#### ҚАЗАҚСТАН РЕСПУБЛИКАСЫ ҰЛТТЫҚ ҒЫЛЫМ АКАДЕМИЯСЫНЫҢ

# ХАБАРШЫСЫ

## ВЕСТНИК

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК РЕСПУБЛИКИ КАЗАХСТАН

### THE BULLETIN

THE NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF KAZAKHSTAN

PUBLISHED SINCE 1944

1

JANUARY – FEBRUARY 2021



NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы "ҚР ҰҒА Хабаршысы" ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources CitationIndex, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

#### Бас редакторы

#### х.ғ.д., проф., ҚР ҰҒА академигі

#### М.Ж. Жұрынов

#### Редакция алкасы:

Абиев Р.Ш. проф. (Ресей)

Абылкасымова А.Е. проф., академик (Қазақстан)

Аврамов К.В. проф. (Украина)

Аппель Юрген проф. (Германия)

Банас Иозеф проф. (Польша)

Велесько С. проф. (Германия)

Велихов Е.П. проф., РҒА академигі (Ресей)

Кабульдинов З.Е. проф. (Қазақстан)

Қалимолдаев М.Н. проф., академик (Қазақстан), бас ред. орынбасары

Қамзабекұлы Д. проф., академик (Қазақстан)

Койгелдиев М.К. проф., академик (Қазақстан)

Лупашку Ф. проф., корр.-мүшесі (Молдова)

Новак Изабелла проф. (Германия)

Полещук О.Х. проф. (Ресей)

Поняев А.И. проф. (Ресей)

Сагиян А.С. проф., академик (Армения)

Таймагамбетов Ж.К. проф., академик (Қазақстан)

**Хрипунов Г.С.** проф. (Украина)

Шәукенова З.К. проф., корр.-мүшесі (Қазақстан)

Юлдашбаев Ю.А. проф., РҒА академигі (Ресей)

Якубова М.М. проф., академик (Тәжікстан)

#### «Қазақстан Республикасы Ұлттық ғылым академиясының Хабаршысы».

ISSN 2518-1467 (Online), ISSN 1991-3494 (Print)

Меншіктенуші: «Қазақстан Республикасының Ұлттық ғылым академиясы»РҚБ (Алматы қ.).

Қазақстан Республикасының Ақпарат және коммуникациялар министрлігінің Ақпарат комитетінде 12.02.2018 ж. берілген № 16895-Ж мерзімдік басылым тіркеуіне қойылу туралы куәлік.

## Тақырыптық бағыты: *іргелі ғылымдар саласындағы жаңа жетістіктер нәтижелерін* жария ету.

Мерзімділігі: жылына 6 рет.

Тиражы: 2000 дана.

Редакцияның мекенжайы: 050010, Алматы қ., Шевченко көш., 28, 219 бөл., 220,

тел.: 272-13-19, 272-13-18, http://www.bulletin-science.kz/index.php/en/

© Қазақстан Республикасының Ұлттық ғылым академиясы, 2021

Типографияның мекенжайы: «NurNaz GRACE», Алматы қ., Рысқұлов көш., 103.

#### Главный редактор

#### д.х.н., проф. академик НАН РК

#### М.Ж. Журинов

#### Редакционная коллегия:

Абиев Р.Ш. проф. (Россия)

Абылкасымова А.Е. проф., академик (Казахстан)

Аврамов К.В. проф. (Украина)

Аппель Юрген проф. (Германия)

Банас Иозеф проф. (Польша)

Велесько С. проф. (Германия)

Велихов Е.П. проф., академик РАН (Россия)

Кабульдинов З.Е. проф. (Казахстан)

Калимолдаев М.Н. академик (Казахстан), зам. гл. ред.

Камзабекулы Д. проф., академик (Казахстан)

Койгельдиев М.К. проф., академик (Казахстан)

Лупашку Ф. проф., чл.-корр. (Молдова)

Новак Изабелла проф. (Германия)

Полещук О.Х. проф. (Россия)

ПоняевА.И. проф. (Россия)

Сагиян А.С. проф., академик (Армения)

Таймагамбетов Ж.К. проф., академик (Казахстан)

Хрипунов Г.С. проф. (Украина)

Шаукенова З.К. проф., чл.-корр. (Казахстан)

Юлдашбаев Ю.А. проф., академик РАН (Россия)

Якубова М.М. проф., академик (Таджикистан)

#### «Вестник Национальной академии наук Республики Казахстан».

ISSN 2518-1467 (Online), ISSN 1991-3494 (Print)

Собственник: РОО «Национальная академия наук Республики Казахстан» (г. Алматы).

Свидетельство о постановке на учет периодического печатного издания в Комитете информации Министерства информации и коммуникаций и Республики Казахстан № 16895-Ж, выданное 12.02.2018 г.

## Тематическая направленность: *публикация результатов новых достижений в области фундаментальных наук.*

Периодичность: 6 раз в год. Тираж: 2000 экземпляров.

Адрес редакции: 050010, г. Алматы, ул. Шевченко, 28, ком. 219, 220, тел. 272-13-19, 272-13-18.

http://www.bulletin-science.kz/index.php/en/

© Национальная академия наук Республики Казахстан, 2021

Адрес типографии: «NurNazGRACE», г. Алматы, ул. Рыскулова, 103.

#### Editor in chief

#### doctor of chemistry, professor, academician of NAS RK

#### M.Zh. Zhurinov

#### Editorial board:

Abiyev R.Sh. prof. (Russia)

Abylkasymova A.E. prof., academician (Kazakhstan)

**Avramov K.V.** prof. (Ukraine) **Appel Jurgen,** prof. (Germany)

Banas Joseph, prof. (Poland) Velesco S., prof. (Germany)

Velikhov Ye.P. prof., academician of RAS (Russia)

**Kabuldinov Z.E.** prof. (Kazakhstan)

Kalimoldayev M.N. prof., academician (Kazakhstan), deputy editor in chief

Kamzabekuly D. prof., academician (Kazakhstan) Koigeldiev M.K. prof., academician (Kazakhstan)

Lupashku F. prof., corr. member (Moldova)

Nowak Isabella, prof. (Germany)

Poleshchuk O.Kh. prof. (Russia)

Ponyaev A.I. prof. (Russia)

Sagiyan A.S. prof., academician (Armenia)

Taimagambetov Zh.K. prof., academician (Kazakhstan)

Khripunov G.S. prof. (Ukraine)

Shaukenova Z.K. prof., corr. member. (Kazakhstan)

Yuldashbayev Y.A., prof., academician of RAS (Russia)

Yakubova M.M. prof., academician (Tadjikistan)

#### Bulletin of the National Academy of Sciences of the Republic of Kazakhstan.

ISSN 2518-1467 (Online), ISSN 1991-3494 (Print)

Owner: RPA "National Academy of Sciences of the Republic of Kazakhstan" (Almaty).

The certificate of registration of a periodical printed publication in the Committee of information of the Ministry of Information and Communications of the Republic of Kazakhstan No. **16895-Ж**, issued on 12.02.2018.

#### Thematic focus: publication of the results of new achievements in the field of basic sciences.

Periodicity: 6 times a year. Circulation: 2000 copies.

Editorial address: 28, Shevchenko str., of. 219, 220, Almaty, 050010, tel. 272-13-19, 272-13-18,

http://www.bulletin-science.kz/index.php/en/

© National Academy of Sciences of the Republic of Kazakhstan, 2021

Address of printing house: «NurNaz GRACE», 103, Ryskulov str, Almaty.

### **BULLETIN** OF NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF KAZAKHSTAN

ISSN 1991-3494

Volume 1, Number 389 (2021), 96 – 103

https://doi.org/10.32014/2021.2518-1467.13

UDC 930 IRSTI 03.01

#### A.Yu. Baltabayeva, A. Abubakirova, A.O. Syzdykova

International Kazakh-Turkish University named after Khodja Akhmet Yasawi, Turkestan, Kazakhstan. E-mail: alyona.baltabayeva@ayu.edu.kz, aktolkin.abubakirova@ayu.edu.kz, aziza.syzdykova@ayu.edu.kz

#### IMPORTANCE OF THE SILK ROAD AND THE SILK ROAD ECONOMIC BELT PROJECT

**Abstract.** The interaction of different political, economic, historical and cultural dynamics of societies play an important role in the emergence of civilizations. The interaction of these dynamics with each other was realized by means of transportation due to reasons such as trade, migration, war, diplomacy. Transportation routes have been the most important element that provides the relationship of space between people and societies through the means that have developed in the historical process. The factor that makes the transportation route valuable and lasting depends on its geopolitical and geostrategic position, on ensuring that the societies carry out their social and economic relations safely. In this context, the oldest and most valuable transportation route in human history is the Silk Road, which covers a large geography from Europe to Asia to Asia to Africa, where many ancient civilizations were born.

Along with the increase in the importance of energy resources in recent years, the importance of the Silk Road has increased as a result of the growing role of the countries concentrated in the region along the Silk Road in the world economy. On September 7, 2013, Chinese President XI Jinping delivered an important speech at Nazarbayev University in Astana, calling on China and Central Asia to join the creation of a new "silk road Economic belt". According to some researchers, this project covers the European economic zone from China and the Eurasia and Asia-Pacific economy corridor. China's project to revive the Silk Road has emerged as a result of China's economic and political-based regional and global expectations and concerns, rather than being a utopian initiative.

In this study, new projects in the revitalization of the Silk Road were evaluated and the Silk Road Economic Belt project was studied. The environmental threats posed to the region by the world's largest transport project, which is being implemented with the participation of 65 countries, were discussed.

Keywords: Silk Road, Silk Road Economic Belt, trade, environmental threats.

**Introduction.** The Silk Road, the longest road in the ancient world, for thousands of years brought different cultural elements to each other and allowed distant geographical regions to interact with each other. The Silk Road has become an important tool for strategic and commercial, political, cultural, religious and technological interaction. Due to such large-scale features, the Silk Road had a vital impact on the states at certain times in history.

The Silk Road, which stretches for more than 7,000 km through Asia, Europe and Africa, has been a catalyst for development for centuries, providing an exchange of goods, cultures, arts, history and religion between China and the West. This caravan trade route was the longest in the pre-capitalist era [1]. On September 7, 2013, Chinese President Xi Jinping delivered an important speech at Nazarbayev University in Astana, calling on China and Central Asia to join the creation of a new "Silk Road Economic Belt." The proposal is aimed at promoting the rapid economic development of Eurasian countries, especially Central Asian countries, achieving rapid development in China [2].

It has become an important network of relations that brings trade countries closer, provides product diversity and allows for efficient use of resources. Foreign trade is still used as a policy tool for countries, especially before the end of World War II, many countries viewed foreign trade negatively. In the 1980s, thanks to the positive atmosphere created by globalization, countries conducted research and agreements to remove barriers to trade. In particular, there is the importance of infrastructure investments for the development of trade, which will reduce transport costs. From this point of view, transport networks, which are trying to attract the dominant countries in world trade, are important.

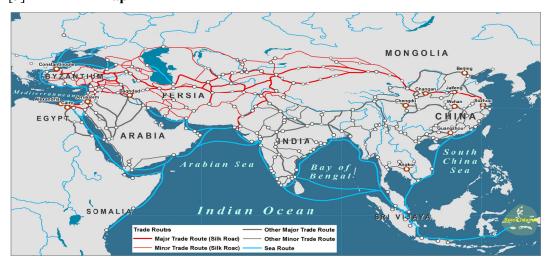
The Silk Road, which has a great significance in history and strives to become the ruler of civilizations, has lost its significance with geographical discoveries. From the Middle Ages, the transportation of commercial goods by sea was important for European countries. In the context of development such as war, economic crisis and globalization, Asian countries have become more competitive in the international arena and have achieved higher growth rates than Western countries. The search for new markets continues, especially for Asian economies, which have achieved economic growth through a breakthrough due to cheap labor, so efforts are being made to reduce transport costs. Therefore, it is important to develop new transportation opportunities, conclude agreements with neighboring countries, invest in infrastructure. Especially with the breakthrough of China, efforts are being made to revitalize the Silk Road as never before in order to trade quickly and cheaply in distant lands. This is evidenced by the modern Silk Road project, which was actually launched under the leadership of China-the "Silk Road Economic Belt". This study assesses the short history of the Silk Road, its economic significance and new projects to revitalize the Silk Road, and discusses the environmental risks of the new Silk Road project.

#### Name, brief history and directions of the Silk Road.

The Silk Road was established 2,100 years ago during the Han Dynasty (206 BC - 24 BC) to promote trade between China and Europe [3].

It is known that the ancient trade route of Asia, which is of great historical significance, was called the Great Silk Road due to the fact that the silk produced in China was transported to the West by this route. The term Silk Road was not used in Asia, especially in China, and the term was used only by Europeans. Baron von Richtofen was the first to use the name of the Silk Road, and in an article on China he referred to the Silk Road and the Silk Road map of the Macedonian silk merchant Marinus [4]. From the first centuries of history, the Silk Road has been a means of commercial, military, cultural, religious and political relations between East and West for thousands of years. According to some sources, silk, carpets, handkerchiefs, tea, and other important Asian commodities were exported to Iran, Byzantium, and many other European countries by more than a hundred caravans. On the other hand, in the West, many of the cultural dynamics (religions, civilizations, and beliefs) that come through merchants and missionaries have shifted to the East.

The main route of the Silk Road was from China, through Iran to Mesopotamia and to the Mediterranean ports of Antioch and Sur. However, over time, this path changed due to the current political and economic situation and became an international trade network. The Silk Road is divided into two sections: the North Road and the South Road. The northern route ran from the Caucasus to the Black Sea, from there to coastal points such as Azov and Crimea, and then from southern Russia, the Urals, southern Siberia, and the Altai steppes to China. The Southern Silk Road stretched from the Chinese capital to the Eastern Mediterranean, through the plateaus of Central Asia and Iran, and then by ships to the interior of Europe [5]. Below is a **Map 1** of the Silk Road:



Source: https://transportgeography.org/wp-content/uploads/Map\_Silkroad.pdf

Date of access: 12.03.2020

Although it was not possible to know the exact direction of the Silk Road, an attempt was made to establish a definite route based on archeological finds and historical data. Until recently, it was believed that there was only one way between East and West. However, today we can talk about a road network with three routes. These are the Northern Silk Road, the Southern Silk Road and the interconnected land and sea routes.

Although it was not possible to know the exact direction of the Silk Road, an attempt was made to establish a definite route based on archeological finds and historical data. Until recently, it was believed that there was only one way between East and West. However, today we can talk about a road network with three routes. These are the Northern Silk Road, the Southern Silk Road and the interconnected land and sea routes.

The information provided so far shows that the Silk Road has a very complex system and a very wide geography. For this reason, its importance can be better understood when considering the direct and indirect economic, social, political, military, religious and artistic effects of the geographical area in which it is located.

#### The importance of the Silk Road in reducing transport costs in trade.

Due to its geographical and physical properties, countries cannot produce any products. Countries that can produce according to their geographical and human structure have the opportunity to use goods that they cannot produce through foreign trade. Especially in the context of globalization, countries have the opportunity to trade more. Thus, countries have the opportunity to import not only goods that they can not produce, but also goods produced at their own production costs. If countries import goods at cost of production, they can use their resources more efficiently by diverting their resources to other high-profit areas. In this case, as a country's foreign trade policy, it is important to conclude trade promotion agreements, developing the capabilities of foreign markets that bring producers closer to more buyers. Countries that remove restrictions and bans on foreign trade aim to increase trade by reducing transport costs between countries, with a focus on infrastructure investment.

When it comes to developed countries until the 80s, the first countries to appear were America, Japan and Europe. However, Asian countries joined the ranks of developed countries in the 80s. The growth of production in Asian countries entering the international market has led to an increase in foreign trade and greater energy demand. Work to reduce transport costs, low-cost transportation of energy resources between countries will reduce the cost of goods, which will allow to better meet the needs of consumers. In particular, along with the rapid development of the economy, China's energy needs are growing rapidly. China is forced to import half of its oil consumption, or 10 million barrels per day. 60% of oil imports come from the Middle East [6, p.28]. China is concerned about the US presence in the Middle East and its control over oil and natural gas resources and their transportation routes. To reduce its growing energy and dependence on the Middle East, China seeks to diversify its resource-rich countries and enters into agreements with various countries in Central Asia, Africa and Latin America. China's investment in energy is growing both domestically and abroad. By connecting oil pipelines with Central Asia, it seeks to minimize the accuracy of maritime transport routes to these networks, including Iran, crossing the Straits of Omuz and Malacca [7].

Reducing transport costs and creating the shortest and safest trade routes as cost-reducing factors are important for maintaining countries' international competitiveness. In other words, countries that can produce cheap goods due to human and technological development are looking for ways to transport these goods to foreign markets at the lowest prices. In this regard, Kazakhstan and other Turkic republics are in geopolitical importance.

#### Projects aimed at improving the Silk Road

Although it lost its significance at the end of the XVII century, the historical Silk Road is now trying to renew it with its various forms. In this context, economic and political cooperation is carried out through a number of international and so-called "Silk Road Economic Belts" initiatives. The most important of these are oil and gas pipeline projects, the Europe-Caucasus-Asia Transport Corridor (TRACECA), the International Transport Corridor Europe-Caucasus-Asia (TRACECA), the Northern Distribution Network, the Korean-Siberian Railway and the Persian Gulf-Asia model. actually takes place in a significant part of them.

**TRACECA program:** It was put on the agenda of the Brussels Conference on May 7, 1993. The conference was attended by the Ministers of Trade and Transport of Azerbaijan, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, as well as representatives of Russia, Romania, Bulgaria, Turkey, Iran, China, Pakistan and the European Union.

The main objectives of the conference:

- Encourage cooperation between participating countries in the development of trade in the region;
- identify problems and shortcomings in the region's trade and transport systems,
- Determining the terms and conditions of the EU-funded technical assistance program;
- Creation and development of the Central Asia-Caucasus-Europe transport corridor.

At the end of the conference, the Brussels Declaration was signed. Thus, the European Union has adopted a funded technical support program for the development of a transport corridor from Central Europe to Central Asia via the Black Sea, the Caucasus and the Caspian Sea. The conference identified problems and shortcomings in the region's trade and transport systems, identified projects to address them, and immediately provided a  $\in$  15 million loan from the European Union to operate these projects. These projects were aimed at opening traditional trade routes to the west of Moscow [8].

In addition, 4 sectoral working groups have been established at the Conference since 1993. These are working groups; It was decided to facilitate trade, road transport, rail transport and sea transport. In these working groups, the costs of the sea, the airline and the existing highways passing through Russia were calculated comparatively by determining the route through Central Asia. The most discussed issue at the conference was the simplification of border crossings.

TRACECO CONTROLLA CONTROLL

Map 2: TRACECA network

Today, the TRACECA route transportation system includes 13 member countries. These countries; Azerbaijan, Armenia, Bulgaria, Kazakhstan, Kyrgyzstan, Moldova, Romania, Tajikistan, Turkey, Ukraine, Uzbekistan, and Georgia (http://www.traceca-org.org/en/countries/). The economic indicators of TRACECA countries are given in the table 1 below.

Countries	Population (million people)	Population growth (annual%)	GDP	GDP growth (% per annum)	Export	Import
Armenia	2,9	0.24	12433089919	5.2	4700348851	6647280643
Azerbaijan	9,9	0.87	46939529412	1.41	25484473000	17705199000
Bulgaria	7,02	-0.72	65132951116	3.08	43450810000	41496250000
Georgia	3,7	-0.04	17599660629	4.80	8896617467	10768594069
Iran	81,8	1.39	4.54013E+11	3.76	-	-
Kazakhstan	18,2	1.29	1.7934E+11	4.10	67083014658	46224938814
Kyrgyzstan	6,3	1.99	8092836609	3.50	2600152769	5483703329
Moldova	2,7		11443671436	3.40	3451540000	6383920944
Romania	19,4	-0.62	2.39553E+11	3.95	1.00511E+11	1.07679E+11
Tajikistan	9,1	2.45	7522947810	7.30	1116258706	3220202290
Turkey	82,3	1.49	7.7135E+11	2.83	2.23448E+11	2.39533E+11
Ukraine	44,6	-0.47	1.30832E+11	3.34	59135000000	70502000000
Uzbekistan	32,9	1.73	50499921558	5.12	14135137288	23443547241

Table 1 - Economic indicators of TRACECA countries (2019)

The Central Asia Regional Economic Cooperation (CAREC): Another project led by the United Nations Social Commission for Asia and the Pacific in the 2000s aims to integrate and upgrade the transport infrastructure of developing Asian countries on land and in transit. Within the framework of this project, 3 transport corridors were involved in Central Asian countries. Another transportation project is the Asian Development Bank's Central Asia Regional Economic Cooperation Program for Transport and Trade Facilitation. 33 out of 80 transportation-related projects have been completed, 37 of the remaining 47 projects have been delayed due to various reasons, and about 40% of these projects have been completed. In addition, CAREC is at each customs gate in terms of trade facilitation between countries in the region. conducts research on the creation of the necessary infrastructure to create a single window system that will reduce waiting times [9].

#### The Silk Road Economic Belt project

The New Silk Road, an important trade and logistics project of the 21st century, was formed and implemented in accordance with the established policy of China. This trade route, where empires have been at war with each other for hundreds of years, will be a great economic zone for modern states with modern projects.

During his visits to Central Asia and Southeast Asia in September and October 2013, President Xi Jinping of the People's Republic of China proposed a joint project to build the Silk Road Economic Belt and the 21st Century Maritime Silk Road, which attracted much international attention. As a result of China's economic growth and aspiration to find new markets, this project, based on its history, connects many countries with their economies. In addition, the "East-West" trade network will be established and will be continuous in the exchange of goods. The necessary infrastructure for the full implementation of the project has been created and funds from many countries have been attracted to complete the network [10].

\$ 40 billion has been transferred to the Silk Road Economic Belts Fund, which China has set up for its investment in the Silk Road. It has invested \$ 100 billion in the Asian Infrastructure Investment Bank, which was established to support and develop infrastructure and is a member of Kazakhstan [11]. These Chinese investments underscore the importance of the Silk Road. The road, which is expected to affect trade and the economies of the countries through which it passes, will have a significant impact on international trade.

As part of the Silk Road project, it is planned to create two types of land and sea routes (figure 2). The first is the so-called "Silk Road Economic Belt", which connects China and Europe. The project includes high-speed railways, highways, ports, airports, natural gas networks and other infrastructure projects. The second line is the so-called "Sea Silk Road", which connects China with the Persian Gulf and the Mediterranean Sea through the Indian Ocean. It is planned to develop maritime trade through the Persian Gulf and the Indian Ocean. The Tengiz Silk Road allows access to markets outside China. Thus, China receives a significant share of world trade.



Source: The One Brief, 2019 https://theonebrief.com/chinas-global-ambition-balancing-opportunities-and-risks-in-one-belt-one-road/

A study of the countries in the area shows that the project includes mainly developing countries. Given that the economic volume of these countries under the project is about \$ 21 trillion, the New Silk Road project has significant economic potential. The project includes railway, road, air, sea and pipeline crossings. Upon completion of the project, transport networks from China to Europe will contribute to the differentiation of trade routes and the development of technology will reduce the time of trade between countries. Costs will be reduced if logistics systems are improved. Pipeline trade is important in the energy sector. China supplies most of the oil needed for its heavy industry through pipelines. The rest is done by sea trade. The project envisages a complex trade network with the construction of a pipeline.

With the New Silk Road project, the People's Republic of China seeks to increase its growth rate and stimulate domestic consumption [12].

#### Environmental hazards of the Silk Road economic belt

The Silk Road Economic Belt is popularly known as the New Silk Road. Reconstruction of the Old Silk Road will bring great benefits to China and the underdeveloped regions of Central Asia, creating wealth and prosperity that will create many needs. However, the main task is to ensure the safety of the New Silk Road and its sustainability. For example, the fact that most of the route is located in vulnerable areas and semi-arid and arid areas of water resources can pose a threat to the environment.

Problems related to limited natural resources and climate change, human activities have a vulnerable impact on the environment. The natural complexity of the natural system and the lack of scientific research on the natural environment and resources of these regions make it difficult to find effective solutions [2].

First of all, the dry climate of the region and limited water resources. Global climate change is exacerbating the situation. The eastern basin of the Aral Sea in August 2014 was completely dry for 600 years [13]. Now it is a desert. In addition, glaciers in the Himalayas and the Tianshan Mountains are a cause for concern due to climate change. Melted glaciers will generate additional flow in the short term, but when glaciers are removed, future catastrophes will have irreversible consequences. Today, about 3 billion people live along the new Silk Road; this number will increase significantly with the implementation of the project. Today, water resources in the region are used inefficiently in most of the water used for agricultural irrigation [14]. The problem is exacerbated by declining water quality due to human health. To solve the problem, it is necessary to make radical changes in water resources management.

Fossil energy sources are also consumed at an increasing rate. China is the world's largest consumer of coal, natural gas and oil annually, especially in the East. If consumption continues to grow, China's coal reserves may be depleted in just 19 years [15]. Climate change and environmental pollution are inevitable consequences of this trend and threaten the economic viability of the New Silk Road initiative. Air and water quality are a clear concern, but land degradation is also an important issue, as soil pollution, soil salinization and desertification can disrupt agricultural productivity. Research can help solve or prevent

some potential problems. However, government-sponsored research is currently limited. Priority areas of emergency research should be based on the following:

- A detailed assessment of the project's required water and energy, including an assessment of transboundary waters and how to manage them.
- Full assessment of the project's environmental potential and environmental impact, along with options for improvement.
  - Full assessment of possible geological hazards as a result of design work.

Conclusion. The Silk Road is one of the oldest trade routes in history, and thanks to it, many countries have historically been engaged in economic activities. In addition, the possibilities of the Silk Road influenced different cultures in social, political, military and religious aspects. Because at that time the most important route from East to West was the Silk Road. The creation of the Silk Road Economic Belt is an interesting prospect that will bring huge economic benefits to the countries of Eurasia. However, intensive human activities could double the water crisis in Central Asia, worsen the vulnerable environment and accelerate energy consumption in the region. In order to create a new and stable economic belt of the Silk Road, it is necessary to promote research, strengthen international cooperation and improve education. Ecologically sustainable development of the Silk Road economic belt is necessary through careful planning, specific research, and the support of governments and the people. Local governments need to invest in research in relevant areas.

At the same time, society must understand the need to protect the environment and the devastating consequences of the abuse of natural resources. The New Silk Road can be built in a useful and sustainable way through careful planning, relevant research and close cooperation between the relevant regions and countries.

ARTICLE AR05132474 Modernization of the cultural heritage of the Great Silk Road (based on the Turkestan region) on the basis of a complex study of cultural monuments, was sponsored by the Ministry of Education and Science of the Republic of Kazakhstan.

#### А. Балтабаева, А. Абубакирова, А. Сыздыкова

 $^{1}$ Қожа Ахмет Ясауи атындағы Халықаралық қазақ-түрік университеті, Түркістан, Қазақстан

#### ЖІБЕК ЖОЛЫ ЖӘНЕ «ЖІБЕК ЖОЛЫ ЭКОНОМИКАЛЫҚ БЕЛДЕУІ» ЖОБАСЫНЫҢ МАҢЫЗДЫЛЫҒЫ

Аннотация. Қоғамның түрлі саяси, экономикалық, тарихи және мәдени динамикасының өзара ықпалдасуы өркениеттердің пайда болуында маңызды рөл атқарады. Динамиканың бір-бірімен өзара қарым-қатынасы сауда, көші-қон, соғыс, дипломатия сынды себептерге байланысты көлік құралдары арқылы жүзеге асырылды. Көлік жолдары – тарихи деконструкция үдерісінде дамыған көлік құралдары арқылы адамдар мен қоғам арасындағы кеңістіктік қатынастарды қамтамасыз ететін маңызды элемент. Көлік жолын кұнды және берік ететін фактор оның геосаяси және геостратегиялық жағдайына, қоғамның әлеуметтік және экономикалық қатынастарын қауіпсіз жүзеге асыруды қамтамасыз етуге байланысты. Бұл тұрғыда адамзат тарихындағы ежелгі және құнды көлік жолы – Еуропадан Азияға, Азиядан Африкаға дейінгі үлкен географияны қамтитын көптеген ежелгі өркениеттер дүниеге келген Жібек жолы.

Соңғы жылдары маңызы артқан энергетикалық ресурстардың ұлғаюымен бірге Жібек жолы бағытында орналасқан өңірде шоғырланған елдердің әлемдік экономикадағы орнының артуы нәтижесінде Жібек жолының маңыздылығы арта түсті. 2013 жылғы 7 қыркүйекте ҚХР Төрағасы Си Цзиныпин Астанадағы Назарбаев университетінде маңызды баяндама жасап, Қытай мен Орталық Азияны жаңа «Жібек жолы экономикалық белдеуін» құруға қосылуға шақырды. Бұл жоба Қытай мен Еуразияның еуропалық экономикалық аймағын және Азия – Тынық мұхиты экономикалық дәлізін қамтиды. Кейбір зерттеушілердің пікірінше, Қытайдың Жібек жолын жандандыру жобасы утопиялық бастама емес, Қытайдың экономикалық және саяси негізделген аймақтық және жаһандық үміті мен алаңдаушылығы нәтижесінде пайда болды.

Зерттеуімізде Жібек жолын жандандырудағы жаңа жобалар бағаланып, «Жібек жолы экономикалық белдеуі» жобасы зерттелді. Әлемдегі 65 елдің қатысуымен жүргізіліп жатқан ірі транспорттық жобаның аймаққа төндіретін экологиялық қаупі талқыланды.

Түйін сөздер: Жібек жолы, «Жібек жолы экономикалық белдеуі, сауда, экологиялық қауіп.

#### А. Балтабаева, А. Абубакирова, А.Сыздыкова

Международный казахско-турецкий университет им. Х.А. Ясави, Туркестан, Казахстан

### ШЕЛКОВЫЙ ПУТЬ И ЗНАЧЕНИЕ ПРОЕКТА «ЭКОНОМИЧЕСКИЙ ПОЯС ШЕЛКОВОГО ПУТИ»

Аннотация. Взаимодействие различных политических, экономических, исторических и культурных динамик обществ играет важную роль в возникновении цивилизаций. Взаимодействие этой динамики осуществлялось посредством транспорта по таким причинам, как торговля, миграция, война, дипломатия. Транспортные пути стали наиболее важным элементом в процессе исторической деконструкции, обеспечивая пространственные отношения между людьми и обществом с помощью развитых транспортных средств. Фактор, который делает путь ценным и сильным, зависит от его геополитического и гео-стратегического положения, обеспечивающего безопасную реализацию социально-экономических отноше-ний общества.

В этом смысле старейшим и наиболее ценным транспортным маршрутом в истории человечества является Шелковый путь, где родились многие древние цивилизации, охватывающие большую географию от Европы до Азии, от Азии до Африки. Наряду с увеличением значимости энергетических ресурсов, которые становятся все более важными в последние годы, значение Шелкового пути возросло в результате растущей роли стран, сосредоточенных в регионе вдоль Шелкового пути в мировой экономике.

7 сентября 2013 года президент Китая Си Цзиньпин выступил с важной речью в Назарбаев Университете в Астане, призвав Китай и Центральную Азию присоединиться к созданию нового «Экономического пояса — Шелкового пути». По мнению некоторых исследователей, этот проект охватывает Европейскую экономическую зону от Китая и Евразии до Азиатско-Тихоокеанского экономического коридора. Многие эксперты считают, что Китайский проект по возрождению Шелкового пути — это не утопическая инициатива, а результат экономических и политических, региональных и глобальных надежд и перемен.

В этом исследовании были оценены новые проекты по оживлению Великого Шелкового пути и изучен проект Экономического пояса Великого Шелкового пути. Были обсуждены экологические угрозы для региона, связанные с крупнейшим в мире транспортным проектом, который реализуется с участием 65 стран.

**Ключевые слова:** Шелковый путь, Экономический пояс Шелкового пути, торговля, экологические угрозы.

#### Information about authors:

Corresponding author: Baltabayeva A. Yu., candidate of philosophical sciences, associate professor, International Kazakh-Turkish University named after Khodja Akhmet Yasawi, Turkestan, Kazakhstan; alyona.baltabayeva@ayu.edu.kz; https://orcid.org/0000-0003-3479-1827;

Abubakirova A.T., PhD, Department of Tourism, International Kazakh-Turkish University named after Khodja Akhmet Yasawi, Turkestan, Kazakhstan, aktolkin.abubakirova@ayu.edu.kz, https://orcid.org/0000-0002-1803-5944;

Syzdykova A.O., PhD, Department of Finance and Accounting, International Kazakh-Turkish University named after Khodja Akhmet Yasawi, Turkestan, Kazakhstan, aziza.syzdykova@ayu.edu.kz, https://orcid.org/0000-0002-1377-0026.

#### REFERENCES

- [1] Chen, F., Masini, N., Liu, J., You, J., & Lasaponara, R. (2016). Multi-frequency satellite radar imaging of cultural heritage: the case studies of the Yumen Frontier Pass and Niya ruins in the Western Regions of the Silk Road Corridor. International Journal of Digital Earth, 9(12), 1224-1241.
- [2] Li, P., Qian, H., Howard, K. W., & Wu, J. (2015). Building a new and sustainable "Silk Road economic belt". Environmental Earth Sciences, 74(10), 7267-7270.
- [3] Xu X, Yeats RS, Yu GB (2010) Five short historical earthquake surface ruptures near the Silk Road, Gansu Province, China. Bull Seismol Soc Am 100(2):541–561. doi:10.1785/0120080282
- [4] Çakmak, M. A., & Hamarat, E. (2016). Some USA-Centered Approaches About Teaching The Silk Road History: Technology, Project And Museum. Kastamonu Education Journal, 24(1), 421-430.
- [5] İşıktaş, E., & Alev, D. (2017). Geçmişten Günümüze İpek Yolu'nun Önemi ve Buna İlişkin Yapılmış Bilimsel Çalışmalar. Social Sciences Studies Journal, 3(8), 584-596.
- [6] BP (2019). Statistical review of world energy, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf Қол жеткізу күні: 02.03.2020
  - [7] Sandıklı, A. (2009). Geleceğin Süper Gücü Çin. Bilge Strateji, 1(1), 40-50.
  - [8] TRACECA (2020). http://www.traceca-org.org/en/traceca/ Қол жеткізу күні: 02.04.2020
- [9] Çatalbaş, N. (2014), "Orta Asya'da Dış Ticaretin Gelişmesinde Lojistik Hizmetlerinin Rolü", International Conference on Eurasian Economies.
- [10] Ghiasy, R., & Zhou, J. (2017). The Silk Road Economic Belt: Considering Security Implications and EU-China Cooperation Prospects. Sweden and Germany, SIPRI & Friedrich Ebert Stiftung.
- [11] Dave, B., & Kobayashi, Y. (2018). China's silk road economic belt initiative in Central Asia: economic and security implications. Asia Europe Journal, 16(3), 267-281.
  - [12] Balcı, Zeynep (2018), "Çin'in Yeni "İpek Yolu" Projesi", İnsamer-İHH İnsani ve Sosyal Araştırmalar Merkezi, Ocak, s. 1-9.
  - [13] Eliasson J (2015) The rising pressure of global water shortages. Nature 517:6. doi:10.1038/517006a
  - [14] Varis O (2014) Curb vast water use in central Asia. Nature 514:27-29. doi:10.1038/514027a
  - [15] Heinberg R, Fridley D (2010) The end of cheap coal. Nature 468:367-369. doi:10.1038/468367a

## Publication Ethics and Publication Malpractice in the journals of the National Academy of Sciences of the Republic of Kazakhstan

For information on Ethics in publishing and Ethical guidelines for journal publication see http://www.elsevier.com/publishingethics and http://www.elsevier.com/journal—authors/ethics.

Submission of an article to the National Academy of Sciences of the Republic of Kazakhstan implies that the described work has not been published previously (except in the form of an abstract or as part of a published academic thesis or as an electronic preprint, see http://www.elsevier.com/postingpolicy), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. In particular, translations into English of papers already published in another language are not accepted.

No other forms of scientific misconduct are allowed, such as plagiarism, falsification, fraudulent data, incorrect interpretation of other works, incorrect citations, etc. The National Academy of Sciences of the Republic of Kazakhstan follows the Code of Conduct of the Committee on Publication Ethics (COPE), and follows the COPE Flowcharts for Resolving Cases of Suspected Misconduct (<a href="http://publicationethics.org/files/u2/New\_Code.pdf">http://publicationethics.org/files/u2/New\_Code.pdf</a>). To verify originality, your article may be checked by the Cross Check originality detection service <a href="http://www.elsevier.com/editors/plagdetect">http://www.elsevier.com/editors/plagdetect</a>.

The authors are obliged to participate in peer review process and be ready to provide corrections, clarifications, retractions and apologies when needed. All authors of a paper should have significantly contributed to the research.

The reviewers should provide objective judgments and should point out relevant published works which are not yet cited. Reviewed articles should be treated confidentially. The reviewers will be chosen in such a way that there is no conflict of interests with respect to the research, the authors and/or the research funders.

The editors have complete responsibility and authority to reject or accept a paper, and they will only accept a paper when reasonably certain. They will preserve anonymity of reviewers and promote publication of corrections, clarifications, retractions and apologies when needed. The acceptance of a paper automatically implies the copyright transfer to the National Academy of Sciences of the Republic of Kazakhstan.

The Editorial Board of the National Academy of Sciences of the Republic of Kazakhstan will monitor and safeguard publishing ethics.

Правила оформления статьи для публикации в журнале смотреть на сайте:

www:nauka-nanrk.kz

ISSN 2518-1467 (Online), ISSN 1991-3494 (Print)

http://www.bulletin-science.kz/index.php/en/

Редакторы М. С. Ахметова, Д. С. Аленов, А. Ахметова Верстка на компьютере А.М. Кульгинбаевой

Подписано в печать 10.02.2021. Формат 60х881/8. Бумага офсетная. Печать – ризограф. 20,17 п.л. Тираж 500. Заказ 1.