

The Threats for Modern Water and Energy Situation in Central Asia and the Ways of Protection from Them

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Abstract: Development of economic aspects in Central Asia supposes not only innovative provision and investment financing. It is also necessary to calculate and to assume the correlation of economic and natural characteristics and possible protection from them. Not only an aspect of steady development in the frames of U.N.O. prospect of declarative correlation of water security and energy one should be taken into account but also the prospect of water and energy threats overcoming with committed actions of Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan and China is actual in Central Asia. The priority group of the different sides of water and energy security, its development, the correlation of threats and challenges are offered at the article. Several economic, technological, international and political measures which will lead the solution of water and energy questions to the new and more effective level are offered here. Political mood of the article is connected to conflicts between the states of Central Asia avoidance by means of laborious negotiate, technical and project activity in the process of settlement, deployment and the first results in water and energy situation in Central Asia solution by means of nonmilitary way acquisition.

Key words: Natural and resource security, conflict overcoming, threats for water and energy situation, economic security, nonmilitary settlements of the conflicts, protection from the threats, harmonization the relations between states in Central Asia

INTRODUCTION

Worldwide importance of water and energy safety in the 90-s of the 22th century and in the beginning of the 21st century began to isolate out of the problems of economic and ecological security in a separate complex of the threats, challenges and risks.

To begin the research of the question we should mention that the “term water security gained prominence in the international literature from a different perspective. U.N.O.-water defines water security as “The capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality of water for sustaining livelihoods, human well-being, and socio-economic development for ensuring protection against water-borne pollution and water-related disasters and for preserving ecosystems in a climate of peace and political stability”(United Nations University, 2013).

Surely, the problem is not assumed to be a cause of the Third World war but the local military clashes because of the water springs have already happened (for instance, at the turn of the 22th and 21st centuries at the Middle East). That is why the regional prospect of the threat development is urgent in the 10-s of the 21st century. Central Asia is one of these regions where some responsible state persons claim about probability of

military operations because of water and energy situation. We would like to show a priority group of these threats emphasizing the scale according to challenges in water and energy situation in Central Asia.

The region of Central Asia is one of the most important ones in the world because of its rich mineral resources, transit potential and geopolitical interest to it from the leading states of the world. One of the problems concerns to joint water consumption. Such states of Central Asia as Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan have faced to many economic, social and political problems since the moment of getting independence by them.

A great analytic material connected to questions of water and energy resources consumption and environmental protection is saved in the region of Central Asia nowadays. But all regional agreements which regulate international relations in hydro economic and energy complexes are not enough systematized, badly coordinated and conflicting (Kushkumbayev and Kushkumbayeva, 2013).

That is why, it is necessary to inspect and to complete all the basic agreements which have been signed by the countries of the region since 90-s of the previous century and to take into consideration trend of water and energy development in order to provide regional security in Central Asia.

Problems of transboundary water resources are difficult questions and contradictory ones. Their solution need in modern management according to international standards. It is necessary to show trends of ecology security threat development from the side of water and energy potential of these countries before beginning of interrelations harmonization questions in Central Asia solution.

The higher priority threat is a regime of water deficit orderliness at the modern stage of security development at the region. The states' apprehensions about it provoke a complex of worse situation waiting that it is indeed.

The second threat may be shown as the growth of population in the region. This uncontrollable growth leads to problems both in the states and relation among them in questions of drinkable water supply nowadays and in near future.

The cardinal threat to the ecology safety of the region is stream usage. According to international standards, it is one of the effective reasons for intensive conflicts in the region development.

The essential threat for the regional water and energy complex is misunderstanding of water and energy questions by foreign countries. There is no threat of conflict in this case but the prospect of global international relations worsening may appear both now and in the short run (Borishpolets, 2013).

The inside regional challenges which may be discussed on international level and may have modeling decision without taking this experience into account by some countries of the region may suddenly turn into the threat for the region security.

Disagreement of the population of the region may also lead to threatening prospects of the water and energy problems development. In this case some people need not water in definite season while the others need in water escape to the prejudice of agriculture and land melioration for own energy supply sake. The chance of the conflict situation aggravation may be as quick as lightning and non controllable if it is worsen with natural disasters or with anthropogenic situation (UNO, 2006).

MATERIALS AND METHODS

Geopolitical method which is based on specific geographical conditions as a factor of international relations development recognition. System method (system of regional interrelations analysis in the condition of its openness).

GIS-method is sometimes used in our case for water and energy situation in Central Asia scrutiny in order to show sharper the situation with water and energy in

Central Asia on the regional map. The method of criterion and selective approach to the sides of water and energy situation as a reflection of multi-vectorial development of Central Asia should be taken into consideration.

The historical approach in choice of water and energy sites criterion with a glance of the 21st century is also rather important.

Water deficit regime orderliness: This question is extremely important and it is connected to a broad number of other questions. Its solution demands great professionalism and mutual understanding among the states in the region. The problem of water deficit imperceptibly grows every year. Different international organizations publish data about this process.

For example, every three years World program U.N.O. of water resource estimation (WWAP) publishes International report of U.N.O which shows the entire assessment of the freshwater recourse condition in the world.

The last report was published at the Fifth World water forum which was held in Istanbul in 2009. This is a result of combined work of twenty different U.N.O. departments which were joined within the scope of tenth anniversary of U.N.O "Water for life" (2005-2015).

It is emphasized at the report that many countries have already reached maximum potential at water usage because fresh water consumption has trebled for the last half a century. Unequal access to the safe fresh water, to water cleanup used for food production and sewage water processing retains in the vast regions of the developing world. About five billion people or 67% of our planet's population will live without clean water in 2030 if nothing is done to prevent this situation.

The question of water quality is arguable from many aspects. "Water quality-related indicators were difficult to obtain. According to Libert and Lipponen (this issue), water quality as a topic has largely been neglected in favour of water quantity issues. Water quality aspects were examined indirectly, through an indicator measuring the percentage of people having access to improved sanitation and water sources" (Stucki and Sojamo, 2012). About 340 million people in Africa to the south of Sahara desert deprived of access to safe drinkable water. There are no treatment facilities in the settlements where half of a billion Africans live. About 80% of diseases in developing countries cause with poor water taking. Three million people die due to this reason every year. Five thousand children every day or a child every seventeen seconds die because of an illness of "dirty hands"! It is possible to avoid 10% of diseases in the world thanks to water supply improvement, water cleaning, hygiene and proper water resource management.

According to data the population of the Earth was 7.3 milliard people in January, 2016. The annual population increase is eighty million. Every year we need sixty-four million cubic meters of water more. About ten milliard people will live on the Earth in 2050 and the main population increase will be in the developing countries where there is not enough water nowadays.

A half of the world population will live under threat of water deficit in 2030. From seventy-five to two hundred and fifty million people will be in this situation only in Africa in 2020 because of the climate changes. Shortage of water in desert and semi desert regions will cause of intensive population migration. According to experts' opinion from twenty-seven to seven hundred million people will have to change their place of residence. In 2000 water deficit was estimated as two hundred and thirty billion cubic meters per year. But 2025 we will not have enough water ten times more: about two trillion cubic meters per annum.

According to data of U.N.O., Russia, Scandinavia, South America and Canada will be the most provided with fresh water regions in 2025. More than twenty thousand cubic meters is the share of each person in these countries per year. The region of Latin America is the best provided with water resource because its share is a third of the world water course, then follows Asia with it's a quarter of the world water course. The next are developed European countries (20%), the states which situated to the south from the Sahara desert and the states of the former USSR (10 %.) Countries of Middle East and North America are the most limited with water resources (1%) (U.N.O.: water will run out soon, n.d.).

Complex of waiting for worse situation arouse the apprehension of the states of Central Asia. Uncoordinated water consumption politics between the states joined with common river system leads to water fund exhaustion.

A President of the Republic of Kazakhstan N.A. Nazarbayev the most competently expressed these apprehensions in his message Strategy "Kazakhstan-2050". He pointed the following at this message: "Water is an extremely limited resource and the struggle for water springs becomes the most important factor of geopolitics and it is one of the reasons of tension and conflicts on the planet... The problem of water supply is also a thorny issue for our country. We have not enough qualitative fresh water. A number of regions have critical necessity in it" ("Strategy "Kazakhstan-2050", 2012).

A President of the Republic of Kyrgyzstan A. Atambayev, took part and gave a speech at the 21-st U.N.O. Conference about the changes of climate which

was held in France on the 30-th of November, 2015. He emphasized that "Negative effects of climatic changes also influence on our country. We worry about arid years and the number of disease increases as never before. Rapid mountain glaciers ablation causes a great alarm because the glaciers are areas of fresh water formation in Central Asia. As it is predicted, the total area of glaciers in Kyrgyzstan may shrink about 30-40% by 2025 and as a result river water content in Central Asia may 25-35% decline. And the glaciers in Kyrgyzstan may disappear from the map of the Earth by 2100. That is why our country takes active measures for questions about climatic changes integration into strategic programs of our country. So, questions about low-carbon and "green" development were included into National strategy of steady development and Prior directions of adaptation to climatic changes were taken".

The representatives of other Central Asian countries also worry about the perspective of water resource development in order to settlement water deficit there. A President of Uzbekistan I. Karimov and a President of Tajikistan E. Rahmonov in their different speeches told about the good wise fresh water usage because it is not only a factor of potential future "water wars" but also priority in regional "water armistice" development.

We shall remind that a strategy of national intelligence service was taken in September, 2014 in the USA. One of the basic threats for global security was mentioned as a problem of fresh water deficit at this document. According to American specialists' opinion, possible sharp fresh water amount reduction may provoke internal conflicts and international arguments in the world. Particularly, thirty-seven fierce forcible international arguments because of water resources have happened for the last fifty years. That is why spectrum of fresh water deficit and fresh water supply is situated between water world and water war in seven or eight positions of final result.

"There are water mains in 120 cities (100%), 112 towns and district centers (99.1%); in 9213 rural settlements (77.8%) in the Republic of Uzbekistan. City dwellers' water main coverage is 93.1% and the rural one is 79.1%. Water supply is based on surface water and mainly on the groundwater. Sharp deficit of drinkable water is noticed in the western regions of the republic (Karakalpakstan, Khorezm and Bukhar and western parts of Samarkand, Kashkadarya, Dzhizak and Surkhandarya regions) because of fresh ground water resources irregular location. Earlier (15-20 years ago) ground waters of these regions met requests for drinkable springs. But intensive new land development, additional collector and drainage

Table 1: The Aral Sea decrease beginning from 1960-s of the 20th century to 2014

| The Aral/ Characteristic | Mark (m) | | | | | Square, thousand km ² | | | | | Volume of water, km ³ | | | | |
|-----------------------------|----------|------|-------|------|-------|----------------------------------|------|------|------|------|----------------------------------|-------|-------|-------|-------|
| | 1960 | 1987 | 2010 | 2012 | 2014 | 1960 | 1987 | 2010 | 2012 | 2014 | 1960 | 1987 | 2010 | 2012 | 2014 |
| The Big Aral: | | | | | | | | | | | | | | | |
| The Eastern part | 53.4 | 40.2 | 29.4 | 27.2 | 27.0 | 68.9 | 37.1 | 5.85 | 2.16 | 1.71 | 1083 | 343.2 | 9.8 | 1.97 | 1.46 |
| The Western part | | | 27.8 | 27.0 | 26.0 | | | 3.94 | 3.67 | 3.38 | | | 53.27 | 50.2 | 46.67 |
| The Small Aral | | 40.8 | 41.99 | 41.8 | 41.99 | | 2.8 | 3.11 | 2.99 | 3.11 | | 22.4 | 28.47 | 24.01 | 28.47 |

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water escape from the irrigation fields, industrial water escape into the water bodies have led to considerable increase in surface and ground waters mineralization level”.

We show the dynamics of water supply development in the Aral Sea and in the Western and Central Asia as an example of protection from water resource shortage (Table 1.)

Looking at the chart we see that the Western part of the Aral has lost its considerable size that is not a real sign of water deficit protection. But the Small Aral has saved its possibility to increase the water size, the volume of desalinated water (decreasing the amount of salt in water with help of fresh springs) and waterside environment for its usage for geospheric aims thanks to developed system of supply through the Syr Darya and it's flowing through Shardaia reservoir and Karaozek water storage.

The scientists warn that a “continuation of the water shortages, the increased soil salinity, the drying out of the Aral Sea and its disastrous environmental spin-offs (salt storms, climate change, diminished biodiversity, worsening human health conditions) can also fuel tensions between (and within) countries” (Spoor and Krutov, 2003).

Only the proper management and reasonable usage of the Aral feeders may improve the situation. Firstly, we should start from the main rivers in the region namely the “Syr Darya river, on which we focus in this study, originates as the Naryn river in the mountains of Kyrgyzstan. It then flows through Uzbekistan, Tajikistan and Kazakhstan where it drains into the Aral Sea. Its total length is around 2,800 km. Around 20 million people inhabit this river catchment which covers an area of around 400,000 km²” (Bernauer and Siegfried, 2012).

No doubt, Turkmenistan moves away from the Central Asia region and tries to create its own regime of water shortage overcoming: main channels which were built in Soviet period of time reviving and artificial storage ponds in the sands of the Kara-Kum creation may become the examples of it. However, fresh water remains a big problem for Turkmenistan. That is why the example of Turkmenistan in its attempt of water deficit problem solution is a separate model of single country's effort in

the solution of the question without integration with its former partners in the USSR.

Turkmen-Uzbek relations are also rather difficult. “Water relations affect about 18 million people who live off the water of the Amu Darya. At the 1996 water agreement the two states agreed to withdraw an equal amount of water from the Amu Darya even though 14 million Uzbeks depend on it compared to four million Turkmen. This agreement is seen by many Uzbeks as unfair since Uzbekistan has more land to irrigate than Turkmenistan. Turkmen-Uzbek relations have also been mired in disputes over exceeding quotas. Turkmenistan has routinely overdrawn its water share from the Amu Darya to sustain its Karakum Canal-an artificial canal built during the Soviet period to irrigate the desert lands of Turkmenistan. A strategy which has intensified conflictual relations with Uzbekistan” (Zakhirova, 2013). “These tensions are stoked by absurd projects such as the Golden Age Lake (Altyn Asyr) in the Karakum Desert. Water for the lake will be drawn from the Amu Darya river through two canals, which are being cut across about 3,200 km of desert. Although it is unclear whether that much water can ever be sourced from the river, it is obvious that downstream, Uzbekistan will not accept those diversions and is ready to defend its water share with arms if necessary. The already serious soil-salinization problems of Turkmenistan and Uzbekistan will be greatly worsened if the project is completed. Since 2000, Turkmenistan has been constructing it, claiming it will increase agricultural production and offer a “symbol of revival of the Turkmen land”, as former president Saparmurat Niyazov (known as Turkmenbashi) put it” (Zonn and Kostianoy, 2013; Stone, 2008).

Population growth in the region: The 2.3 billion people have got access to better sources of drinkable water in the period of time since 1990-2010. This is positive fact. But more than 700 million people have not access to clean and safe water which is a source of healthy lifestyle. According to U.N.O. Report of world water resource condition, about two billion people have not access to improved sanitary and technical facilities and girls and women are in the worst situation.

Many developing countries are situated in problem regions where there is water resource deficit and climatic changes may influence on them in a very negative way. At the same time, demand for water also increases greatly in developed countries where agriculture, industry and cities grow too fast.

This problem is very urgent one. Water is a source of life and it plays the main part in steady and inclusive development.

That is why the questions about water resources are in the center of new agenda in the field of steady development in the period till 2030. Water resource is paid a great attention in frames of the sixth goal which is aimed to accessibility provision, efficient water resource usage and sanitary for everybody, it also plays an important role for other aims successful achievement, including worthy work for everybody and the Report about world water resources condition in 2016 devoted to it (Message of a General Director of UNESCO Irina Bokova at the International Day of water resources in 2016).

It is no coincidence that a public expert of the international water consumption problems Jim Rogers has recently made an assertion that many regions in the world may have real wars because of water. "Water is one of the greatest possibilities in our days. If Middle East eastward the Red Sea will have wars, they will be because of oil, then to the west of the place they will be because of water because there are serious problems with water in this region. We also will have the same problems in the western part of the USA because of great water basin exhaustion", said Rogers. According to an investor's words, there are serious problems with water in China: "They have water supply in the regions where it need not and water is very dirty. So, the Chinese have to spend a lot of money to solve these problems".

But it recently seemed that there is plenty of water in the Earth and the main source for struggle is hydrocarbon. But when the population of the planet became more than seven milliard, people have catastrophic shortage of water. Fresh water supply is distributed among the world very unevenly. 85% of the population of the Earth is people from the arid territories of our planet.

The population of the Earth has trebled for the last 100 years. Fresh water consumption has septuple increased for the same period of time and communal and drinkable needs grew thirteen times. Irrigation and food industry consumption is very hard load for fresh water resources. More than 70% of all water is used by agriculture but in the countries with market economy this level rises to 90%.

In the result, according to U.N.O. prediction need in water may 40% exceed its production. Even CIA called the problem of water resource shortage as a main risk or our time several years ago (Dokuchaev, 2015).

Uzbekistan gives the greatest population growth in Central Asia. Its regions need more adequate water supply according to generation change where about a third is population from seven to twenty years old. It is difficult to predict water consumption in future because standards of water usage, interests of growing generations and transboundary communication change. This uncertainty is a foundation of the result for water wars because of possible loss of excessive population.

Kazakhstan has problems of population growth connected to water consumption only in some regions (South of Kazakhstan) and in some cities (Astana). The urban type of Astana brings many dividends for perspective development of Kazakhstan but quicken population growth (to a million people) such disasters as downpours, a threat for a part of Astana transformation into Venice, as N.A. Nazarbayev said, all these questions will be actual for water and energy security development prospective. Some invariance of population growth in Astana assumes a problem of water and silt reservoir Taldykol which may with side effect harm to exhibition "Energy of future" organization in 2017.

Southern Kazakhstan is a region where population growth in the amount of a million has happened for the last seven years. Water is necessary for vital needs of water and energy complex. The problems may be both local (border dwellers willfully closed the traditional canal from Kyrgyzstan) and regional (glaciers their thawing and sudden mud flows into the rivers Almatinka and others). Regional aspect of population growth in water and energy problems development aspect remains at the level of some regions', urban cores', Southern regions' of Central Asia and desertification areas' of definite countries at the region overpopulation. Nevertheless, neither overpopulation prospect of major cities of China, India and Central Asia nor overpopulation of foreign citizens at the leased areas, for instance by China from Kazakhstan, do not threat. Only it is necessary to take pace of population growth into consideration and correlate them to dangerous regions which appear because of emergency water and energy factors.

Usage of the streams: An effect "country and people" has territorial, frontier and transboundary problems in the context of the previous factor development. Streams (rivers, brooks, riverbeds, mud flows, dangerous lake savings and glaciers) are territorial problems of frontier interrelation between countries.

E. Rahmon, a President of Tajikistan, gave a speech at the International Water forum which was held in Daegu city, South Korea, on the twelfth of April, 2015. He stated there: “Tajikistan has determined three main priorities along with other important tasks for our steady development. They are food safety achievement, energy safety and communication isolation leaving. The achievement of food and energy safety totally depends on efficient water and energy resources of the country usage, on efficiency of existing system growth and modernize technologies application in water and energy fields.

It is possible to achieve a process of steady development through the wise exploitation and water and energy resources usage thanks to proper these sectors financing” (Speech of a President of the Republic of Tajikistan E. Rahmon).

A number of countries in Central Asia became worried about unsettled problems with water and with streams usage after the end of U.N.O. decade “Water for life”. As E. Rahmonov showed, there are a lot of projects but there is lack of financing there. U.N.O. also is not able to support them properly because of mechanism for funds of the program “Water for life” transmission absence. That is why, according to a specialist’s opinion of Strategic Research Center at a President of Tajikistan Amirhonov M.M., the question remains opened in international, regional and national contexts.

A main engineer of Rogun hydro power station construction and an expert of water and energy resources on the rivers of Syria and Iran in the past, A. Kolesnichenko, offers a possible prospective of the question solution in frames of medium-term (5-7 years) project. A. Kolesnichenko understands that slack Rogun hydro power station construction will not provide

water and energy safety of the region in near future. So, he offered a project for water and energy regulation in winter and summer regime where after some improvements it will be possible to control water escape with alternating filling and underflowing (in the account of glaciers thawing and warming) at three hydro power stations Nurek, Sangtudin and Rogun. It is assumed an exchange with energy along with water flow sort what will partially decide energy deficit in winter and in summer in the republic.

In general, the problems of the streams in Central Asia are shown at the map from U.N.O. data (UNEP) (Fig. 1). Looking at the map we notice that the Shardarin reservoir has a rather dangerous characteristic because of its presents both in Kazakhstan and Uzbekistan. After Uzbekistan had stopped water intake (dam construction), Kazakhstan had to fix the Arnasaisk dam and to construct a special Koksaraiskiy compensator. It was done in 2005-2006 years after uncontrolled water escape from the Shardara into neighboring with Kyrgyzstan lands that had led to a difficult situation for land use in the regional scale. The question was not settled because growing amount of rains (sometimes during two-three days was monthly variant) had several times led the question with water consumption to the critical condition, including Uzbekistan. Koksaraiskiy compensator started its work only in 2014 but growing precipitation amount keeps a regime of danger in this region.

It is necessary to mark that countries of Central Asia concur about all questions of water and energy problems at the region. The leaders of the region, the presidents of the republics in Central Asia, agree that it is necessary to keep both the principles of environmental protection and frontier countries interests during the process of the streams and water flows usage.



Fig. 1: Places of water resource problems occurrence

There were some attempts in this field. "On 17 March 1998, the governments of Kazakhstan, Kyrgyzstan and Uzbekistan adopted an interstate agreement on the use of the water and energy resources of the Syr Darya River basin".

On the basis of a course book of Kasymova V. M., a foreign commentator Wegerich (2011) turning to this subject from international level and position has noticed that: "According to this agreement, each riparian state is responsible for the operation and maintenance costs of the water infrastructure owned by it".

Surely, "Water problem" not only in Central Asia is a historical point of contradiction. We only tried to show a scale of real threats, their transmission into challenges and several moments connected to prospective answer to the regional challenges in Central Asia.

Water and energy problems misunderstanding by outward of central asia countries river transfer: "There is plenty of water in the south of the country and there is a shortage of it in the north. If it were possible to take some water from the south to the north it would be very good", said Moa Sedum in 1952. These words started the greatest in China project of rivers transfer. The essence of the project was in water transfer out of full-flowing southern rivers - Chang Jiang and Hwang which floods had many times damaged southern province economy to the drought-afflicted region in the North".

Ministry of Russian agriculture is able to transfer fresh water from Altai to Xinjiang-Uigar Autonomous Area (XUAA) of China. A head of Russian Federation Ministry of agriculture Alexander Tkatchev announced about it on the fifth of May, 2016.

"According to the minister's words, a project for arid area of China water provision stipulates usage the territory of the Republic of Kazakhstan as a transit way. We are going to have consultation with colleagues from Kazakhstan about this question. The experts of both sides should exchange the materials and have consultations. If both sides develop engineering infrastructure together, it will be possible to increase water feed volume to one billion cubic meters per year without any harm for the ecological conditions of the water basins, TASS quotes" (Samoilova, 2016).

A project CASA-1000 (Central Asia-South Asia) is aimed to power transit from Tajikistan and Kyrgyzstan to Afghanistan and Pakistan which was started with a formal ceremony on the twelfth of May near Dushanbe has already got an epithet "mythical". Tajikistan and Kyrgyzstan are countries with energy shortage and some power excess appears only in short summer period of time. The rest time Kyrgyzstan buys great volume of power

from Kazakhstan and Tajikistan is not able to negotiate with Uzbekistan about Turkmen power transit for many years while only the center of the capital is illuminated in the republic in winter.

Kambaratin hydropower station-one in Kyrgyzstan and Rogun in Tajikistan are considered as power generators within the project. But Kyrgyzstan has denounced agreements with Moscow about Kambaratin hydropower station-one and Verhnenaryn coordinated hydroelectric system construction in the beginning of 2016 and there are no other investors. Water and energy problem has international and transnational character and any foreign investor who will not take all countries' of the region interests into account will not only finally promote proneness to conflicts growth but also will endanger own interests. Any hypothetical investor of the power stations instantly appears in the state of conflict with the countries at the Amu Darya and Syr Darya lower course that is with Uzbekistan, Kazakhstan and Turkmenistan which are against this kind of construction.

Tajikistan has been searching the investors for Rogun hydropower station since September, 2007. Its engineering project was approved in 1974 by Gosstro of the USSR. But after the collapse of the country the construction was stopped. The government of the Republic of Tajikistan and the company Russian aluminium (RUSAL) have signed the agreement about this hydro power station completion but finally the sides have not agreed about a number of conditions and Dushanbe abrogated an agreement. There are no other investors.

Moreover, "the construction of such large-scale structures in seismically unstable areas increases technological and environmental risks since the failure of such a dam would lead to disastrous consequences in the densely populated southern regions of Uzbekistan, as well as adjacent areas of Tajikistan and Turkmenistan" (Kushkumbayev and Kushkumbayeva, 2013).

China-Black Irtysh: The main problem of relations between China, Russia and Kazakhstan is the Black Irtysh water distribution (in the conditions of general water and energy situation worsening at the board of Eastern and Central Asia). The questions related to this problem are solved at the negotiations between Kazakhstan and China under an intent supervision of Russian water and energy security departments. The solution of these questions has some indefinite viewpoint because the situation changes very quickly and sometimes it becomes threatening. Surely, the prospect of the solution has its future fate according to understanding of safety aspect growth both in regional and continental scale.

Kazakhstan should really think about the problem of the Black Irtysh and find proper solution of it. "The Black Irtysh is already a heavily polluted river as it crosses into Kazakhstan. Pollutants include agricultural chemicals and heavy metals. If the Black Irtysh's flow is reduced the concentration of pollutants can be expected to increase absent some sort of water treatment by China" (Sievers, 2002).

The situation in the region of the Irtysh stream in Central Asia worsened in the second half of the first decade of the 21st century. China managed to construct four reservoirs for the counter regulation of the Black Irtysh in own favour (with a glance of Kazakhstan interests). That is why China was able to take the state of emergency with the water from the Black Irtysh riverhead flow into consideration and to warn Kazakhstan that it will not be able to counter regulate the increase of water flow and it will have to drop excessive water in Kazakhstan. The data was sent to water flow calculating committee in order to fill the Bukhtarma reservoir. The committee was not ready to settle the situation with the reservoir overflow. That is why Daniyal Ahmetov gave an order himself to outflow water through the cascade of three hydroelectric power plants that cost only local gas main rupture, seventy million tenge loss of profit because of receive electric power loss and some floods in Omsk region. It is interesting that this situation was supposed in Thomas Fingar's foreign publication "The New Great Game: China and South and Central Asia in the Era of Reform" (Fingar, 2016).

"In December, 2012 (an author), reading Nursultan Nazarbayev in the strategy of Kazakhstan development till 2050 empathized the questions about water deficit and he ordered for government to prepare a long-term state program where there is a peculiar place for negotiation process about mutually beneficial transfrontier rivers flow division with boarding countries and especially in the relation with China. It is clear, the experts and the parliamentarians have noticed passive position of Kazakhstan in the process of interests of our country interest's protection during the negotiations with China about transfrontier rivers. Though this kind of negotiation is held for fifteen years, there is not any result in it: Peking was able to include into Kazakhstan and Chinese two-sided documents a paragraph about watershed where it is shown that Kazakhstan is not able to oppose China plans in water intake from the rivers the Ili and the Irtysh widening because this is a "reasonable approach from the side of China". Some progress has been achieved lately. An agreement between Kazakhstani and China was achieved in 2011. According to it, transfrontier rivers, the Ili and the Irtysh division should be done in 2014 but

China can considerably decrease these rivers and their feeders flow and it will be impossible to avoid problems in this situation. Peking has a plan for Western China vast development. According to the plan, XUAA should turn into a regional and trade center of Central Asia in near future. Hydrotechnical objects construction on transfrontier with Kazakhstan rivers will provide water and energy development or XUAA. Chinese government has a plan to invest about two billion dollars into it till 2020. A fourth of the sum should be spent for water and energy objects-hydropower stations and storage pools construction. But China regularly takes water from small and big rivers which feed the Irtysh and the Ili since 2004. Nine storage pools will be implemented in near future in XUAA and eight ones more in two or three years. But even now, according to scientists' calculation, China takes more than thirty percent from the Irtysh flow. And Peking is going to construct some more large hydroobjects on the Irtysh till 2020 including one of the greatest hydropower stations in the region-Tsyaobate. The end of the construction has been planned on 2015".

Besides, water actively flows from the rivers along the irrigation canals because China has a plan to turn XUAA into blooming agricultural, industrial and densely populated region: government of the country is going to move a great number of the ethnic Chinese here and it will demand extra water intake in order to provide needs of growing population. XUAA uses 26.3 cubic meters of water resource per year that provides only eighteen million people though population of the region is more than twenty million and it keeps growing.

Peking considers as an alternative variant of water supply an idea about part of water flow turnover from the south of the country-from Tibetan plate-to the north, to XUAA which is the driest region of China. It is possible because water resource supply in Tibet nowadays ten thousand times exceeds water resource volume of all the rest territory of China. But there is the same way of Peking behavior about the questions of transfrontier rivers like with Kazakhstan: Chinese government also is not going to make concessions with India and to share water with it. For instance, in spite of Indian initiative to start a negotiation process and to create a joined committee, the government of China delays this initiative consideration under the different pretexts. Chinese officials only exchange information about rivers during flood seasons in order to prevent possible destructions and victims on the both sides of the river. According to experts' and political scientists' opinion, such a position of Peking depends on its aim to keep water as a lever for pressure on the country which may take Chinese leadership in the

region in near future: India shows good results in economic growth and takes an active part in economic and political integration processes.

Peking has the same behavior in the relations with Kazakhstan. China insists on two-sided negotiation process and forges initiative of the countries involved in water consumption problems in this way. A number of foreign experts notice that India should take some fundamental changes and involve other countries of the region which rivers feed on Tibet into these problems solution. They also offer arguable questions solution between Russia, Kazakhstan and China through involvement of such international organizations as U.N.O. which implements a project "U.N.O.-Water" (Bigdanova, 2013).

Kazakhstan and China laid the foundations of a new project about transboundary bodies of water apportionment, planning to finish research work of water resource estimation in 2014 again and to prepare an agreement of water apportionment between Kazakhstan and China in 2015. We should notice that Kazakhstan gets the considerable part of water abroad. It is the Irtysh and the Ili from China and also twenty other transfrontier rivers and the Syr Darya in Kyrgyzstan. The Irtysh connects three countries-China, Kazakhstan and Russia and it is an object of different negotiations for many decades.

The specialists of Kazakhstan agree with this opinion. So, Dauren Tleubayev supposes that "the greatest danger will threat to the lake Zaisan in the West Kazakhstan Region and then to this entire region in general". Russian expert Sergei Luzyanin marks the Irtysh problems Chinese unwillingness discussion at three-sided format or at the frames of Shanghai Cooperation Organization (SCO). At the same time, according to his words, "there is a problem of joint usage of the Argun, the Amur and Asian countries can not solve the same water problems about river basins of the Mekong and the Brahmaputra with China". Russian specialists did not figure on relation of the Ili river but the region of the lake Balkhash where the river falls into it is in very short supply and according to hydrologists' opinion, planned by Chinese side flow withdrawal will mean "the greatest part of the lake dying off with the following ecological catastrophe of the region" (Shishanova and Gubenko, 2013).

We should notice a necessity of development and agreement the interests of China and Kazakhstan in mentioned above question with a glance of loss for Russia because of unsettled problem, relation harmonization in water of the Black Irtysh delimitation in

order to join Central Asia and neighboring Eastern and Asian regions (Xinjiang, Kashgariya, Uigur settlements in China, region of XYAA) which are used for general Chinese interests. The way of these interconnections development goes through negotiation prolongation including the situation of 2016.

The answers and the protection from the threats connected to water and energy deficit in Central Asia :

Surely, we did not take into account all positions of risks for the steady Central Asia development. And there is no orange and bright red color of danger in these zones of risk. But there is a real problem of drinkable and good fresh water even in the yellow register. The problems of population growth join to it in the grey and green region of Central Asia (including Southern Kazakhstan). The blue level shows problems of the streams connected to global warming and destructive mud flows and downpours which resemble the Deluge. And the last priority is water and energy aggravation by outward states. There is black and gloomy level here because it is useless to threat with war because of the Black Irtysh of the Ili even if you have world, international and organizational support on different levels. Of course, it is not "Kimer darkness" but the accurate water division calculation is hardly known to the high arranging sides , it should be corrected and it is the next stage of steady development assumption after the final of UNO. water decade in 2015.

CONCLUSION

Kazakhstan has recently been chosen as a non-permanent member of U.N.O. security council. In the complex of questions which the President of Kazakhstan N.A. Nazarbayev showed as goal-setting aims till 2017-2018, he empathized two ones: water and energy security. We suppose that in frames of the relations between Russia, Kazakhstan and China about Bukhtarma reservoir it is offers avoidance of water and energy security threatens priority complex simplification and the measures of protection from them.

Preliminary protection from mentioned above threats of both international and regional scale supposes. The protection from above mentioned threats supposes:

- U.N.O. committee organization by the results of "Water decade" in Central Asia region
- The questions about water and energy safety inclusion into SCO agenda with their importance growing to anti-terror problems level

- The Conference of trust measures in Asia connection to a complex plan of the steady development creation on the basis of the tasks for water and energy resources balancing implementation (up to possible Conference reformation into organization)
- Water and energy committee implementation in the frames of Eurasian Economic Coalition (EAEC) which will really be able to appreciate and calculate the efficiency of breakthrough projects for Central Asia on the example of A. Kolesnichenko's one

It is possible that in this case, there will not need in tank and bulldozer groups in the region of Rogun, Kambar-Ata, Naryn or somewhere else.

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