

Threats to water security in the Republic of Kazakhstan in the transboundary context and possible ways to eliminate them

*Anatoliy Dmitriyevich Ryabtsev,
Chairman, Committee for Water Resources
Ministry of Agriculture
Republic of Kazakhstan*

The Strategy for Industrial Innovation Development in the Republic of Kazakhstan by 2015 sets an objective to improve the efficiency of material consumption in the national economy. This objective relates, along with other kinds of resources, to water resources, which are of strategic importance, as they directly influence the social component of the national economy's competitiveness – population health.

Kazakhstan is one of the states that have limited water resources and experience severe water scarcity, for satisfying the needs of the sectors of economy as well as for providing the population with drinking water.

It is generally recognized that such energy resources as oil and gas are now considered strategic resources. Having them available enables to exert a certain influence in the world economy and politics. However, this issue should be considered only in the context of any given region. For example, according to the "Economist" magazine, water resources and their availability will play a key role for Central Asia region in the near future. It is explained by that such energy resources as oil and gas are exhaustible energy sources, while water resources are renewable.

Most of Kazakhstan's territory comprises desert and semi-desert areas, where water supply is a very acute problem in terms of not only economic activity, but also consumption by the population.

The problem of sustainable water supply and water security in Kazakhstan gets acute owing to that more important surface water sources are located in neighboring Russia, China, and Central Asian countries. In average wet year, altogether about 44 km³ of water comes to the territory of Kazakhstan through such transboundary rivers as Ural, Black Irtysh, Ili, Chu, Talas, Syrdarya and others, with total available water resources of the country amounting to 100.5 km³.

Economic activity expansion in these countries leads to reduction in inflow of a part of water resources to the territory of Kazakhstan. This is an interstate problem that requires developing an appropriate regulatory legal mechanism with account of the experience of, for example, European countries on the use of water resources in the Danube and other rivers.

At present, interstate relationships with adjacent countries in regard to shared use and protection of transboundary water resources are established on the basis of the agreements in force.

The relationships among **Central Asian countries** in regard to shared use and protection of transboundary river water resources are regulated by several basic agreements, which have been rendered competent by the **Heads of Central Asian states** in a number of documents, including in the Nukus Declaration of Central Asian States and International Organizations on Sustainable Development in the Aral Sea Basin adopted on 20 September 1995. All of them should be put into effect in a steadfast manner.

1) Agreement between the Republic of Kazakhstan, Kyrgyz Republic, Republic of Uzbekistan, Republic of Tajikistan, and Turkmenistan on Cooperation in the Field of Joint Management and Protection of Interstate Water Resources signed on 18 February 1992 (Alma-Ata).

2) Agreement on Joint Action for Solving the Aral Sea and Priaralie Problem, Environmental Sanitation and Socio-Economic Development in the Aral Region signed 26 March 1993 (Kzyl-Orda).

3) Agreement between the Governments of the Republic of Kazakhstan, Kyrgyz Republic and Republic of Uzbekistan on the Use of Water-Energy Resources in the Syrdarya River Basin signed on 17 March 1998 (Bishkek).

4) Agreement between the Governments of the Republic of Kazakhstan and Kyrgyz Republic on the Use of Interstate Waterworks Facilities on the Chu and Talas Rivers signed on 21 January 2000 (Astana) (ratified by the Law #301-II of the Republic of Kazakhstan of 7 March 2002).

Along with these agreements in addition to the 1998 Framework Agreement, bilateral and multilateral inter-governmental Protocols are signed every year, which stipulate terms of compensatory delivery of water, electric energy and fuel between the countries. For the recent years (2005, 2006, 2007), Uzbekistan has not signed, at its sole discretion, a quadrilateral Protocol on the Use of Water-Energy Resources in the Naryn-Syrdarya reservoir cascade (between the governments of Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan). Thereupon, the same bilateral Protocols are signed every year between Kazakhstan and Kyrgyz Republic, and between Uzbekistan and Tajikistan. The bilateral Protocol does not guarantee for Kazakhstan a water supply over the Syrdarya river up to the Shardara reservoir in such quantity, for equivalent of which the Kyrgyz electric energy is purchased. This is connected with that the share of the Syrdarya river water resources, which is allotted for Kazakhstan, is partly used in Uzbekistan and Tajikistan.

In the near future, the following steps should be taken:

1) Developing and signing a long-term Agreement between the Governments of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan on the Use of Water and Energy Resources in the Syrdarya river basin.

The draft Agreement has mainly been developed within the framework of the Asian Development Bank RETA “Improved mechanism for management and regulation of water resources in the Amudarya and Syrdarya river basins”.

After signing, this Agreement will replace the 1998 Agreement and should ensure adjustment of operation modes for the Naryn-Syrdarya reservoir cascade through long-term flow planning and regulation, yearly water release regimes coordination, electric power generation and transmission, and energy resources compensation on a contractual basis. Furthermore, it will assign to each Party a share of limits on water withdrawals from the Syrdarya river channel for hydrological year before the confirmation of a new Strategy for water distribution in this river basin. It also establishes a mechanism for providing water-energy regimes for the Naryn-Syrdarya reservoir cascade, stipulates issues regarding joint consideration of the construction of new hydroelectric schemes and reservoirs in the region, development of large irrigable land massifs, economic mechanisms in regard to international water relations, water conservation, reduction of polluted water discharge into water bodies, exchange of information and forecasts and so on.

2) Developing and signing, within the framework of the Eurasian Economic Community (EurAsEC), a Concept for Effective Use of Water-Energy Resources in Central Asian region and then Agreements on the Creation of International Water-Energy Consortium in Central Asia.

The Concept is a set of agreed views and approaches to principles for interaction of EurAsEC member states in joint development of hydroelectric potential and effective use of water-energy resources in the Syrdarya and Amudarya river basins. It determines favorable economic and legal

conditions for economic entities in water, fuel-energy and other sectors of EurAsEC member states in this field.

The provisions of the Concept serve as a basis for development of an interstate Agreement and other legal acts in regard to water-energy resources use in Central Asian region.

In Kazakhstan, along with the work on interstate cooperation, a big work on development of the Kazakh part of the Syrdarya river is being done within the framework of the “Regulation of the Syrdarya River Channel and Conservation of the Northern Aral Sea” Projects 1 and 2. Thanks to the implementation of the “Regulation of the Syrdarya River Channel and Conservation of the Northern Aral Sea” Project 1, all the major hydraulic structures on the river were reconstructed, new structures were constructed, river-channel straightening work was done at several sites, and check dams along the river channel were restored. As a result of these measures, the Syrdarya river’s winter flow capacity increased from 350-400 m³/sec to 700 m³/sec, partly solving the inundation problem in riverside territories during man-made winter floods. The Northern part of the Aral Sea was separated by a dam and filled with water from the Syrdarya river.

Within Phase 2, deltaic lakes will be restored, and further impoundment of the former seabed in Saryshyganak bay will be carried out. Project Phase 2 also includes the construction of a Koksarai counter-regulator, which will enable to completely eliminate possible emergency situations on the river in winter period, when there is no opportunity to discharge flood water into the Arnasai depression. To date, owing to the construction of an Arnasai reservoir, releases from Shardara have reduced by almost 4 times from 2600 to 600 m³. This has begun to cause a great danger: loss of the sustainability of Shardara’s main dam. During flood, the water body can quickly be overfilled. There was a very dangerous incident in the history of the Shardara reservoir. In 1969, a large-scale flood lasted till the middle of summer. Its extent reached 2000 m³/sec. And only the complete opening of the sluices enabled to avoid a catastrophe. During the development of Project Phase 2, the following objectives were set. Firstly, it was stated necessary to ensure the sustainability of the Shardara dam and, essentially, conserve the reservoir. Secondly, what is probably the most important, the threat of emergency situations for settlements in South Kazakhstan and Kzyl-Orda provinces should be eliminated. Thirdly, it is necessary to improve irrigation water supply to lands in Kzyl-Orda province, provide guaranteed water supply to fill deltaic lakes in the lower reaches of the river, and keep the needed size of the Small Aral. Moreover, there is another very important factor. One cannot disregard that Kyrgyzstan is gradually winning Central Asian electric power market and plans to enter international markets. These are Pakistan and Afghanistan. Kyrgyzstan is installing new generation capacity on its hydroelectric power stations. This will lead to discharge of additional water, especially in winter period, from the Naryn-Syrdarya hydroelectric stations cascade. In this case, the analogue of Arnasai in the Kazak territory can generally relieve the tense water situation in the Syrdarya river downstream reaches.

Water relations **between the Republic of Kazakhstan and People's Republic China** are also being established on the basis of the agreements signed owing to the joint work. The basis for interstate cooperation in the field of water relations between the two countries is the Agreement between the Governments of the Republic of Kazakhstan and People's Republic China (PRC) on the Cooperation in the Use and Protection of Transboundary Rivers signed on 12 September 2001 (Astana). It should be noted that earlier PRC concluded such agreements only with Mongolia and Korea.

It is only in recent times that a similar agreement between PRC and the Russian Federation has been concluded. Currently, trilateral cooperation among China, Kazakhstan and Russia in water resources use and protection in the Irtysh river basin is not accepted by the Chinese party.

In order to execute Article 8 of the above-mentioned Agreement, a Kazakh-Chinese Joint Commission on the Use and Protection of Transboundary Rivers has been founded. The main result of the Joint Commission's operation is signature of several agreements:

- Agreement between the Ministry of Agriculture of the Republic of Kazakhstan and Ministry of Water Resources of People's Republic China on emergency notification of the Parties of Natural Disasters on Transboundary Rivers signed 4 July 2005 in Astana;

- Agreement between the Ministry of Agriculture of the Republic of Kazakhstan and Ministry of Water Resources of People's Republic China on Development of Scientific-Research Cooperation on Transboundary Rivers signed 20 December 2006 in Beijing;

- Agreement between the Ministry of Environment of the Republic of Kazakhstan and Ministry of Water Resources of People's Republic China on Exchange of Hydrological and Hydrochemical Information (Data) of Border Gauging Stations on Major Transboundary Rivers signed 20 December 2006 in Beijing.

Till recently, the fundamentally important issues for Kazakhstan that are related to control over water quality in transboundary rivers and prevention of their pollution, as well as the consideration of the principle for water distribution along transboundary rivers were not perceived by the Chinese party properly. The last meeting of the Joint Commission held in Beijing in December last year eventually succeeded in moving ahead in regard to these issues, submitting the Chinese party a draft Concept for Water Distribution along the Irtysh and Ili rivers, and achieve consideration of the draft Agreement on control over quality of transboundary waters and prevention of their pollution prepared by the Kazakh party.

In the near future, the following steps should be taken:

1) Accelerate the signature of agreements:

- on cooperation in environmental protection;
- on control over water quality in transboundary rivers and prevention of their pollution;
- on the principles of water distribution on the Irtysh river;
- on the principles of water distribution on the Ili river.

The position of Kazakh specialists on water distribution should, first of all, be based on the ecosystem approach, when socio-economic requirements for water resources should be taken into account in the complex, not infringing requirements of the environment.

2) Continue the efforts for preparing and concluding a trilateral agreement (Russia, Kazakhstan and China) on cooperation on the field of water resources use and protection in the Irtysh river basin, in particular use the format of measures carried out within the framework of the Shanghai Cooperation Organization.

It is necessary to use the potential of contacts in all forms: diplomatic channels, meetings of national government officials, resource of the intergovernmental agreements in force, other formats.

3) Accelerate the construction of joint hydroelectric schemes on transboundary rivers (Khorogos and other rivers) that will enable to prevent the interception of a great number of water by China and guarantee water supply to its users in required quantities.

4) Urgently provide laboratories and gauging stations in Kazakhstan with modern equipment and measurement instrumentation to improve the precision of measured parameters and the coverage of all exchanged ingredients in chemical composition of water in transboundary rivers. The postponement of solving these issues will lead to further pollution of water resources inflowing to us, and defer sine die the conclusion of an agreement on water quality.

At present, the Agreement between the Governments of the Republic of Kazakhstan and Russian Federation on Shared Use and Protection of Transboundary Water Bodies signed on 27 August

1992 (Orenburg city) is the basis for interstate cooperation in regard to water relations between the **Republic of Kazakhstan** and **Russian Federation**. In order to execute Article 11 of this Agreement, a Joint Kazakh-Russian Commission on Shared Use and Protection of Transboundary Water Bodies was founded on parity basis. Within the framework of the Commission, working groups were established on transboundary Ishim, Irtysh, Tobol, Ural, Big and Small Uzeni river basins.

In recent years, one of the topical issues of interstate cooperation among our countries is the issue related to the competence of declaring irrigation water supplied from the Pallasov irrigation system in Volgograd province (Russia) to the Janibek irrigation system (Kazakhstan), which was raised by the Russian party. The issue has not been solved yet.

The other topical issue to be solved is a trilateral Kazakh-Russian-Chinese cooperation in shared use and protection of transboundary water resources in the Irtysh river basin. The parties deem it necessary to continue joint actions to mitigate and change the position of China on this issue, using the potential of contacts in all forms, including diplomatic channels, meetings of national government officials, resource of the acting intergovernmental agreements of other formats.

In the near future, the following steps should be taken:

- 1) Conclude a new long-term Agreement, considering the experience of cooperation accumulated since 1992, based on the rules of international water law.
- 2) Sign an inter-governmental Agreement on exemption from water tax, customs duties for custom registration and declaring in water supply from the territory of one country for environmental and irrigation needs of another country.
- 3) Study the issues of preparing and signing a trilateral agreement on cooperation in the field of shared use and protection of transboundary water resources in the Irtysh river basin together with the Chinese and Russian parties.

All of these steps being taken to retain water security in the Republic of Kazakhstan will not work in full, if regular and purposeful work is not done on extensive introduction of resource- and water-saving technologies in enterprises, water reuse in industry, new and more rational irrigation technologies, broad public awareness raising and the need for respectful attitude to water as a valuable and universal natural resource. All this work should be done within the framework of the Program for integrated water resources management.