

***Issues of Water Security in the Central Asia and Ways of their Decision***  
***Проблемы и пути решения водной безопасности в Центральной Азии***

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The CA is a unique natural complex with a wide variety of ecosystems, consisted of the highest mountain ranges of Pamir, Tyan-Shan and Altai, the vast deserts and steppes, large ancient rivers like Amudarya, Syrdarya, Irtysh and Ili, and a lot of lakes, including the lake Issyk-Kul which is one of the world's most beautiful and deepest lakes. The CA ecosystems play an important role in maintaining the global environmental equilibrium and water exchange.

Abundance of warmth and solar energy as well as quite fertile soil creates favorable conditions for the farming development. Water from the mountainous rivers is used for irrigation and water supply. Especially extensive areas of irrigated land are concentrated in the midstream and downstream of Amudarya, Syrdarya, Zeravshan, Talas, Naryn, Ili, Chu and in the foothill valleys. Uzbekistan holds the forth place in the world in cotton production. Natural conditions are favorable for livestock production; an extensive river network and abundance of artificial water reservoirs create conditions for the development of commercial fishing.

The CA states have established a certain capacity for strengthened cooperation. A number of important decisions have been made at the level of the heads of state, sub-regional organizations and programs have been launched. The countries in the sub-region are actively developing their collaboration with regional and international programs and are the members of many international and regional organizations and the parties to the basic international environmental agreements on biodiversity, climate, and desertification.

One of the features of CA is a vulnerability of its ecosystems. The CA is located in the single environmental space of land-locked Caspian and Aral basins, Balkhash and Issyk-Kul lakes, that with the arid climate, results in significant environmental limitations for economic activity and trade.

Well-fare in CA depends a lot on the natural balance in the area of river formation – the mountainous ecosystems of Pamir, Tyan-Shan and Altai. High mountainous ecosystems absorb moisture from the top atmospheric layers transported by the air masses primarily from the Atlantics and serve as the gigantic fresh water accumulators. They hold almost the total water-flow of the Aral basin. However, degradation processes, such as deforestation and erosion, pollution with wastes and grasslands reduction are becoming increasingly severe in the CA mountains. Degradation of mountainous ecosystems causes disruption of hydrological regime and depletion of water resources. The glaciers of Pamir and Altai lost over 25% of ice reserves from 1957 to 2000 and this process is intensively developing.

The forest's area in CA has shrunken by 4-5 times since the middle of the previous century. Developed for farming haloxylon and flood plain forests (tugais) have suffered severely from human activity. Only in the flood plain of Amudarya river the area under forests has reduced from 150 thousand hectares to 22-23 thousand hectares for the last decade. This process is continuing. Tugai forests degradation downstream of Amudarya and Syrdarya rivers have been strongly affected by the disruption of hydrological river regime.

As a result of business activity and no tracking of the natural ecosystem limits, desertification processes affect more than a half of the CA area. The share of salinated areas under irrigation has reached 50% in Uzbekistan and 37% in Turkmenistan. The farming area in the CA has been decreased by 16,4 mln hectares due to wind, water erosion and secondary salination. The size of land affected by desertification and degradation in Kazakhstan is about 179,9 mln hectares or 66% of its area, and up to 80% in Turkmenistan and Uzbekistan. As stated in GEF's Project "Water Resources and Salts Management at the Local and Natural Level", if the former salination trends persist, the main part of agricultural land in the river basins will become unsuitable for irrigated farming within several decades, alongside with that, salination of rivers will cause severe damages to the river ecosystems and will make them unsuitable to be used as drinking water sources.

Tajikistan and Kyrgyzstan have the best supply of water resources, where 50% and 30% of the Aral Sea Basin water flow are formed respectively. However, the rest of the CA area experiences a shortage of water resources. Currently there doesn't seem to be any severe shortage of water, as the needs are met primarily at the expense of the ecosystem. However, water shortage is already having an adverse effect upon social and economic situation. For example, during the last years water supply Amudarya River amounted to 50% of the agreed water draw off limit, which, in its turn, was also less than required. The shortage will grow with time, especially in view of the population growth in the CA, the increase of water scoop by Afghanistan and aggravated desertification process and climate change.

The unbalance of energy and irrigation interests and the uneven seasonal water consumption lead to the escalation of contradictions between sectors and countries. Within the existing framework of relations, Kyrgyzstan and Tajikistan rich in fresh water do not get an adequate economic return through preservation of water resources, which are not only significant for the sub-region, but also important for the global equilibrium. It is necessary to keep in mind that Afghanistan is also a large water consumer in the Aral Sea basin and, may require an increase of its share of water for social and economic development. It should be considered that Afghanistan is also a large water user in the Aral Sea Basin and may demand an increase of its water share for its social and economic development. It also could significantly change the water flow of Piandj and Amudaria rivers and create additional requirements to harmonization interests of countries in the region.

Water is the key factor for the well fare of the CA countries. Availability of clean water will determine the quality of life and the future development in the sub-region. These countries are united through the ecosystems of the water basins. Any changes in water use of one country will inevitable affect the interests of the other countries. The need of a common scheme of management for the CA water basin is rooted in the nature itself and requires the working out and development of mechanism of cooperation.

The Central Asian countries undertake some efforts to resolve the water problems at the national level and in the transborder context to settle issues on water supply, water distribution and preservation of ecosystems in basins of main rivers. Therewith, the basic problem is providing of the stable rational usage of water and other resources by means of introduction of the integrated complex control by the river basins.

One of the examples of such approach is the Transborder Project **`Introduction of the Integrated Control Into the Ili-Balkhash Basin`**.

The Ili-Balkhash Basin is a unique natural complex. The basin is rich in natural resources, it possesses a large potential for development of agriculture, power engineering, transport, processing industry and tourism. The region is of great importance in the geopolitical programmes too. At the same time, with its unique resources and potential, this region experiences a lot of social and economic problems. The ecosystem of Lake Balkhash due to increasing negative anthropogeneous load, irrational water use and increase in water intake

for economic activities can have a destiny of the Aral Sea. Unresolved law problems and ineffective control limiting the use of existing potential became the urgent problems, which require a proper resolution. The international experience in the ecosystem and basin controls, as well as possible mechanisms for support of long-time aims of the basin development are currently discussed.

Taking into account an anxiety caused by growth of degradation processes in the Ili-Balkhash basin, which are similar to the ecological catastrophe of the Aral Sea, the European Commission together with the Regional Environmental Centre of Central Asia:

- draw attention to more effective usage of existing natural and economic potentials;
- accept water resources and water ecosystems as the key factors for security, health and well-being of people that can make important contribution to eradication of poverty and economic development;
- confirm that for development of the basin, it is necessary to achieve the following goals:
  - preservation of the hydrological condition of Lake Balkhash, natural (ground and water) ecosystems as the main condition for providing vital activities in the region;
  - development of ecologically oriented activities, stable power engineering and agriculture, transport and communications infrastructure;
  - development of the human potential, preservation of spiritual cultural valuables and health of people.

To provide joint actions, the following measures should be carried out:

- working out and introduction of the Basin Plan for Integrated Control of Water Resources and corresponding National Plans of Kazakhstan, Kyrgyzstan and China for preservation of ecosystems and effective usage of natural resources;
- the use of existing international experience in creation of effective mechanisms of co-operation of countries and sectors, and in formation of the joint platform for coordination and communication to provide openness and higher effectiveness of the official aid for development;
- welcome the proposals on usage of foundations and efforts of international organisations and countries-donors on transfer of know-hows, technical and other aids to countries of the basin;
- encouragement of working out of innovative financial mechanisms and formation of favourable conditions for attraction of private sector and best accessible technologies with the aim of development of tendencies, which are promising both for the economic development and ecological stability;
- assisting in application of the integrated approach to control the Ili-Balkhash water basin and provide support to creation and strengthening the basin control entities and the regional and national law basis, necessary for these.

The above mentioned directions correspond to national priorities and international obligations of the basin countries, countries-donors and international organisations regarding to the `Goals of Development of the Millennium`, the European Water Initiative including obligations on providing the ecological stability, struggle with poverty and strengthening the international co-operation for achievement of economic and social development, as well as its impact on strengthening the peace, stability and prosperity of the region. In case of successful implementation of the project, its experience can serve as the example for solving not only the water problems, but also for preservation of natural ecosystems, providing the ecological stability, in other parts of Central Asia.