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Ecological Aspects of Water Resources Management in Aral Sea basin

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The penetrating comprehension of water importance in the Water relations between Central Asia republics during the Soviet Union time were regulated by “Complex Use and Protection of Water Resources Schemes” in Amudarya and Syrdarya basins. The main purpose of working out basin “Schemes” was to define real volumes situated within the Amudarya and Syrdarya basins and available for using water resources. It was also providing their fair allocation among region republics, meeting all the water users interests.

It should be noticed, that the number of important aspects were not considered and included in “Schemes”, for the situation has greatly changed after 1980 (years of the last “Schemes” specification and completion of hydraulic range composition). Mainly it concerns the ecologic acquirements and sanitarian clears thrown into rivers and channels. Overusing basin water in irrigational lands planned as maximum use by “Scheme” resulted in exhausting water resources and appearing new problems. They are:

- deterioration of ecological condition, sometimes leading to ecological disaster in river lowlands of Aral basin.

- great pollution of river water with pesticides, herbicides, other harmful elements and increasing of water mineralization.

For example it is established that Amudarya waters after coming out from Tuya-muyun Reservoir is characterized by margin concentration (MC) of sodium and ni-

trites (NO_2) exceeding in 1.2 and 2.3 times accordingly, in Nukus region MC exceeding of heavy metals is observed. Mineralization of water coming from Shardarin Reservoir increased to 1.4g/l and in Kazalinsk region up to 2g/l, which exceeds the norm twice. Finding out of heavy metals (Pb, Zn, Cr, Ni, Cd, and Hg) with concentration in tens and hundreds times exceeding MC in Syrdarya water and it's tributaries first of all is connected with conditions of narrow-department approach to assimilation entrails using not modernized technological working out schemes.In water gathering areas of Naryn-Syrdarya basin only in the territory of Kirgizstan there are situated 14 suspended and working mining industry objects, and volume of solid waste materials exceeds 550-mln m^3.The International Fund for Aral Salvage, for example, published the booklet (September, 1997), in which there is submitted the enumeration of the basin projects requiring additional donor support. It is remarkable, that the majority of these projects concern investigations of water arteries quality of the Aral basin. The problem of studying the water quality change and development of mechanisms of its control is still actual and concerns not only the separately taken country of Central Asia, but all the states of the region. Here it would be possible to recommend development of bilateral and multilateral legal mechanisms for strict adhering to 13 and 16 principles of Rio Declaration, concerning the duty and compensation for ecological damage and approach, that the contaminant pays for contamination. Let's assume, that tranceboundary river taking its beginning in the country – the Upper (À) runs through the territory of the next state (Â) into the country of Lower (Ñ).According to limited water system if mineralization degree of a river drain exceeds, (Ñ) shows (Â) the demand for super limited water intake as compensation.

Two versions in this case are possible:

1. (Â), which was asked to keep to the limited water intake, should address (À) with the similar demand.

2. (Â) should decrease its own limit of a water intake to meet the demand of (Ñ).

As the author of limited water intake system states, the river drains going from mountainous territories of their forming are polluted almost with nothing and differ by its small mineralization degree. Therefore, the demand of (Â) will be automatically rejected by (À).

It goes without saying, that the version 2 neither is appropriate; for it defines the main source of several hundred thousand people's lives.

Region and social responsibility for steady water supply, for example, called immediate reaction of 5 Governments in Central Asia. In February 1992 there was founded Interstate Coordination Water Commission (ICWC). The foundation of ICWC in dif-

ficult and unpredictable post-Soviet time enabled the countries of the region to pass painlessly the period of water “anarchy”, to ensure equilibrium and consent in the region and has shown strategy of all countries to ensure today and in future mutual understanding and respect in fruitful cooperation.

It gives the ground to hope, that the problem of contamination and ascending of a degree of water arteries mineralization can be solved with the same success by creating (similar ICWC) Interstate Coordination Water Quality Commission (ICWQC).

The structure of such organization can be presented in the following aspect:

Structural subdividing “The interstate experts” unite the leading technicians in valuating the quality and composition of waters from all five states of Central Asia.

The main function of this body is to compare the republican experts’ information about water composition and to solve disputable questions by carrying out the independent expert appraisals of water quality of tranceboundary rivers. ICWQC Secretary appoints the stuff and sets terms of power of the interstate experts. In Information Center established in each country of Central Asia the water quality control statistics in industrial, agricultural, municipal sectors and hydroposts are gathered, generalized and systematized. Thus, the data concerning water arteries quality from each country come to Analytical Center of ICWQC.

It should be noted, that after reaching the complete transparence of relative composition and quality of all water arteries in Central Asia the next stage is the development of mechanisms to encourage and take measures to the states polluting water environment. These problems together with other questions should be studied in ICWQC Secretariat for considering at Meeting of Central Asia Heads of Governments.