

## **Basic principles of ensuring water security in the lower reaches of the Amudarya river**

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It is known that XX century is marked by the beginning of widespread development of agriculture in the basin of the Aral Sea and, accordingly, construction of large cascade hydrosystems, water reservoirs, as well as development of new vast land areas, which eventually brought to fundamental changes in natural regimes of ecological systems in the lower reaches of the Amudarya and Syrdarya rivers.

On the one hand, there is no denying the fact that water use for irrigation ensures food security for population and economic wellbeing in the region; on the other hand, inefficient water use for momentary wellbeing has led to reduction of water flowing to the lower reaches, firstly of the Amudarya river, as well as to irreversible environmental damage: the Aral Sea tragedy and environmental problems in the deltas of the two rivers are the example of that.

The experience of water use in dry years shows that in 2000 water deficit in Tajikistan was 11 %; in the lower reaches of the Amudarya river in the territory of Turkmenistan, water amount decreased to 55 %; and in the Republic of Karakalpakstan, down to 59 %.

Within the boundaries of the Republic of Karakalpakstan alone, the irrigated area decreased by half because of water shortage, and in low water years, such as 2000-2001, a little more than 100 thousand ha remained out of the total area of 500 thousand ha; in particular, of 110 thousand ha under rice only 4 thousand ha were sown. According to data of SIC ICWC, annual losses of the Republic of Karakalpakstan (including the river delta) were estimated as much as 150 million US dollars [1].

Ensuring of water security and sustainable development in the lower reaches of the Amudarya river is only possible on the basis of mutually beneficial cooperation between all water users, which is based on the following:

1. A need for searching ways to achieve joint agreements and arrangements that meet the interests of all water consumers in the both upper and lower reaches. Until recently, the principles, terms, and mechanisms of such an arrangement have not been worked out.
2. It is necessary to recognize the rules of the International Water Law.
3. Water security should be achieved simultaneously with environmental security.
4. It is necessary to raise the status and competence of the BWOs along with the transfer of all large facilities, including reservoirs to their balances. In the future, addressing of water security issues in the lower reaches of the Amudarya and Syrdarya rivers, as well as of environmental problems depends to a large extent on activities of the two organizations, such as BWO Amudarya and BWO Syrdarya.

### List of references

1. V.A. Dukhovny, Joop de Schutter. South Priaralie - New Perspectives. Tashkent, 2003.
2. E. Kurbanbaev, O. Artykov, S. Kurbanbaev. Integrated Water Resources Management in the Amudarya River Delta. Tashkent, 2010.