

## **Improvement of the Condition of Irrigated Land and Efficiency of Water Use is a Guarantee of Sustainable Development**

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**Dear Ladies and Gentlemen,**

Let me greet all the participants of the Congress!

Irrigation and drainage play an important role in the life of Uzbekistan by ensuring national food security. The issues related to the improvement of the condition of irrigated land, rational and efficient use of water resources and enhancement of irrigated soil fertility are among priority directions in the national development policy. Since independence, owing to recognition of the social value of irrigation in the water sector, Uzbekistan have managed to preserve its irrigation fund and modernize and improve irrigation systems.

Uzbekistan is an official member of ICID since September 1993. In this context, the Uzbek National Committee on Irrigation and Drainage (UzNCID) was established at the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan.

UzNCID actively promotes implementation of the single scientific-technical water policy, which is aimed to develop the water sector of the Republic and achieve sustainable agricultural production. The improvement of the condition and productivity of irrigated land and the adoption of modern irrigation technique and technologies to ensure better water management and environmental improvement, with the use of historical experience of Uzbekistan, are the objectives of water-related activity in the Republic. The NCID members propagandize best irrigation and drainage practices collected all over the world by sharing research and technical information with other national committees, disseminating up-to-date scientific and practical materials, and contributing information to ICID publications.

At present, under conditions of growing water deficit, Uzbekistan is playing a leading role in application of advanced technologies and promotion of efficient water use in irrigated areas. The Republic has pioneered the development and implementation of integrated water resources management (IWRM) using the example of the Fergana Valley. This allowed aggregating all modern methods in irrigation water management, improving institutional structure and technical facilities, with consequent saving of 200 Mm<sup>3</sup>/year on an area of more than 130,000 ha. By using the resulting products and upscaling their application, IWRM is now implemented in seven Uzbek provinces on an area of almost 500,000 ha. Implementation of IWRM is accompanied by development and installation of automated water control and monitoring systems in main canals and along the Syrdarya River and by widespread establishment of agricultural extension services that naturally complement the existing network of Water Consumer Associations.

According to the Decree of the President of the Republic of Uzbekistan in 2007, the Fund for Reclamation of Irrigated Lands was formed and the State Program for Irrigated Land Reclamation was implemented at the expense of this Fund. Within this program, during the period from 2008 to 2014, optimal groundwater bedding was achieved on an area of 1,500,000 ha to ensure good growth and development of crops. Moreover, the irrigated areas with groundwater table of less than 2 m have decreased by 117,600 ha, and 113,000 ha of strongly and medium saline land were brought to the condition of slightly saline and non-saline land.

For further improvement of irrigated land conditions, development and enhancement of irrigation and drainage structures, effective use of water resources, and increase of irrigated land productivity, the 2013 Decree of the President of Uzbekistan identified integrated measures and targets for reclamation of irrigated land over 2013-2017, for construction, reconstruction and rehabilitation of irrigation systems, and for application of drip irrigation. More than US\$1.2 billion were allocated for these purposes.

For undertaking such huge efforts, appropriate facilities and capacities of water management organizations are needed in order to timely fulfill all the tasks related to performance of irrigation and drainage network. A special system referred to as "Uzmeliomashlizing" was established in the republic, and during the period from 2008 to 2014 leased 1688 units of equipment and machines, including 655 excavators, 200 bulldozers and more than 833 other mechanisms totaling to US\$672 million.

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More than 80% of water used in Uzbekistan flows from neighboring countries. Dry years are becoming more frequent in the Aral Sea basin. Before 2000 dry years occurred every 6-8 years, whereas recently they repeat every 2-3 years.

Under such conditions, the rational and efficient use of water resources and improvement of irrigated soil fertility are among the development priorities.

There are three key areas for application of water conservation technologies in agriculture in Uzbekistan:

- water conservation through optimization of water resources management and delivery;
- water conservation by preventing percolation losses through improvement of the conditions of irrigation canals, including coating of earthen channels, rehabilitation of existing ditch systems;
- water conservation at field level, i.e. application of those irrigation methods that save water. These include more efficient irrigation schemes, equipping of outlets of each water user (farm) with water control and accounting devices. This allows saving up to 15% of delivered water.

The following main water-saving measures of crop irrigation are implemented:

- improvement of conventional furrow irrigation technique through short furrows cutting, alternate furrow irrigation, varying stream application, etc.;
- appliances for higher water productivity, such as polyethylene films, flexible irrigation hoses, etc.;
- application of advanced water-saving irrigation methods, such as drip irrigation and sprinkling.

These items were included in the State Program 2013-2017. Flexible hoses and film are applied in 8,000 ha. Drip irrigation was adopted in more than 10,000 ha in the recent years. The Program provides for adoption of drip irrigation in 25,000 ha additionally at the expense of state preferential credits during five years by 2018.

According to the Uzbek Government's Decree, agricultural producers, who adopted drip irrigation or other water-saving technologies, have a right to use saved water for growing crops on the areas made available from cereals, and agricultural entities applying drip irrigation also exempted from the land tax for 5 years.

This work on adoption of advanced technologies is accompanied by a widespread capacity building company. More than ten thousand persons among the personnel of water management organizations and staff of WUAs, especially, farmers get trained every year.

The Republic pays particular attention to agricultural diversification. Water intensive crops, such as rice, cotton, and alfalfa are replaced by less water consuming crops, such as cereals, cucurbits, orchards, vines, etc. While at the beginning of the 1980s cotton occupied more than 2 Mha out of 4.3 Mha of the total irrigated area (about 50%), nowadays the cotton area is slightly more than 1,250,000 ha or 30%, i.e. almost twice less. The area under rice was reduced from 180,000 ha to 40,000 ha or 4 times.

As a consequence of the above-mentioned measures, the total water diversion decreased from 64 to 51 billion m<sup>3</sup> a year (21 %) as compared to the 1990s in the republic. The unit water diversion for irrigation of one hectare decreased from 18,000 m<sup>3</sup>/ha to 10,500 m<sup>3</sup>/ha.

However, despite the undertaken water-conservation measures, irrigated land in Uzbekistan suffers from water shortage. The challenging water-related situation and problems related to water supply for irrigation purposes and ecosystems are explained by the fact that Uzbekistan is located in the downstream of regional transboundary rivers and largely depends of flow regulation by upstream reservoirs.

The unilateral transfer of reservoirs in the upstream countries from irrigation to energy-generation operation regime since 1992 has radically changed the natural regime of Transboundary Rivers and caused water shortage in summer and flooding of irrigated land and infrastructure in winter. This has a negative effect on environmental and water balances in the region. It is important to understand that commercial interests of some sectors and countries should not adversely affect the basic population needs for water, food and favorable environment.

Irrigation in the arid zone depends on stable and guaranteed water supply. If there is no stability and predictability of transboundary water management, the water conservation measures at the national level cannot be effective. Regulation of Transboundary Rivers on the basis of electricity demand creates continuous flow variations and unreliable water supply. In such circumstances, sustainable access to water can be guaranteed neither now nor in the future! Coupled with liberal interpretation of the notion

"sovereignty" as a possibility of unilateral domination on the basis of geographical location advantages, this jeopardizes water and food supply for millions of people.

Uzbekistan builds relations with its neighbors on the basis of the international law norms, by supporting the ideas of sustainable development without infringing upon the interests of riparian countries and ecosystems. In addition to regional agreements signed between the Central Asian countries, in 2007, Uzbekistan joined two water conventions - the Convention on the protection and use of transboundary watercourses and international lakes (Helsinki, 1992) and Convention on the law of the non-navigational uses of international watercourses (New York, 1997) that provide for the use of transboundary waters on equitable and reasonable basis, while avoiding significant harm when using them.

An important impetus to solution of water problems was given by the Interstate Commission for Water Coordination, which was established in 1992. This is a unique interstate organization that, along with planning of water allocation among the five countries, undertakes management, monitoring and coordination of activities related to water management and improvement of this process. Another important cooperation institute - International fund for Saving the Aral Sea - was formed in 1993.

Currently the Republic of Uzbekistan has taken the presidency in IFAS, and we hope that the countries in the region will continue cooperating actively for implementation of activities planned in the Third Aral Sea Basin Program (ASBP-3), which was approved by all the countries.

***Dear participants of the Conference!***

We realize very well that the objectives set for food and water security are difficult to achieve without fruitful cooperation and active interactions with international organizations, among which ICID takes a special place. We are appealing to ICID, which has a colossal experience and great reputation, for continuation of activity aimed to ensure stable and guaranteed access to water and food for all in need, especially in the arid zones.

**Thank you for attention**