

## Ideas flow into water resources.

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Central Asian countries are currently working to integrate principles of sustainable development into their policy documents and public administration practices – with water resources a key issue.



Integrated Water Resources Management (IWRM) is an important tool with critical relevance for Central Asia, which relies heavily on water resources, for hydropower generation and agricultural production among other uses.

According to the Eurasian Development Bank in 2008, almost 70 per cent of Central Asia's hydropower potential is held by Tajikistan - which ranks 8th in the world in hydropower resources - and more than 20 per cent by Kyrgyzstan.

Hydropower accounts for more than 12 per cent of Kazakhstan's total generating capacity. For most of the region's countries, agriculture is their largest economic sector, contributing in 2005 to 36 per cent of GDP in Kyrgyzstan and 24 per cent in Tajikistan (EDB, 2008). About 90 per cent of the water utilization in the Aral Sea basin goes to irrigation.

According to UNDP, the problems in the water sector of Kazakhstan include pollution of surface and groundwater, excessive loss of water through leakage, increasing difficulties in quality drinking water supply and harmful impacts of industrial development and population growth on water resources.

But issues of institutional fragmentation in particular can be addressed through adopting a more integrated approach to managing water resources.

The development of water resources, such as damming or diversion, affects water availability elsewhere in the basin. Therefore, all stakeholders need to be involved in the decision-making processes.

UNESCO Almaty, together with the Center of "Cooperation for Sustainable Development of the Republic of Kazakhstan" (CSD), recently organized a workshop for the evaluation of a pilot university course on IWRM.

With support from UNDP's IWRM project, Kazakhstan has taken the first steps in putting river basin –based water management into practice through the recent establishment of the River Basin Councils for all eight major river basins of Kazakhstan.

In Kazakhstan, like elsewhere in Central Asia, a key condition for applying IWRM principles is the necessary human capacity. Budget and staffing cuts have negatively affected the authorities' ability to manage water.

Another challenge is the large number of employees in the field who are approaching retirement, said Amirhan Kenshimov of the Ministry of Agriculture's Water Resources Committee, another participant in the workshop.

The number of well-trained students who pursue careers in science and technology in Kazakhstan is currently inadequate, largely because of low salaries, poor facilities, and housing difficulties that limit mobility. Many prefer to work abroad, or enter private business.

In addition to complimenting the relevance of the introduction of the pilot curriculum, workshop participants adopted a set of recommendations for furthering the employment of the course and teaching materials, such as encouraging universities to adapt IWRM course materials.

The curriculum contains topics such as the monitoring of water resources, information management, water law and policy, and international cooperation in managing trans-boundary watercourses.

Mr Kenshimov said UNESCO has a role as an enhancer for scientific potential and cooperation in the field of water resources management, education and research.

The International Hydrological Programme is UNESCO's international scientific cooperative programme in water research, water resources management, education and capacity-building, and the only broadly-based science programme of the UN system in this area.

Several universities in Kyrgyzstan have expressed an interest in adapting the course to fit their needs. UNESCO will prepare an assessment of their requirements and a proposal in accordance to the experience gathered in Kazakhstan.