



# A Source of Peace – Transboundary Water Management in Central Asia

## Safety monitoring system at Ravatkhodja headwork

### Context

As an agrarian country located in a semiarid zone, reliable and uninterrupted hydrotechnical facilities are essential for Uzbekistan. One such facility is the Ravatkhodja headwork, which crosses the Serafshan river in the Urgut rayon (administrative district) of Samarkand province, close to the Tajik border. The headwork diverts water into the Dargom and Pravoberejniy main canals which irrigate about 100,000 hectares and is designed for a maximum discharge of 1,350m<sup>3</sup>/s.

Having been in operation for more than 70 years, the structure and fabric of Ravatkhodja headwork have severely deteriorated. The facility has not been adequately monitored

for several years because the measuring and control equipment has either failed or does not actually exist. Possible flood events caused by failing structures pose a significant threat to lives and livelihoods located downstream from the headwork.

Partner:	State Inspection for the Safety of Large Hydraulic Infrastructure under the Cabinet of Ministries of the Republic of Uzbekistan (Gosvodkhoz-nadzor)
Project term:	Aug. 2009 – Jul. 2011
Budget:	89,100 Euro

Irrigation systems, industry and Samarkand city itself are all at risk.

### Objective

This project helps to ensure secure water supplies and safer water management in the Serafshan river basin. Its main objective is to ensure reliable and safe long-term operation of the Ravatkhodja headwork and its related hydraulic infrastructure. An effective monitoring and risk assessment

system will reduce flood risks and improve the stability of water supplies, protecting downstream settlements. In particular, water users should experience less financial losses from floods or low water levels in canals.



Ravatkhodja headwork

The project supports the headwork operation and maintenance organisation, the State Inspection for the Safety of Large Hydraulic Infrastructure under the Cabinet of Ministries of the Republic of Uzbekistan (Gosvodkhoz-nadzor) and local farmers.

### Measures

Both technical and institutional measures are needed to respond to these objectives.

The technical component consists of a mobile diagnostics laboratory, which will improve Gosvodkhoz-nadzor's capacity to carry out field measurements and safety assessments of hydraulic structures (dams, headworks and pumping stations). The main focus of the laboratory's work will be the Uzbek section of the Serafshan river basin. Additionally, 14 boreholes for groundwater observation were drilled at the headwork and water elevation rods were supplied and

installed for continuous monitoring of the headwork's safety.

The institutional component comprises a survey of the present condition of the Ravatkhodja headwork and a study looking at how the Gosvodkhoz nadzor can develop safety indicators for large hydrotechnical infrastructures. The proposed safety concept will include appropriate, up-to-date guidance and regulations for sustainable headwork operation and will be transferable to other headworks across the country.



Groundwater observation bore at Ravatkhodja headwork



Uzbek delegation at Ennepetal Barrage in Germany

Furthermore, stakeholders improved their knowledge and skills through participating in a regional seminar on continuous safety monitoring of large hydrotechnical infrastructure and going on a study tour to Germany to learn about safety standards and practices at German barrages and dams.

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