ELABORATE THE SYSTEM OF MEASURES TO SOLVE THE PROBLEMS OF TRANS- BOUNDARY COUNTRIES IN ORDER TO PREVENT HEAVY POLLUTION OF KURA RIVER

COORDINATING CENTRE: ECMHT, Azerbaijan

PARTNER CENTRES: GHHD, Georgia

REPORT ON THE RESULTS OBTAINED WITHIN THE COORDINATED PROJECTS FOR 2014

The source of Kura River is a group of springs found in North-East slope of Gizil-Gadik Mountain at a height of 2700m. The total length of the river is 1515 km, the total basin area is 188,000 km2. 174 km of the river length is in the territory of Turkey, 522 km in Georgia, and 819 km is in Azerbaijan. It's the biggest river of the Southern Caucasus. Being the major water artery of our Republic, this river plays an important role in the country's water supply.

In the water of Kura along the flow, hydrocarbonate ion is prevailing (from Mingachevir to the river mouth), while the sulphate ion increases along the flow. Calcium cation prevails from Mingachevir to Zardab, and then from Zardab to the river mouth,the increase in the amount of natrium+calcium cation is a common case.

The water of Kura River is widely used in irrigation, energetics and water supply.

Upper course is Shikhli-2 station located on the border with Georgia. This observation station is moderately contaminated as a result of impact of untreated sewage and industry wastewaters discharged into the river. Due to less anthropogenic impacts Yenikand station belongs to moderately polluted water class with total amount of 557.7 mg/l ions

Due to little anthropogenic impact and self-cleaning processes, water of middle course falls under moderately polluted water class. Amount of phenols at Yevlakh station is 0,002 mg/l. It belongs to clean water class. Zardab station undergoes the impact of wastewater discharged from agricultural activities.

Surra station of the lower course is also moderately polluted with wastewater discharged from residencies, especially Shirvan and Salyan cities. Shirvan, Salyan and North-Eastern Banka observation stations belong to moderately polluted class with more Calcium ion concentration than the allowable limit.

In general, villages along Kura-Araz Rivers have used various water sources. The pollution reasons and features of these waters are different, therefore in different stages various anti-pollution structures have been installed against various types of pollution.

The Ministry of Ecology and Natural Resources is involved in providing the population with appropriate ecological information, organizing environmental awareness and promotional works, establishing business relations in this field with the public and NGOs, maintaining close relations with the media, sending the data on water pollution to the relative organizations, posting the information on various environmental issues on the website of the Ministry and regularly updating it.

The most hazardous contaminants in Kura River in 2014 are oil and oil products, phenols and copper compounds the concentration of which exceeded the allowable limit in all the stations.

The contamination sources of Kura River are sewage and industrial wastewaters from the cities of Georgia. The reason of significant increase in the pollution level of lower stream of Kura is contamination of Araz River and its tributaries with industrial, mining and domestic wastes disposed from Armenia.

There are no potential accidents within the country, however it could occur as a result of transboundary pollutants causing big environmental and economic damages.

The organizations under the Ministry of Ecology and Natural Resources control the institutions polluting the waters on a regular basis. Communication with the population is organized according to the Plan of Measures by means of which all the information about the institution collected and addressed to the population.

The organizations that don't consider it important to communicate with the population limit their activity only to sending the bulletins prepared for the media to newspapers, magazines and television. However, maintaining the communication with the population in this restricted framework is not appropriate at all.

GHHD

The main sources of Kura river pollution are: Kaspi cement plant, Tbilisi (Avchala) glass plant, Tbilisi Aviation Plant, Rustavi Metallurgical Plant, Rustavi Chemical Plant, Rustavi cement plant, Bolnisi Mining Plant et al., which pollute Kura River with heavy metals (Cu, Zn, Fe, Pb) and the chemical compounds (amonium sulfate, caprolactam, cyanide, etc). The largest source of pollution is the main quarry of Madneuli ore deposit, where also the washing out the ore body (Au, Cu, BaSO4, Pb, Zn, Ag, Cd) occur. The main river of the region is the river Mashavera with its right side branches Kazretula and Poladauri. These rivers are really washouts of the ore body and strongly pollute the groundwater area. These rivers belong to the basins of the main river of the Caucasus – Mtkvari (Kura). The studies of ecological situation began in 1993- 94 and continue to this day by various agencies. All of these studies have confirmed the severity of the environmental situation of the area. According to the data in the range 20 km from the quarry, the territory (soil) is classified as contaminated. Soil contamination is more than 3 times then the maximum permissible concentration (MPC). Much worse is the condition of water in the rivers Kazretula and Poladauri, where the concentration of toxic metals in some places is more than MPC 50 or even 100 times. In one site the concentration of Cd reaches 3,8 mg/l, which is 2000 times greater than the normal value of ground water (0,002 mg/l). In the adjacent area of quarry the chemical elements are presented in concentrations exceeding existing standards MPC in Georgia. Almost everywhere are registered the increased concentrations of major pollutants: Cu, Zn, Pb, Ni, Mn, Cr, Ti, Mg, Cd, Hg; their concentration exceeds MPC 3-2 000 times. It should be stressed that the agricultural products (greens, vegetables, wine, etc.) of considered region represent the main source on the market of the capital of Georgia - Tbilisi.

Analysis shows that the current system of Kura river water quality control is fragmented, does not provide the organization of alarm systems and in reality the system of operational analysis of the state of the river and the early warning system is absent. So it is highly desirable to organize independent early warning system capable of issuing real-time alarm to react on the spread of contamination with participation of existing institutions.