Georgia

National Political Dialogue on Integrated Management of Water Resources in Georgia in the Framework of European Water Initiative

Transboundary Water resources Management Problems in Georgia, Transboundary Water Cooperation with Neighboring Azerbaijan and Getting Prepared for accession of Georgia to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention, Helsinki, 1992)

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Introduction

Water is necessary in all fields of life. The main objective for all states is providing of adequate supply of population with good quality water, maintaining hydrological, biological, and chemical functions of ecosystems, adjusting the activities of man, considering the possibilities of nature, and struggling with diseases connected with water.

The main problems of freshwater reservoirs and sources of fresh water are: accessibility of water resources (regional imbalances of presence and need of surface and ground waters), low quality of water and hydrological changes (changes of interconnections between Rivers and their high-water Riverbeds). The main reasons for inadequate access to water resources are worsening of the quality of water and hydrological changes.

1.1. The main objectives and goals of the paper

The present paper provides the review on development of transboundary water cooperation with the objective of "Strengthening of transboundary water cooperation, including preparation of transboundary water agreement with Azerbaijan and supporting Georgia to join to Water Convention of UN EEC".
The paper makes an attempt to analyze problems and experience of transboundary water cooperation of Georgia, as well as cooperation of Georgia with Azerbaijan in water policy management, provides the information about current transbaondary projects and prepares recommendations on further development of cooperation with Azerbaijan and steps, which will be taken by the Government of Georgia to sign the UN EEC Convention on waters.
The paper was prepared in the framework of National political dialogue on complex management of water resources with support of grant from the Government of Finland.

1.2. National policy dialogue on IWRM

National policy dialogue (NPD) on integrated water resources management (IWRM) and water supply and sewage (WSaS) are main on-the-fly instrument of Water Initiative of European Union as the Component for Eastern Europe, Caucasus, and Central Asia (EECCA).

NPD / IWRP are means of rendering practical assistance in strengthening of integrated water resources management in the countries of EECCA. They are based on consultations with ministries, agencies, and institutions (including science and scientific circle), non-governmental and other national and international organizations. In Georgia, NPD / IWRP started under the guidance of UN EEC in September, 2010 with participation of UN EEC members of Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention, Helsinki, 1992) Convention Secretariat in cooperation with the Ministry of Environmental protection and Natural Resources (from March, 2011, it has the new name – the Ministry of Environment), and other interested sides.
The dialogue is organised in cooperation with the Ministry of Environment by support of Georgian National Water Partnershiep.

The process of NPD / IWRP starts from the meeting in Tbilisi in March, 2011. National policy dialogue on IWRM discusses three main topics: preparation of national water law on the basis of the principles of IWRP; creation of objectives on implementation of the program of UN EEC / WHO Protocol on Problems of Water and Health of Water Convention of UN EEC, as well as transboundary water cooperation with neighbor Azerbaijan and preparation of joining of Georgia to Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention, Helsinki, 1992).
The process of NPD / IWRP in Georgia is carried out by the support of European Union, as well as the government of Finland and OSCE.

II. Transboundary water cooperation

2.1. Transboundary water resources of Georgia and current situation

The territory of Georgia embraces two basins – the basins of the Caspian Sea and the Black Sea. The majority of Rivers flow into the Caspian Sea and it should be mentioned that the Rivers of Kura, Terek and Sulak flow along semi-desert, most arid sensitive ecosystems of Georgia and Azerbaijan. Transboundary water basins of the Caucasus include the basin of the Kura-Araks (Araz) River, the basin of the Chorokhi River, the basin of the Psou River, the basin of the Psou River, the basin of the Terek River, the Alazani River, the basin of the Debed (Debet) River, lakes of Kartsakhi, Djandara, and others.

The extent of two longest Rivers in the Caucasus – the Araks (Araz) and Kura constitutes more than 1000 kilometers. Average volume of the River flow of Caucasus Rivers fluctuates sharply, reaching its maximum in the regions of the Great Caucasus and Adjara (Adjara-Trialeti ridge), where these levels reach 1000 mm, whereas in the lowland of Kura-Araks (Araz) they constitute 50 mm. Water resources are distributed very unevenly, and maximal amount of the total flow fall on the territory of Georgia.

Water consumption in Georgia is uneven. Unlimited water consumption and irrational use of water resources is common in Georgia, which is caused by increased domestic water consumption, leakages in the systems of domestic water supply, and unlimited use of water in agriculture.

In some countries of the countries of Caucasus, in which transboundary water ecosystems are located, irrigation takes more than 60% of consumed water, while in the countries of more humid and modest climate irrigation is carried out mainly in order to add to the amount of water, coming in the form of natural precipitation. Curtailment of agriculture in the countries of South Caucasus in the process of transformation into market economy caused considerable decrease of consumed amount of water. On the other hand, in Turkey, the demand for irrigation water has increased by 35% in recent years in connection with realization of new projects in the field of irrigated agriculture.

Increase of industrial water use in connection with the growth of concentration of industrial operation and inefficiency of consumption is also the reason of reduction of accessibility to water. In Georgia, industrial water consumption sharply decreased after the break-up of Soviet Union. At the same time, in Northern Caucasus and Azerbaijan, the majority of enterprises continued functioning, and the level of water consumption has almost not changed.

Sectoral approach to water economy having been formed in previous century still remains one of the main frameworks for water consumption, excluding any coordination in carrying out of the policy on water resources protection and use.

The above-mentioned is in natural way reflected in the system of institutional management and legal base, as well as in the formation of financial strategy on water consumption. Concerning financial strategy it should be noted that the "polluter pays" principle of sustainable development was introduced practically in all countries at the end of previous century, but mechanisms of implementation of this principle have changed for last 6 years in Georgia. The system of taxes and duties, so-called "water payment" is of rather fiscal nature for states and/or municipalities. This payment remains low and does not contribute to preservation of water resources, since tax proceeds are not used directly for environmental protection, but go to general budget.

Ineffective and non-coordinated systems of management of hydrological resources have recently led to the deficit of drinking water in many regions of Georgia.

Problems of deficit of funds of water economy organizations should also be mentioned, which led to further worsening of the condition of water economy systems. The single water company created recently has practically centralized all systems of municipal water supply, and it is still early to judge how effective it will work.

Application of fertilizers and sulfur-containing substances in agriculture influenced the quality of surface and ground waters, which causes the leaching of nitrates and phosphorus and brings to acidification and eutrophication;

Uncontrolled discharge from industry, agriculture, and sewage, as well as other wastes into River systems in previous century has increased the level of pollution of the majority of Rivers of the region. The discharge of such elements as heavy metals, oil products, phenols, copper, nutrients, pesticides, and organic materials has brought to pollution of surface and ground waters in the country.
As a result of decrease in industry, municipal enterprises have become main polluters of water resources. In Georgia, municipal sewage collects about 60% of all sewage waters. It should be noted that the system of treatment facilities is actually not modernized and requires considerable investments.

Climate change is natural reason for the reduction of the amount of water, and significantly influences the state of water resources and quality of rendered services on water supply. By the data of hydro meteorological services of Georgia, ice cap of Central Caucasus diminished almost by 1/3. It is generally known that glaciers are important reservoirs of fresh water. One of the reasons of reckoning of fresh water resources among "nonrenewable" ones proved to be reduction of the reserves of fresh water. In relation to this, it is quite important to provide for the necessity of analysis at regional level of consequences of climate change in the context of water resources, as it is obvious that climatic changes will significantly influence the condition of water ecosystems[1].

Hydrological changes of water resources in the region are connected with artificial regulation of watercourses, including flood control, as well as generation of electricity (construction of dams) and drainage of adjacent agricultural lands. One of the consequences of excessive use of surface and ground waters can become reduction of the level of ground waters, drying of water reservoirs, and,

[1] "Second Report of Georgia on Climate Change", 2009.

as a result, changes in flora and fauna. Other consequences can be depression of landscape, disturbance of stability of buildings and constructions.

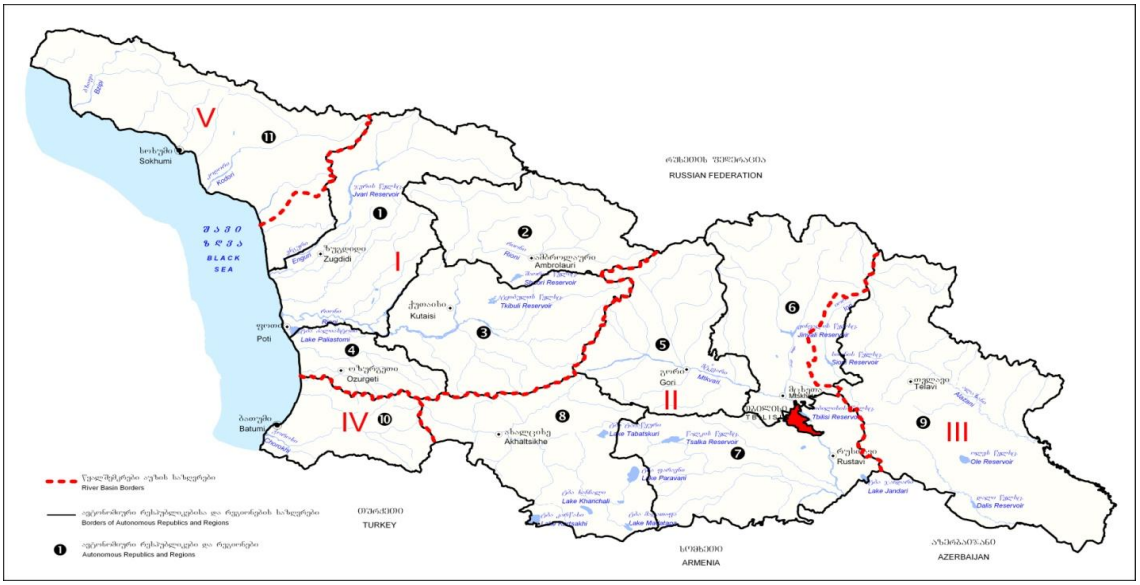
Organic pollution and eutrophication of water sites has brought to deterioration of conditions of dwelling of biological cenoses, including those of fish. Organic substances, heavy metals, and other chemical elements and compound pollute ground waters, including drinking water, and can extremely negatively influence the health of living organisms, including human being. The discharge of polluters into surface waters (mainly Rivers) often brings to transboundary pollution.

Consequences of hydrological changes in River systems can include: increase of the level of a River, instability of subsidence of sediments in the Riverbed, increase of sedimentary transportation. All this exacerbates the significance of high water cases. Construction of dams and reservoirs can bring to deterioration of lands and disturbance of habitats, as well as social problems.

Scanty water resources, industrial pollution, minerals industry, and construction of dams may cause tension and hostility in the relationships between different water consumers.

Hydrological map of Georgia

2.2. Basins of transboundary Rivers and lakes of Georgia
The main basins of transboundary Rivers



I – The Rioni River basin

II – The Kura River basin

III – The Alazani River basin

IV – The Chorokhi River basin

V – The Psou River basin

2.2.1. River basin of the Alazani River

The Alazani River is a transboundary River for Georgia and Azerbaijan. The total length of the River is 391 kilometers. In Georgia it is 104 km. The common boundary between Georgia and Azerbaijan is 282 km, in Azerbaijan there are 5 km.

The River starts at southern slopes of Chief Caucasian ridge. Considerable part of the River runs along Azerbaijani-Georgian borders and flows into the Mingachevir reservoir in Azerbaijan. In Georgia, the River system of the Alazani consists of 1.803 minor Rivers with total length of 6.815 km. Seasonal melting of snow and rains result in spring floods. There are also floods in spring, caused by Rivers, which can result in insignificant raise of water level, especially in the lower reach.

Alazani-Agrichai aquifer consists of unconfined part (more subject to pollution and other impacts), and upper part of alluvial cone at the foot of mountains, under which there is the only unconfined aquifer with artesian ground waters (better protected by confining bed). The level of ground waters reaches maximal depth at the top of the cone (up to 90 m), and in the artesian basin of the Alazani it fluctuates between 10 and 60 m.

2.2.2. River basin of the Chorokhi (Korukh) River

The Chorokhi River is a transboundary River for Turkey and Georgia.
The River starts in Turkey and flows into the Black Sea 6 kilometers to the South-West from the city of Batumi.
The basin of the River is mainly of mountainous nature with the Riverhead located at the height of about 2,700 m (Turkey).
The length of the River is 438 km (26 km within Georgia). The catchment area is 22 100 km2. The width of the River between the state border and the village of Erge (within Georgia) is 60-200 m, with the high-water bed getting 1.5-2 km wide further at the mouth of the River.
To the main transboundary inflows belong: 37 km of the Machakhelistskali River, which forms itself at the confluence of spring brooks, flowing from the Southern slope of mount Mereti at the height of 2 200 m and flows into the Chorokhi River (on the territory of Georgia) from the right bank at 21 km from its mouth. The length of the flows of the River is 37 km. The catchment area is 369 km2. The upper part of the basin is located within Turkey, the middle and lower streams are within Georgia. Water regime was studied in 1951-1992. Average annual expenditure of the water is 20.6, the highest expenditure is 34.0, and the lowest are 9.72 m3/sec.
The resources of surface waters amount to 276m3/year (average figure for the period from 1951 to 1992). At the Chorokhi/Korukh River it was planned to build 10 dams, including the biggest of them – the dam of Jusufel and HES.
In Turkey, the monitoring of alluvia is carried out twice a year. In 2006, there were in total 15 series of measurements carried out, whose results were passed to Georgia through diplomatic channels.
From 1997-1999 the joint commission on the problems of the Chorokhi River is working.

2.2.3. River basin of the Debed (Debet) River

The basin of the Debet River is a transboundary one for Armenia and Georgia.
176-meter long River of Debed (Debet) starts at 2100 m over the sea level and runs through deep gorge. It flows into the River of Ktsia-khrami (on the territory of Georgia) from the right bank at the distance of 12 km from its mouth.
Its average height is monitored at hydrological post of Sadakhlo – 1680 m over the sea level.
The area of the River basin in Armenia is 3790 km2 (92.4%), and in Georgia it is 310 km (7.6%). In