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WORKSHOP 2 – Water landscapes: international experiences

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Georgia's Landscapes and Hydroelectric Resources: Challenges and Opportunities

Georgia is rich in water resources, which is the main component of natural wealth of the country. With hydro-power potential (rivers, lakes, reservoirs, glaciers, underground waters, swamps) the country takes one of the first places in the world. There are over 26,000 rivers and 860 lakes in Georgia. Some rivers belong to the Black Sea basin, others to the Caspian Sea Basin. There are 44 water reservoirs currently operating in Georgia, covering a total area of 0.23% of the territory. Reservoirs of western Georgia are mainly for energy use, whilst most of the water reserves in eastern Georgia are used for irrigation.

The usage of hydropower potential of the country is one of the main strategic criteria of economic development of Georgia. The share of hydro-power plants is 75% of the total capacity of the electro stations operating in Georgia. The country currently operates up to 70 hydro-power plants, mostly located in western Georgia (in the Enguri and Rioni river basins). At present, construction of new hydro-power plants is underway in different regions of Georgia.

It should be noted that the construction of water reservoirs and hydro-power plants changes the natural environment: areas of the gorges are covered with water, and new landslides are occurring; the air and soil humidity increases; the river flow regime changes etc. As a result, the landscape is changing. In some cases, it is necessary to resettle people, which in turn leads to significant changes in the natural and social environment.

To illustrate Georgia's landscape protection issues, three examples of changes to water landscapes have been identified, caused by the construction of water reservoirs and hydro-power plants :

- the issue of ensuring the protection of the already-modified landscape during the construction of water reservoirs and hydro-power plants (the Historical Monuments of Mtskheta – World Heritage);
- current problematic processes: people protesting about landscape changes due to the construction of new dams and hydro-power plants (Neskra, Svaneti Hpp);
- the use of water reservoirs and hydro-power plants by granting additional functions that might be a mechanism for increasing the development of potential of the region and could be some mechanism for protection of the landscape from additional alterations. (Enguri Hpp, Samegrelo Region).

The issues of the protection of the already modified landscape by construction of water reservoirs and hydro-power plants in the previous period will be discussed in the context of the landscape of Mtskheta World Heritage Monuments.

In the Aragvi Basin, on the right bank of Aragvi River, the construction of Zhinvali Hydro complex was started in 1971 and the former village of Zhinvali was in the flood zone. As a result, some of the population had to resettle in another territory. Two more hydro complexes were constructed in Aragvi Basin-Roshka and Misaktsieli.

The construction of hydro complexes has caused landscape changes. One of the modified landscapes is located in the area of historical monuments of Mtskheta. Part of the Aragvi Coast was turned into a swamp. As a result of the rehabilitation works, the land between Svetitskhoveli monastery and river Aragvi has naturally become green and a part of the historic landscape.

It is noteworthy that since 1994 the historical monuments of Mtskheta are on the World Heritage List. The surrounding environment is an integral component of the monument. Since 2005, the development of the territory and construction has started, without taking into consideration the interests of the buffer zone of the monument. As a result, the Mtskheta site was inscribed to the List of World Heritage in Danger.

In 2016, Mtskheta was returned to the main List, taking into consideration a number of matters, including the need to develop relevant measures for environmental protection of the historical monuments of Mtskheta, in order to prevent further degradation of landscape of the world heritage site. In 2018, by the order of the government, the adjusted boundaries of the landscape protection zone were developed within the framework of the Correction Project of Mtskheta Cultural Heritage General Protection Zones, which is currently at the review stage. One of the main aims of this project is to protect the landscape of the river Aragvi coast from undesirable change.

Taking the aforementioned into consideration, the protection of the landscape of the river Aragvi coast from undesirable changes has the highest level of actuality, as it constitutes an integral component of the World Heritage site and it significantly determines the existence of the site in the World Heritage list.

The second example concerns the current processes when people protest at environmental and landscape changes regarding the construction of new dams and hydro-power plants.

The construction of the Neskra hydro-power plant in Svaneti region caused discontent amongst the population. Neskra hydro-power plant is one of those 35 power plants which is planned for construction in the Upper Svaneti region of Georgia. The Svaneti region is distinguished by its unique landscape, medieval villages and residential towers. Changes to the landscape were painfully perceived by the population. The explanations made, regarding economic benefits of the hydro-power plant, did not have much impact. The population firmly stated: “No to Neskra dam”. As a result, construction of this hydro-power plant has been suspended. Ongoing construction of new hydro-power plants in other regions of Georgia are being undertaken against the backdrop of clear protestations by the people.

In this regard, it has to be noted that the discussions on the suspended construction of hydro-power plants continues, despite protests. For instance, the discussion on construction of the Khudoni HPP, which was stopped by public protest, is now renewed after 35 years.

The issues regarding the changes of the landscape of rivers is very important to the international community. The International conference “River gathering Georgia 2017” responded to the movement against construction of hydro-power plants. Representatives from different countries participated in the conference, including North and South America, Europe, the Balkans, Southeast Asia, the Mediterranean and the Caucasus countries. The goal of the conference was to maintain healthy rivers, which is the best way to fight climate change.

The third example illustrates that, in some cases, the protection of water landscape from further changes can be achieved by providing additional functions for existing hydroelectric complexes.

Construction of Enguri HPP began in 1961. Enguri Hydro-Power Plant and its dam is in the top five world highest arch dam. This complex, as the object of industrial heritage, was granted the status of national category by the Government of Georgia in 2015. The project “Enguri Dam – Most attractive industrial site and tourist spot” was elaborated and is now at review stage. The project aims to provide additional functions to the Enguri HPP and Hydro-Power dam by developing a museum area and a tourist site. Complex infrastructure projects include establishing an Enguri museum, where artifacts relating to the construction of Enguri HPP will be exhibited, as well as cognitive entertainment activities using modern technologies.

It is also possible to arrange a scientific centre that will help young people engage with fields of engineering; Arrangement of various types of attractions on the site include sightseeing with electro mini-cars and an extreme sports centre (rafting, climbing, jumping from the rock, zip line etc.) The possibility of arranging a recreational-leisure infrastructure, including spa-hotel arrangements, will also be considered.

Thus, the protection of the water landscape from further changes can be achieved by providing additional functions for existing Hydro-Power Plant complexes.

Finally, it should be noted that there are more questions about the protection of water landscapes than there are answers. Therefore, sharing international experience on this particular topic is very important and it is appreciated that this workshop is dedicated to these issues.