

# Causes and consequences of pollution of the Great Bačka Canal, Serbia

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## Abstract

The excavation of the Great Bačka Canal at the end of the 18th century played a large role in the cultural and economic development of the whole Bačka. With the rapid development of industry on the banks of the canal, the use of water resources increased, and because of that the Great Bačka Canal was transformed into a so-called black ecological spot of Europe. The 118 km long stream from Beždan to Bečej connects the Danube and Tisa and passes through the settlements Beždan, Sivas, Crvenka, Kula, Vrbas, Srbobran, Turija, Bačko Gradište, and Bečej. The main causes of this canal pollution are untreated wastewater that flows into the canal uncontrollably from the oil mill, sugar mill, meat factory, tannery, metal industry, etc. Numerous activities to find an adequate solution to this problem began in the 1990s. The construction of the Central waste water treatment plant, as the most rationally chosen solution, was funded by the European Union and completed in 2018., but the conditions for its full implementation remain unfulfilled.

## Introduction

According to the official assessment of the Norwegian Institute for Water Testing, NIVA (Norwegian Institute for Water Research), the Great Bačka Canal is today the most observed watercourse in Europe, where in the last decade, without any treatment, most of the municipal and industrial waste of the Vrbas-Kula-Crvenka basin has been drained. On the 6 km long section of Vrbas through wastewater deposition 400.000 m<sup>3</sup> of sludge is piled, and the water is full of chemical and biological pollution, heavy metals, pathogens and petroleum hydrocarbons. The depth of the channel in this section is only 30-40 cm, which means that the deposition of suspended materials is replaced by more than 90% of the profile surface. While according to many studies, the pollution of the Great Bačka Canal equals that of fecal waters, Vrbas is one of the leading cities in Serbia in terms of cardiovascular processing and about six types of cancer. The statistics of two doctors from Vrbas hospital confirmed the suspicions that the citizens who live in the vicinity of the canal massively suffer from cancer.

## Materials and Methods

The basic research method of collecting and processing data in the paper is a qualitative analysis of the content of documents, studies and regulations of the competent institutions, as well as news articles focused on this topic. Considering that the paper aims to answer the question why is the Great Bačka Canal most polluted watercourse in Europe, the media as a means of mass communication is one of the key sources of information that can provide an answer to this question. In order to reach a conclusion on the basis of the analysis of individual cases, the paper uses an inductive, but also a deductive method as a final process in scientific knowledge. Except these methods, in the paper is also used a historical method, which contains principles and statements to know the things in a process of their creation.

## Results

The project of revitalization of the Great Bačka Canal on a contaminated section of 6 km through Vrbas includes the construction of sewage collectors between Vrbas and Kula, the construction of a sewerage network, the construction of the CPPOV and the process of revitalization or cleaning of the canal itself. According to the data from JVP "Vode Vojvodine" in 2010, as the canal polluters 24 industrial objects were registered, and most of them are from food industry section.

As the criminal procedure for identified illegal leakage of untreated waters is a very long process that is successfully completed in only 10% of cases, the costs of causing pollution are generally higher than the penalties provided for polluters.

Construction of the EU-funded CPPOV with € 15 million began in 2011 and although it was planned to be completed in 2014, it has only been completed in 2018. Although works on the construction of the CPPOV has been completed in 2018, the basic conditions for its full implementation are not fulfilled. Namely, in order to operate at full capacity, the purifier requires large quantities of water, but as long as a large number of the population connected to the canal has no sewage, no one can connect to it.

The existence of a cause-and-effect relationship between cancerous diseases and life by the canal confirmed the ten-year study of the primarius of Dr. Mimir Milović, former chief of the chest ward of Vrbas hospital. Considering that the Norwegian Institute for Water Conservation declared the Great Canal of Bačka as the most polluted water course in Europe, and the fact that its sludge contains a large amount of toxic and carcinogenic elements, the question is why the state has not yet done a study on their harmfulness for the health of the people around it.

## Discussions

Since, among other things, Serbia's accession to the EU entails fulfilling the requirements of Chapter 27 relating to sustainable development and environmental protection, Serbia must primarily harmonize its laws with the laws of the European Union and accept all Community legal legislation, the so-called *acquis communautaire*. As this French term denotes "what is harmonized" and without harmonization, there is no sustainable development, the question is how to stop the pollution caused by sewage into natural recipients as long as it is allowed by the laws of one country and other prohibited. First of all, because of this, Serbia should intensify discussions on these issues not only in order to meet the prescribed criteria, but primarily in order to protect the environment and natural resources.

## Conclusion

As it turned out that in this case the judiciary is powerless and the penalties for polluters are minimal, it is concluded that someone from personal interests and for the sake of profit, at the expense of the environment and risking human health, consciously gives money for pollution to the state instead of investing it in the construction of purifiers and the application of modern business techniques. Although the resolution of this problem for decades points to the lack of functioning of legal and institutional regulations, and large companies solve their problems to the detriment of the environment and the health of citizens, the impression is that the activities of the competent authorities over the years have been more focused on eliminating the consequences rather than the causes of pollution. Considering that the state as the main initiator of the canal revitalization, for decades has not played an active role in sanctioning pollutants and eliminating the causes of the problem, but also the fact that the solution to its consequences is largely financed by the European Union, gives the impression that the European Union has more interest in canal cleaning than Serbia has an interest in facing obstacles to European integration. As it has been established that the wastewater of many industrial plants is the main cause of canal pollution and its consequences for the health of the population are serious, the answer to the question why the Great Backa Canal is the most polluted watercourse in Europe is precisely the lack of timely dedicated control of canal and business operations, but also the lack of implementation existing legislation by the state.

## References

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