



EUROPEAN UNION



GOVERNMENT OF ROMANIA



GOVERNMENT OF THE REPUBLIC
OF SERBIA



Structural Funds
2007 - 2013



ENVIROBANAT
Common History, Common Future

Surface water quality monitoring in romanian Banat area

Francisc Popescu

ENVIROBANAT WORKSHOP

9 - 10 June 2014, Zrenjanin, Republic of Serbia

In the frame of the project

Sustainable development of an research center in Banat region and Danube flow area through scientific research and environmental simulation tools to asses and evaluate potential threats

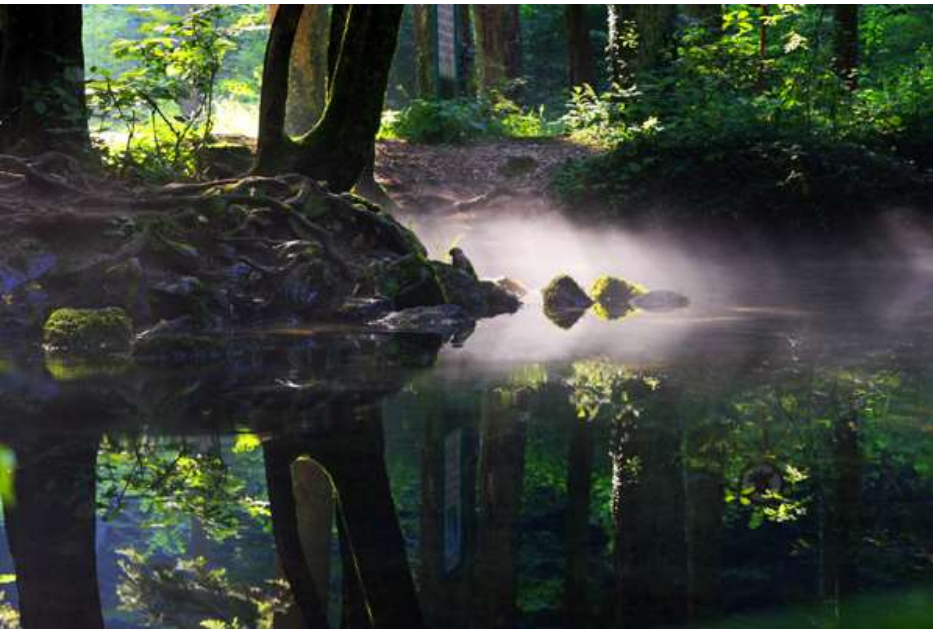
www.envirobanat.ro

Nera River.

The Nera is a 124 kilometers long river running through Romania and Serbia, and the left tributary of the Danube.

The Nera rises in the Semenic mountains, the easternmost part of the Banat region, south of the city of Reșița, in the Caraș-Severin County of Romania. The river starts at the junction of headwaters of the Nergana and Nerganița then flows straight to the south from the Piatra Grozbe peak, under which it springs. Reaching the village of Borlovenii Vechi, the Nera turns southwest, flowing between the Semenic and Banat Mountains. In this section, the Nera receives its left tributary, the Rudăria, and passes next to many villages, until it reaches Sopotu-Nou, where it sharply turns to the northwest, still curving around the Semenic Mountains. It passes next to the villages of Sasca Română, Sasca Montana, Slatina Nera and Naidăs, at which point it becomes the border between Romania and Serbia for the remaining 27 kilometers.

In the border section, the Nera flows through the depression of Bela Crkva, and settlements on the Romanian side include Lescovita, Zlatita and Socol, while on the Serbian side there is only one village on the river itself, Kusić, with several settlements in the vicinity of the river. At Vračev Gaj the river turns south and empties into the Danube near the village of Stara Palanka.



Bega River.

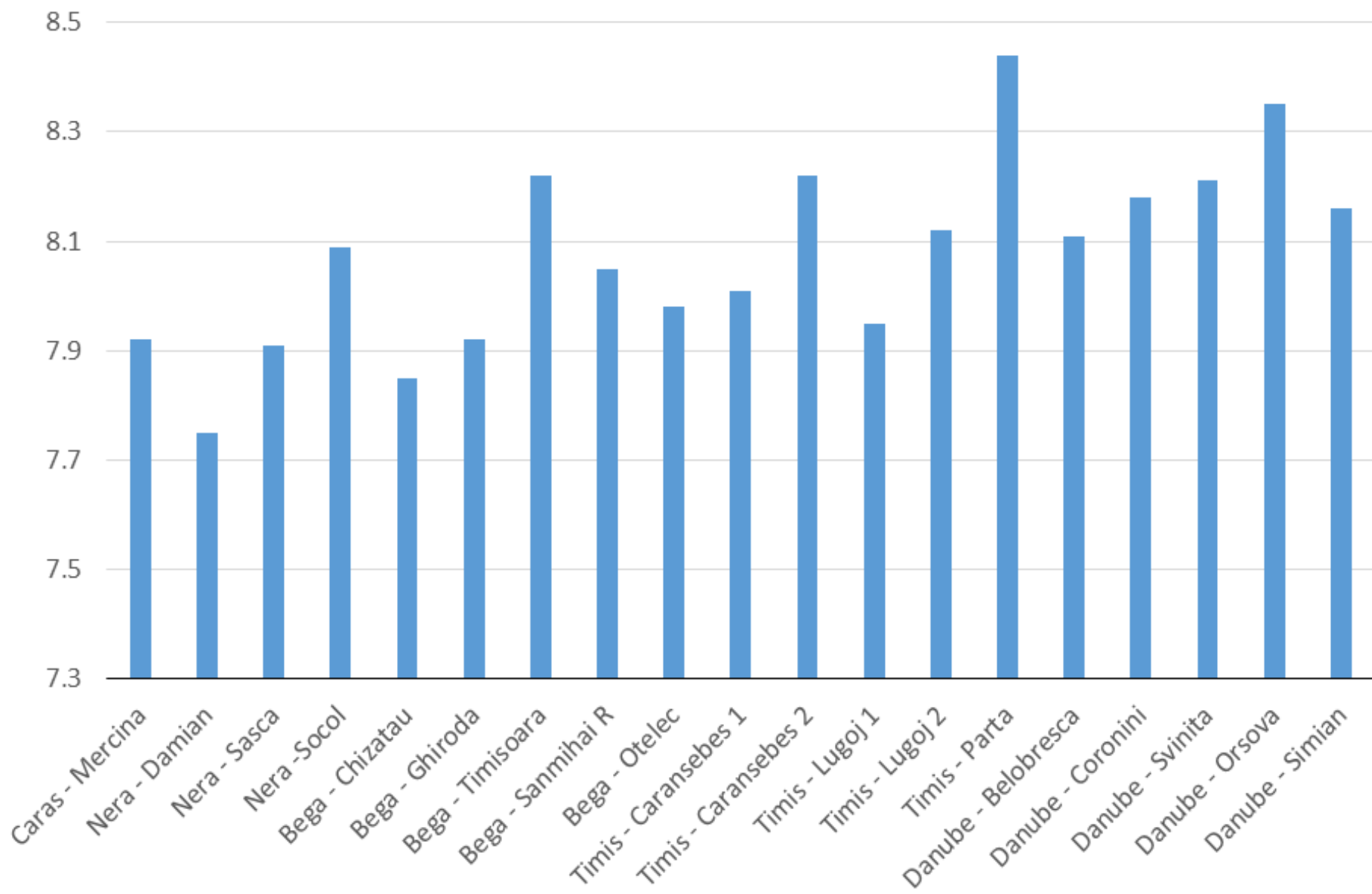
The Bega Channel represents a landmark both for the Banat region, being the proof of progress and of civilization in a century when this area could compete with Western areas from many points of view.

Timișoara had many benefits from the river as a means of transport, before the railroad was built in 1857. The first hydraulic pump that was installed in the Fabric neighborhood allowed the households to receive drinkable water. In 1869, the ships started to transport passengers on the Bega channel. Thus, Timișoara becomes the first city on the territory of present day Romania to use this means of public transport. The building of the channel began at Făget, passing through Răchita, Belinț and Chizătau, following as much as possible straight directions, until the channel reached Timișoara, where four smaller channels opened up, with locks used to provide water for water mills, for factories and plants and to transport construction materials, wood and salt.

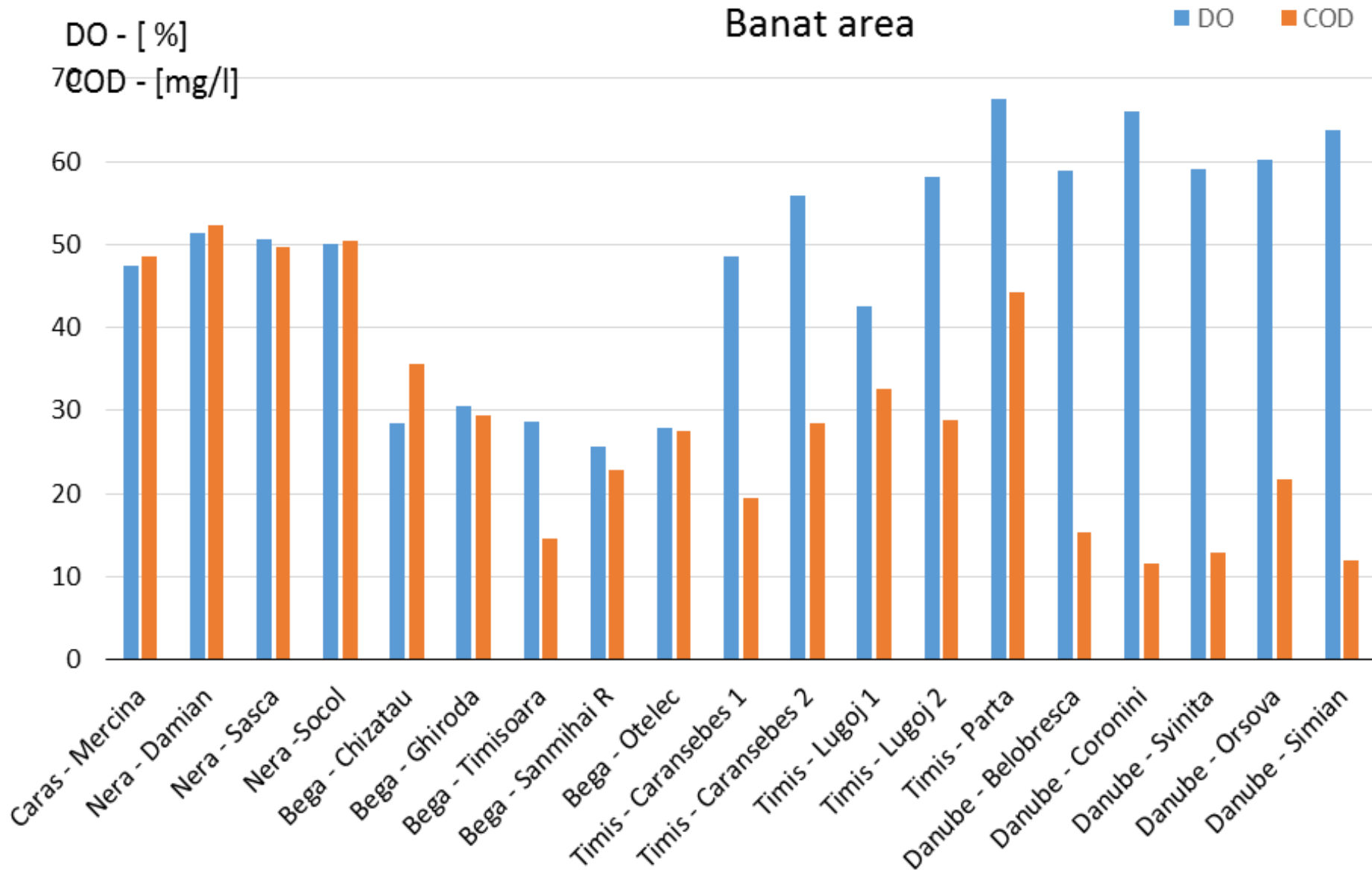
Between 1728 and 1732, the stream of the Bega River was modified, and a channel suitable for navigation was built. Thus, the city was connected to the rivers Tisa and Danube, suitable to become part of the Central European water transport network. As a consequence, the works on the rivers Bega and Timis and the draining of swamps changed radically the image of the city.



pH values for surface water measurement in Romanian Banat area

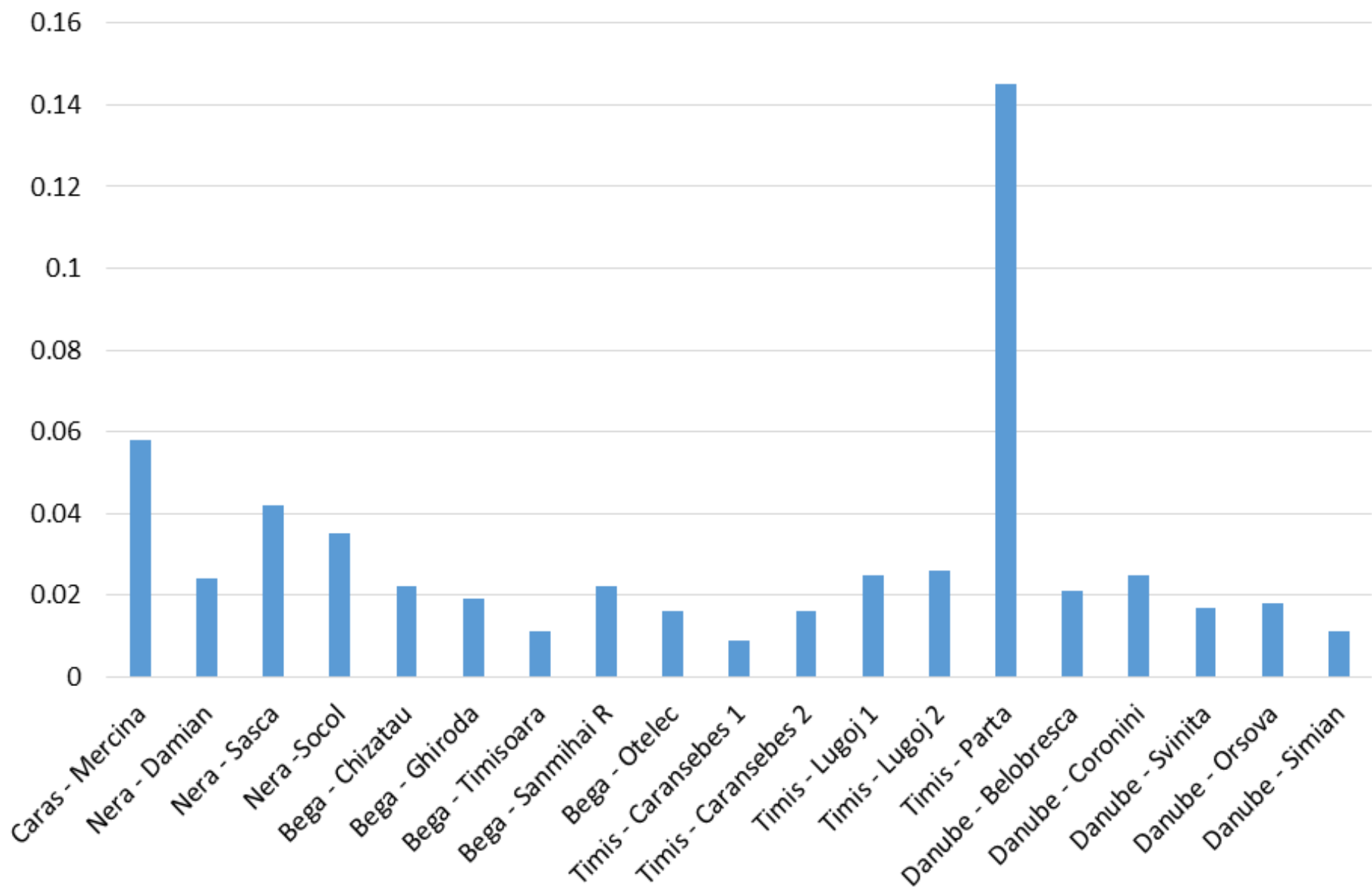


DO & COD values for surface water measurement in Romanian Banat area



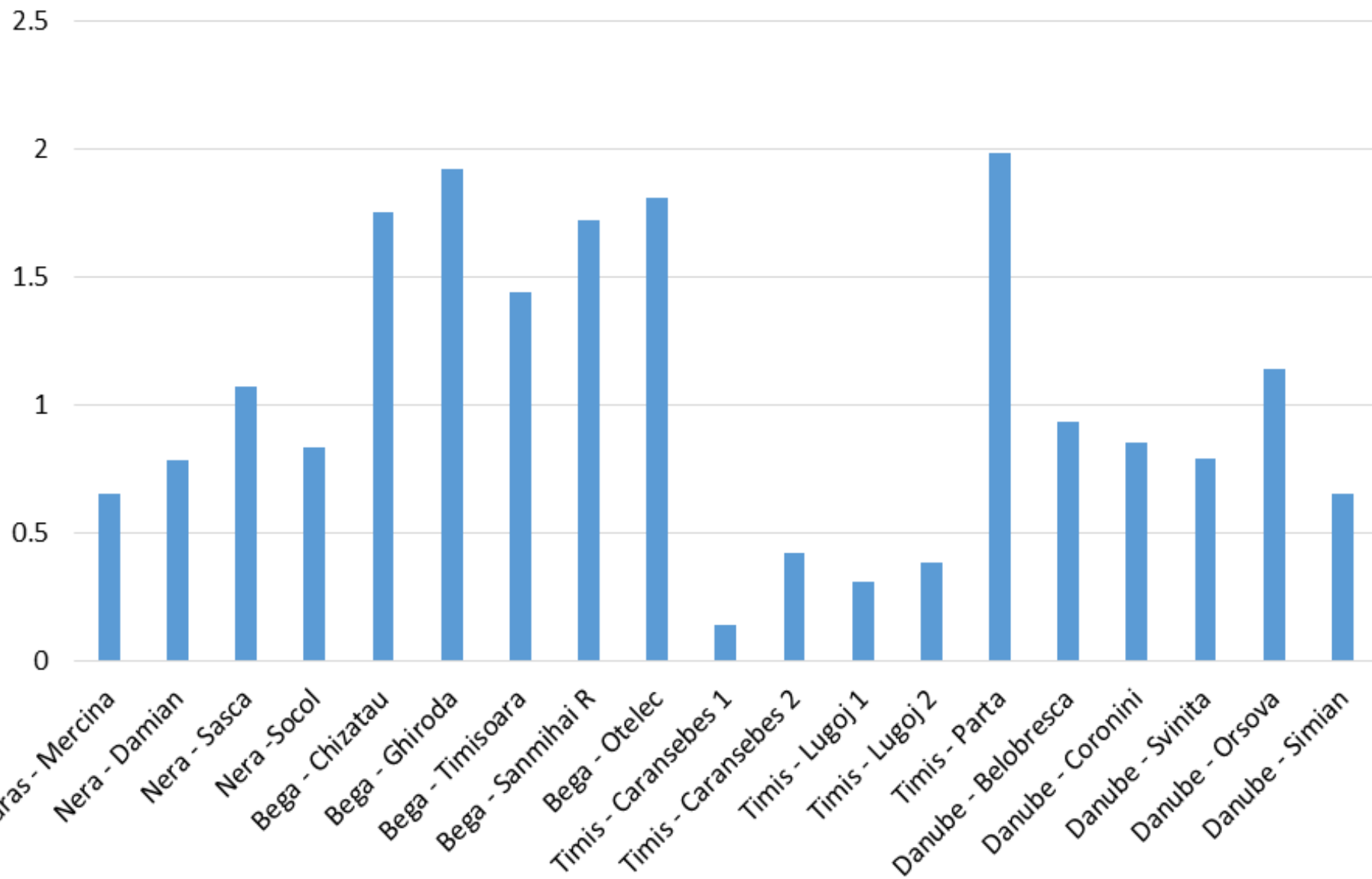
NO₂⁻N values for surface water measurement in Romanian Banat area

[mg/l]



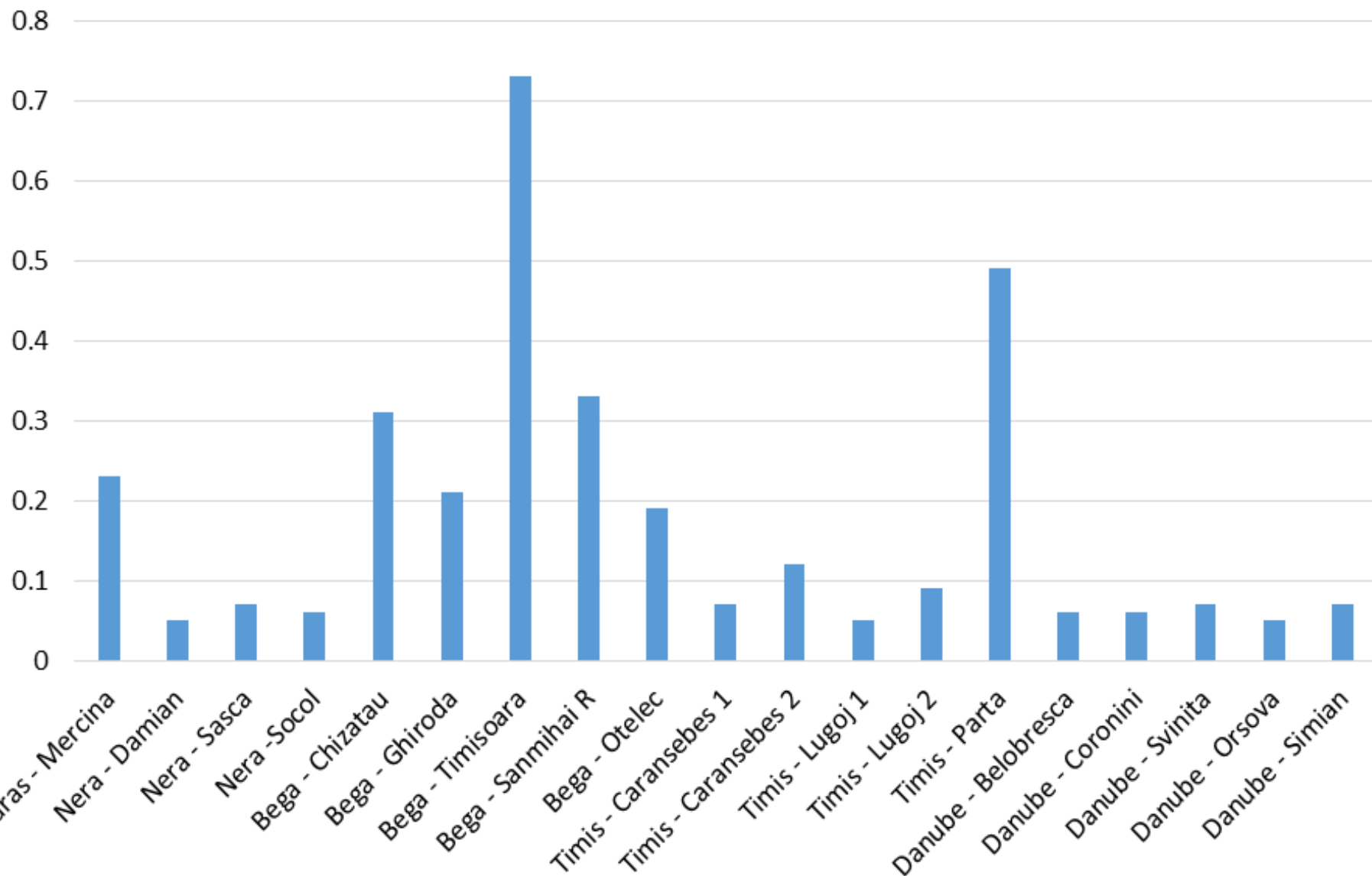
NO₃⁻N values for surface water measurement in Romanian Banat area

[mg/l]

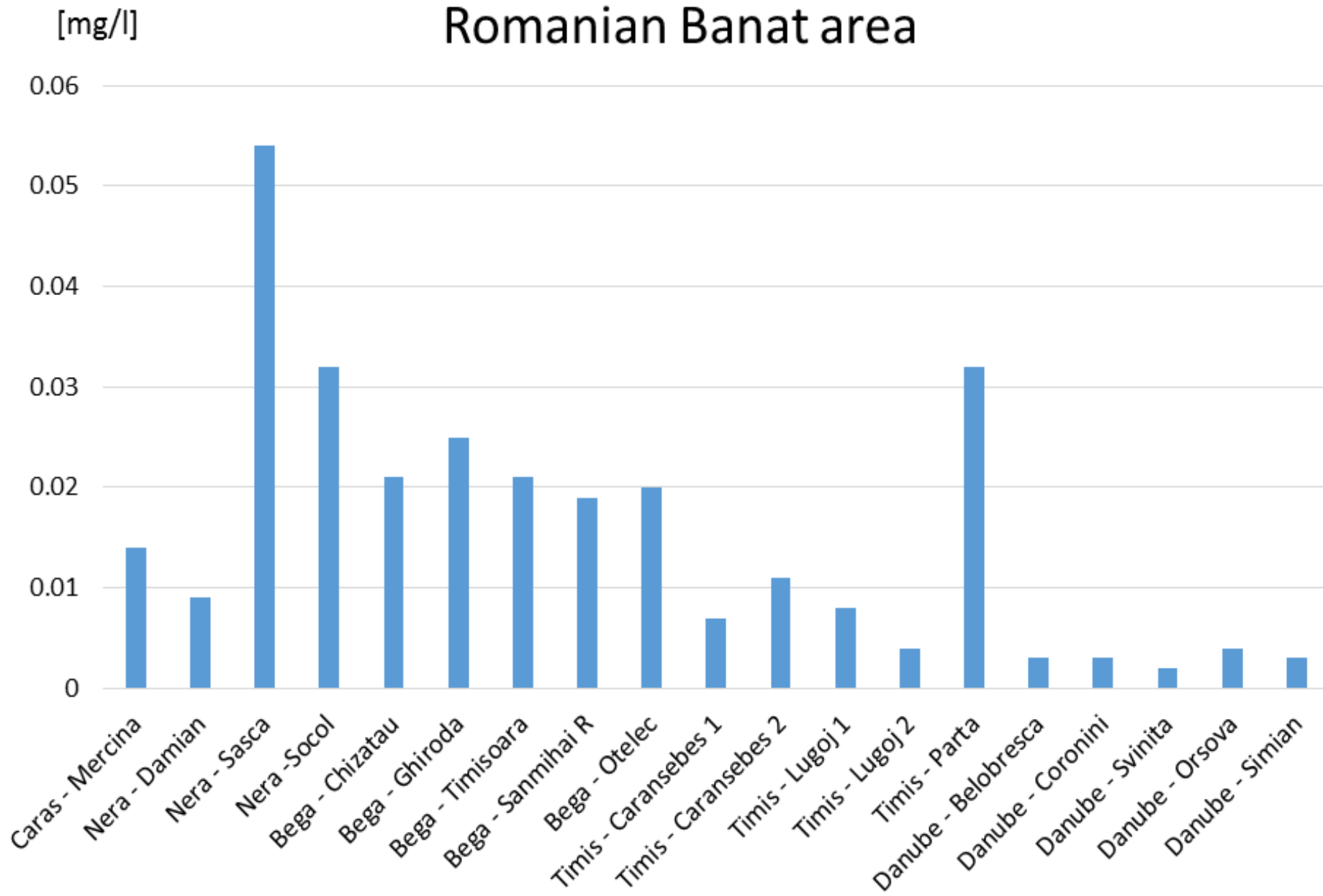


Phosphor values for surface water measurement in Romanian Banat area

[mg/l]

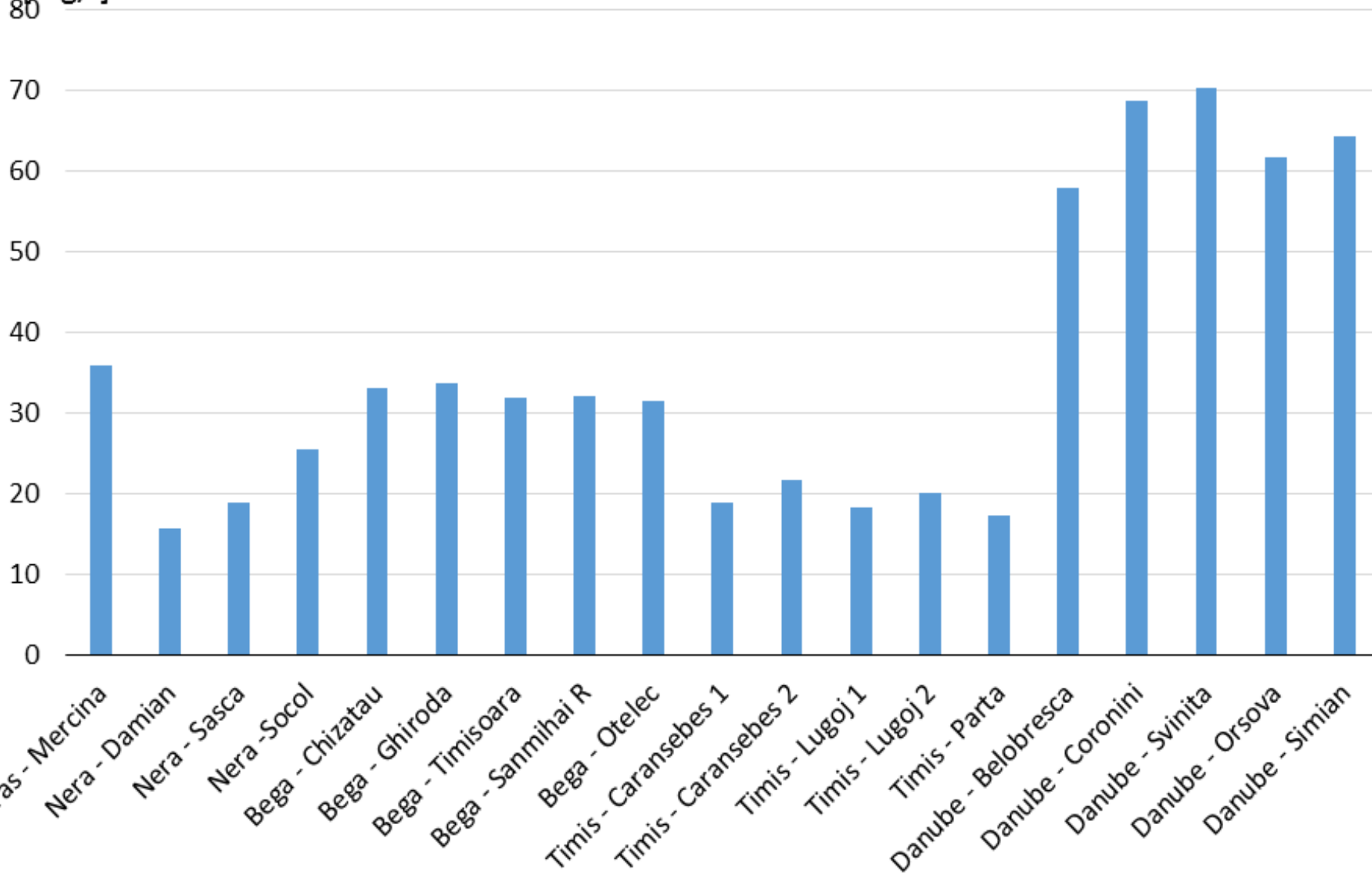


Fe values for surface water measurement in Romanian Banat area



Suspended matter concentrations for surface water measurement in Romanian Banat area

[mg/l]



Analyzing the data resulted from the surface water monitoring campaign of main Banat Rivers it becomes clearly that is difficult to draw a clear conclusion. However, one could observe that on Bega River the nitrates ($\text{NO}_3\text{-N}$) and phosphorus (P) are significantly higher than on other rivers. It is difficult to analyze this data especially due to untypical wetter conditions during May 2014, with unusual cold temperatures and frequent rain episodes.

Another issue was observed on Timis River, downstream to Parta village. The village and the Timis River near the village is close to the recently closed Timisoara's dump/waste field. Most probably the very high values recorded on Timis River (near Parta) are caused by infiltration from the dump field. The measurements in this location should be extended to other pollutants, especially heavy metals



More data are available to download from
envirobanat.ro/Database.php



ENVIROBANAT
Common History, Common Future