
CROATIA
SERBIA
Klokot
Vrela Sane
Vrelo Plive
Bosnia & Herzegovina
Vrelo Bosne
CROATIA
Vrelo Bune
MONTENEGRO
ADRIATIC SEA
– MIKAS
– NIKAS
Karstifiable rocks
(potential karst aquifer)
Continuous carbonate rocks
Discontinuous carbonate rocks
WOKAM database;
©BGR, IAH, KIT and UNESCO 2017
0
75
150
Km

Country (NIKAS)	NIKAS springs	Coordinates / Nearby City	Spring discharge (Q in l/s,min/av/max) / tapped or not	Criteria* order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic	Data collected by
Bosnia & Herzegovina 	1. **Klokot**	N 44.8244 E 15.8025 Z= 220 m asl Bihać, Federation of B&H	2310 /19600 / - Tapped for municipal water supply	***E, Ec, S, A, H*** *The Klokot is a karst spring issuing from Cretaceous limestone at the foot of the Plješevica mountain massif. This is one of the largest springs in inner section of the Dinaric karst and drain transboundary aquifer, with majority catchment in Croatia (confirmed by tracing tests). The spring originates not far from Bihać, flows through the settlement of Klokot, and—after a course of 4.5 km—empties into the Una River. In the lowest part of the catchment there is the former military Željava airfield, and some contamination of the springs happened during civil war in ex-Yugoslavia. The water is currently utilized for the water supply of the Bihać Municipality (average abstraction 225 L/s).*	Boban Jolović, *Nenad Toholj, Zoran Stevanović*
	2. **Vrela Sane**	N 44.3167 E 16.8363 Z=420 m asl Mrkonjić grad, Republic of Srpska	1000 / - / - Not tapped, there is a plan for its energetic utilization	***Ec, E, S, A*** *Sana karst springs consists of the three outlets in the Inner Dinaric karst aquifer system. These strong springs are located in the karst plateau near the villages of Donja Pecka, municipality of Mrkonjić Grad. After approximately 1.5 km, these three springs merge into one stream. Sana in its upper course represents an extremely important tourist potential. There is a potential for drinking water supply and electricity production in addition to ecological service for groundwater and surface water dependant ecosystem. The name of the river comes from the Latin word "Aqua Sanus", meaning "healthy water".*	Boban Jolović, *Nenad Toholj, Zoran Stevanović*
	3. **Vrela Plive**	N 44.2400 E 17.0147 Šipovo, Republic of Srpska	8000/22000/35000 Not tapped	***Ec, A, E, S*** *Pliva River springs are located in the village of Pljeva, 15 km from Šipovo. They drain part of the Inner Dinaric karst aquifer. There is an assumption that most of the water of this very rich karst aquifer originates from large Glamočko karst polje. The two springs, 300 meters from each other, appear at the foot of Mount Vitorog. There is a potential for drinking water supply and electricity production in addition to ecological service for groundwater and surface water dependant ecosystem.*	Boban Jolović, *Nenad Toholj, Zoran Stevanović*

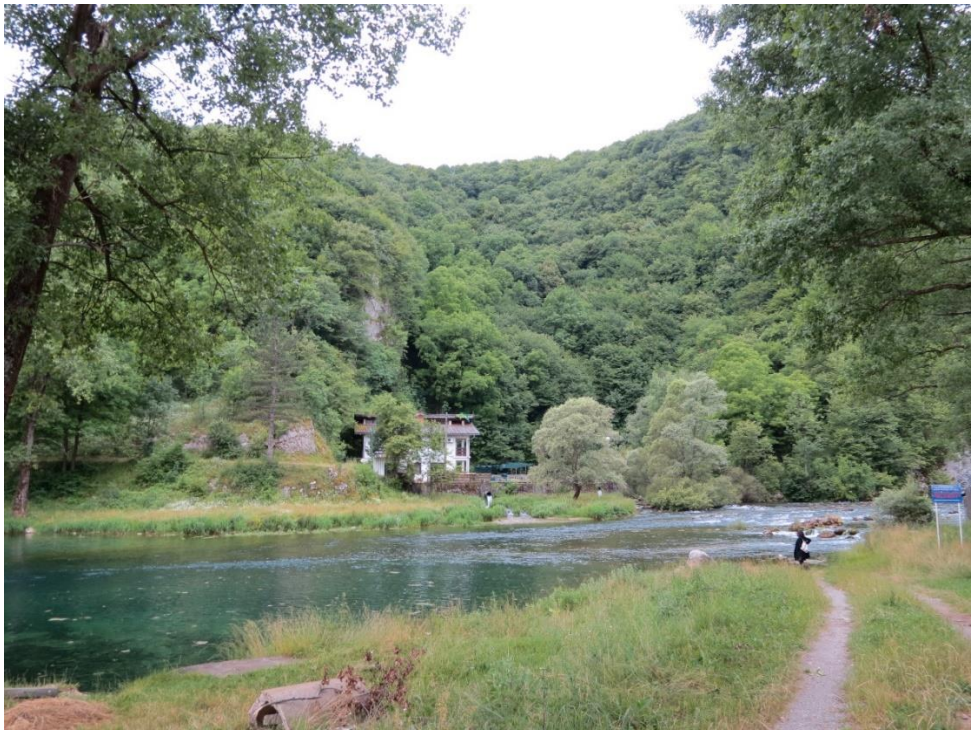
NIKAS – Klokot



Location map of NIKAS springs in Bosnia & Herzegovina – Klokot spring is close to border with Croatia and is issuing from transboundary aquifer with majority catchment in Croatia



Klokot spring (photo by Z. Stevanović)



Klokot River downstream of the intake (photo by Z. Stevanović)

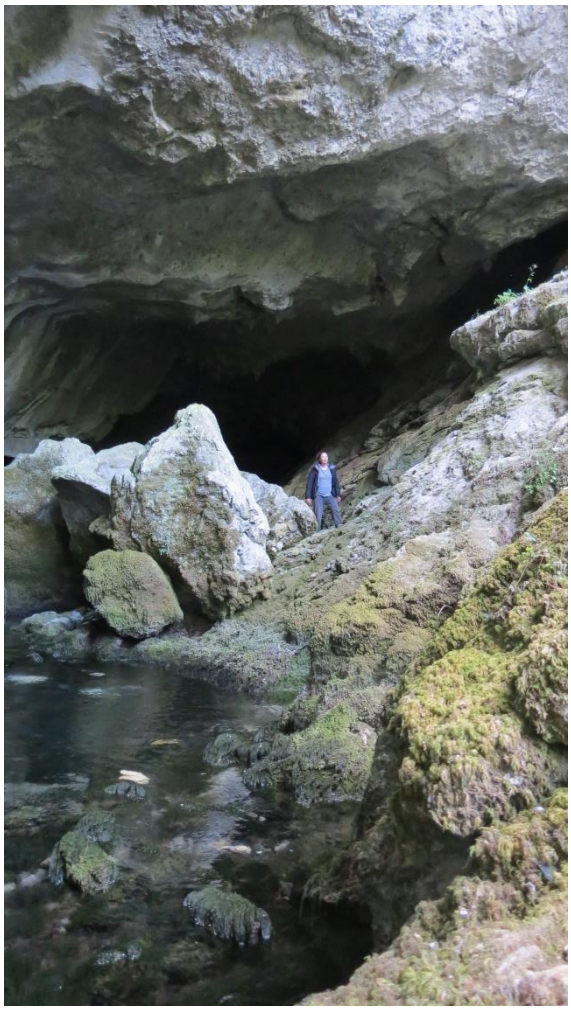
NIKAS – Vrela Sane



Left spring of Sana River



Right spring of Sana River

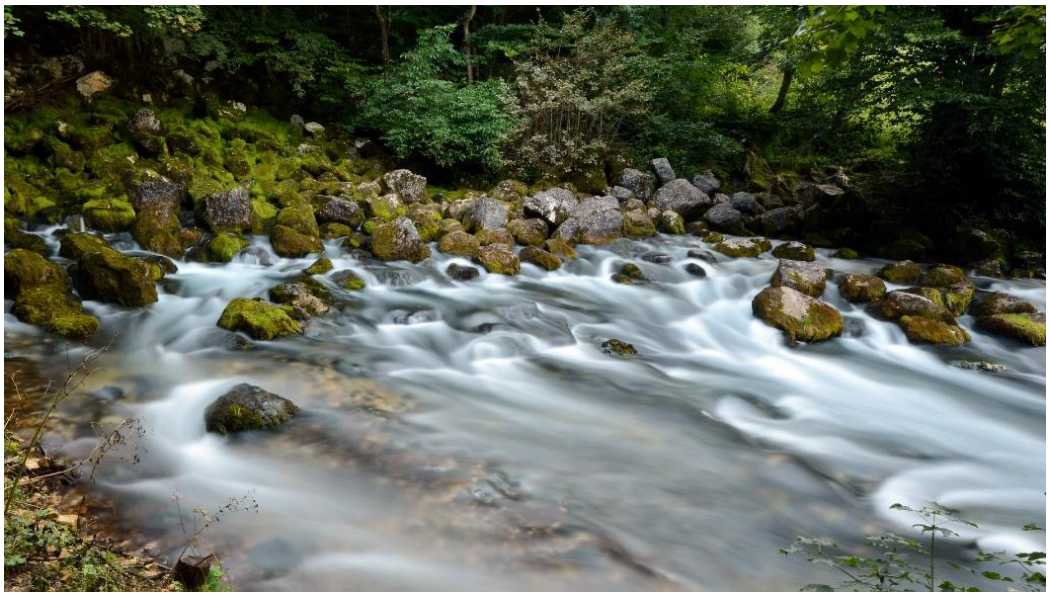


One of the Sana springs issuing from a large cave (photo Z. Stevanović)

NIKAS – Vrela Plive



Right spring of the Pliva River (photo by B. Jolović)



Left spring of the Pliva River (photo by B. Jolović)