

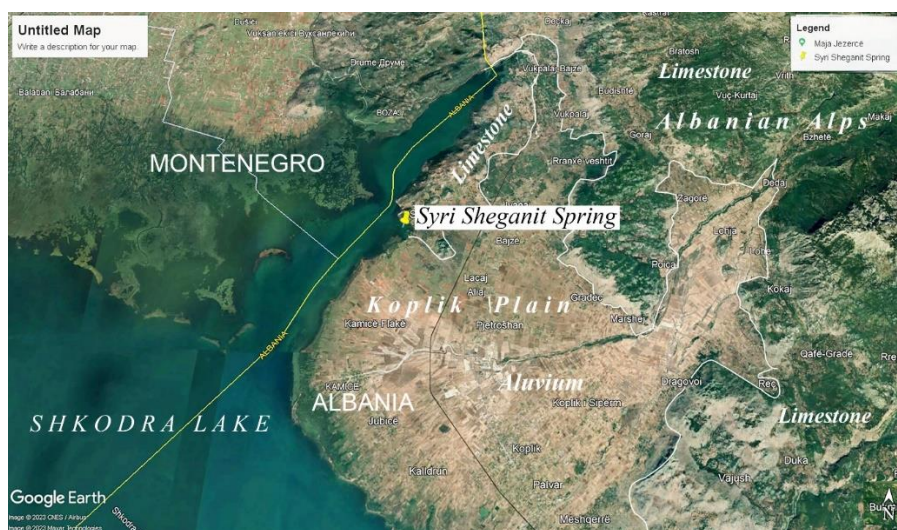


Country (NIKAS)	NIKAS springs	Coordinates / Nearby City	Spring discharge (Q in l/s,min/av/max) / tapped or not	Criteria* order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic	Data collected by
Albania 	1. Syri Sheganit	N 42°16'20.72" E 19°23'44.63" Z = 6 m asl Shkodra	250 / 800 / >30000 Not tapped for potable water supply, used for irrigation	A, Ec, S, E <i>Beautiful, typical vauculian spring, one of the largest in Albania. The spring issues from a siphon depth of more than 20 m, with a horizontal prolongation of more than 200 m, located on shore of the transboundary Shodra (Skadar) Lake. it is used for the irrigation of cultivated lands of Bajza karst plain. The Syri Sheganit Spring area is a distinct wetland along the northern coast of Shkodra Lake - the Ramsar site with rich flora and fauna. The spring is recognized as Natural monument.</i>	Romeo Eftimi
	2. Valbona (Vrella Currit Spring)	N 42° 23' 16,83" E 20° 04' 51,16" Z = 280 m asl Bajram Curri, Valbona River, Albanian Alps	200-300/ /2.300/6000 About 50 l/s are pumped for the water supply of the small city of Bajram Curri	E, A, S, Ec <i>One of the biggest springs of the Albanian North Alps. Vrella Currit Spring issues from the thick slope debris deposits, which lie above the southern periphery of carbonate rocks. The spring has important aesthetic values and is a reference point for the people visiting the Valbona Valley. The spring is an important contributor to the Valbona River, which is an important ecological regulator of the area.</i>	Romeo Eftimi
	3. Selita	N 41° 23' 02,45" E 20° 00' 36,87" Z = 887 m asl Selita village Tirana	215 / 520 /1200 The spring has been tapped since 1951, and the intake structure is a long drainage gallery. It is used for the water supply of Tirana, the capital of Albania (500,000 inhabitants)	E, S, H <i>Permanent gravity freshwater spring, which drains pure massive limestones of the Mali Me Gropa (MMG) karst massif (55 km²). At the top of the massif, at an elevation of 1500-1600 m asl, a karst plateau is developed, the surface of which is fully covered by swallow holes (dolines) of different sizes. Effective infiltration of the rainfall (1630 mm/av/y) is 78%. Selita Spring is the first tapped spring (since 1951) for the centralized water supply of Tirana City. Apart from the water supply of Tirana, it is also used for the production of electricity. It is the spring with the longest period of daily discharge measurements in Albania.</i>	Romeo Eftimi
	4. Tushemisht	N 40° 55' 37.46" E 20° 42' 45,79" Z = 696 m asl Pogradec, Ohrid Lake	1000/2500/4500 The spring has been captured since about 45 years ago, but the intake structure was reconstructed, enlarged, and tightly isolated from water infiltration from Ohrid Lake (2002-2004) The used water quantity for Pogradec varies	E, A, Ec, S <i>The spring is located at the shoreline of famous transboundary Ohrid Lake with many protected endemic species. The Tushemisht Spring is issuing from Triassic limestones aquifer of the Mali Thate-Galichica karst massif surrounding the lake. In Tushemisht karst spring, to increase the spring rate-flow, as well as for the protection from pollution by the eventual seepage of the lake water, an impermeable protection diaphragm is constructed. The wide area of this spring and the surrounding area have attracted people for its beauty. About 50</i>	Romeo Eftimi

			from 150 to 250 l/s depending on the season	years ago it was here recorded the movie, and in the centre of the Tushemisht Village was placed the monument to 'Uncle Sofka', who played the main role in the film.	
	5. Poçemi	N 40° 30' 03,90" E 19° 44' 38,45" Z = 41 m asl Ballsh, Malakastra Region	550 /1350 /2800 Tapped for Ballsh potable and industrial water supply	E, H, S <i>Poçemi gravity fresh water spring is the biggest spring of the Kremenara karst massif, with a surface area of about 35 km², consists mainly of Jurassic to Eocene limestones. This spring has relatively important economic value because it is located in a wide area without large springs; it is used for the water supply of the city of Ballsh (25000 inhabitants). After the determination of the intensive recharge of the spring by the Vjosa River, by use of isotopic method, the planned high dam to be constructed on this river was cancelled.</i>	Romeo Eftimi
	6. Bogova	N 40° 34' 05,28" E 20° 11' 09,47" Z= ~400 m asl Çorovoda Skrapar Region	250/1350/4000 The water is diverted to generate electricity, and after that, about 200 l/s is pumped and gravity-fed to the cities of Poliçan, Berat, and Kuçova for water supply	E, S, Ec, A <i>Bogova is permanent, gravity fresh water spring. It drains the Tomorri Karst Massif, a karst plateau covering ~3-4 km², with concentrations of karren, karren fields, dolines, and uvalas. In addition to, there are 20 explored caves, including some vertical shafts ranging from ~120 m to 209 m in depth. The intense local quarrying contributes to pollution in Bogova Spring; occasionally, the spring water becomes turbid. Supported by the well-developed conduit network of the karst aquifer, the turbidity disperses rapidly over large areas and affects the spring. During such episodes water supply stops.</i>	Romeo Eftimi
	7. Tragjasi	N 40° 19' 26,88" E 19° 30' 36,11" Z = 7 m asl	700/1500/3400 Tapped, c. 20 l/s used for water supply	E, S, Ec, A <i>Permanent, gravity fresh water spring with a surface area of about 40 km². It is used for the water supply of Tragjasi Village, as a recreation object, for raising fish, and for irrigation. The future is planned for use in the water supply of the tourist centers in Albania's south-coastal area. The protection of this spring is very problematic because the village of Tragjasi and many tourist facilities are located upstream of it.</i>	Romeo Eftimi
	8. Syri Zi	N 40° 18' 20,70" E 20° 10' 59,10" Z = 180 m asl Kelcyra, Permet Region	1800/3500 /~8000 Not tapped	A, S <i>Permanent, ascending- Vauclusian type spring issues from Cretaceous and Paleocene-Eocene limestones. The spring's siphon was investigated to a depth of 20 m. Spring is located in the Kelcyra Canyon of Vjosa River. It has beautiful orifice of diameter about 4 m. It is the biggest spring of the very large Trebeshina-Dhembel-Nemerçka karst massif of about 270 km², inside the Albanian territory, and an unknown surface in Greece.</i>	Romeo Eftimi

	9. Dumre	N 40° 52' 16,65" E 19° 50' 54 ,81" Z = 28 m asl Belsh	100/ - /300 Not tapped	A, S, Ec <i>Springs issue from breccia deposits, but is linked to evaporites - Permian-Triassic gypsum. Linnear, permanent gravity springs Are located in the southernmost area of the Dumre gypsum platform along the Thana artificial lake. The single springs discharge about 1 to 4-5 l/s, but the main spring line is about 200-250 m long and has a total discharge of about 100 to more than 300 l/s. Type of water SO₄-Ca-Mg.</i>	Romeo Eftimi
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NIKAS - Syri Sheganit



Google Earth map with pinned Syri Sheganit Spring



Syri Sheganit Spring, flows to Shkodra Lake (Photo R. Eftimi)

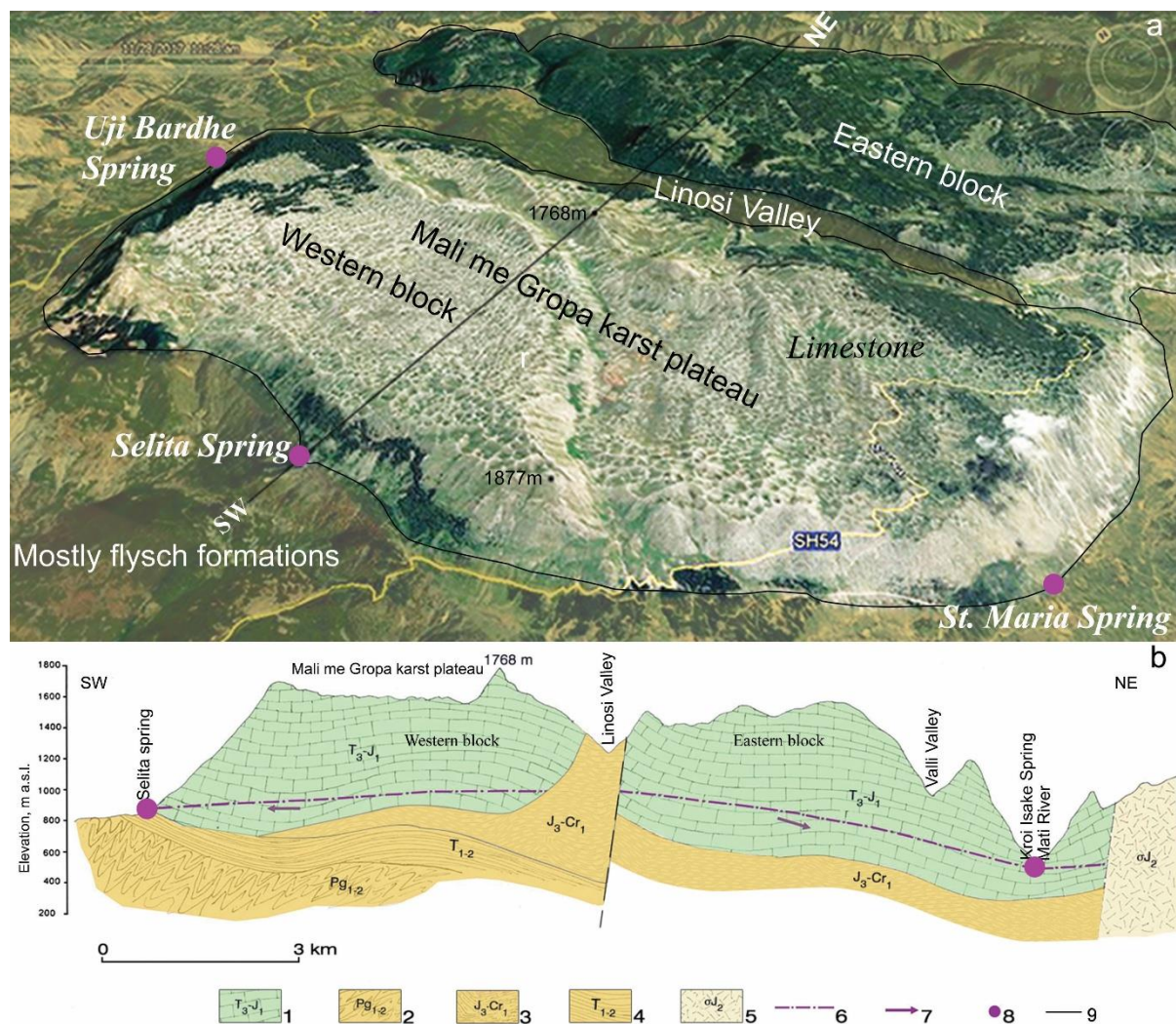


Cross-section A-A, through Blue Eye Spring (after Eftimi R. 2008)

NIKAS – Valbona (Vrella Currit Spring)



Vrella Currit pumping station transmitting the water to the city of Bajram Curri.



(a) Google Earth of Mali me Gropa karst massif and some geological-hydrogeological elements; (b) Hydrogeological cross-section SW-NE of the MMG: 1 - High permeable karst aquifer, massive limestone; Low permeable rocks: 2 – Siltstone, shale (Krasta flysch); 3 - Ophiolitic conglomerate-breccias; 4 - Effusive-sedimentary rocks; 5 - Intrusive ultrabasic rocks; 6 – Groundwater level (supposed); 7 – Direction of groundwater flow; 8 – Big karst Springs, (modified from Eftimi et al., 2024).

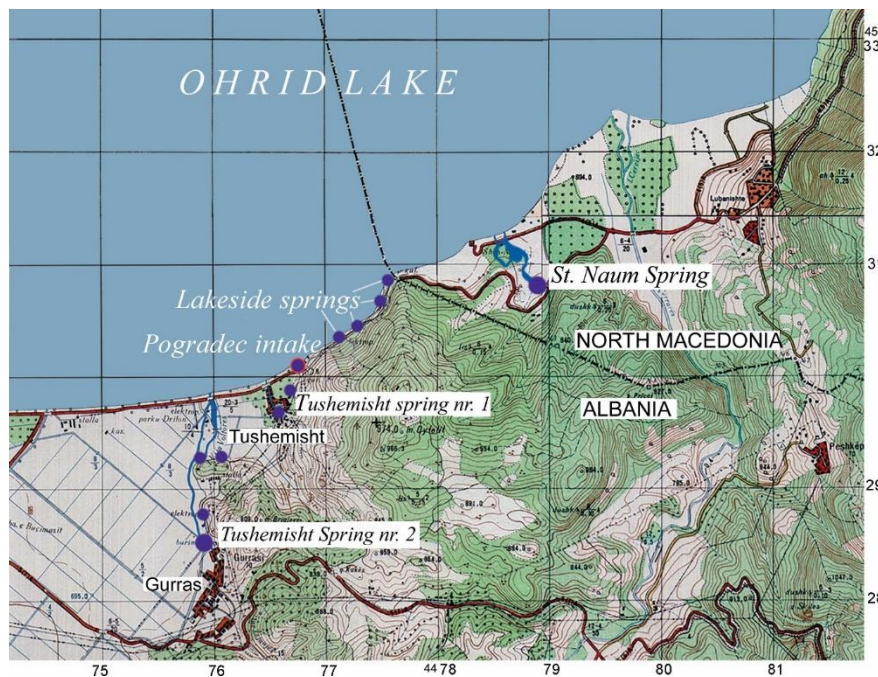


Daily discharges and precipitations 1980-1981 (Eftimi et al., 2019).

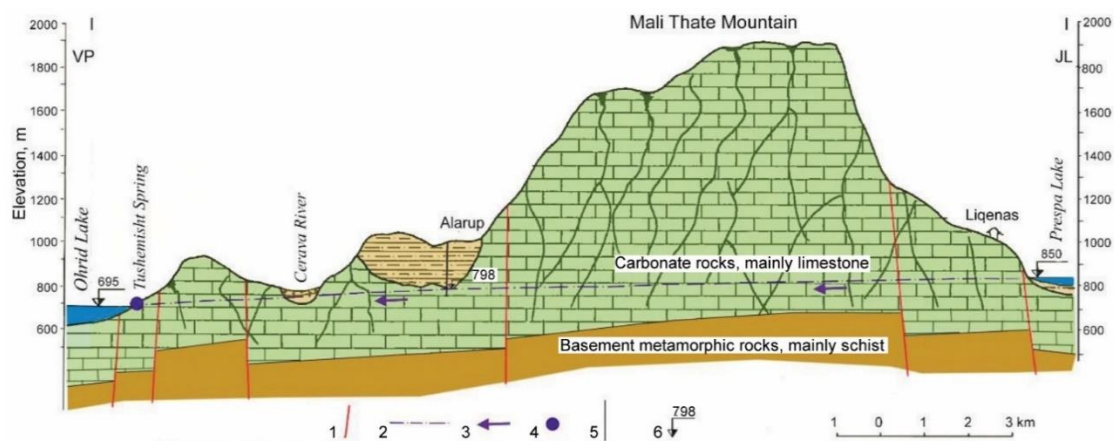


Karst phenomena of the plateaus of the Mali Me Gropa karst massif: A general view of the western plateau. B Cultivated doline in Central Plateau; C Uvala, length about 300 m, in Central Plateau (photos R. Eftimi).

NIKAS – Tushemisht



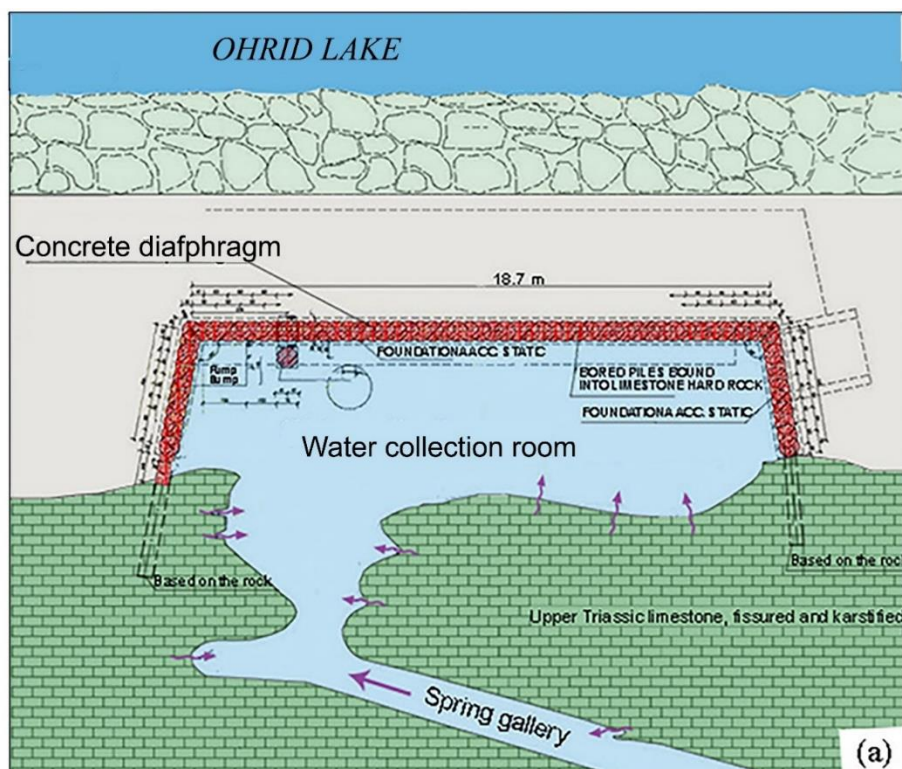
Location Map of Tushemisht group of springs, in Albania, and St Naum Spring in North Macedonia



Hydrogeological cross-section between lakes Ohrid and Prespa. Legend: 1 tectonic fault; 2 groundwater level; 3 groundwater flow direction; 4 karts spring; 5 boreholes, 6. Groundwater level (m a.s.l.)

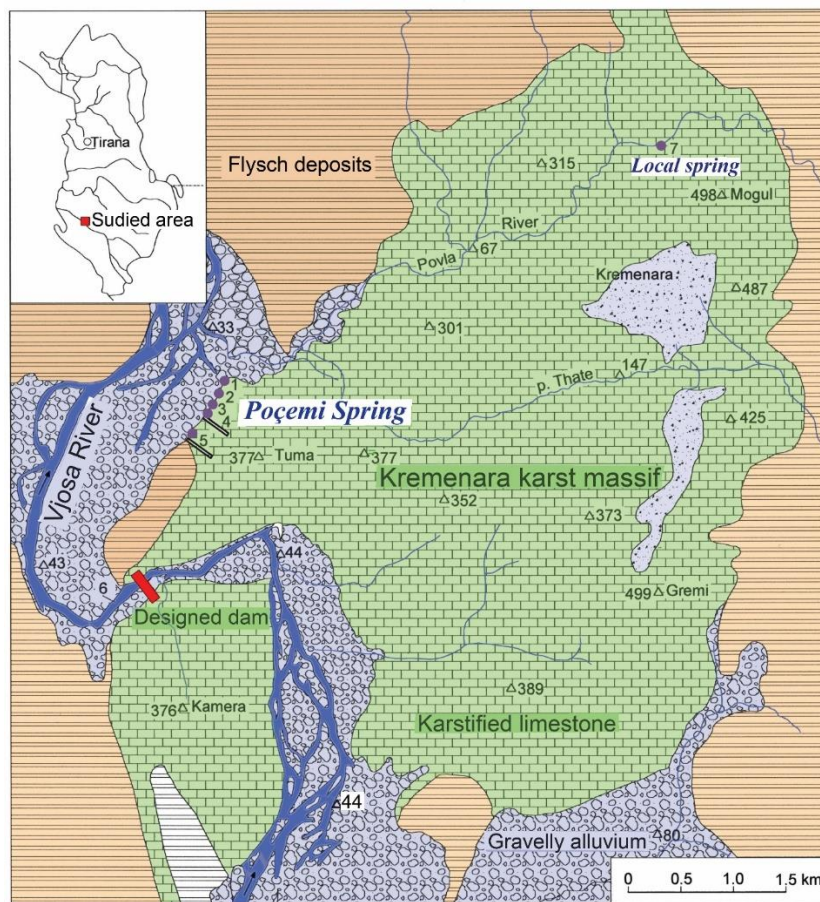


Tushemisht spring area



Scheme of water intake structure of the Tushemisht spring

NIKAS – Poçemi



Hydrogeological Map of the Kremenara Karst Massif (after Eftimi and Dhame 2006)

NIKAS – Bogova

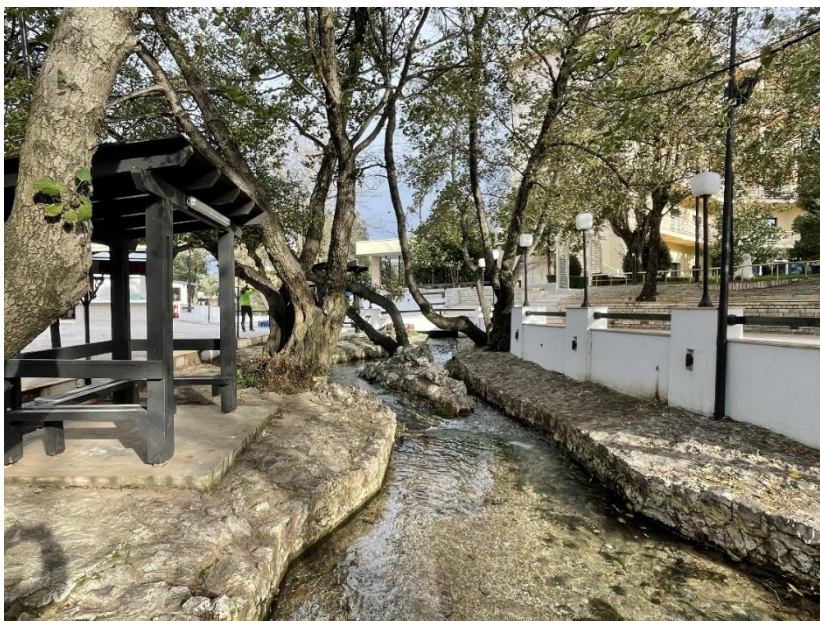


Large quarries developed in the recharge area of Bogova Spring. (Photo R. Eftimi)



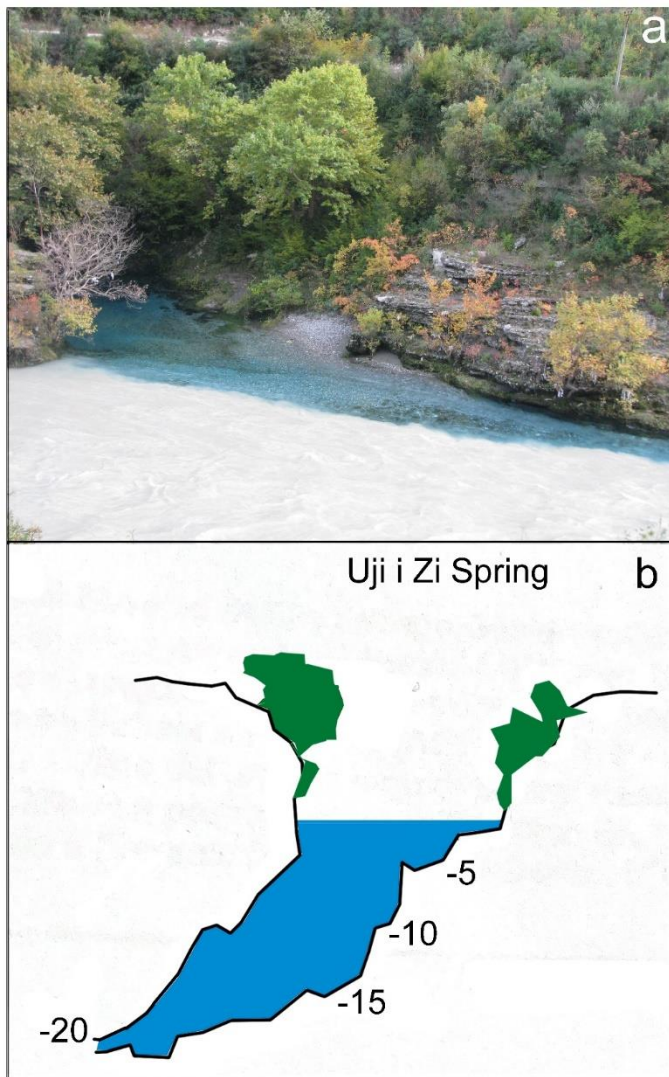
Bogova Spring flow outside the intake structure during the rainy season

NIKAS – Tragjasi



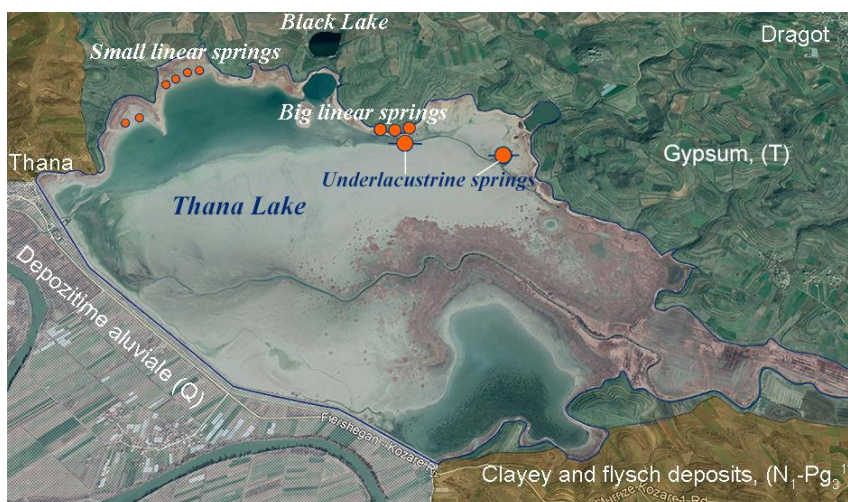
*Tragjasi Spring, main issue
(photo R. Eftimi).*

NIKAS – Syri Zi

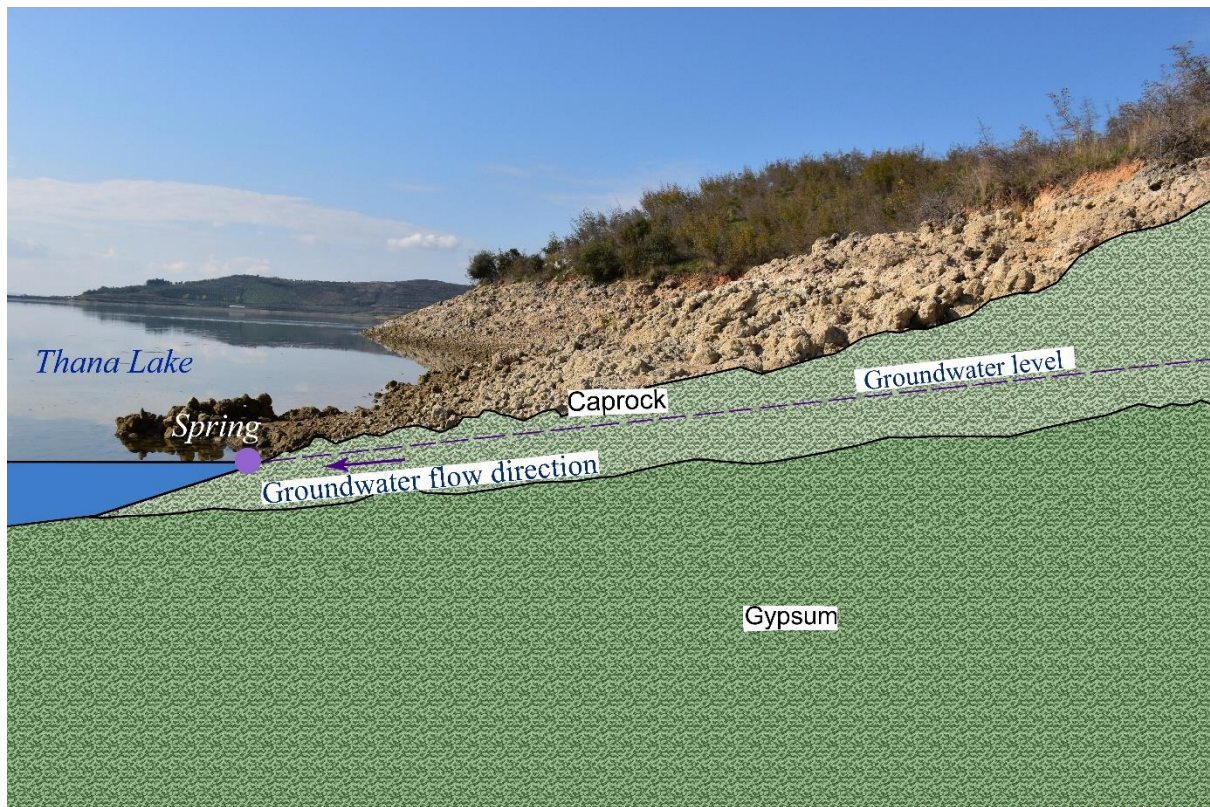


Syri Zi spring on left bank of Vjosa River

NIKAS – Dumre linear springs



Google Map of the southern area of the Dumre Gypsum plateau and the location of Dumre springs



Hydrogeological cross-section in the Dumre gypsum plateau (after R. Eftimi)