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Countryside and Water—Fshat i Ujit

Water Commons: Weaving Together the Water Fabric

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Southern Albania is a karstic mountainous area abundant in water resources, featured in form of springs, creeks, rivers, aquifers, and heavy rainfall. Two long rivers wind through south western Albania: the Vjosa River—the last wild, untouched river of Europe, and the Drino River—endlessly interrupted by agriculture and industry that feeds off its supply. Today, the rivers and their surrounding ecosystems are threatened by the consequences of climate crisis such as aridity, flooding, and pollution, as well as by the intensified uses of the river courses related to hydro energy, tourism, and growing urban areas.

Water connects people, mountains, fields, and infrastructure as they are all part of one metabolism. At the same time it reveals interdependencies between different actors, which could provoke conflicts but also encourage collaboration.



Artificial irrigation of agricultural fields in Socialist Albania. Source: *40 Years of Socialist Albania*, Tirana: 8 Nëntori, 1984.



Collapsed bridge between in Dropull near Gjirokastër after heavy rainfalls in December 2017. Source: Periskopi [https://www.periskopi.com/permbytjet-ne-shqiperi-shemben-pese-ura-ne-gjirokaster/].



Hydropower construction site Kalivaç. Photographer: Nick St. Oegger [http://www.stoeggerphotography.com/].



Historical Kordhocë bridge crossing the dried out Drino river near Lazarat in Septemer 2019. Photographer: Gyler Mydyti.



Goats drinking on a so-called Lera, a high mountain water reservoir built for livestock. Photographer: Nick St.Oegger.

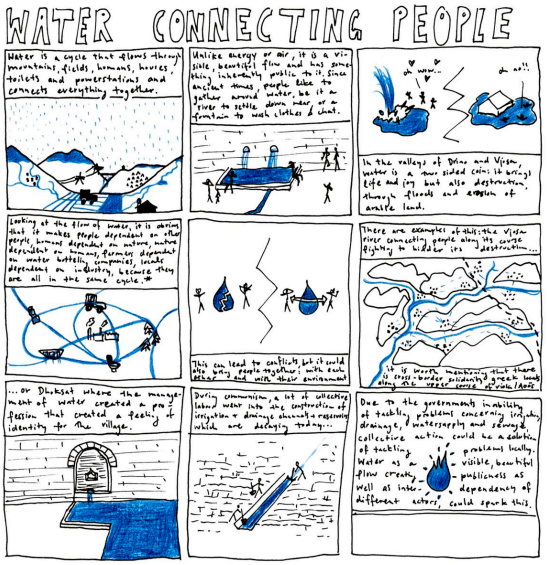


Thermal baths of Benje, 2019. Photograph: Gyler Mydyti.



Water fountain in Dhoksat.
Photographer: Gyler Mydyti.

The People of Southern Albania have always had an intimate relationship with water. For them, water symbolises life and beauty, resilience, transformation, grace, and fluidity, as well as fear and destruction, as animated in ancient legends in which rivers become personified actors, such as “Mother Vjosë.”

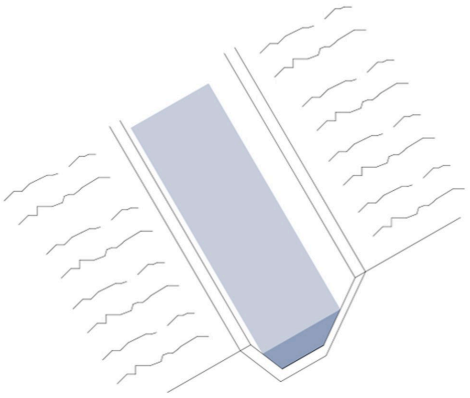


How water connects the people of Southern Albania.

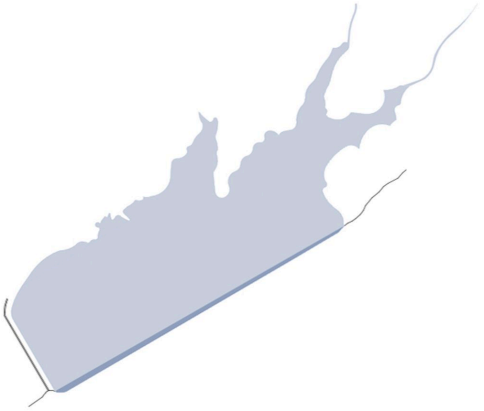


A legend about the Vjosë River.

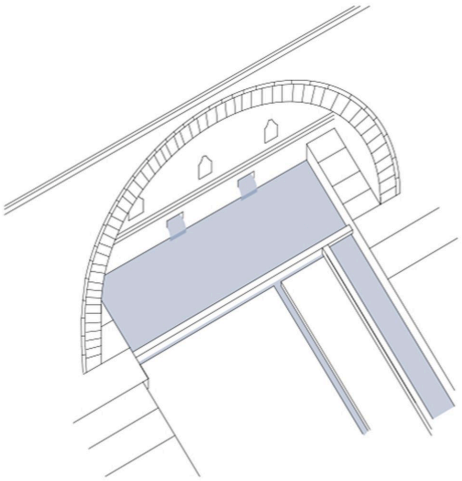
Throughout the area of the Gjirokastër region there are a variety of water infrastructures: from old Ottoman bridges, wells, water distribution systems and houses for storing water, to socialist irrigation and drainage works. However, the region is often confronted with floods and erosion of arable lands. Furthermore, in many small mountain villages water distribution systems have not been maintained or upgraded since the early nineties. There, the water infrastructures are in poor condition: dry, polluted and sometimes even completely broken.



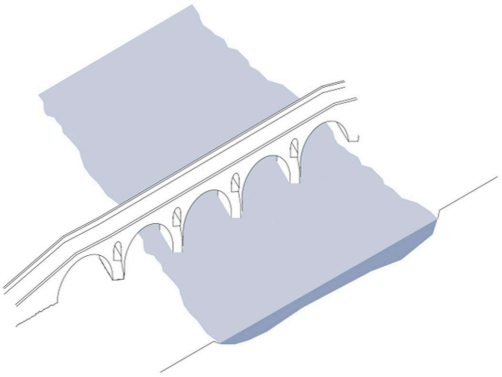
Irrigation channel.



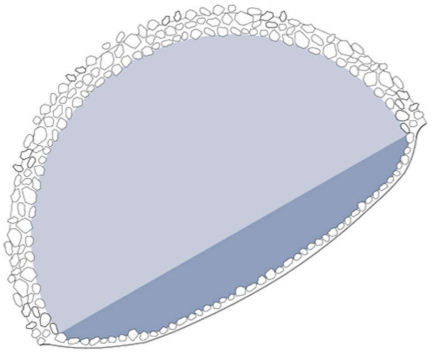
Storage reservoir.



Water fountain.



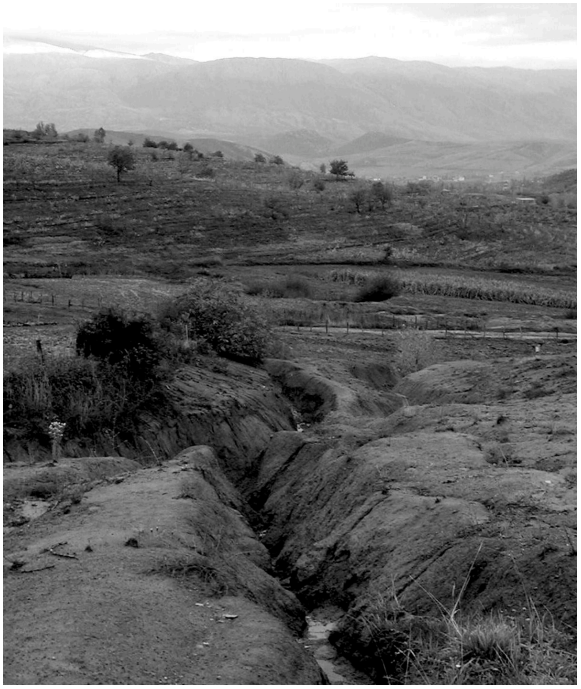
Bridge.



Lera, waterhole for livestock.



Water tank.



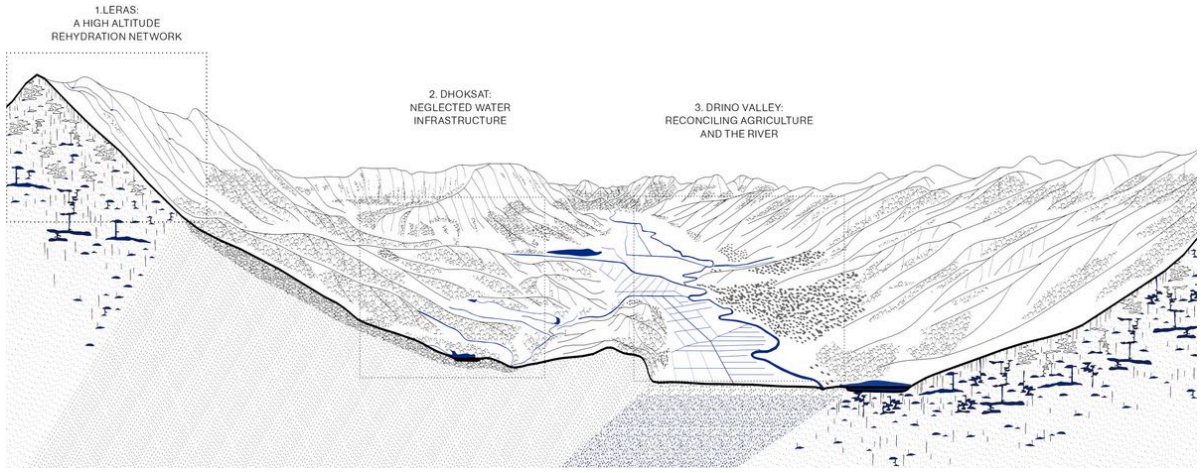
Gully erosion due to deforestation near the village of Kodra, South-Eastern Albania. Photographer: Johannes Stahl. Source: Stahl, Johannes. *Rent from the Land: A Political Ecology of Postsocialist Rural Transformation*. London: Anthem Press, 2012, p. 33.



Dysfunctional water channel in Dhoksat. Photographer: Gyler Mydyti.

Water Commons

We believe that collective action is needed to overcome problems concerning irrigation, drainage, water supply and sewage system in the region. We believe that water has the power to create public spaces that attract people and to create connections and interdependencies between different stakeholders, which would further drive the creation of water communities in the region.



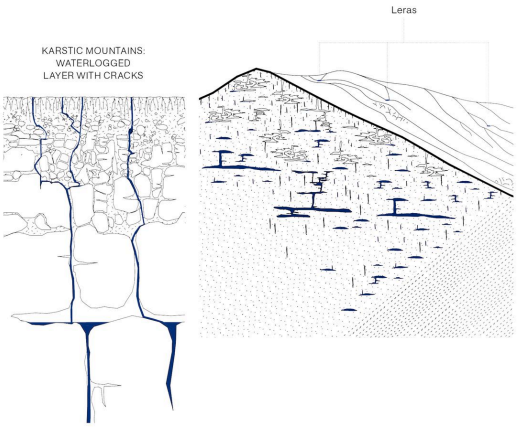
The three projects: *Leras*, Dhoksat, and Drino Valley.

LERAS: A HIGH ALTITUDE REHYDRATION NETWORK

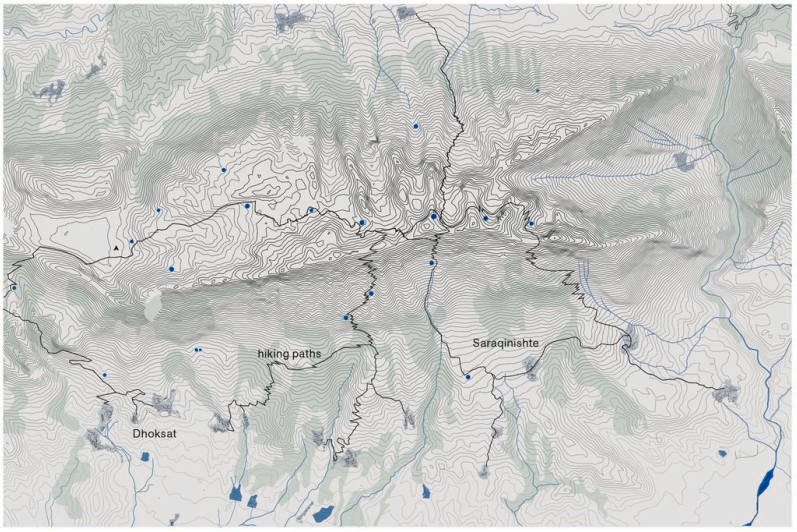
The summits of the mountains are the recharge areas of underground water supplies which result in springs at lower heights. These areas of 900–1500 meters above sea level are mainly used by shepherds and their livestock. As the rainwater quickly penetrates the porous karstic rocks of mountain tops, small water infrastructures named *leras* are built by shepherds to collect the runoff water to sustain the livelihood of the livestock who spend the summer season in the mountains. Despite the frequent use and ease of construction of *leras*, the cooperation among shepherds for building and maintaining these has nowadays prominently diminished. To revive this valuable building culture, we want to involve other actors in this process.

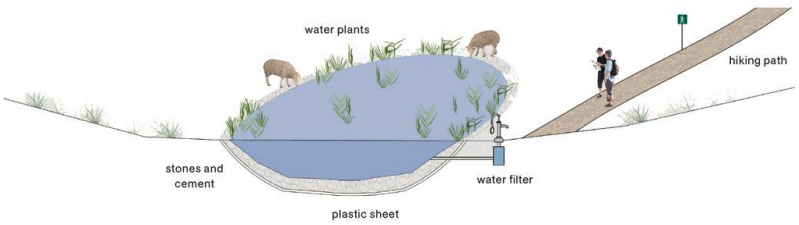


By extending the existing shepherds' paths and infrastructure, a network of recreational spaces and hiking routes along *leras* and mountainous villages will be formed.



Karstic mountains:
waterlogged layers with cracks.





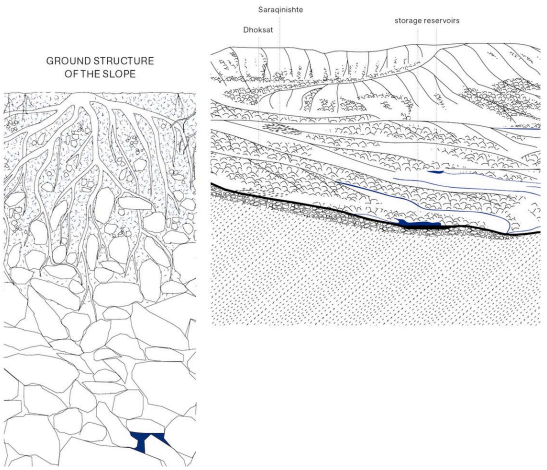
By adding a water filter system, the water of Leras will be drinkable for both livestock and humans.

DHOKSAT: NEGLECTED WATER INFRASTRUCTURE

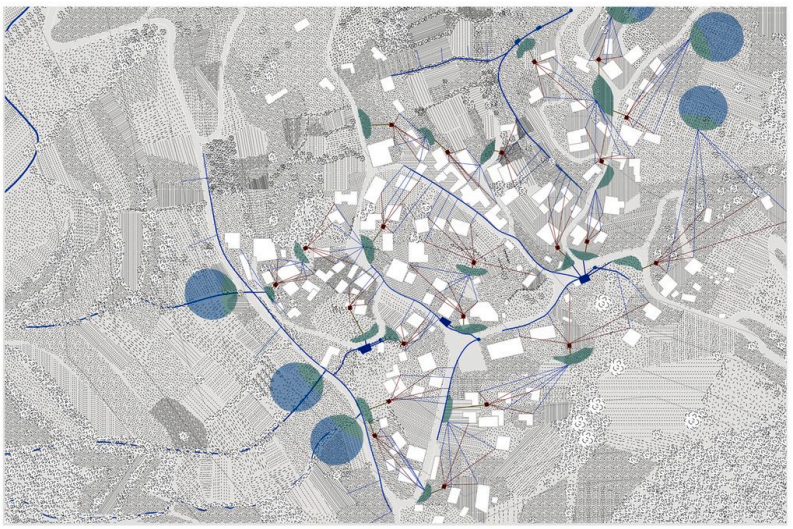
The village of Dhoksat—famous for its stone masonry and water-engineering works—has a functional existing water distribution system for watering gardens and fields in the village. However, its lack of maintenance has lead to malfunctioning and on certain days water is not distributed properly. We envision an adapted water recycling and distribution system that restores and builds up on the existing infrastructure.

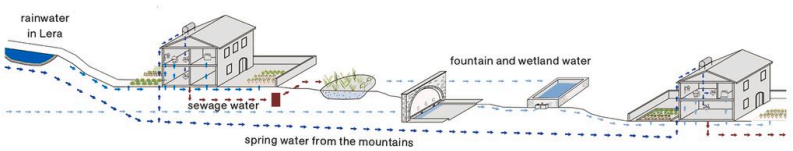


A water treatment system, namely the new cleaning wetlands system, will contribute to public spaces the same way as fountains which will filter rainwater. The black-water will also be cleaned by this system to ensure the health of the waterways and the community.



Ground structure of the slope.

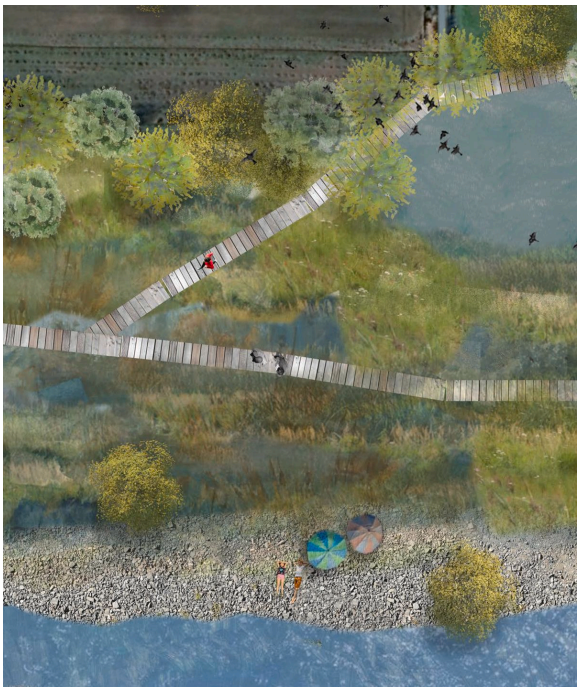




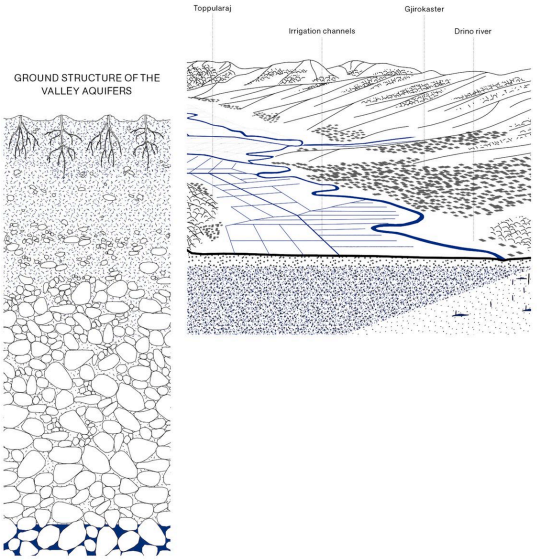
The drinking water will be directly connected to the springs up in the mountains.

DRINO VALLEY: RECONCILING AGRICULTURE AND THE RIVER

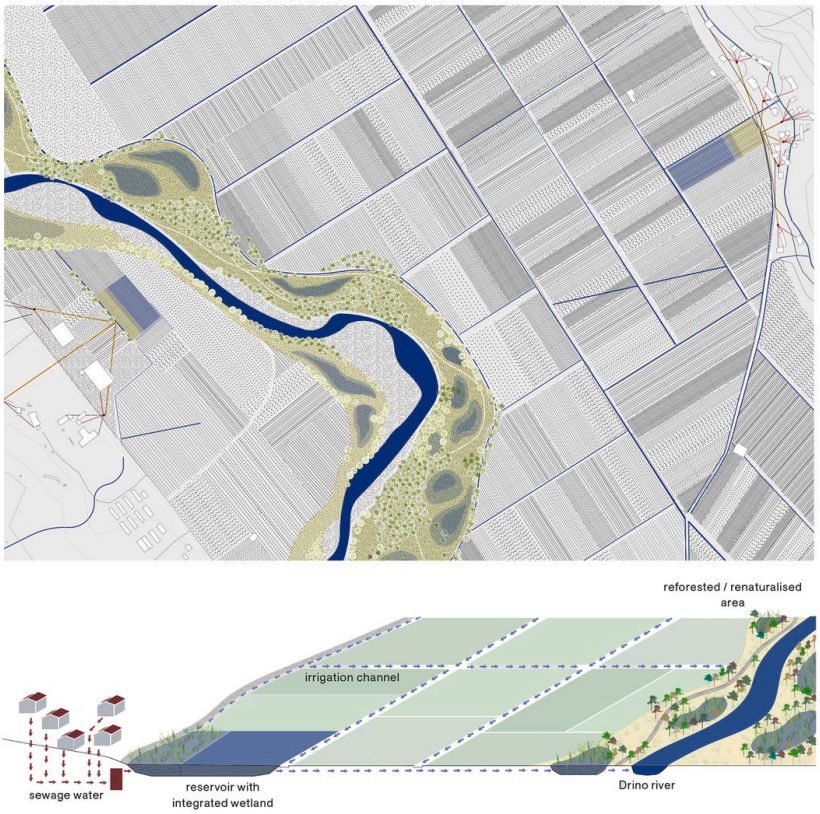
The Drino river almost dries out in summer, whereas frequently floods during winter, damage the surrounding villages and agricultural lands. Black water from households and industry, as well as chemicals and fertilisers used for agriculture pollute the river and affect the valley aquifers. Much of the native flora has been lost from the river banks. For so long, the detrimental effects of agriculture and pollutants have left the river largely unused by the public. Through this project, we hope to reinvigorate life along the riverbanks of the Drino.



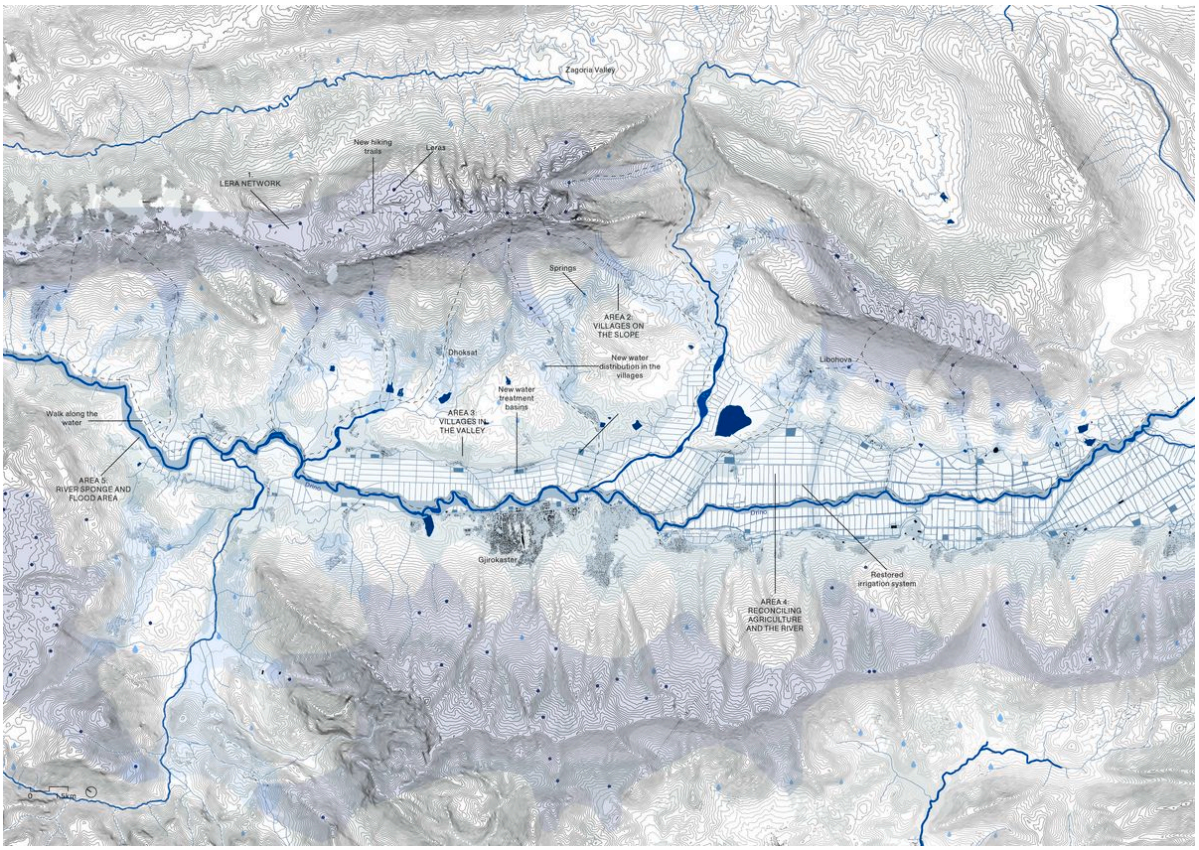
By renaturing the space along the river locals can enjoy and care for the waterway.



Ground structure of the valley aquifers.



By restoring and ensuring maintenance of irrigation system in the surrounding agricultural lands, and by providing policies and education to raise awareness on consequences of use of chemicals, the river's ecosystem can be rehabilitated.



These interventions lie at different altitudes, allowing us to follow water from the mountain summit down to the valley plain. Through this interconnected pathway of water, we discovered notably different hydrogeological conditions, communities, needs and urgencies. These sites enabled us to piece together the fragments of our broad research and make conclusions about the nature of water that are somehow generic but drawn from highly specific analysis.

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SOURCES

- Balkan Rivers www.balkanrivers.net
- Bego, Ferdinand, and Hysaj Etleva. 2014. "Influence of the artificial water reservoirs in the feeding strategy and distribution of the otter (Lutra lutra) along the Drinos river valley, Albania."
- 2009. Better water and sanitation services through a consumer rights based contract in Albania. Case Study, Sustainable Development Goals Fund.
- (BOKU), University of Natural Resources and Applied Life Sciences Vienna. 2019. Measuring of sediment transport and morphodynamics at the Vjosa river/Albania . Vienna: Save the Blue Heart of Europe.
- Die Volks Wirtschaft https://dievolkswirtschaft.ch/de/2019/05/lanz-06 2019/
- Eftimi, Romeo. 2010. "Hydrogeological characteristics of Albania." Aqua Mundi 80-92.
- European Construction Advisory Services (ECAS) ecas.ec.europa.eu/
- Good Albania www.goodalbania.com/
- IAWD and WB. 2015. Water and Wastewater Services in the Danube Region. World Bank Group. 2019. Report on the Performance on the Water Supply and Sewerage Utilities. Tirana : Water Regulatory Authority of Albania (WRA).
- INSTAT http://www.instat.gov.al/
- Irrigation Management Principles and Practices. CAB International.Brugmans, George, Marieke Francke, and Freek Persyn. 2014. Metabolism of Albania. Rotterdam: iabr/UP.
- Mukaj, Arben. 2009. Water Resources Management in Albania . World Bank Workshop on Climate Risks and Vulnerabilities, Tirana: Energy Sector Management Assistance Program. Association. 53–54.
- Network, Zoi Environment. 2018. Mining and environment in the Western Balkans. Vienna: UNEP. 2018. Eco-Masterplan fro Balkan Rivers. Drawing a line in the sand. Vienna: Riverwatch, EuroNatur.
- Ooze Design Practice http://ooze.eu.com
- 3rdInternational Conference of Ecosystems (ICE2013). Tirana : Health and Environment Association. 53-54.
- Schiemer, Fritz, Sajmir Beqiraj, Wolfram Graf, and Aleko Miho. 2018. "The Vjosa in Albania – a riverine ecosystem of European significance." ActaZOOBot Austria 155/1.
- Schwarz, Ulrich. 2019. Hydropwer Pressure on European. The Story in Numbers. FLUVIUS, WWF, RiverWatch, EuroNatur, GEOTA.
- Sinani, Albina, and Jostina Dhimitri. 2015. "Effects of Irrigation and Drainage on Rural Landscapes of Gjirokastra Region in South of Albania." Agriculture and Agricultural Science Procedia, vol 4 175-185.
- Stahl, Johannes. 2010. Rent from the Land. A Political Ecology of Postsocialist Rural Transformation. Anthem Press.Burton, Martin. 2010.
- 2017. Strategjia e Ujitjes dhe Kullimit. Tirana: Ministria e Bujqësisë, Zhvillimit Rural dhe Administrimit të Ujërave.

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