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REGIONAL STRATEGY FOR SUSTAINABLE HYDROPOWER IN THE WESTERN BALKANS

Transboundary Issues

(Presentation of Background Report No. 4)

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Background and Rationale

- Known facts to be conceptualised in a framework for action that will possibly tackle Transboundary Issues (TI).
- Come closer to an answer on how to share water resources in the Region, focusing on the utilisation of hydropower potential blocked by a vicious cycle of action and counteraction.
- Learning lessons about what went wrong in order to assess situation, by analysing 9 typical and still open transboundary cases in the Region.
- Important considerations in realisation of reservoirs:
 - relate to environmental impacts assessed,
 - case of shared river basins requires decision-making at the political level, due to the fact that water management issues are closely related to sovereignty of the territories.

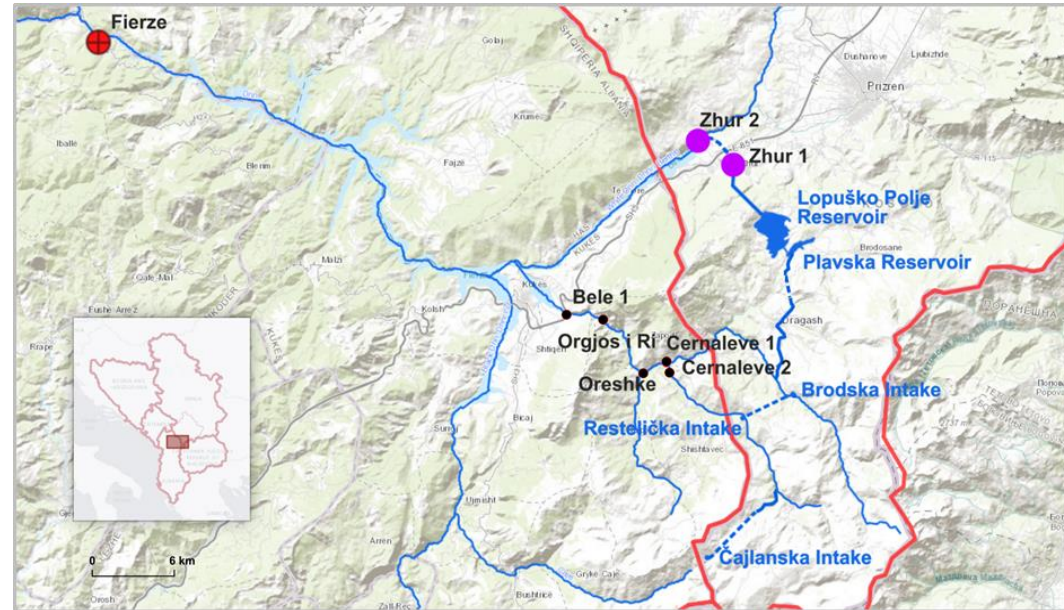


Content of Presentation

- Background of the Transboundary Issues (TI)
- State of the Art of TI
- Relevant international agreements
- Description of 3 Transboundary Cases (No. 2, 4 and 5) in the Region
- Sharing of water resources in the EU
- Conclusions and recommendations

Method and Approach

- Transboundary cases in the region researched via literature available, complemented by further insights obtained during visits to the representatives of governments, agencies, and investors.
- Best practices identified with practical approaches leading to useful recommendations.
- Research of the state of affairs in the international arena of water resources management.



Transboundary Case No. 1: Locational reference of the planned HPPs Zhur 1 and Zhur 2, the existing HPP Cascade Fierza, and several SHPPs upstream Luma and its tributaries

Significance of Transboundary Issues Analysis

- Starting idea: Resolving issues of general economic development and poverty.
- The outside conditions:
 - Electricity production is still not globalised, use of renewable resources even less so;
 - Good local source of renewable energy which pertains generally to riparians and not to country where it is utilised;
 - Hydropower potential is a rare and precious resource compared to no other resource in the Region, combined with suitable terrain for reservoir realisation;
 - Hydropower beneficial renewable characteristic on the environment to be employed with considerable economic effect.
- Water resources should not be wasted. Hydropower resources relate to:
 - Water storage (volume) capacity in reservoirs;
 - Means of regulating (peak) flow downstream to fight flood risk and produce peak energy;
 - Conditions for Realisation of the head (difference of upper and lower water levels),
 - means to adapt to Climate Change.

(14) River Basins in the WB6 Region



(9) Major and Exemplary Transboundary Cases Identified in WB6



1. Drini i Bardhe/White Drin/Beli Drim River System - HPP Zhur (KOS-ALB)
2. Trebišnjica Hydropower Scheme – HPP Dubrovnik 2 (CRO-BIH-MNE)
3. Vardar River System - HPP Lukovo Pole (ALB-MKD-GRE)
4. HPP Buk Bijela (BIH-MNE-SER)
5. Drina River Basin - HPP Koštanica (MNE-BIH-SER)
6. Čehotina River Basin - HPP Chain on the Čehotina River (MNE-BIH)
7. Drina River System - HPPs along Middle Drina River (SER-BIH)
8. Drini River System - HPP Skavica (ALB-MKD)
9. Vjosa River Basin - HPP Chain on Vjosa River (GRE-ALB)

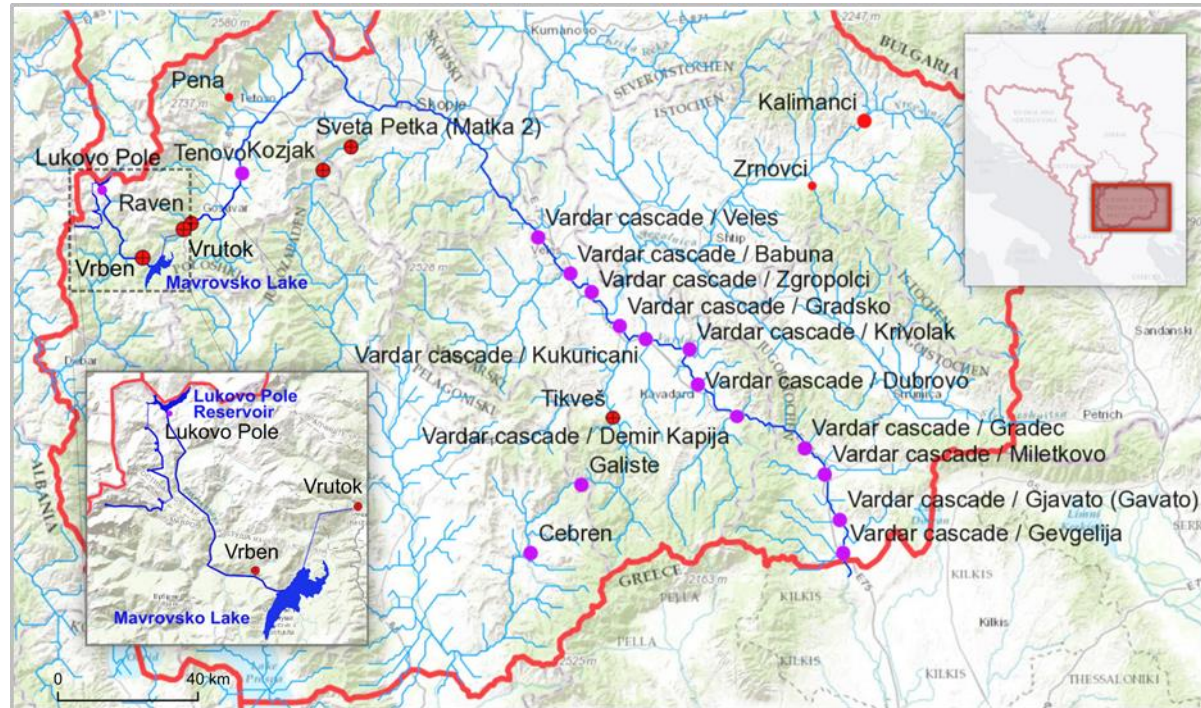
WB6 Parties to Selected Multilateral Agreements

	ALB	BIH	KOS	MKD	MNE	SER
Stabilisation and Association Agreements						
Energy Community Treaty						
Energy Charter Treaty						
Convention on the Settlement of Investment Disputes						
Espoo Convention						
Aarhus Convention						
UNECE Water Convention						
World Heritage Convention						
Convention on the Conservation of Migratory Species						
Bern Convention						
Danube River Protection Convention						

Platforms for Resolving Disputes and Beneficial Planning

- **Water Framework Directive Transposition (continued)** in legal system of each country

- a legal act which provides **regulation in a planning phase**,
- offers framework for **harmonising diverse interests of stakeholders** before and after enforcement.
- two institutes of importance: IWRM (IRBM) and River Basin Management Institutions.



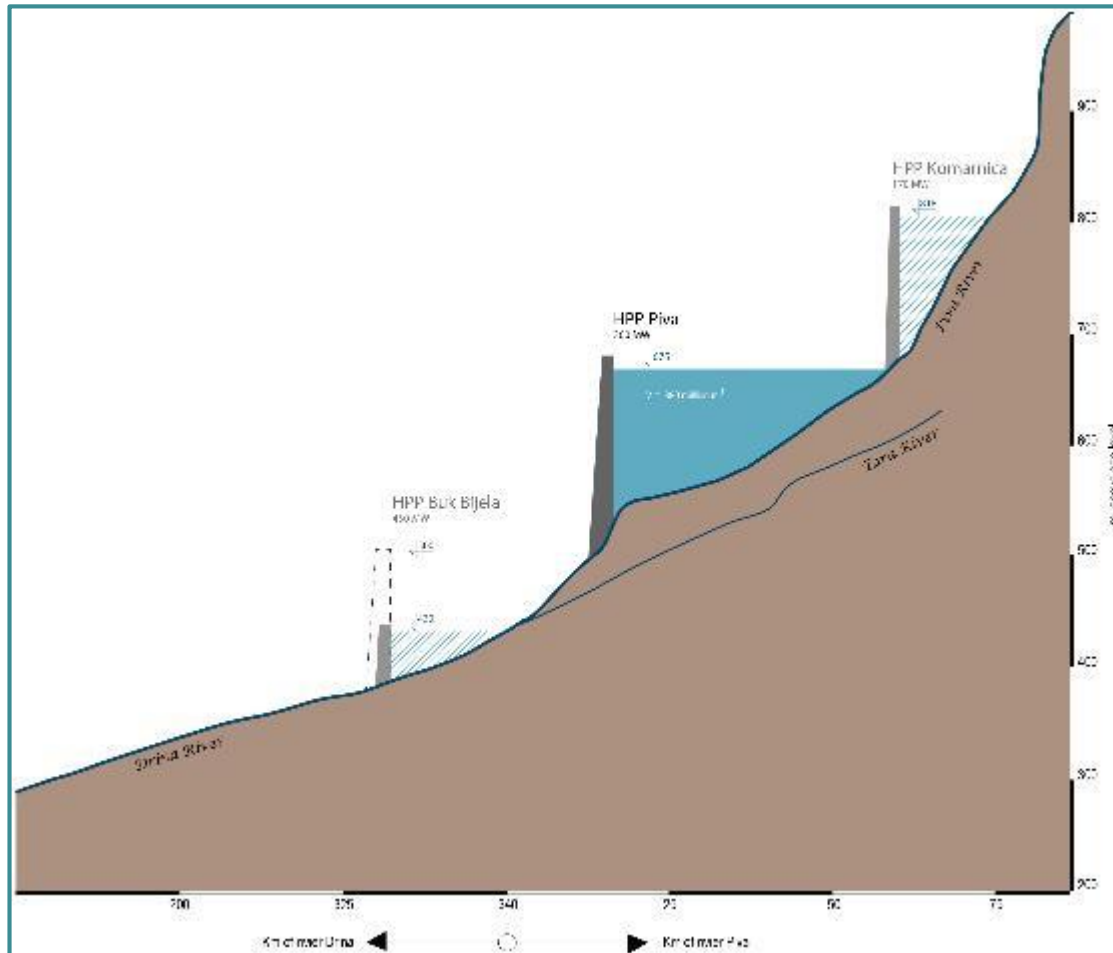
Transboundary Case No. 3: Locational reference of the planned HPPs on the Vardar/Axios watershed and the one on Lukovo Pole and the existing HPPs on the Vardar/Axios watershed

- **Legal platform for resolving transboundary issues** within Energy Community action

- Mediation administered by the **Energy Community Secretariat**,
- **European Commission** to join forces with the Energy Community Secretariat and make a compelling offer to the countries and territories involved.

Transboundary Case No. 4: HPP and Reservoir

Buk Bijela on Drina River



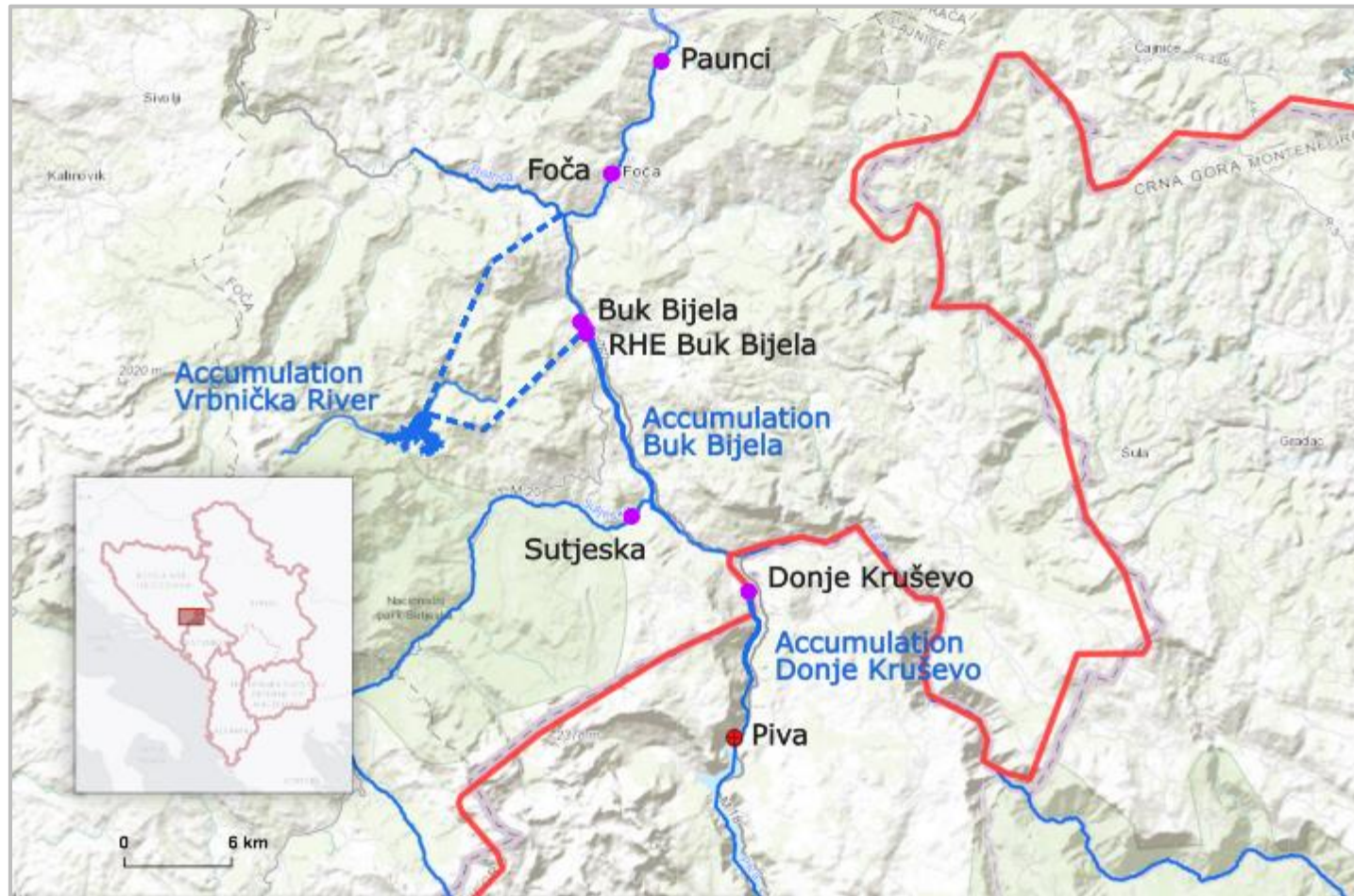
Longitudinal section of usage of the Rivers Piva and Tara above the HPP Buk Bijela site

Facts

- **Difference in volume:** lost or gained 413 million m³ vs 70 million m³ (68 m reduced head) – considerable loss in capacity (MW) and output (GWh)
- **Major inefficiency:** insufficiently studied environmental impacts when it came to important decisions
- **Decision making:** political reflecting the current situation rather than professional
- **Lost opportunities:** for effective fight against floods and adaptation against climate change

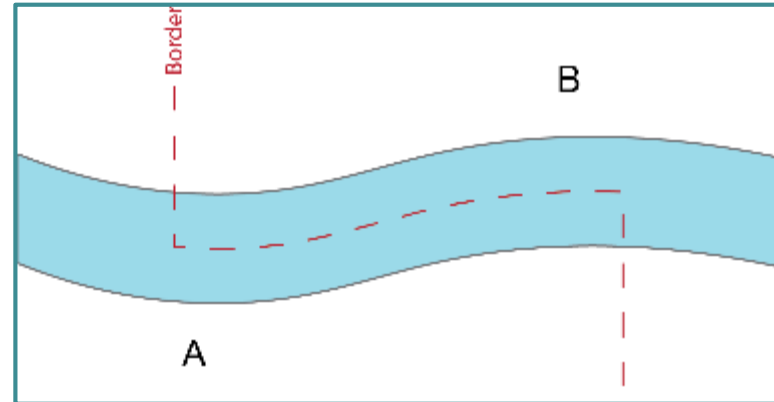
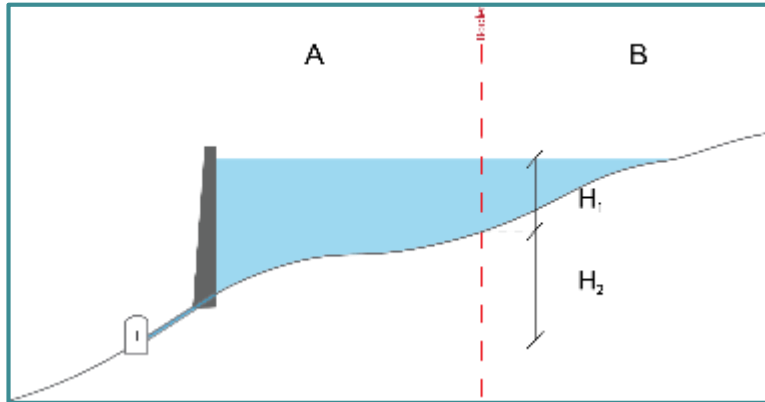
Transboundary Case No. 4: HPP and Reservoir

Buk Bijela on Drina River

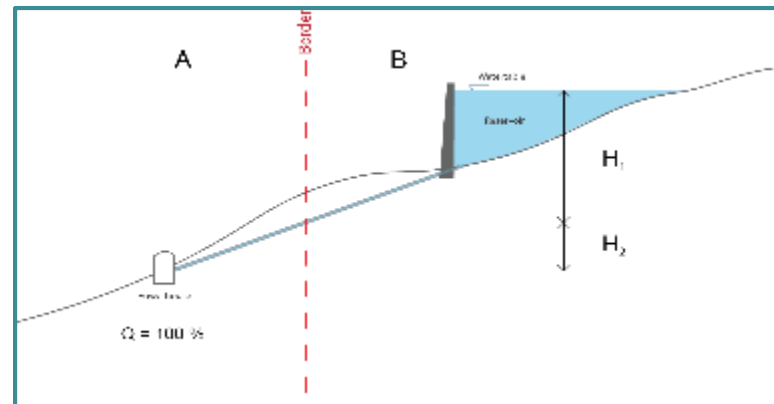


Transboundary case No. 2: Locational reference of the existing HPP Piva and the planned HPPs on Upper Drina and Piva Rivers

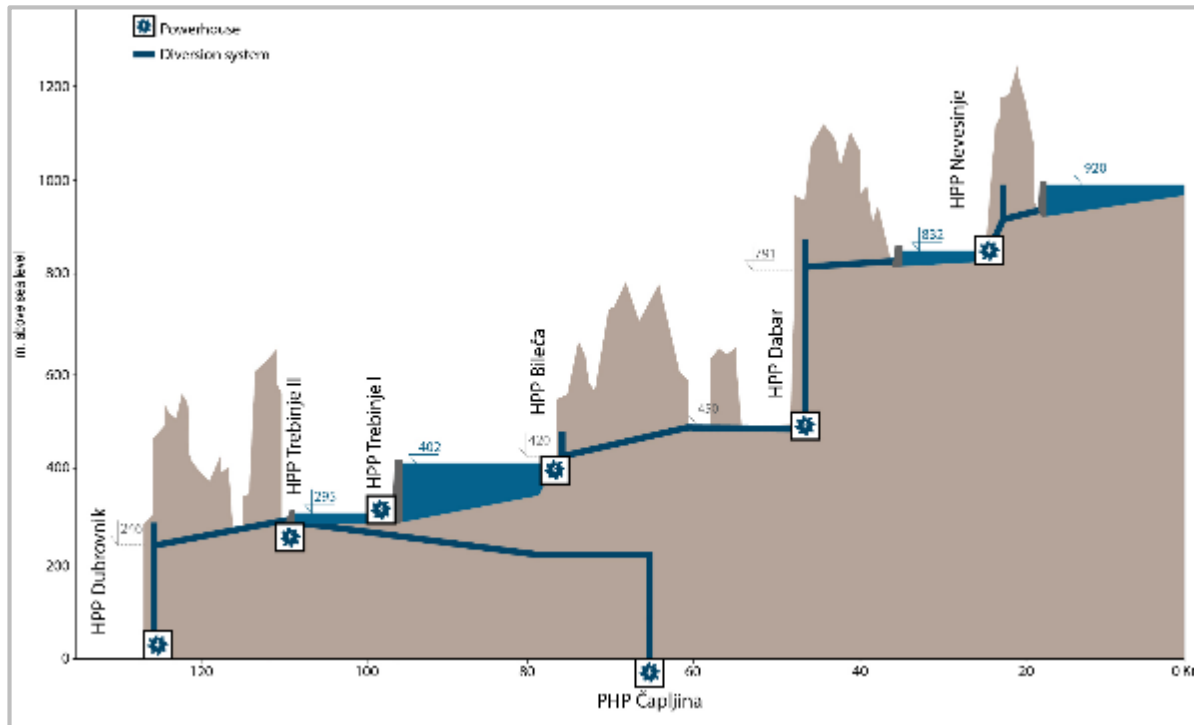
Consultant's Position in Case No. 4 on Sharing Hydropower Potential



- $E = c * H * Q$
- $H =$ water pressure/head
- $Q =$ discharge



Transboundary Case No. 2: HPP Scheme on *Trebišnjica River Basin*

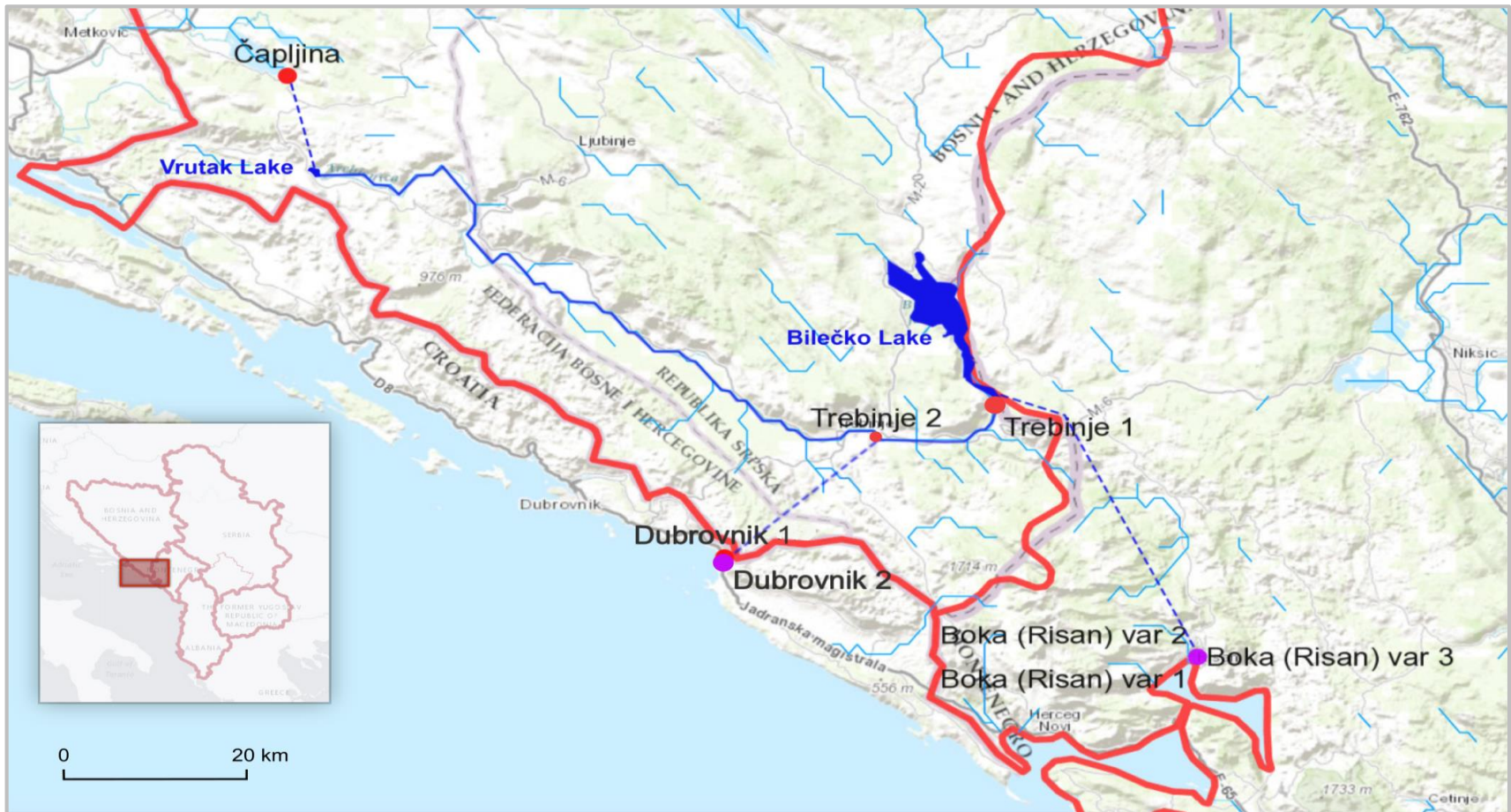


Longitudinal section of Trebišnjica and the rivers above It

Facts

- **Feasibility:** HPP Dubrovnik economic feasibility has been proved.
- **Decision-making:** political stand to resolve some other open cases are blocking development of scheme expansion.
- **Advantages:** environmental impacts are very limited or negligible.
- Good starting point to resolve legal situation.

Transboundary Case No. 2: HPP Scheme on Trebišnjica River Basin



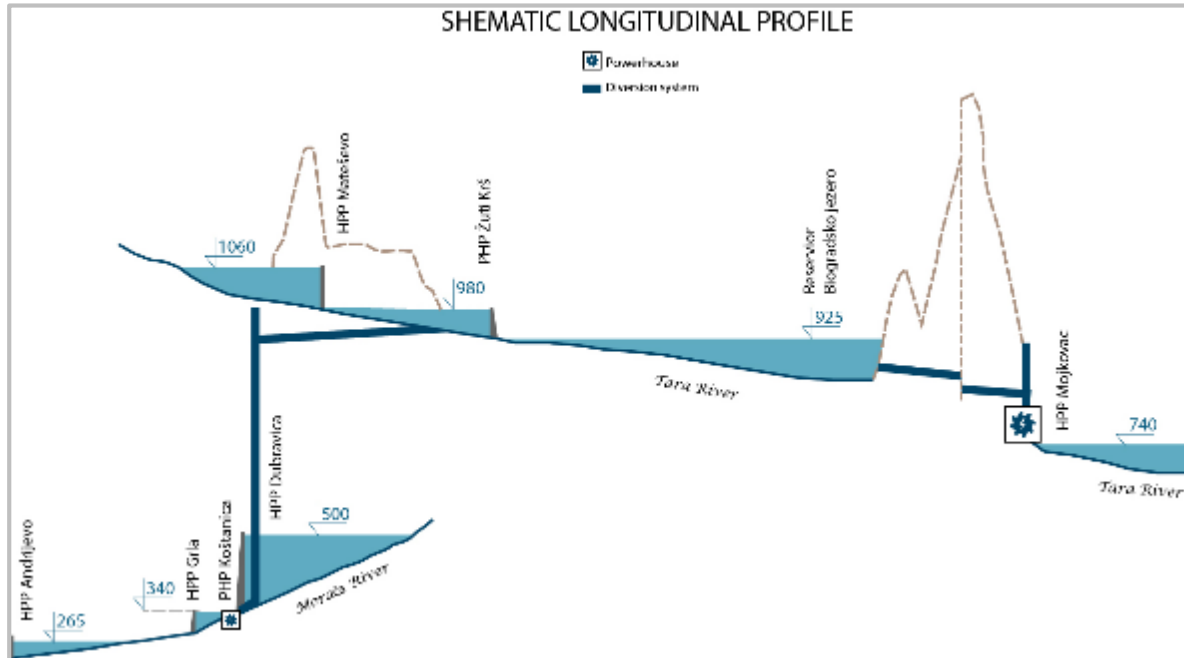
Transboundary Case No. 2: Locational reference of the planned HPPs Dubrovnik 2 and Risan, and of the existing HPPs Dubrovnik 1, Trebinje 1 and Trebinje 2 and of the existing RHPP Čapljina

Consultant's Position in Case No. 2

- **HPP Dubrovnik 1 development plan represents good practice and case of hydropower sharing and resolved transboundary issues**, which existed in the Region in pre-conflict period in the former SFRJ. However, during and after the conflict it is well known that many aspects of the agreement were ignored in practice and as long as those are not resolved any new developments are put on hold.
- **Undesired preconditioning:** Unfortunately, a still open and unresolved issue related to HPP Dubrovnik 1 is used as an argument against development of the new and very promising scheme of HPP Dubrovnik 2, conditioned by its settlement.
- **HPP projects on hold:** Consequently, a 200 MW (300 GWh) project worth approx. 170 million EUR (HPP Dubrovnik 2) is put on hold as well as HPP Risan (MNE) as part of a possible alternative solution for using water from the Bileća Lake in parallel.

Transboundary Case No. 5:

HPP Košťanica



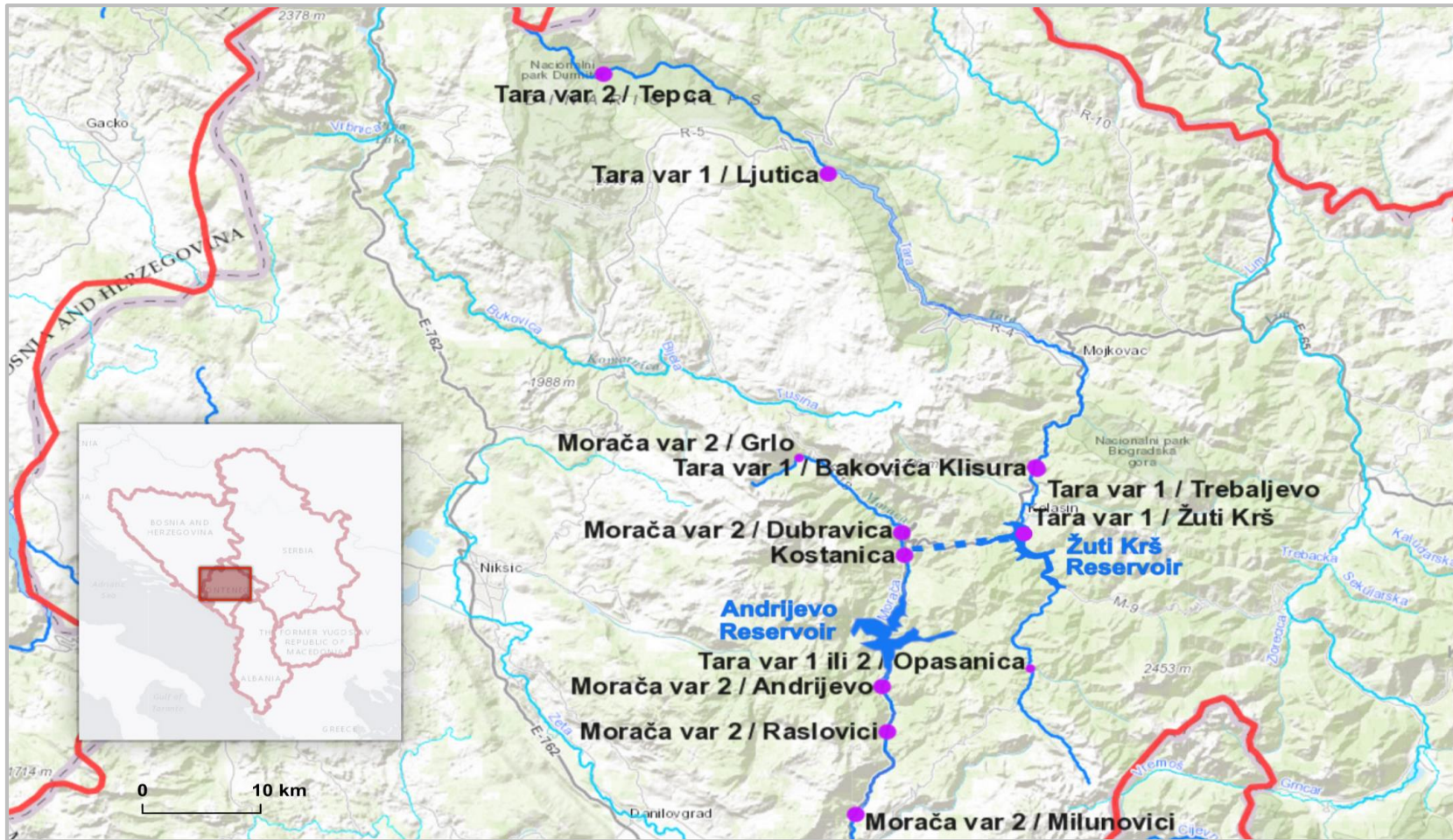
Longitudinal section of planned HPP Košťanica

Facts

- **Feasibility:** Water transfer from one RB to another RB is not strictly forbidden, and not allowed unconditionally.
- **Decision-making:** has to be done within framework of WFD principles
- **Benefits:** Overall Benefits are potentially bigger with transfer to Morača RB, if reservoirs are once realised
- Joining flood protection with renewable energy production

Transboundary Case No. 5:

HPP Koštanica



Transboundary Case No. 5: Locational reference of the planned HPPs and SHPPs on the Tara and Morača Rivers

Consultant's Position in Case No. 5

- **Feasibility study required:** Feasibility on the transfer of water from one River Basin (Drina) to another (Morača) needs to be further studied and a possible decision on the transfer of water proposed on proper techno-economic argumentation and mutual benefits for all the parties involved.
- **Consensus required:** If water transfer turns out to be advantageous, and project gains outweigh losses on the other side (that would logically need to be adequately compensated) there are good chances that it would be consensually agreed by the respective state authorities of the countries in the involved River Basins.
- **Controlling water-related risks** like floods, droughts, and pollution is more relevant than ever in a context of climate change that may aggravate the occurrence of extreme events. The actions taken to mitigate these risks, e.g. protection, should be part of strategic planning on the scale of the transboundary basin.

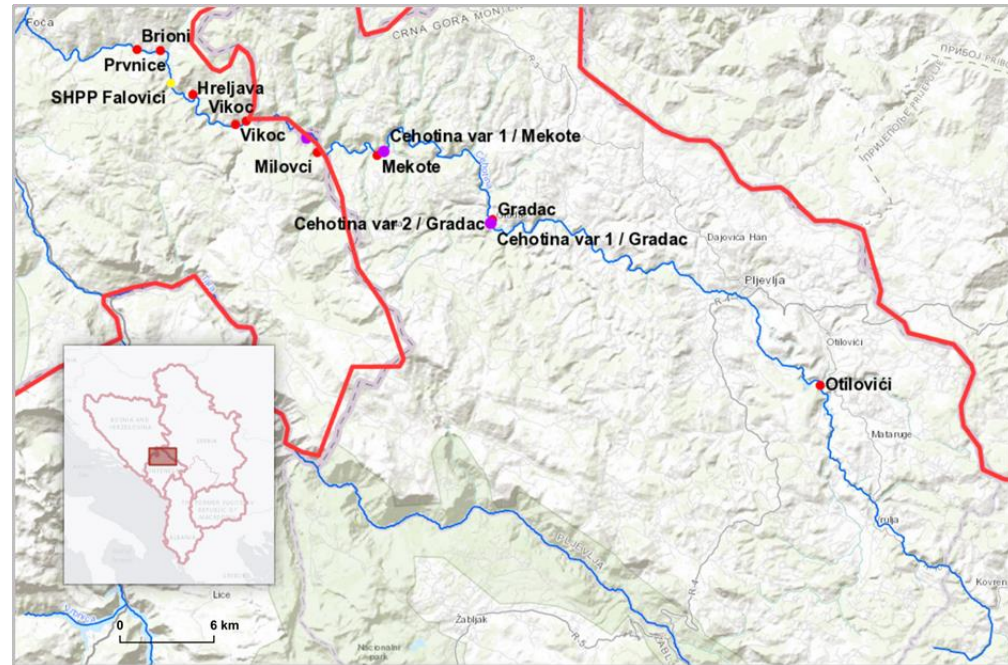
Lessons Learned (from all 9 Cases)

- **Changed focus:** Until present day transboundary issues in WB6 Region were:
 - predominately dealt with water quality aspects and to some extent biodiversity,
 - hydropower sector and power potential development remained behind practical consideration.
- **Questionable compromises:** The wrong-doings in utilising shared hydropower potential:
 - either no-progress or sizing-down of the reservoirs' volume (e.g. Buk Bijela, or Skavica), while forgetting that location with suitable properties for a reservoir is an asset by itself,
 - the greater the head reservoirs, the better regulation of floods is possible.
- **Lack of long-term motivation and commitments:** The transboundary issues are generally subject to international agreements
 - difficult to respect/enforce in the absence of active consent by stakeholders on an individual matter,
 - all sides have to be motivated in order to balance their own interests with the needs of other riparian parties.

Recommendations

Guidelines - 1

- Division of hydropower potential: head and discharge - follow introduction to the guidelines.
- Use up-to-date relevant planning tools:
 - CIA (Cumulative Impact Assessment) for Key Issues: water balance, sediment transport and biodiversity;
 - Cost-Benefit externalities, among regularly used instruments like FS, EIA, SEA, SIA, etc.
- Prepare for the development and operation of adequate HPP business model.
- Support in the negotiating process is expected from EC and the banking sector if stakeholders are committed to continue negotiations that would eventually lead to a mutually beneficial agreement.



Transboundary Case No.6: Locational reference of the planned HPPs Milovci, Mehote and Gradac and of the existing SHPPs on the Čehotina River, including Small HPP Falovici (currently under construction)

Recommendations

Guidelines - 2

- Search for synergy effect between different water uses in harnessing water infrastructure investments.
 - energy production and flood risk control go hand in hand,
 - sharing investment in a reservoir of common purpose would improve economic performance on both sides tremendously.



Transboundary Case No. 7: Locational reference of the existing and the planned HPPs on the Drina River and the planned RHPP Buk Bijela

Recommendations

Guidelines - 3

- Suggested business models underpinning hydropower valuations, e.g.:
 - Model 1 without the establishment of new organisational forms (SPV-Special Purpose Vehicle), project will be enabled by leading utility which will fund development of the project,
 - Model 2 without the establishment of new organisational forms where several utilities are participating in the investment in the project in equal shares,
 - Model 3, in which utilities jointly establish a new company (legal entity) for the purpose of realisation, operation and maintenance of the project with equal shares.

Recommendations

Guidelines - 4

- Controlling water-related risks like floods, droughts, and pollution is more relevant than ever
 - climate change may aggravate the occurrence of extreme events,
 - actions taken to mitigate these risks, e.g. protection, should be part of strategic planning on the scale of the transboundary basin,
 - intensive stakeholder participation and public consultations are needed,
 - flood control is part of the IWRM concept, slowing down of flooding dynamics is effective and sustainable, including protection of downstream area.
- Water transfer from Tara to Morača still has chances to be reopened
 - water transfers have never been declared impossible and neither they appear to be against legal requirements,
 - renegotiation of conditions and terms of respective riparian countries, supported by environmental, economic and societal analysis of effects of water transfer, this idea could be tested by proper means following present day integrated approach.

Summary – Key Conclusions

- **Integrated River Basin Management (IRBM)** based on European WFD is the key approach to greater, faster and more optimal utilization of considerable untapped hydropower potential in the Region.
- **Political and institutional support is required:**
 - European Commission is to join forces with the Energy Community Secretariat (ECS) and make a compelling offer to the countries and territories involved for establishing an organised institutional support - **a platform for resolving transboundary issues in the IRBM context.**
 - **Political committment of all WB6 countries** to speed up resolution of existig transboundary issues in the Region is required.

Broader Messages Based on BR-4

- **Information:** Subject of existing TI in the WB6 region, considerably ignored for several decades, has been brought to the attention of the Regional and European key stakeholders, i.e. interested and professional audience.
- **Examples:** Voluntary agreeing upon mediation (in case of existing dispute) or respecting IWRM (in the planning phase), a State of the Play in resolving TI aspects is sending a clear message to other similar unresolved cases in the Region.
- **Cooperation and assistance:** As these issues can't be resolved from outside, countries have to find their own ways presumably based on EC assistance as has been put forward in BR-4.

Topics for Discussion

- Feedback from the Region is expected on this topic. How would you value effect of reservoir realisation in national economy?
- Countries should rethink their position in regard to TI, and consequently re-approach this subject where mutually positive (beneficial) outcome is expected. Is national administrations capacity in this respect build enough?

Compensation of opportunity loss for eventual non-utilisation of hydropower potential would be possible for various reasons. Since “nature” is of transboundary interest, compensation should be covered from a community point of view. How do you comment this?

WBIF-IPF 3 Consortium

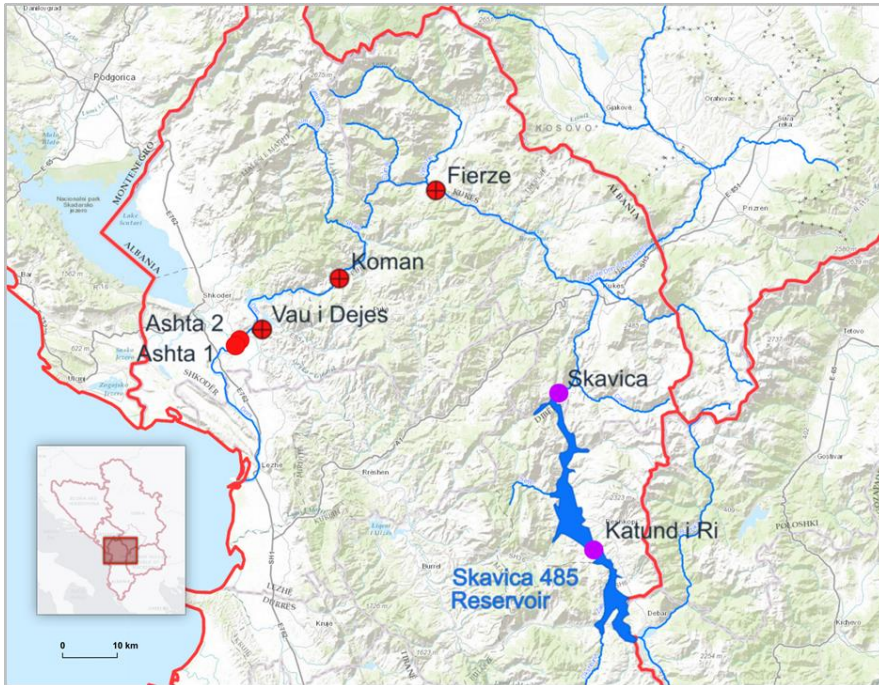


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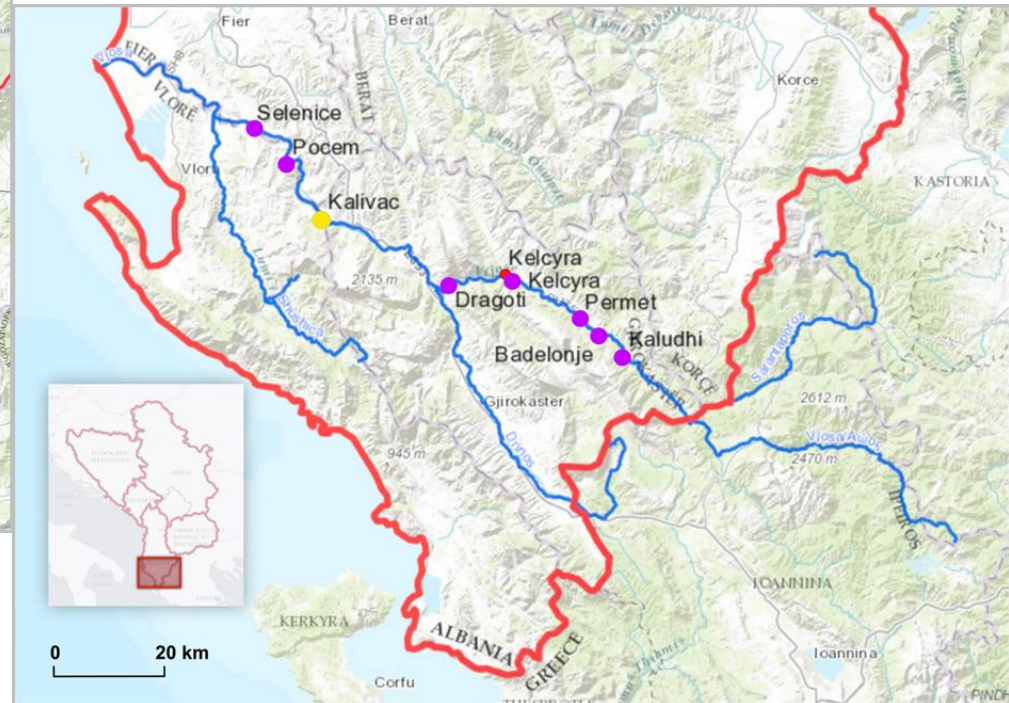
www.wbif.eu

Location References

Transboundary Cases No. 8-9



Transboundary Case No. 8: Locational reference of the existing and the planned HPPs on the Drini River



Transboundary Case No 9: Locational reference of the HPP Kalivac under construction and the planned HPPs on the Vjosa River