Centar za životnu sredinu

AIDA
Action, Mediation, Formation
Association internationale pour le développement de l'agroenvironnement

Strategic report

Territorial approach and the Climate change/ biodiversity /agri-environmental nexus

Lessons learned from the diagnostic of two municipalities of Bosnia & Herzegovina

March 2023

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1. Why and How?

After an occasional contact two NGOs (CZZS from Bosnia and AIDA from France) began to exchange about the different approach and method they have to identify environmental issues, and to build program and actions… and how these differences could enter in discussion. This happens in the context of rise, at the international-European level, of the so-called "nexus" issue between climate change and biodiversity, as highlighted by the joint working groups between IPCC and IPBS in the year 2022. The environmental movement urge its participants to deal with it in practical terms. This conversation agreed that this nexus was associating the two most important questions of the current environmental global challenge, and that it was necessary and useful to deal with it at the level of "territories" - each situation being, in one way or another (environmental but also institutional, economic, politic, social), specific. We decided to collaborate through a light fieldwork research action. AIDA propose as a method to elaborate a comprehensive territorial diagnosis to fuel our discussion - insisting on the importance of agriculture, or better said agri-environment.

The main hypothesis of this short action (7 months extended to 10 because of agenda constraints) was that this comprehensive approach could be an opportunity for the CZZS to insert its advocacy, awareness and mobilization work with specific target, in a more contextual analysis, and by this to promote the principle of a just transition involving more broadly the actors of the territory. For AIDA it was the opportunity to better understand the territorial dynamics and the environmental stakes of the country, benefiting from the expertise and knowledge of the CZZS, with a view to subsequent brokerage programs between the EU situation and fights and that of the Balkan candidate countries. It was though an exploratory approach, a step to be strengthen and followed.

The project was proposed to the European Climate Foundation and accepted mid-2022.

We decided to choose two municipalities in the north of BiH, one in each Entity that make up the country: in Sanski Most and Mrkonjić Grad (Figure 1).

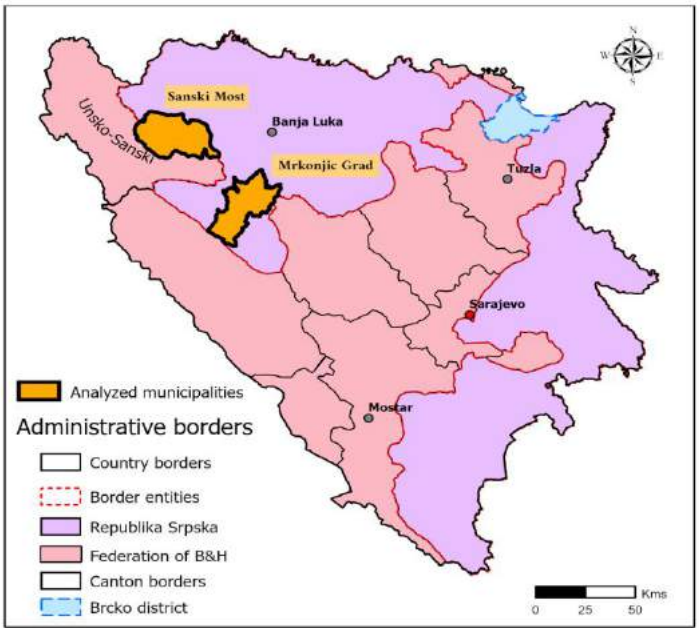

Figure 1: Analyzed municipalities locations (Zoé Siegel & Borka Malešević)

The program was divided in three phases from May 2022 to March 2023.

(1) Carry out a territorial diagnosis on two study areas and compare them through the field work of a French/Bosnian pair (Zoé Siegel et Borka Malešević) .
(2) Produce the present strategic short report based on the diagnosis.
(3) Public restitutions (Banja Luka, Livno, Sarajevo).

It is worth to note that in the course of this action, we decided to have a new collaboration mainly financed by the French partnership, about another territorial diagnosis on environmental and agri-environmental issues in the poljes of the Canton 10 (F-BiH - February-April 2023). We shall shortly comment this action point 6 of the present note.

2. The "territory"

The notion of territory is increasingly used, both by the social sciences and in the context of the (political) governance and management at the local levels. "Territorial engineering", "territory project", "territorial management", "territorial prospective" (etc.) have become important concepts and approaches that have spread across Europe over the past ten years. It is a way to try to avoid the implementation of activities piecemeal without integration into a thoughtful overall coherence (as it is common for example for concessions to wind farms, structures on waterways, mines operating licenses, etc.). In a way close from the classical "spatial analysis" – the notion of territory refering more to a specific region or landscape with its uniqueness and peculiarity.

Implementing a territorial approach means that the entire territory has to be described, and integrated in a single vision. Obviously, there is always a simplification of the diversity when scaling down to more localized situations. But the landscape methodology is a good way to describe the overall territory with sub-units identified. The landscape concept permits to take in account morpho pedologic aspects, vegetation cover, human activities, anthropic patrimony, etc. The delimitation of the encompassing territory and the sub-units is thus an empirical work combining a visual field approach, the layers of imagery and cartography available, but also the statements of actors…

Building a representation of the territory through maps, sketches, and 3D images, is also a good way to discuss with stakeholders of the situation and trends; it is a possible ground for the collective elaboration of a common vision of the present and the future. It is also a practical way to assert it with the competent authorities and the powers (political and economic) in place. It is thus a possibly tool for a better enrolment of actors and stakeholders and also for pushing the decisions makers into the ropes… The collection of the information and attitudes of the local persons and communities (through semi-directed interviews), as the landscape analysis, are time-consuming, but are the only way to build the more comprehensive description of the territory – to subsequently identify the main environmental, social and economic issues to be treated in the most integrative way.

Retrospective note: *we probably did not make the best choice choosing the Municipality as the territorial unit for diagnostic and analysis… The poljes studies we talk about above (the final Report is still a work in progress) is already a counterpoint that make us better understand that, for our environmental/governance purpose towards a fair transition, we should take environmental units more than administrative one. It is probably better to deal with governance problems, visions for the future (etc.) through the description and analysis of an identify cultural landscape – forged both by nature (in the very broad sense) and anthropic activities throughout time. Administrative units and landscape-ecologic territories often did not fit – provoking a gap in the effective management. Maybe we should have followed our first intuition with a territory choice like a water course or a mountain range and its plains, or that kind of object. But we were driven also by the fact that there was in these two municipalities campaigns against the reopening of mines and small hydro centrals… and that choosing the water basin as unit was a too important territory for the alloted time.*

A description at different scales:

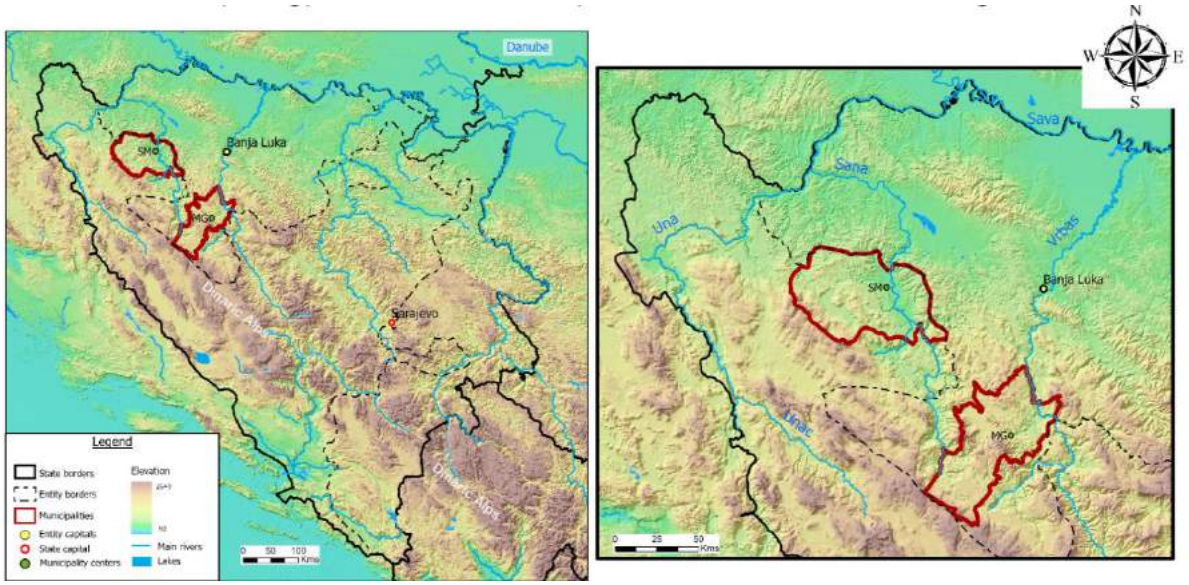

Figure 2: Geomorphology and main water components of Bosnia and Herzegovina (ZS & BM).

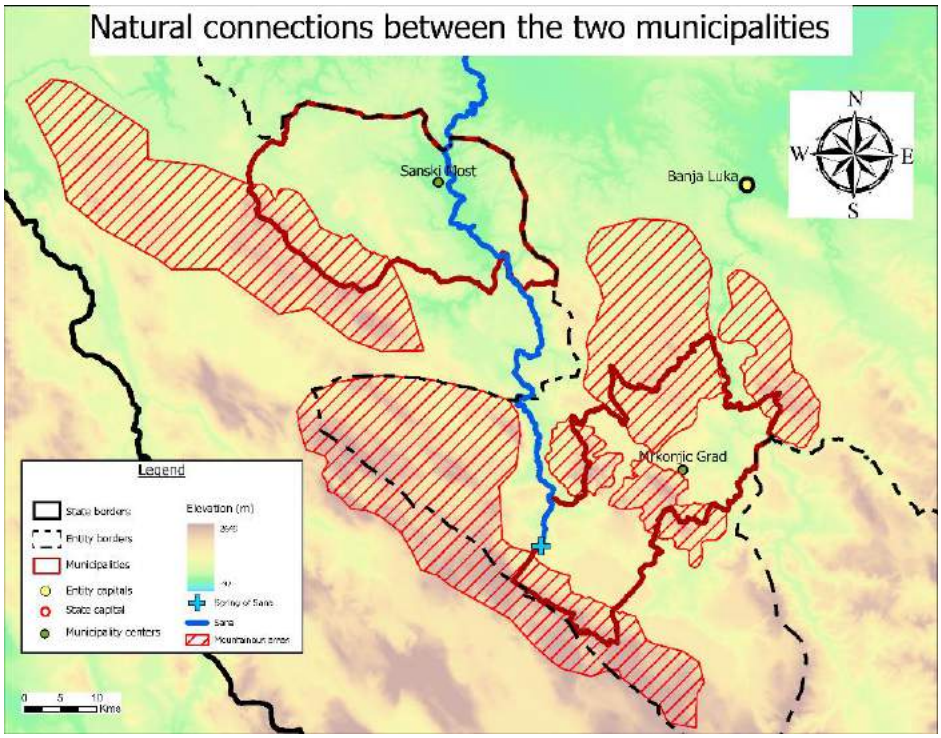

Figure 3: Mountain range units and common water courses of the two municipalities. (ZS & BM).

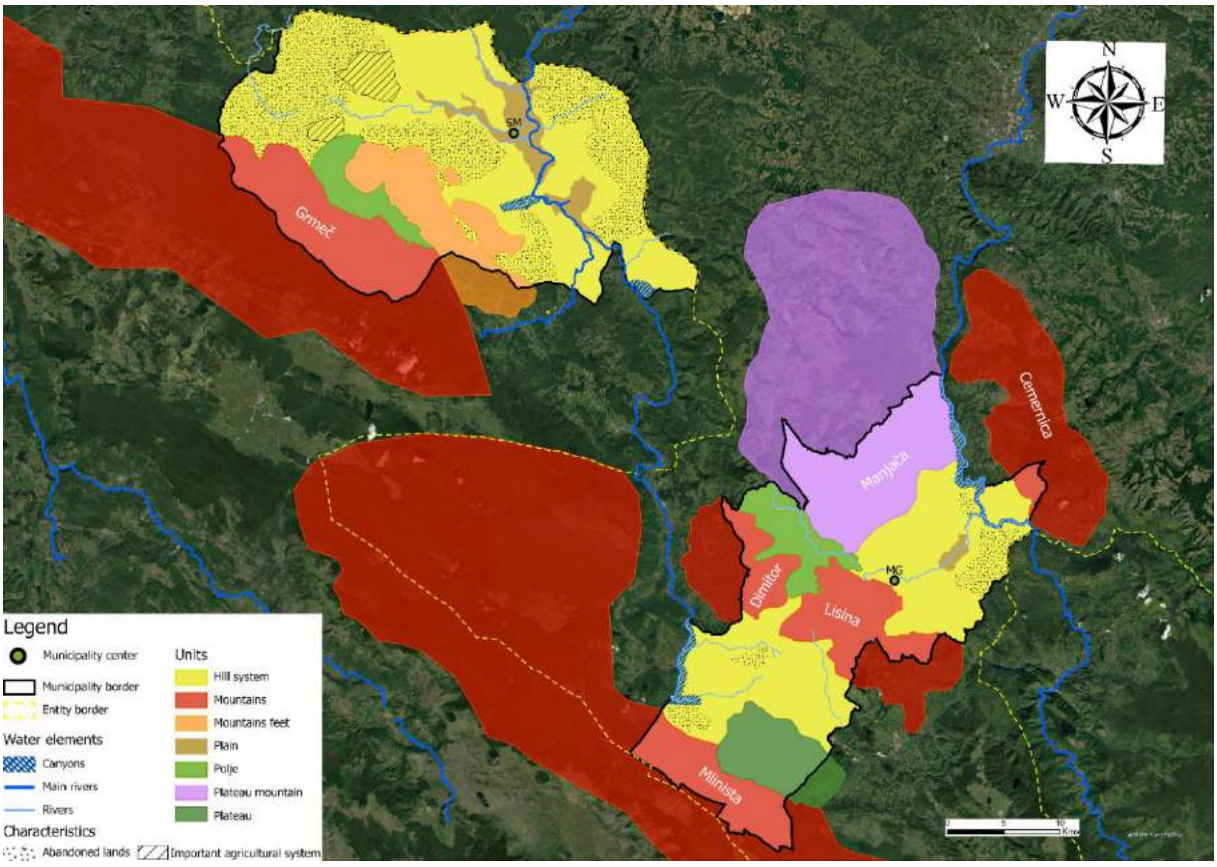

Figure 4: Landscapes units of both municipalities and their main rivers. (ZS & BM).

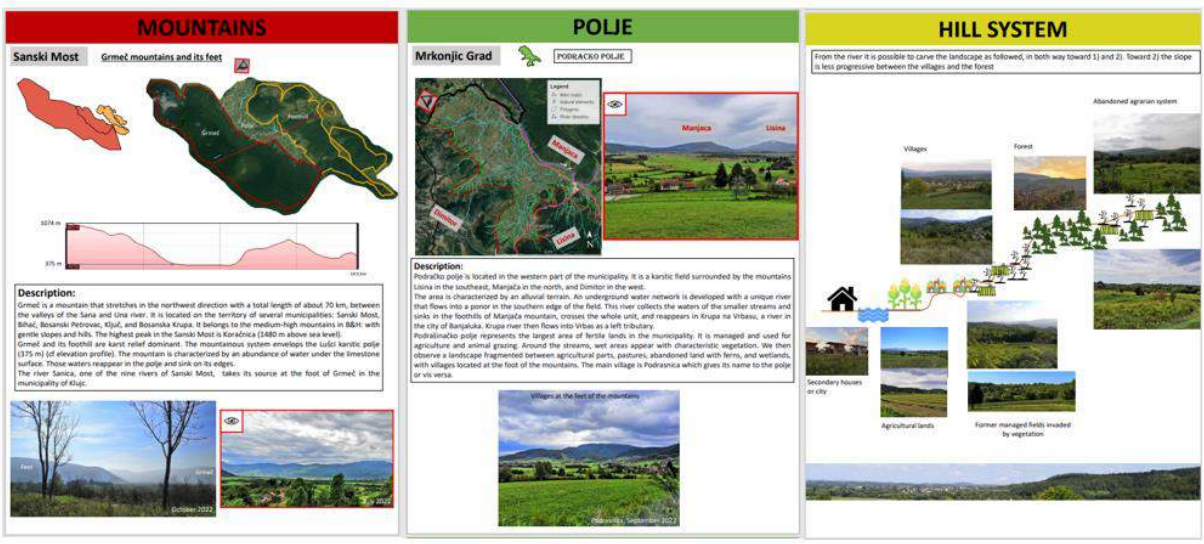

Figure 5: Examples of the detailed territory description. (ZS & BM).

3. Revitalizing agriculture ?

In rural areas agriculture and forestry are two basic management drivers of the territory. Practices, trends, strategies, publics choices and support (in both sectors) are basic to envisage the future and also to identify better the natural resources use and the challenges and environmental stakes. As the management of the forest seems in good shape, the rural exodus and the dramatic diminution of the agricultural production are the main factors of a very worrying situation in the countryside.

As in all the Balkans country the population decline in BiH is dramatic. The country lost (at least) one quarter of its inhabitants from the pre-war period to nowadays (Figure 6). The rural areas are heavily impacted as the migration did not only take place abroad but also by rural exodus towards the cities and the head of the municipalities (Figure 7). The process of “human desertification” of the most remoted and difficult territories is important and results in the total abandonment of some villages and settlements. We can also notice that the trend “back to the countryside” perceptible in a lot of European countries these past years is not (for the moment?) observable in BiH and in the municipalities studied – neither is experimentation of “smart villages” and new tech devices to revitalize and open up the remotes areas.

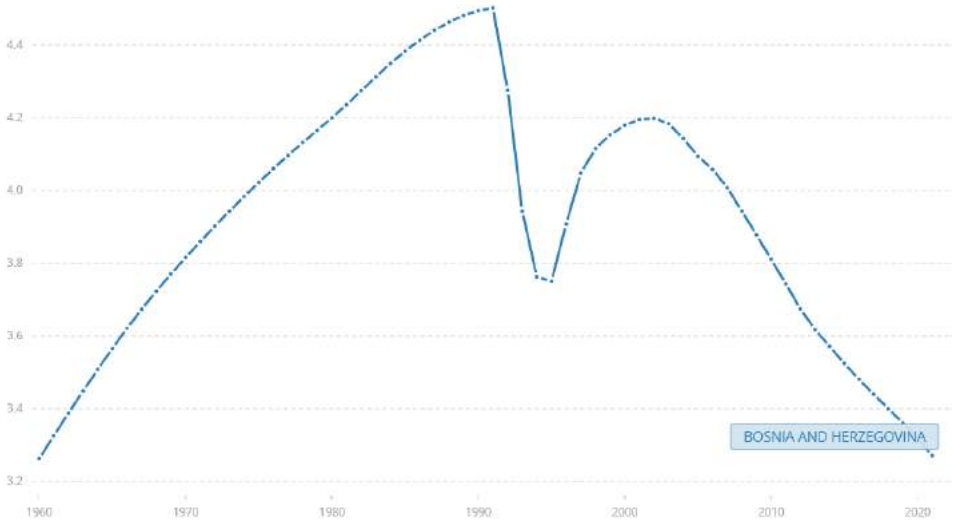

Figure 6: Evolution of the population in B&H from 1960. (ZS & BM).

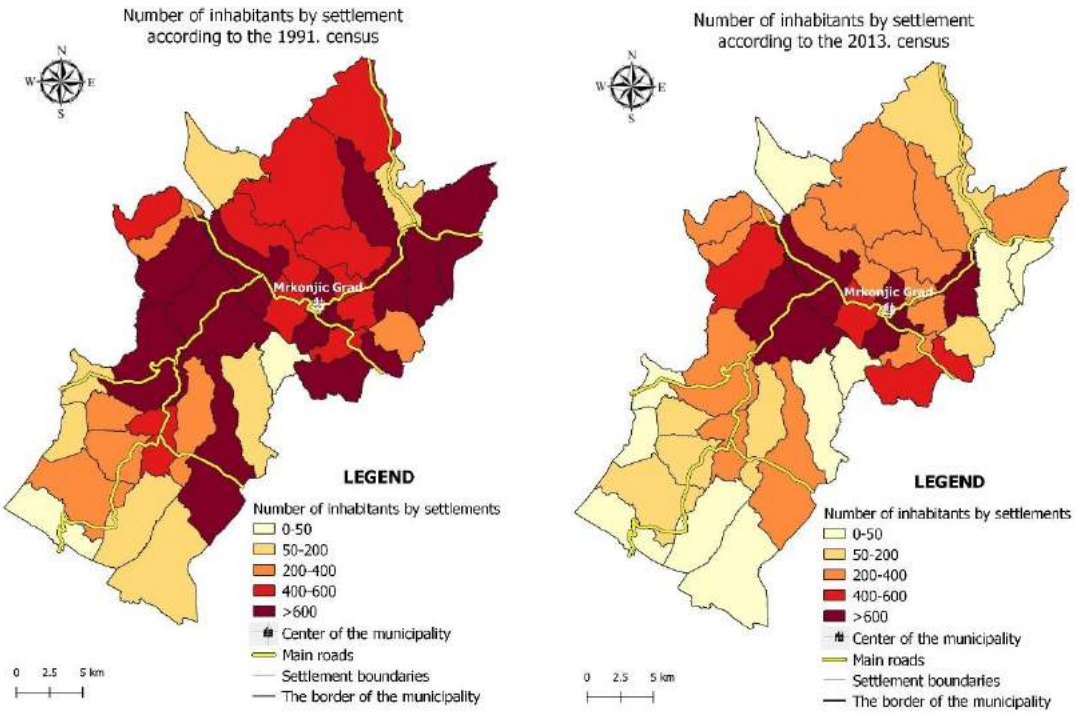

Figure 7: Population repartition and changes in Mrkonjić Grad. (ZS & BM).

As it is well known, the country has a huge deficit in food products: 2/3 of the consumption is imported from foreign countries. The decrease of rural population is also a dramatic drop in the number of active farmers and agricultural production. The enquiry shows that in the two municipalities studied we are on the edge of total abandonment in a lot of valleys and plateau and that, except some lowlands, the production is shrinking. This trend has also major consequences in term of semi-natural biodiversity, agrobiodiversity (varieties, breeds and practices) and also in term of cultural landscapes (Figure 8).

Figure 8: Past agricultural system that was invaded by the vegetation after its abandon (ZS).

How can we appreciate if there is any possibility to revitalize the agricultural sector in these areas? It is a trickled problem because of the specific agrarian profile of BiH after the collapse of the socialist regime. Indeed the country inherited from the agrarian reforms of a network of very small farms (less than 10 ha), which during the process of industrialization and urbanization convert themselves in self-sufficiency farms with a more or less important marketable surplus (or dedicated activity for the market). *The system is at an end* – and this all the more because of the parcel fragmentation induced by inheritance (Figure 9). It had today difficulties to compete with imports goods or more intensive agriculture in the country itself. The access to the market and the demand is difficult also because the retailors are strongly oriented to standardized, more profitable (and generally imported) foodstuff.

Figure 9: Example of land division in villages (MG: Ocune, August 2022). (ZS).

However, these "terroirs" have attributes and favorable resources for High Natural Value (HNV) agriculture and livestock: their vocation for pastoral livestock breeding was fullfeed in history. The pastoral surface is very underuse today despite its carrying capacity for all type of cattle (bovine, ovine, caprine) (Figure 10). Self-supplied livestock farm in term of feed is possible – with pasture during the free grazing time and hay (and possibly grains) for winter period, during which the cattle is in barns. Local breeds of sheep and cows (*busha*/ *buša*)**,** as shepherds dog, are also part of the agrobiodiversity of these lands.

Figure 10: Landscape of a suitable area for pastoralism. However new forests appeared in the former open landscape (MG : Surjan, September 2022). (ZS).

There is also potential development of production for local identified products -like *savka* prune for example. And it is possible to use this agricultural patrimony though protected Geographical Indications (or other signs of quality, origin, sustainability, equity) to look for a premium price and identification by the consumers… Wild aromatic and medicinal plants (MAPs – including mushrooms!) are also a complementary local resource if harvested in a sustainable way. Berries (wild or planted) and theirs juices, sirups and fresh consumption and, may be above all, honey - with a very supportive market inside the country and abroad (Figure 11).

Figure 11: Example of local products from the two municipalities. (ZS).

This is easier to write than to do!... But one of the output of the study is that a HNV agricultural strategy supported by public choices is needed at least for three main reasons:

- *environment*, to keep open and biodiverse these lands and landscapes;
- *production*, to fight again food deficit in the country while producing quality food for the market and the population;
- *fair transition*, to keep alive green markets, local products and productor-consumer relation, in short circuits (P2C model).

In the mark of the UE Green Deal and Farm to Fork concept, it is important that some lobbies for the use of pre-adhesion tools like: the second-pillar, eco-scheme, biological production incentives, rural development measures, compensatory allowance for natural handicaps (designed mainly for the mountains), etc..

4. Energy in its broader picture.

As mentioned before the forest sector is in good shape and productivity due to a managing system "close to nature" issued from the former socialist regime. A self-sufficient budget system that maintains a multi-age, multi-species forest. It is worth to note: first, that it is probably one of the best environmental forest management in Europe; and second, that despite the brutal collapse of the former regime and the administrative separation of the country in two entities and in powerful cantons, this efficient system was maintained everywhere. A situation that should question us, both about of the over spoken country's mismanagement and also about the common grounds despite the "borders" created.

It is clear that the wood sector is deficient, using only a small part of the resource and exporting logs, beam and planks without major transformation… notwithstanding: the sector had an important role in term of energy – bringing pellets and firewood in many homes. The importance of the forest sector cannot be overestimated: three-quarter of the surface of the municipality of Mrkonjić Grad is covered by forest and two-third of Sanski Most (!)(Fig. 12) much above the average of BiH already important in comparison with the other European countries… And this forest is growing due to the encroachment and natural growth on abandoned lands – arable or pasture (

Figure 13). The forest is then a formidable energetical resource (and more).

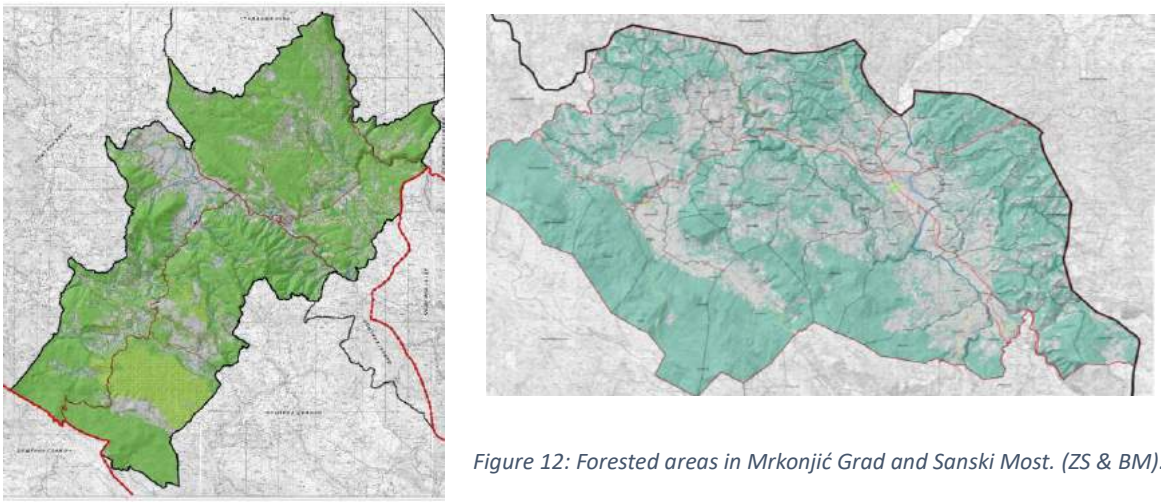

Figure 12: Forested areas in Mrkonjić Grad and Sanski Most. (ZS & BM).

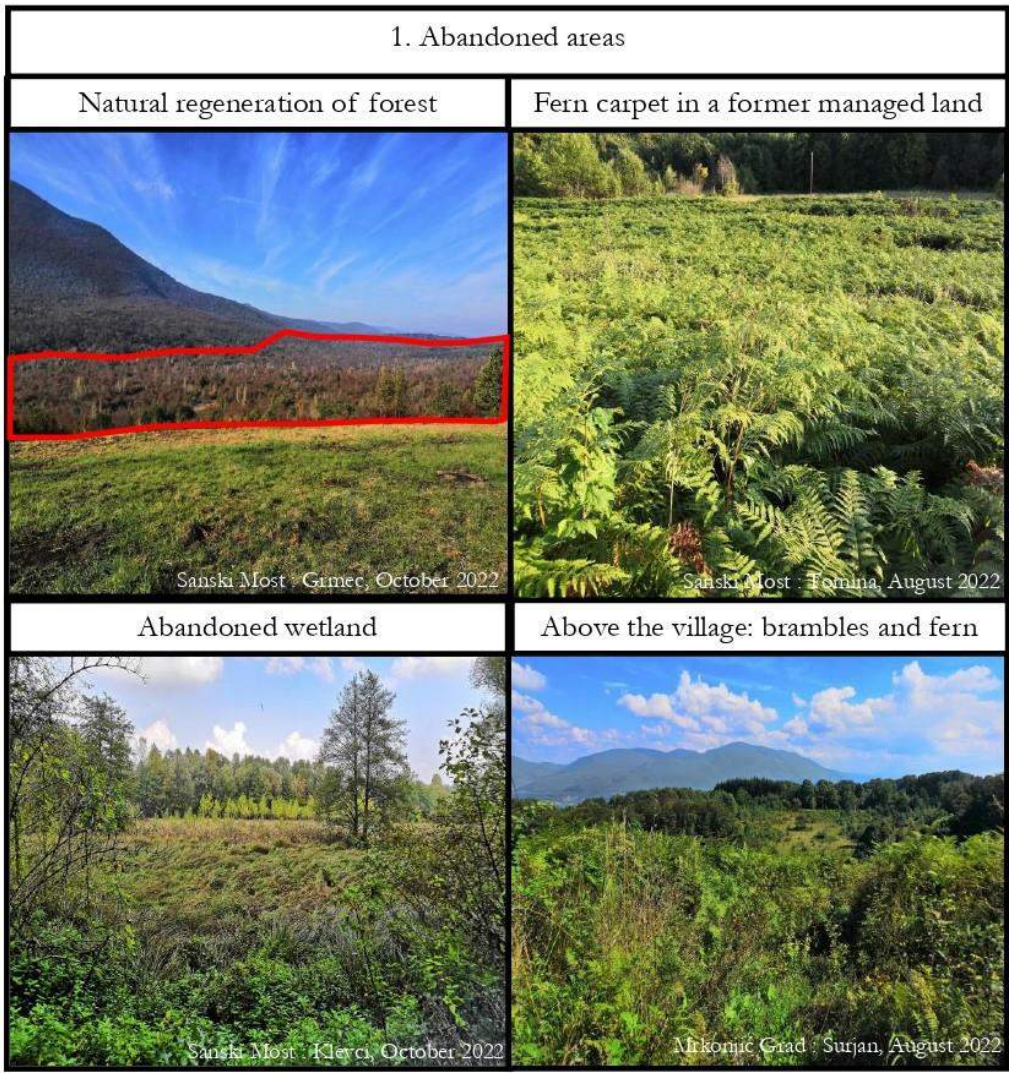

Figure 13: Pictures of different degrees of land abandonment.
1) Pictures of different abandoned areas in various environments. 2) Picture of mixed of managed and unmanaged lands. 3) A used agrarian system.

In terms of energy the study has shown that, like in a lot of European countries, the energy sector is a non-coordinate sum of projects: here a concession for an old coal mine, there a hydro-power plan, here again a solar farm or a project of wind turbines... Therefore the evolution of the energetical mix is not presented in a strategic way, and the path forward a zero carbon system is unclear. It is significant at the national level that BiH are of the few European countries that have not presented a plan for phasing out of coal.

It seems that the effects of the climate change are less already present in these territories and thereby a frequent underestimation of the negative impacts of the use of fossils fuels – and especially coal and lignite. However the use of wood products and the origin of electricity should be discuss in local arenas as energy commons and collective responsibility (energy justice, rights and wrongs). Consultation and awareness of the public is necessary even if there is negative impact at the local level when implementing renewable energies. Reopening coal mines for export (as it is the case in Kamengrad in Sanski Most) is only good business for the owner: it is counterproductive for the fossil balance of the country as it is detrimental for the local population and productive activities because of water and air pollution (Figure 14).

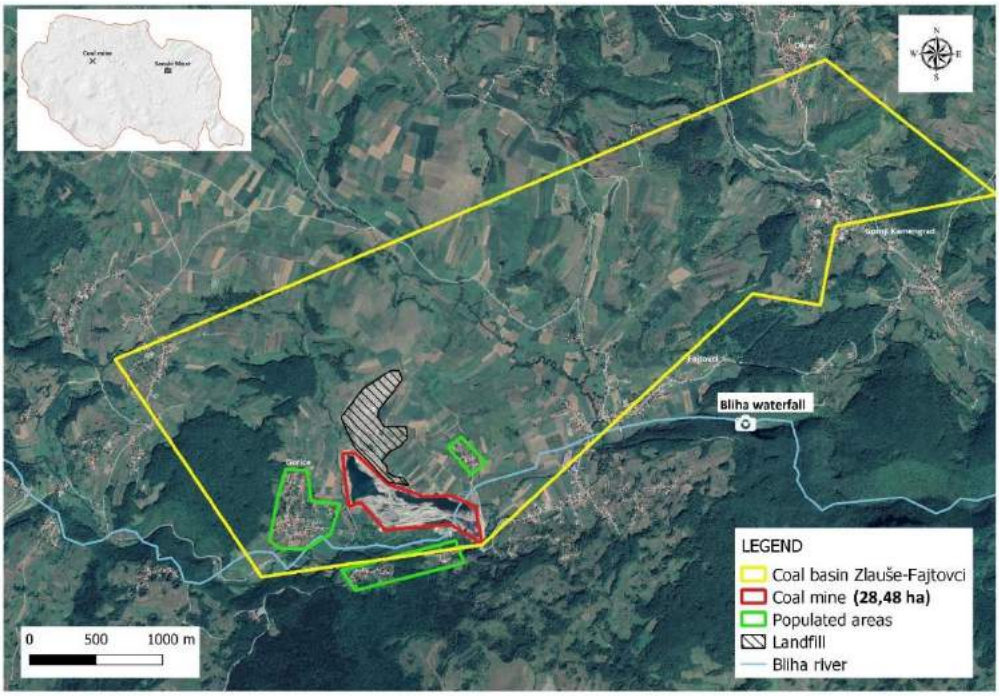

Figure 14: The LAGER coal mine in Kamengrad (SM) and its surroundings.
The mine is close to a village and also to the most used agricultural area of the municipality. It is also discharging some waste in Bliha river, which flows to the touristic area of Bliha waterfall which was classified as Natural Monument under the Yugoslav system. This description underlines the non-sense of the location choice of the mine. (ZS & BM).

The coupling of the national perspective and local situations must be implemented here (as elsewhere) to ensure the best consensus and the maximum limitation of negative externalities. Hydro, wind, solar and biomass could only be perceived by the citizen as "sustainable" and necessary ***IF*** they mean the end of the fossil fuels and their effect of climate change. Here the main thing to highlight is the fact that there is only "projects" (mines operating authorization, permit to build dams and micro-central, etc.) and no inclusion neither in a global-national scheme – coal phasing out – nor in a local-territorial approach (smart grid, local taxes and revenues, etc.). In that case some inevitable trade-off between

energy and biodiversity (for example) are not clear, the public discussion confuse, favorizing the “not in my backyard” attitude, as only profit-oriented projects.

5. The 2W (Water and waste) versus living environment and tourism.

The quality of water and the ecological landscape of the watercourses are serious problems affected by various types of alteration, even if there is still in the region high quality waters and natural courses. The sewage treatment is low and the discharge of wastewater frequent. Small hydroelectric power stations, poorly conceived in ecological terms, are scars in the landscape for an energetical benefit uncertain – and, as we previously said, not inserted in a global transition scheme both at the local and national levels.

Some “solutions” to floods are also detrimental to the ecosystems landscape of the rivers. It Is in particular the case of the artificialization of the banks and, above all, the removing of the tuffs in the riverbed – one of the particularities of the Sana river in Sanski Most and a fragile ecosystem (Figure 15).

Figure 15: Tuff of Sana river (October, 2022). (ZS & BM).

Coal mines activity is polluting the rivers as the environmental precautions devices and standard rules are not respected. It is one of the most challenging wrongdoings in environmental terms of the reopening of the mines in the two municipalities (Figure 16).

Figure 16: Bliha waterfall before and after the pollution of the coal mine (SM, October 2022). Source : Eko akcija group

The other W threat is that of the waste, especially the plastic always visible in the rivers and wetlands. This wastes degrades into micro-particles, invisible to the naked eye, but which constitute a real danger for wildlife and ultimately for humans (through the food chain) (Figure 17).

Figure 17: Waste illegal deposit located just above Vrbas canyon (MG, 2022).

Apart their negative consequences for the environment, the ecological landscape and eventually the wild life, these pollutions and landscape degradation are against the touristic, recreative vocation of these areas, as it is for the quality of life of the inhabitants (including urban dwellers or members of the diaspora with second homes).

6. The polje experience - another territorial diagnosis

As mentioned before, in the course of the collaboration between our two organizations we decided to collaborate on another research action. This was done in parallel to the CZZS project with EuroNature and Naše ptice ("our birds"): "*Sustainable Future for Livansko polje in Bosnia and Herzegovina*".

We organized a collective internship about the polje of the Canton 10 (FBiH) that lasted three weeks with field work and desk analysis (Figure 18). 16 students and 4 mentors (3 AgroParisTech, 1 AIDA), as well as 4 students of the University of Sarajevo, worked on the subject. The goal was to identify the main environmental problems and give some idea about the possible status of protection needed by this territory. The study was based on landscape analysis, semi-structured interviews with stakeholders (farmers, local authorities, entrepreneurs, environmental NGO,…) to collect information as well as people opinions.

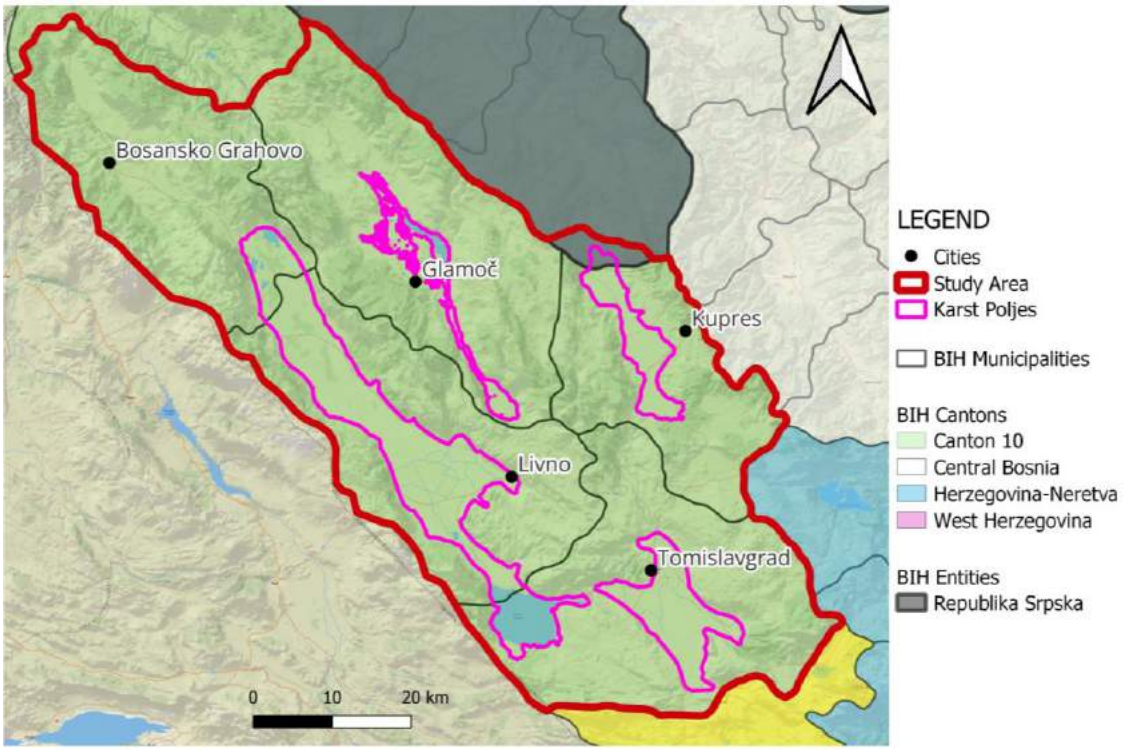

Figure 18: Study area of the project.

In a nutshell we can say that:

(1) in accordance with the project mentioned above, the work identified water pollution as the major environmental problem and stake;

(2) that the dynamic livestock system which revolves around local cheeses (including *livanski sir* which is a Geographical indication) has to be investigated. Indeed there is a new business model of big farm:

some with environmental impacts (water quality) unknown; others more sustainable with ranching-style pastoral practices;

(3) that the poljes as such were only one element of the territory and that they should be understood in combination with other landscape units: plateau and hills with dolines, slopes and mountains (Figure 19). The hydrographic system (and anthropic activities) linking all these landscapes together;

(4) in consequence of point 3, it seems that the best way to protect the polje is to add different types of overlapping protection on an overall territory (in addition to the Ramsar site already existing), like: inscription in the Cultural landscape list of the Unesco, GeoPark one, Sipam-FAO, etc.

Figure 19: The defined landscape units.

7. Strategical output

Based on these two experiences we shared it is possible to conclude that the territorial diagnosis is a useful way to identify the environmental stakes and eventually to hierarchize them in a comprehensive approach.

It is a first-step approach and is not delivering whatever sort of "final" analysis. At the contrary it point**s** out, through a robust description, some challenges, problems that needs to be investigated both in term of more in depth analysis (scientific/ technical) and in term of actors dynamic and public participation.

This cautious approach is all the more necessary since the "governance issue" creates an even more difficult situation. Clientelism, corruption or interface between political power and private interest, as the complex and inefficient layers of responsibility and the "borders" between entities, cantons and

municipalities (…) are omnipresent in all progressive treatment of collective vision and management – environmental, economic or social.

As the word “transition” is not well perceived by the public (to say the least), the “just transition” promoted by the European Green Deal had to be discuss and still needs awareness and concrete examples from the whole Western Balkan region in order to be true and not only used as a term with bad reputation. The just transition process need to starts from the bottom up – stating the community’s needs, challenges and potentials, bundling them with the global climate change and biodiversity issue through a still needed brooking activity.

Instead of silo approach – driven by agenda, target and purposes of international-European principals and donors, or private interest combine with political power – the territorial diagnosis is a tool to enforce a bottom-up approach to identify the problems, bottlenecks, dissensus (etc.), as also the possible common vision and the possible tracks for collective action

It should be possible to stimulate and amplify this perspective by networking situations, particularly in the candidate countries. Indeed, for these, the question arises of the use of Green Deal tools in the accession process, and the discussion and visibility of the need for agri-environmental and territorial transition - within the framework of national policies and regional coordination.