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Agri-environmental Policies in the Western Balkans: soil conservation

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Abstract

Although all of the Western Balkan countries are at different stages of development, they face similar challenges in policy reform and harmonisation, information systems and economic development, coupled with general underdevelopment and limited institutional capacity, which continue to obstruct the reform processes of the Western Balkans. The Action Plan for the Implementation of the Sofia Declaration on the Green Agenda for the Western Balkans 2021-2030 has put forward several objectives that are in line with EU policies for soil conservation. To this end, the establishment of the Soil Partnership for Western Balkans as an open forum for gathering of all stakeholders in the region would be the perfect entity to discuss and exchange knowledge, data, best practices and experiences about sustainable soil management. This process started in 2021 under the leadership of the Regional Rural Development Standing Working Group in South Eastern Europe (SWG).

Keywords: soil conservation, partnership, Western Balkans

Introduction

The Western Balkans (WB) shows a great variety of climate, soil, and geomorphological characteristics. Although the region was blessed by some of the most fertile soils in Europe, soil is a limited natural resource in the Western Balkans and its availability for biomass production and ecosystem functions and services is decreasing (Zdruli et al., 2022). The region is characterized also by several natural constraints that include salinity, sodicity, poor drainage and texture conditions, shallowness and stoniness and other nature based and human induced limitations.

In addition to the policy requirement for integrating the WB countries into the EU, extended regional cooperation is most important for future relations with the EU. The process of establishment of the Soil Partnership for Western Balkans as an open forum for gathering of all stakeholders in the region started in 2021 under the leadership of the Regional Rural Development Standing Working Group in South Eastern Europe (SWG). The first goal was to make a first integrated assessment of soil degradation process in the Western Balkans and develop policy recommendations for a wider implementation of sustainable soil management practices. Other important objectives include the strengthening of institutional and technical/professional capacities of the region to assist the implementation of the new Soil Strategy for 2030 as well as work towards harmonization of the guidelines, methods, measurements, and introduction of soil protection indicators to enhance implementation of sustainable soil management practices. Furthermore, the enrichment and availability of soil data and information, along with awareness raising in the area of soil protection and land use are crucial components.

Material and methods

This paper presents an updated analysis of state of the art of soil management and conservation policies in the Western Balkans region. The paper was prepared using data and information from nominated soil experts from six countries in the region (Albania, Bosnia and Herzegovina, Kosovo*¹, North Macedonia, Montenegro and Serbia) working together in the implementation of the Action Plan for the Implementation of the Sofia Declaration on the Green Agenda for the Western Balkans 2021-2030. This process started in 2021 under the leadership of the Regional Rural Development Standing Working Group in South Eastern Europe (SWG).

Another important relevant source of information derived within the frame of the project titled “Rural development through integrated forest and water resource management in Southeast-Europe: Rural perspectives: qualification, reintegration and (self) employment”, jointly implemented by the Regional Rural Development Standing Working Group (SWG) in South-Eastern Europe and GIZ and supported by the German Federal Ministry for Economic Cooperation and Development (Cukaliev et al., eds, 2018).

Results and discussion

An analysis of Corine Land Cover 2018 data shows that Western Balkans is a very rich and diverse region. Some conclusions can be drawn:

- Forest and semi-natural areas have the largest share of the land in the region (55.5%), followed by Agricultural areas with 40.04%.
- Montenegro has the largest share of Forest and semi natural areas in the region (79.17%), and Serbia has the largest portion of Agricultural areas (55.13%).
- More than 2.8 % of WB land is used as artificial areas, which includes built-up areas and unbuilt surfaced areas such as transport networks and associated areas.

Soil threats in the Western Balkans are complex, and although they are unevenly spread, their dimension is regional, and they are frequently inter-linked. When many threats occur simultaneously, the combined effect tends to aggravate soil degradation (Jones *et al.*, 2005). Based on a first assessment of the status and trend of soil degradation in the region the main degradation processes include land take, soil sealing, contamination, loss of organic carbon and erosion. These pressures will only increase in the future and climate change will aggravate the situation as the region could become hotter and drier (Table 1).

Table 1. Summary of soil threats status in WB

Soil treats		ALB	BIH FBIH	BIH RS	KOS*	MNE	MKD	SRB
Land take and soil sealing	In densely populated parts of WB countries soil sealing is one of the most threatening phenomena.	↕	↕	↘	↘	↘	↘	↘
Contamination	Soil contamination is a problem in some part of WB countries. The most frequent contaminants are heavy metals and mineral oil.	↕	↕	↘	↘	=	↘	=
Organic carbon change	The loss of organic carbon is evident in most agricultural soils.	=	=	↘	↘	↘	↘	↘

¹ This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Soil erosion Water erosion is active ↘ ↘ ↘ ↘ ↘ ↘ ↘
in all the cultivated
mountainous areas and
wind erosion in lowland
areas.

Legend: ALB-Albania, BIH FBIH-Bosnia and Herzegovina, Federation of Bosnia and Herzegovina, BIH RS-Bosnia and Herzegovina, Republic of Srpska, KOS-Kosovo, MNE- Montenegro, MKD- North Macedonia, SRB-Republic of Serbia*

Stable =, Variable ↑↓, Improving ↗, Deteriorating ↘

The magnitude of these pressures is largely conditioned by the lack of awareness and knowledge about sustainable soil management, the lack of a legislative framework (EU and national), division of responsibilities and lack of cooperation among the institutions. In order to tackle these challenges, well equipped and trained administrative steering is needed (institution building), while it is equally important to increase institutional cooperation, information development and data exchange.

Legal framework and Strategic documents for soil management in Western Balkans

The EU’s soil policy aims to improve soils by taking measures and actions to protect and restore soils, and ensure that they are used sustainably, putting forward a vision to achieve healthy soils by 2050, improving the framework for soil monitoring in Europe, developing the knowledge base and supporting soil research and raising awareness about the vital importance of soils. In November 2021, European Commission adopted the new EU Soil Strategy for 2030 - Reaping the benefits of healthy soils for people, food, nature and climate (COM (2021) 699 final). This Soil Strategy therefore builds on and will significantly contribute to several of the objectives of the Green Deal. Strategy is complementary to other European initiatives such as the next Zero Pollution Action Plan, the EU’s biodiversity strategy for 2030 and the “Farm to Fork” Strategy, as well as with the sustainable development goals (SDGs). This Strategy sets ambitious and necessary goals, which must be met urgently. The new EU Soil Strategy derives a long-term vision for soil from the ambition of the European Green Deal and lists the key existing objectives and targets for the medium and long term where soil policy is called to contribute. The new EU Soil Observatory will collect policy-relevant data and develop indicators for the regular assessment and progress towards the ambitious targets of the Green Deal (Panagos and Montanarella, 2021).

Legal framework for soil conservation in WB

The WB countries have incorporated provisions from the EU legal framework in their legislation, such as the Water Framework Directive, the Nitrate Directive, Biodiversity Protection, Agrobiodiversity, the Habitats and Bird Directive etc. Countries address the environmental requirements with the cross-compliance that is set as a Code of Good Agricultural Practices (CGAP). Most of the countries foresee cross-compliance in their legal documents, but it has either not been prepared yet, or it has not been properly implemented. Cross compliance is essential for going further in the environmentally friendly agriculture, particularly in the agri-environmental measures. Moreover, it is an essential tool for applying the “polluter pays” principle in the agri-environmental policy. Therefore, the legal framework enables implementation of the cross-compliance, but due to the weak institutional capacities and other reasons, it cannot be fully implemented (Cukaliev et al., eds, 2018).

Legal framework for soil protection and management in Western Balkans is not limited to one regulation but relies to a number of by-laws regulating spatial planning, protection of the environment and water, agricultural land, forests and forest land and so on. Most countries in the region has a law on agricultural land, while some have the law on soil protection. A downside in the existing legal regulations of the countries is the lack of an integrated systemic approach to soil management in the manner which will take into account the adaptations of the soil to the local climate conditions, types of the soil and other details regarding the land management.

The most important conclusion from the review of the legal framework for soil management in WB is that there is no country in the region with a comprehensive legal framework that covers soil protection, restoration, sustainable use

and monitoring, and that would set the necessary conditions to integrate soil protection in other policy areas, and thus ensure soil protection and restoration in other policy areas. Another reason for this is the lack of a comprehensive and coherent framework of the EU policy for protection of the soil and its resources, which is a key gap that reduces the effects of the existing incentives and measures and limits the capacity of both the European Union and the Western Balkans countries, which are striving to reach the Green Agenda Goals, UN Sustainable Development goals, No net land take by 2050 goal, land degradation neutrality and other objectives related to development of green infrastructure and bio-economy.

Strategic documents for soil management in WB

With the view to harmonization with the EU policy, all Western Balkan countries have set soil-related goals in their respective strategic documents regarding agriculture and rural development. These documents, inter alia, focus on agroecology and they provide a good basis for development of soil protection policy and related measures for integration of the environment in the agricultural policies. Regardless of the differences between the analyzed countries, it is worth noting that in their strategic documents related to agriculture and environmental protection all the countries present very similar strategic priorities, objectives and measures. Most of them are a result of EU rapprochement. As regards agriculture and rural development, strategies in all the countries mentioned set priorities and activities aimed at soil management, as follows:

- Restoration, preservation and improvement of the ecosystem through sustainable management of natural resources and climate actions,
- Improved management of natural resources and resource efficiency ensuring sustainability of the environment,
- Introduction of agricultural methods that protect the environment and mitigate climate influence (environmentally friendly practices),
- Introduction of EU accession policies related to natural resources management and climate actions focused on sustainable use and management of soils, forest and water resources and waste management, as well as ameliorated use of pollution prevention laws and regulations,
- Reversed trend of environmental degradation (soil erosion, water pollution and biodiversity loss) due to unsustainable soil management and agricultural practice,
- Organic production, control, certification and organic production control system,
- Revitalization and pasture preservation,
- Control of non-selective conversion of agricultural soil for other land uses,
- Preservation of the landscape and agricultural ecosystems, agricultural surfaces of high natural value and their respective resources,
- Awareness raising on climate change, its impacts and mitigation measures, and on the methods for protection from such change,
- Implementation of the reciprocal harmonization as a mechanism that links direct payments with harmonization between farmers and basic environmental standards, including requirements for maintenance of the soil in a good agricultural and ecological state.

With the view to harmonization with the requirements set in the new EU Soil Strategy for 2030, it is necessary to harmonize and finalize the goals set within the strategic documents of the Western Balkans countries.

The IPARD Agri-environment-climate measures: example of the Republic of Serbia

The Agri-environment-climate measure in IPARD III Program for the Republic of Serbia (2021-2027) consists of four operations that aim to enhance cultivation methods adapted to the environment and the features of landscapes, and to enhance the Republic of Serbia biodiversity and ecosystem services, promote water conservation and water quality improvement, and contribute to climate change adaptation and mitigation principally by sustainable input use and improving soil management. Supporting more sustainable practices and management of agricultural land in rural areas will contribute to the maintenance of a favorable landscape and environment for enhanced public goods.

The 4 operations consist of the following: Operation 1 - Crop rotation on arable land; Operation 2 - Grassing in inter-row area in permanent crop land; Operation 3 - Establishment and maintenance of pollinator strips; Operation 4 - Sustainable management of meadows and pastures. These operations are also directly relevant to the achievement of the vision and strategic goals of the National Agriculture and Rural Development Strategy which underlines the importance of a more responsible and sustainable use of resources and agricultural practices. Furthermore, the operations are highly relevant and complementary to the 5 Pillars of the Green Agenda for the Western Balkans.

Soil Indicators for Western Balkans policy support

Agri-environmental indicators (AEIs) track the integration of environmental concerns into the Common Agricultural Policy (CAP) at the EU, national and regional levels. In the context of monitoring the status of natural resources, land-use change, soil cover, soil quality and soil erosion are included among the 28 AEIs.

In WB countries there is nearly no structured soil monitoring or regular reporting on state of soil. Data availability is very diverse in the WB countries. In some countries the set of soil data can be covered to a large degree, although with a different frequency and sometimes diverging national methodology. Through a combination of statistical and environmental data sources, a lot of information is available or at least possible to collect. All available data has been put together in a targeted effort for reporting to international conventions or other obligations. Some AEIs related to soil are also being monitored in the Western Balkans (Table 2).

Table 2. Threats, issues and indicators related to soil in WB countries

Threat/issue	Indicator
Soil erosion	Estimated soil loss by wind erosion
	Estimated soil loss by water erosion
Decline in soil organic matter	Topsoil organic carbon content (measured)
	Soil organic carbon stocks (measured)
	Peat stock
Soil contamination	Heavy metal contents in soils
	Progress in management of contaminated sites
Soil sealing	Land take [to urban and infrastructural development]
Decline in soil biodiversity	Species diversity
	Soil microbial respiration
Soil salinization	Salt profile
	Exchangeable sodium percentage
Desertification	Land area at risk of desertification
	Land area burned by wildfire
Landslide	Occurrence of landslide activity
	Volume/mass of displaced material
	Landslide hazard assessment

In order to establish an indicator-based reporting system in the Western Balkans, it is necessary to consider what are the regional aspects that need to be taken into account when selecting a set of indicators for monitoring soil status.

Conclusions

Soils play a crucial role in achieving the ambitious target of the European Green Deal on a climate-neutral EU by 2050. Implementation of a soil protection framework to ensure healthy soils is a priority for the implementation of the Green Agenda for the Western Balkans. This requires coherent action across a broad policy base. Soil degradation is a trans boundary issue, therefore tackling it requires a well-coordinated regional approach where all stakeholders have equal responsibility to ensure that soils are managed sustainably and the 2030 Agenda for Sustainable Development goals are met.

The agri-environmental measures in place in WB countries and entities, mostly financed through national programs, refer to organic farming, protection of animal and plant genetic resources incl. bees, grazing or revitalization of extensive pastures. In most of the countries in the region, there are neither defined requirements for complying with the Statutory Management Requirements (SMR), nor with the good agricultural and environmental conditions (GAECs) in terms of environmental protection.

Agri-environmental indicators and monitoring of farming practices, impact on the environment, responses of society, and effectiveness of agri-environmental measures need to be further developed. Generally, there is a low level of environmental awareness among farmers. Big challenge and issue in some of the countries of Western Balkans is the LPIS system (Land Parcel Identification System) for all the agricultural plots as a major part of the agri-environmental payments. The Agricultural Advisory Extension Services in the region have had a very important role in farmer education and implementation of the agri-environmental and rural development measures.

The subsidies (IPARD and direct payments) present a good mechanism for support to the implementation of the good agricultural practices for soil conservation, they involve principles of the EU Common Agricultural Policy (CAP) and environment protection through direct support and rural development measures for farmers. In addition to constant work in the process of harmonization of national regulation with the EU standards, additional programs and measures are needed, as well. From the regional perspective, the highest priority is set on the issues of capacity building, awareness raising, and improvement of data availability and transparency.

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