

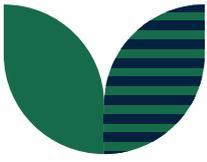


Green Agenda

for the Western Balkans Action Plan

IMPLEMENTATION
REPORT
2022





good. better. regional.

Title:

Green Agenda for the Western Balkans Action Plan - Implementation Report 2022

Publisher:

Regional Cooperation Council

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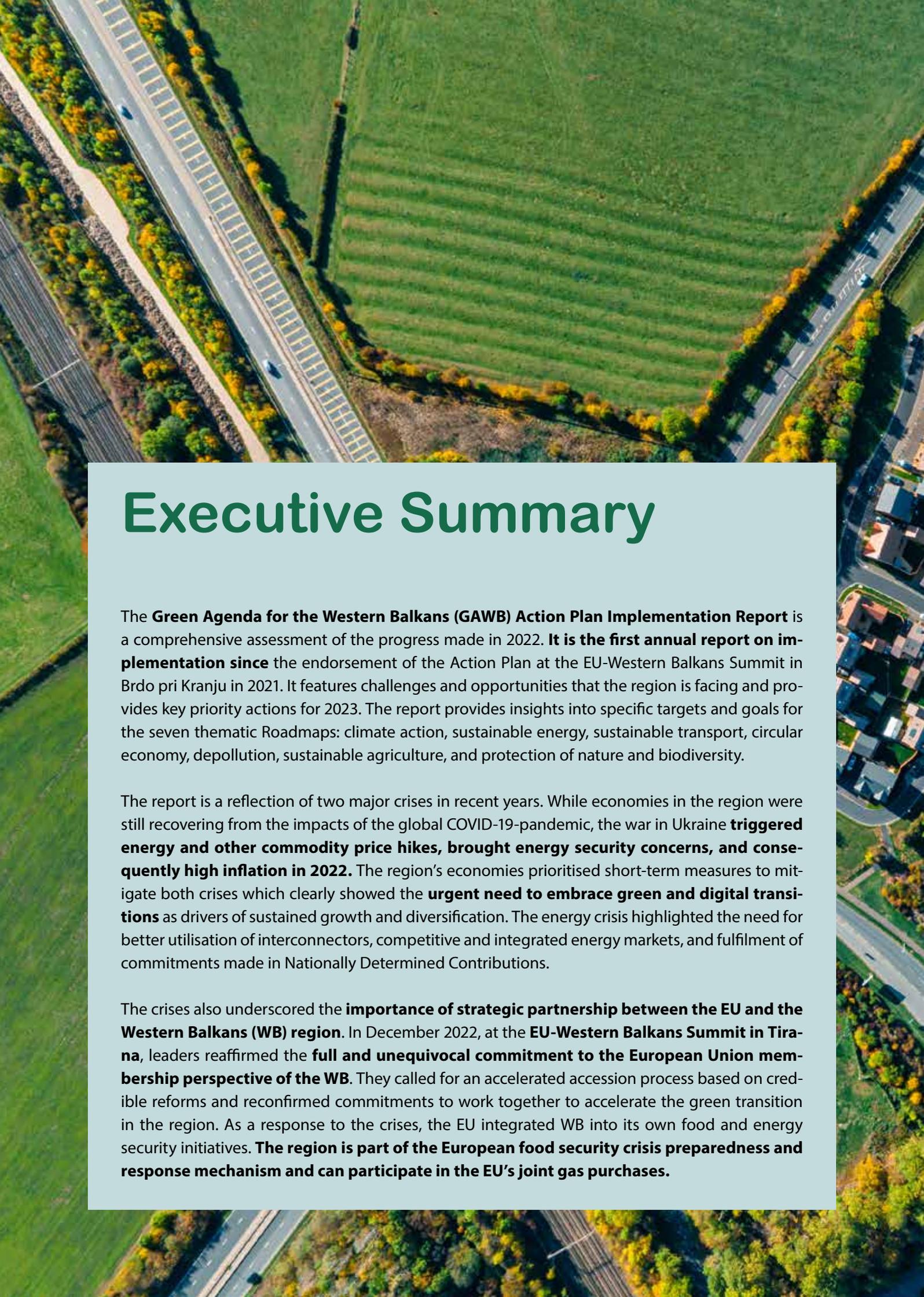
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An aerial photograph showing a multi-lane road with a central green median and yellow-flowered trees. The road curves through a vast green field. In the bottom right corner, a residential area with houses and a road is visible.

Executive Summary

The **Green Agenda for the Western Balkans (GAWB) Action Plan Implementation Report** is a comprehensive assessment of the progress made in 2022. **It is the first annual report on implementation since** the endorsement of the Action Plan at the EU-Western Balkans Summit in Brdo pri Kranju in 2021. It features challenges and opportunities that the region is facing and provides key priority actions for 2023. The report provides insights into specific targets and goals for the seven thematic Roadmaps: climate action, sustainable energy, sustainable transport, circular economy, depollution, sustainable agriculture, and protection of nature and biodiversity.

The report is a reflection of two major crises in recent years. While economies in the region were still recovering from the impacts of the global COVID-19-pandemic, the war in Ukraine **triggered energy and other commodity price hikes, brought energy security concerns, and consequently high inflation in 2022.** The region's economies prioritised short-term measures to mitigate both crises which clearly showed the **urgent need to embrace green and digital transitions** as drivers of sustained growth and diversification. The energy crisis highlighted the need for better utilisation of interconnectors, competitive and integrated energy markets, and fulfilment of commitments made in Nationally Determined Contributions.

The crises also underscored the **importance of strategic partnership between the EU and the Western Balkans (WB) region.** In December 2022, at the **EU-Western Balkans Summit in Tirana**, leaders reaffirmed the **full and unequivocal commitment to the European Union membership perspective of the WB.** They called for an accelerated accession process based on credible reforms and reconfirmed commitments to work together to accelerate the green transition in the region. As a response to the crises, the EU integrated WB into its own food and energy security initiatives. **The region is part of the European food security crisis preparedness and response mechanism and can participate in the EU's joint gas purchases.**

An aerial photograph of a residential neighborhood. The houses are densely packed, with various roof colors like grey, brown, and blue. There are winding roads and parking areas. To the right, there is a large body of water, possibly a lake or a wide river, surrounded by lush green trees. The overall scene is bright and clear, suggesting a sunny day.

To support green and digital transition and to help bridge the socioeconomic gap between the WB and the EU, implementation of a nearly **€30 billion Economic and Investment Plan is underway**. The EU has so far adopted financing for **40 flagship projects, with €1.8 billion EU support and a total investment value of €5.7 billion**. This includes 12 investment projects adopted in December 2022, of which 6 of the €1 billion energy support package.

The report examines the baseline indicators to establish a benchmark for future progress monitoring. **It covers the trends in key indicators since 2016**. This year was chosen to establish a baseline, in addition to measuring progress compared to the period before the endorsement of Sofia Declaration in 2020. This assessment shows gaps in data availability and quality, and provides recommendations to enhance monitoring and reporting system moving forward.

GAWB Action Plan enhancement is a gradual process, and this report captured advancements that have been made across the defined objectives in 2022. The progress is often uneven across the region, as economies are at different stages of EU accession processes, and have different green transition paths. The implementation of GAWB Action Plan is the responsibility of WB economies, but regional coordination is required to enhance the Action Plan implementation in a synchronised manner. Therefore, the priorities for 2023 include, among others, finalisation of the GAWB governance model at the regional level, and further inclusion of key groups of stakeholders in related policy dialogue.



Key findings

Climate Action - Most of the WB economies are developing their legal frameworks to address climate issues and align with EU Climate Law by 2025, **although the progress is uneven**. All economies have set energy and climate goals within Nationally Determined Contributions. Albania and North Macedonia have adopted integrated National Energy and Climate Plans. The Emission Trading Scheme (ETS), proposed in the GAWB Action Plan, is yet to be introduced in the WB economies, with the exception of Montenegro where basic ETS exists but requires further development. **The prospect of CBAM to embed the carbon price in selected goods from 2026 for a group of products entering EU markets will incentivise economies to speed up the ETS introduction**, as foreseen in the GAWB Action Plan.

Energy - All WB economies agreed on their energy and climate targets for 2030 within the Energy Community framework (energy efficiency, renewable energy, and greenhouse gas emissions targets). Economies are increasing the use of renewable energy sources through developing de-risking mechanisms and renewable support schemes. In 2022, progress was recorded in implementing the Clean Energy Package, particularly the Renewable Energy and Energy Efficiency Directives. The economies are at the early stage of assessing the socioeconomic impact of decarbonisation and conceptualising just transition and addressing energy poverty.

Sustainable Transport - In 2022, the region experienced some progress in the implementation of regional action plans. The rail electrification compliance increased to 74% for Core Network and to 55.5% for Comprehensive Network. Alternative fuel infrastructure availability is still generally low, even for electric vehicles. Clean fuels are not available in any of the inland waterways or maritime ports. In 2022, work to deploy intelligent transport systems and the European Rail Traffic Management System was ongoing, but there is a need to enhance work on laws and by-laws to establish a regional railway market. **The EU-WB Green Lanes initiative has achieved significant progress**. Participation of renewable energy sources in transport sector is close to none, and all economies have still to align with the Alternative Fuel Infrastructure Directive. Climate proofing of infrastructure and adaptation strategies still needs to be put in place. Despite progress in technical document development, the progress in implementing flagship projects could be improved.

Circular Economy - Montenegro and Serbia have adopted circular economy roadmaps, followed by strategic plans and programmes, while other economies are developing their roadmaps to be adopted in 2023. The region, rich with mineral resources, will benefit from integration into the European mineral market, but reforms are required in mineral policy, land planning, regulations for exploration and mining to provide access to resources and safeguard nature and people. **Current waste management practice is dominantly landfilling, with low recycling rates. Waste management policy frameworks require further harmonisation with EU standards, followed by significant infrastructure investment needs**. In 2022, there was some progress at the regional level to address plastic pollution, including banning single use. **The regional joint statement on preventing plastic pollution including marine litter has been developed to tackle plastic pollution in the region, but has yet to confirm final agreement**.

Depollution - Air quality improvement is an urgent goal for WB economies, and air quality monitoring systems need improvement. Moreover, effective implementation of relevant EU legislation on industrial pollution, such as the Industrial Emissions Directive, is challenged by limited capacities and in-



vestments. In terms of water management, the legislation in all WB economies is still to be fully harmonised with the related acquis, and water-monitoring networks need improvement. **There is a commitment to integrated soil protection through the signing of the Communiqué/Memorandum of Understanding on Soil Partnership between WB economies**, but a comprehensive legal framework for soil protection in WB economies is still to be developed. Currently, Serbia has the Law on Soil Protection that is not fully implemented. Other WB economies do not have such a dedicated legislation so development of comprehensive legal framework for soil protection is valid for all of them.

Sustainable Agriculture - The region made progress to harmonise with EU food quality and safety policies. Sanitary control along the food chain is still a work in progress. Organic agriculture remains a niche activity, but the **WB region is working towards aligning its legislation with the EU standards through Agricultural Knowledge and Innovation Systems (AKIS) Regional Expert Advisory Working Group (REAWG)**. National roadmaps for sustainable rural development have been developed with a focus on increasing the pace of EU pre-accession funding implementation for rural development (IPARD III). **A study on the impact of climate change on agriculture was published**. Improving data collection, incentivising nature-based solutions, and diversifying farming systems with efficient resource use and soil conservation remain priorities.

Nature Protection and Biodiversity - The region is in the process of preparing the Western Balkans Biodiversity Report. **All economies have developed biodiversity strategies and set targets for nature protection**. On the other hand, restoration planning is not in place, as it is not integrated systematically into nature conservation strategies and legislation. The use of Nature-Based Solutions is being explored in the region to increase ecosystem and community resilience.

It is worth noting the collaborative approach taken in developing this report. Alongside consultations with WB economies and the EC, key Regional Coordinators have been involved, namely the Energy Community, Transport Community, International Union for Conservation of Nature, Standing Working Group on Regional Rural Development, and Regional Cooperation Council. This report benefited from the detailed technical inputs received by the EU4GREEN project, and OECD team working on Green Economy and Sustainability in South East Europe. The report also benefited from inputs from NGOs, participating in the regional NGO Forum on the implementation of the Green Agenda for the Western Balkans.



2. Progress report across the roadmaps



2.1 CLIMATE ACTION ROADMAP





2.1.1 Progress in implementing the Roadmap across the actions and the region

Action 1 Align with the EU Climate Law with a vision of achieving climate neutrality by 2050

Five of six WB economies have adopted or are in the process of adopting a law addressing climate issues. Climate issues in the WB economies are mainly regulated by a set of laws concerning environmental protection and energy use. In December 2020, **Albania** adopted the Law on Climate Change¹. The Law and the related secondary legislation will need to be adjusted to ensure transposition of climate-related parts of the EU Governance Regulation.

Bosnia and Herzegovina still did not start working on the Climate Law although this action is identified in the IPA III Action Document for 2022². The indicative timeframe for WB economies for alignment with the EU Climate Law is 2025, with a continuous improvement by 2030. Drafting the Law on Climate Change is ongoing in **Kosovo*** and **North Macedonia** with the Energy Community Secretariat's active support.

Montenegro is preparing a new Law on Protection against Negative Impacts of Climate Change with the aim to transpose elements of EU Climate Law. The new law is expected to be adopted in the fourth quarter of 2023. **Serbia** adopted the Law on Climate Change in March 2021³. In addition, three by-laws were adopted to ensure operationalisation of the Law on Climate Change for the planned extension of the Energy Community acquis⁴.

Action 2 Set forward-looking 2030 energy and climate targets

All WB economies have set forward-looking energy and climate targets in Nationally Determined Contributions (NDCs), government strategies or other relevant documents. All Energy Community Contracting Parties signatories of the Paris Agreement and UNFCCC have submitted their revised Nationally Determined Contribution (NDC2). The Ministerial Council of the Energy Community adopted the 2030 energy and climate targets for the entire Energy Community, including for individual economies⁵. The Ministerial Council of the Energy Community adopted domestic targets on 15 December 2022 (Decision 2022/02/MC).

¹ Grantham Research Institute on Climate Change and the Environment. (n.d.). Climate Change Laws of the World: Law no 155/2020 on climate change-Albania. <https://www.climate-laws.org/geographies/albania/laws/law-no-155-2020-on-climate-change>

² Grantham Research Institute on Climate Change and the Environment. (n.d.). Climate Change Laws of the World: Overview and context. <https://www.climate-laws.org/geographies/bosnia-and-herzegovina>

³ Grantham Research Institute on Climate Change and the Environment. (n.d.). Climate Change Laws of the World: Serbian Law on Climate Change. <https://www.climate-laws.org/geographies/serbia/laws/serbian-law-on-climate-change>

⁴ Official Gazette of RS, No. 107/21. Rulebook on Verification and Accreditation of Verifiers of Reports on Greenhouse Gas Emissions; Official Gazette of RS, No. 13/22. Regulation on Types of Activities and Gases with a Greenhouse Effect; Official Gazette of RS No 107/22. Rulebook on data on economic fuel consumption and CO2 emissions from new passenger vehicles.

⁵ Energy Community. (2022). Decision of the Ministerial Council of the Energy Community. https://www.energy-community.org/dam/jcr:421f0dca-1b16-4bb5-af86-067bc35fe073/Decision_02-2022-MC_CEP_2030targets_15122022.pdf

* This designation is without prejudices to the position on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.



2030 energy and climate targets for the Western Balkans				
Contracting party	Target for share of energy from renewable sources in gross final consumption of energy, 2030	Maximum share of primary energy consumption in 2030 (Mtoe)	Maximum share of final energy consumption in 2030	Target for net Greenhouse Gas Emissions compared to 1990 levels and absolute emissions in 2030
Albania	52.0%	2.60 Mtoe	2.40 Mtoe	+53.2% 12.00 MtCO ₂ eq
Bosnia and Herzegovina	43.6%	6.50 Mtoe	4.34 Mtoe	-41.2% 15.65 MtCO ₂ eq
Kosovo*	32.0%	2.70 Mtoe	1.80 Mtoe	-16.3% 8.95 MtCO ₂ eq
Montenegro	50.0%	0.92 Mtoe	0.73 Mtoe	-55.0% 2.42 MtCO ₂ eq
North Macedonia	38.0%	2.30 Mtoe	2.00 Mtoe	-82.0% 2.20 MtCO ₂ eq
Serbia	40.7%	14.94 Mtoe	9.54 Mtoe	-40.3% 47.82 MtCO ₂ eq

Source: Energy Community, author's interpretation⁶

Action 3 Develop and implement integrated Energy and Climate Plans

Two WB economies have adopted their integrated National Energy and Climate Plans (NECPs), while in others NECPs are in the developing phase. With the adoption of the Governance Regulation at the 2021 Energy Community Ministerial Council, development and adoption of integrated NECPs became a legal obligation for the Contracting Parties. NECPs are an important instrument for steering the energy transition, defining economy's energy and climate goals, and policies and measures to attain them. According to the Regulation, the draft NECPs are to be submitted for the Energy Community Secretariat's review and opinion by June 2023 and adopted by the Contracting Parties by June 2024.

Albania⁷ and North Macedonia⁸ have already adopted their NECPs. Albania is currently updating the NECP adopted in December 2021 and a new strategic environmental assessment was launched. North Macedonia adopted its NECP in May 2022. The remaining Contracting Parties are in the phase of developing their plans, and plan to submit their NECP drafts to the Secretariat by June 2023 deadline and their final NECPs by June 2024.

⁶ Notes of the Energy Community related to the table: Target of Kosovo* is compared to 2016 levels. Target of Montenegro excludes LULUCF emissions and removals. The base year used for Kosovo* in the calculation of the percentage reduction figure is 2016

⁷ Energy Community. (n.d). Climate: Implementation indicators. <https://www.energy-community.org/implementation/Albania/CLIM.html>

⁸ Energy Community. (n.d). North Macedonia adopts National Energy and Climate Plan, commits to accelerate energy transition during Secretariat's visit to Skopje. <https://www.energy-community.org/news/Energy-Community-News/2022/06/01.html>



Bosnia and Herzegovina is currently working on development of integrated NECP for the period 2021-2030⁹. An early version of NECP was submitted to the Secretariat in November 2020¹⁰. In **Kosovo***, a draft NECP has been discussed within the working groups and the Government. The Energy Strategy 2022-2031 was published for public consultation in June 2022 and adopted in December 2022¹¹. The draft NECP is planned to be finalised according to the Energy Strategy and submitted to the Secretariat for review in the first half of 2023.

Montenegro submitted the analytical part and updates to the policy parts of its draft NECP to the Secretariat in May 2021. Since there is still no policy decision on the future of Pljevlja thermal power plant, the draft NECP still incurs a high level of uncertainty regarding its scenarios and essential policies and measures¹².

In the reporting period, **Serbia** continued with working group meetings dedicated to NECP development¹³, finalised the model and obtained the first results for scenarios¹⁴. It should be noted that Serbia has advanced in the Terms of Policy Section (A) and Analytical Section (B) since the Energy Tracker 2022 was published (see figure below). All WB economies need to reflect the 2030 energy and climate targets adopted by the Energy Community Ministerial Council in their NECPs.

State of National Energy and Climate Plans preparation

	Legal basis adopted	Working group operational	Modeling capacity exists	Policy section (A) drafted	Analytical section (B) drafted	Submitted to the Secretariat for peer review	Final version submitted to the Secretariat
Albania	●	●	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●	●	●
Georgia	●	●	●	●	●	●	●
Kosovo*	●	●	●	●	●	●	●
Moldova	●	●	●	●	●	●	●
Montenegro	●	●	●	●	●	●	●
North Macedonia	●	●	●	●	●	●	●
Serbia	●	●	●	●	●	●	●

● Finished ● Started ● Planned

Source: Energy Community Secretariat, WB6 Energy Transition Tracker¹⁵

9 BHAS: Agency for Statistics of Bosnia and Herzegovina. (n.d.). Towards clean, renewable and efficient energy use: Bosnia and Herzegovina. https://unece.org/sites/default/files/2021-02/7_Bosnia_Herzegovina_2nd%20UNDA_country%20experience.pdf

10 Energy Community. (n.d.). Climate: Implementation indicators. https://www.energy-community.org/implementation/Bosnia_Herzegovina/CLIM.html

11 Taylor, A. (2022, December 19). Kosovo approves renewables-focused energy strategy. EURACTIV. <https://www.euractiv.com/section/politics/news/kosovo-approves-renewables-focused-energy-strategy/>

12 Energy Community. (n.d.). Climate: Implementation indicators. <https://www.energy-community.org/implementation/Montenegro/CLIM.html>

13 Energy Community. (n.d.). Climate: Implementation indicators. <https://www.energy-community.org/implementation/Serbia/CLIM.html>

14 Todorovic, I. (2022, August 19). Serbia's NECP on public review until 5 September. BALKAN GREEN ENERGY NEWS. <https://balkan-greenenergynews.com/serbias-necp-on-public-review-until-september-5/>

15 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf



Action 4 Prepare and implement climate adaptation strategies

All WB economies, except North Macedonia and Serbia, prepared and adopted their climate adaptation strategies¹⁶. There is no information available regarding the progress of their implementation. Development of a domestic adaptation strategy in North Macedonia was initiated in the framework of a project implemented by UNDP¹⁷. Serbia is finalising preparations of its first Climate Change Adaptation Programme.

	Adaptation strategy 
Albania	
Bosnia and Herzegovina	
Montenegro	
North Macedonia	
Serbia	
	 In Place  In Progress  Not in place

Source: Energy Community Secretariat, WB6 Energy Transition Tracker¹⁸

Action 5 Align with the EU Emission Trading System and/or introduce carbon pricing instruments

Carbon-pricing instruments have not yet been introduced in the WB region, with the exception of Montenegro. However, carbon pricing in Montenegro is at a much lower level than the price under the EU Emission Trading Scheme (ETS). An estimate of the costs of carbon emissions shows that only in 2021 the cost of emission allowances for power produced in the Energy Community would have reached EUR 3.8 bill, calculated at an average EU Emission Trading Scheme (ETS) price of 42 EUR/ton in 2021.

If internalised, the avoided costs of emissions would have amounted to close to 1.5% of the Energy Community's GDP in 2021 and could have been used to offset, at least partially, the costs of energy transition. Two utilities, in Bosnia and Herzegovina (Elektroprivreda Bosne i Hercegovine) and in North Macedonia (Elektrostopanstvo na Severna Makedonija), expressed their intention to introduce an internal carbon price¹⁹.

¹⁶ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

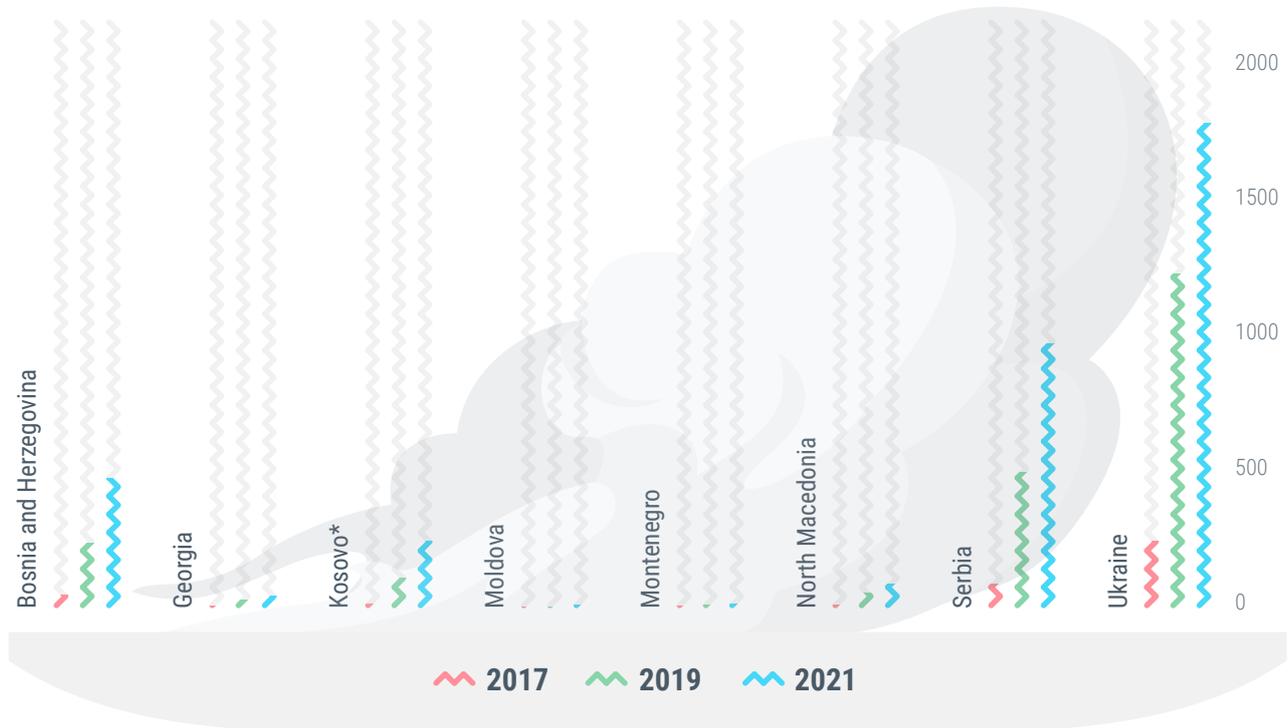
¹⁷ UNDP Climate Change Adaptatio. (n.d.). Introduction: Country background, Sustainable Development Goals and Paris Agreement. <https://www.adaptation-undp.org/projects/supporting-north-macedonia-advance-their-nap-process>

¹⁸ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

¹⁹ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf



Avoided costs of emission at EU ETS price [mio EUR]



Source: Energy Community Secretariat, WB6 Energy Transition Tracker²⁰

Action 6 Increase opportunities for deployment of nature-based solutions to mitigate and adapt to climate change

The application of approaches that integrate ecosystems and nature more broadly into climate change adaptation and disaster risk reduction measures is still insufficient and fragmented in all WB economies. Through the ADAPT project²¹, IUCN completed two scoping studies for **Bosnia and Herzegovina** and **Serbia** in August 2022 that map the main climate risks and hazards and their causes, provide stakeholder analysis of relevant existing projects using Nature-based Solutions (NbS), and put forward recommendations for deploying those solutions at economies' level.

The key sectors identified for future NbS interventions include agriculture, forestry and water resources. There are many challenges for introducing NbS at the policy and strategic levels, and this is further amplified by a lack of synchronised, up-to-date and accessible data, especially regarding environmental monitoring. Existing policy frameworks of **Bosnia and Herzegovina** at the central, entity and cantonal levels do not recognise NbS explicitly, even though this concept appears in some strategies as associated actions or a possible tool that can be used, but without a broader overview of the possible benefits and advantages for climate change adaptation or disaster risk reduction.

²⁰ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

²¹ IUCN. (2022, August 26). Opening the untapped potential of Nature-based Solutions in the Western Balkans – two national scoping studies available online. <https://www.iucn.org/news/202208/opening-untapped-potential-nature-based-solutions-western-balkans-two-national-scoping>



Many documents and reports developed for different conventions should pay particular attention to NbS and include this concept as a potential solution for climate change adaptation and disaster risk reduction in Bosnia and Herzegovina. At the entity and Brcko District level, there are many important sectoral documents in agriculture, forestry, water management, nature protection and biodiversity that would profit from recognition of the potential of NbS, but unfortunately, this concept has not yet been included.

Within the existing **Serbian** policy framework, the values of ecosystems and their contribution to climate change adaptation and mitigation and disaster risk reduction are partly recognised, but NbS are not explicitly mentioned as associated actions or tools. However, Serbia's first Climate Change Adaptation Programme, which is in the final phase of development, will include NbS.

NbS need to be integrated into and applied through the existing policy and institutional framework mainly in the disaster risk reduction and climate change sectors, and further mainstreamed and incorporated in urban development, agriculture and rural development, land-use, forestry, water management and biodiversity and nature protection. Four scoping studies for the remaining WB economies that ADAPT operates in (**Albania, Kosovo***, **Montenegro, North Macedonia**) are in the final stages of preparation, including final consultations with economy-level stakeholders.

Action 7 Ensure participation of WB economies in the European Climate Pact or consider development of a similar mechanism

None of the WB economies have made official pledges as an organisation or as a group to participate in the European Climate Pact or similar mechanism. Only individuals from **Albania, North Macedonia** and **Serbia** have registered as ambassadors of the European Climate Pact. The WB economies need to communicate the existence and goals of the European Climate Pact and support organisations to make pledge and utilise the Pact as a platform to share stories, solutions, and suggestions.

2.1.2 Monitoring the implementation of Climate Action Roadmap

In Albania, Montenegro, Bosnia and Herzegovina, North Macedonia, Kosovo* and Serbia, reports on indicators regarding climate action are released annually. Total GHG emissions statistics²² for Kosovo* are only provided for 2017-2019, while during 2022 Kosovo* prepared the inventory of GHG emissions for 2020 and reported it to the European Environment Agency²³. The following analysis looks back at how indicators regarding the GHG emissions changed from 2016 to 2019, as well as how the percentage of sectoral policies that include climate change varied throughout the period from 2018 to 2022.

As it is visible in the following graph regarding the **total GHG emission**, all analysed economies record stagnation, maintaining a constant level of GHG emissions over the years, without excessive oscillations. The emissions from the energy sector are dominant in each economy (cca. 80%), therefore a slight decrease in total GHG emissions is recorded in Bosnia and Herzegovina and Serbia due to installation of renewable energy sources. Serbia marks the highest GHG emissions in the region due to relying on fossil fuels for heat

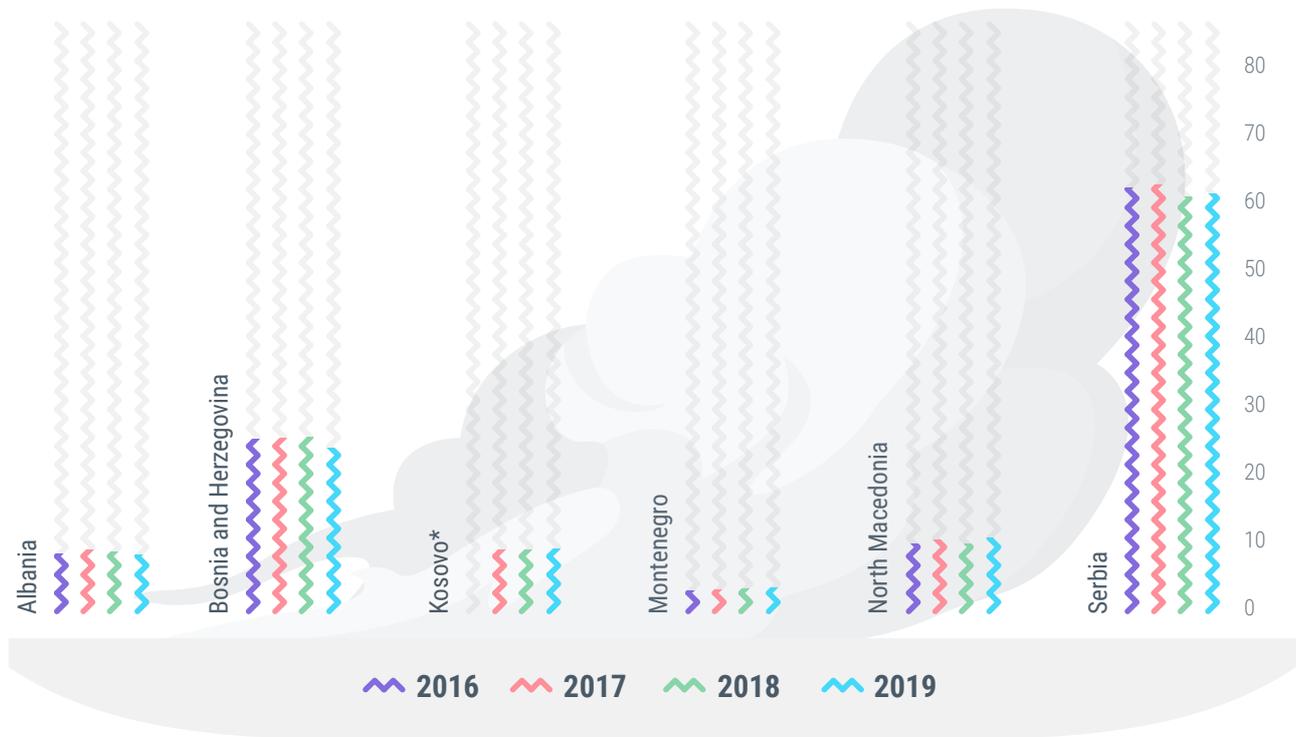
²² Eurostat. (n.d.). EU key indicators. <https://ec.europa.eu/eurostat>

²³ European Environment Information and Observation Network, Greenhouse gas inventories (UNFCCC), <https://cdr.eionet.europa.eu/xk/un>



generation and the bigger size of its population and economy, according to its Department for Energy Efficiency. Nearly 70% of each economy's total emissions are the result of electricity and heat generation. Since all Western Balkan economies are in the transition period, the increased consumption of heat and electricity for the purpose of development is expected to be high. The indicator regarding **GHG emission intensity of power generation** (as named in GAWB Action Plan) should show whether the mentioned consumption is used in a way suitable for reducing GHG emissions. The GHG emission intensity is most often expressed in the unit tCO₂/kWh (please see the recommendation part), based on which the degree of efficiency of the production process and the amount of used green energy sources can be determined. According to the UNFCCC, Albania, Montenegro and North Macedonia's GHG emissions are primarily coming from the energy sector and these are economies with the lowest GHG emissions per capita in Europe. The largest source of emissions relates to burning of fossil fuels for electricity and heat production.

Total GHG emissions (Mt of CO₂eq)



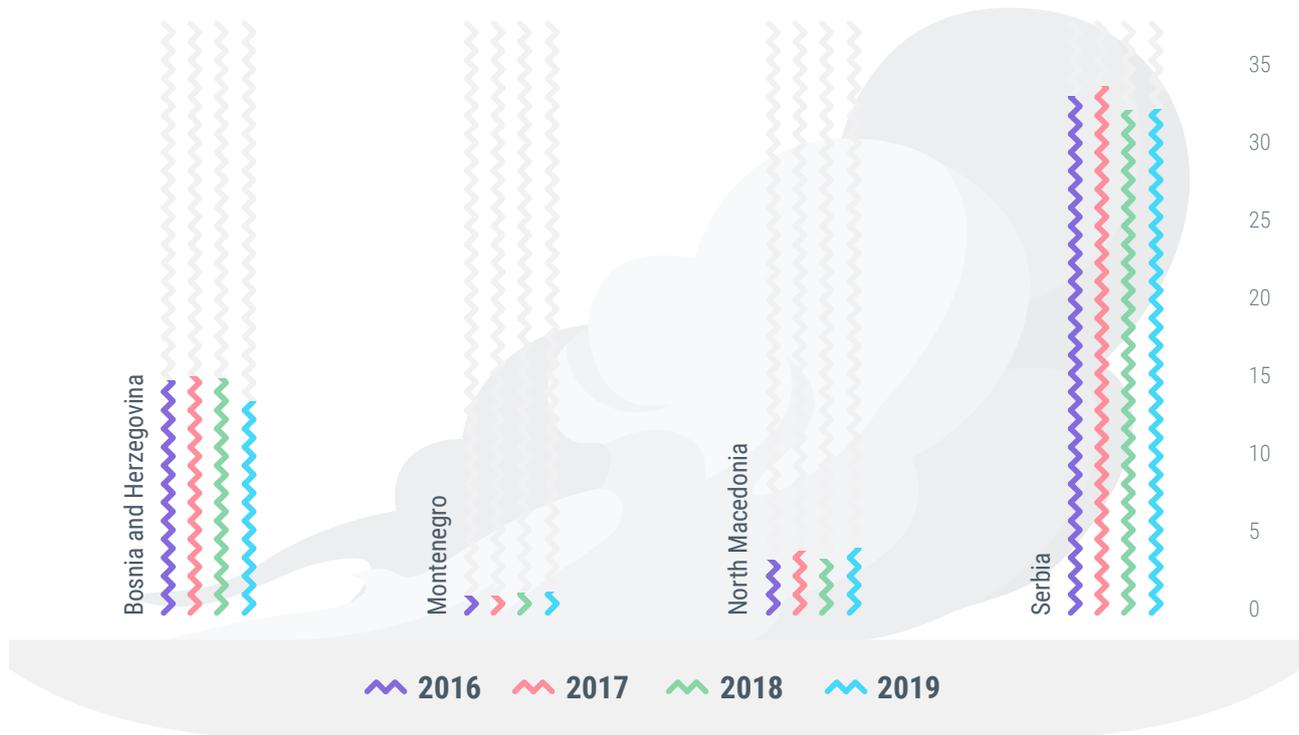
Source: Climate Watch and Eurostat for Kosovo^{*24,25}

24 Climate Watch. (n.d.). About. <https://www.climatewatchdata.org/about/faq/ghg>

25 Eurostat. (n.d.). EU key indicators. <https://ec.europa.eu/eurostat>



GHG emission intensity of power generation (tonnes of CO₂eq)



Source: Climate Watch²⁶

The number of sectoral policies that include climate change adaptation is inspired by the 2006 OECD Declaration on Integrating Climate Adaptation into Development Cooperation²⁷, which obligates OECD members to integrate climate change adaptation into their development planning and assistance, both domestically and with partner economies. It is important to note that the graph below presents the percentages and not the number of implemented sectoral policies (number of policies is not available as such in the accessible documentation, so the percent values are used).

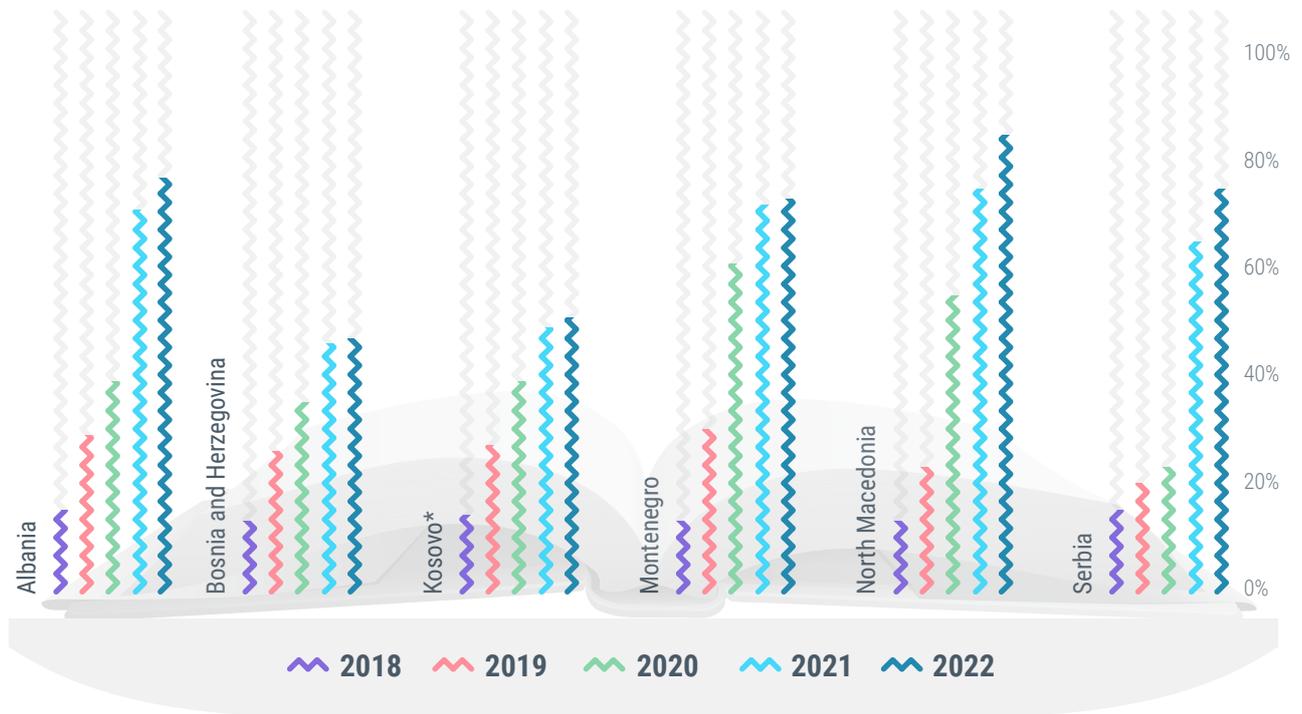
Therefore, the name of the indicator has been changed to **“Fulfilment of climate related obligations (%)”** to reflect the referenced data. Albania and North Macedonia recorded the highest increase in 2020, due to the adoption of their National Energy and Climate Plans (NECPs). In 2021 and 2022, economies progressed with transposing parts of the Governance Regulation related to NECPs. When it comes to the Law on Climate Change, Albania adopted it in 2020, Serbia in 2021, Kosovo*, Montenegro and North Macedonia are in a drafting phase and Bosnia and Herzegovina has not yet started working on the Climate Law. Accordingly, Kosovo* and Bosnia and Herzegovina have the lowest percentage of sectoral policies.

²⁶ Climate Watch. (n.d.). About. <https://www.climatewatchdata.org/about/faq/ghg>

²⁷ Development and Environment Ministers of OECD Member Countries. (2006). Declaration on Integrating Climate Change Adaptation into Development Co-operation. <https://www.oecd.org/dac/environment-development/44229637.pdf>



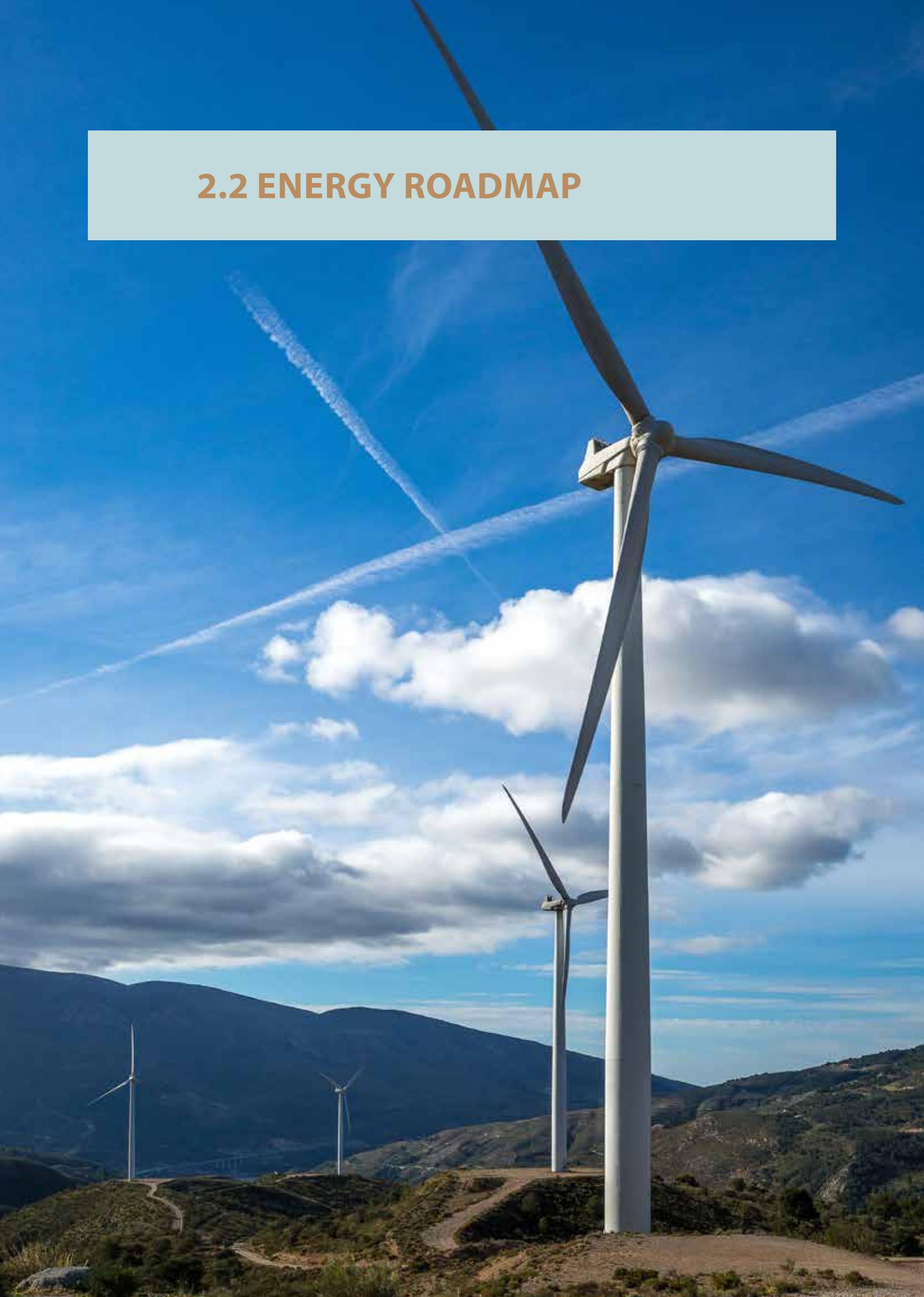
Fulfillment of climate related obligations (%)



Source: Energy Community Secretariat²⁸

28 Energy Community. <https://www.energy-community.org/>

2.2 ENERGY ROADMAP





2.2.1 Progress in implementing the Roadmap across the actions and the region

Action 8 Review and revise, where necessary, all relevant legislation to support progressive decarbonisation of the energy sector

Implementation of environmental law in the WB region, both in terms of pollution standards and the quality of permitting procedures, remains a source of concern, as evidenced by a number of infringement procedures. Simultaneously, all WB economies show some progress in implementing the Clean Energy Package, particularly the Renewable Energy and Energy Efficiency Directives.

Albania has achieved moderate progress in terms of electricity and gas market reforms. When it comes to renewables, the economy continued to be a frontrunner in the implementation of auctions for renewables projects and achieved its 2020 renewables target. Albania advanced in the implementation of Energy Performance of Buildings Directive but more progress in the area of energy efficiency is needed especially in the context of energy crisis. Transposition of the new Renewables and Energy Efficiency Directives is at an early stage, while the transposition of 2021 electricity legislation is yet to begin. Environmental concerns regarding hydropower development on Valbona and Vjosa rivers continued, with work stopping on HEC development due to Vjosa river being declared Category IV protected area since January 2022. Albania has adopted the first version of its Energy and Climate Plan and the Governance Regulation is partially transposed.

The energy legal framework in **Bosnia and Herzegovina** is fragmented along the entities and central level institutions. The non-compliant gas sector legislation limits the economy's gas infrastructure development ambitions. The Energy Community Secretariat had to initiate infringement actions to address the economy's breach of the Large Combustion Plants Directive in the case of Tuzla 4 and Kakanj 5, which continued to operate despite the expiry of their limited lifetime derogation period. Environmental standards remain low with levels of sulphur dioxide, nitrogen oxides and dust from large combustion plants above the ceiling. Transposition of the Governance Regulation and 2021 electricity legislation is yet to begin, while transposition of the new Renewables and Energy Efficiency Directives is moderately advanced.

Kosovo*'s electricity market reforms are overshadowed by concerns over security of electricity supply. Nevertheless, modest progress was achieved in improving market liquidity and competition. Kosovo*'s record of accomplishment when it comes to its environmental performance has deteriorated. Infringement cases for lack of environmental impact assessment legislation and breaching emission limits for large combustion plants initiated by the Energy Community Secretariat are ongoing. When it comes to advancing on the Green Agenda, progress hinges on the adoption of Energy Strategy. In this regard, progress was made in terms of final adoption of the Energy Strategy 2022-2031 in March 2023. Kosovo* is in the early stages of transposing the 2021 Clean Energy Package, with the exception of electricity legislation the drafting of which is yet to begin.

Montenegro continues with the approximation of electricity energy efficiency and climate related acquis. No significant progress was made with respect to the environmental acquis. The infringement case for non-compliance of its only coal-fired power plant Pljevlja with the Large Combustion Plants Directive is ongoing. Transposition of the Governance Regulation is well advanced but the lack of policy decision on



the future operation of Pljevlja affects finalisation of the National Energy and Climate Plan. Transposition of the new Renewables Directive is at an early stage, while work to transpose 2021 electricity legislation is yet to begin.

North Macedonia made some progress in the implementation of electricity, gas, oil, energy efficiency and climate acquis. It made progress in better usage of its gas interconnector with Bulgaria. This economy is one of the best performers when it comes to the implementation of Oil Stocks Directive. North Macedonia is still to improve the uptake of legal and regulatory framework to reach its renewables potential. Its environmental reforms remain limited, with a lack of environmental impact assessment legislation and non-compliance with emission ceilings under the National Emission Reduction Plan. The economy adopted its National Energy and Climate Plan and continued to make progress in drafting the Law on Climate Action. North Macedonia is in the early stages of transposing the 2021 Clean Energy Package, with the exception of electricity legislation where work is yet to begin. It should be noted that there is an ongoing infringement case for the breach of LCP Directive.

Serbia's otherwise good track record when it comes to acquis implementation is overshadowed by a lack of progress on several issues such as the lack of unbundling of gas transmission system operator and refusal to grant third party access to Horgos gas interconnection pipeline. Serbia implemented the Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) and transposed electricity Connection Codes. The economy is the best performer when it comes to the implementation of oil stocks acquis. Serbia is making progress in most areas of energy efficiency acquis. Some progress has been achieved in completing the regulatory and legal framework for renewables and the economy is yet to tap into its renewables potential. With respect to the transposition of 2021 Clean Energy Package, Serbia is by far the most advanced of all Energy Community Contracting Parties with many elements of the Governance Regulation, Renewables Directive and Energy Efficiency already transposed. The only exception is electricity where work is yet to begin²⁹. Serbia is currently not complying with the LCP Directive, and has an ongoing case for its breach.

Action 9 Prepare an assessment of socio-economic impact of decarbonisation at the individual economy and regional levels

With the assistance of various development partners and international financial institutions, WB economies have begun to assess the socioeconomic impact of decarbonisation at the individual economy level with the goal to ultimately develop action plans that will include recommendations for enhanced institutional and governance structures, required policy reforms to support a just transition³⁰ and a number of potential targeted investments^{31,32}.

There is no regional-wide assessment of socio-economic impacts of their planned decarbonisation actions, and therefore it is beneficial to conduct the assessment while developing decarbonisation plans in order to align findings and incorporate them into decarbonisation activities (including gender, social equality

²⁹ Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf

³⁰ Focus of the Just Transition is to ensure that the shift towards a climate-resilient and low-carbon economy maximises the benefits of climate action while minimising potential negative impacts on workers and communities in affected regions. A Just Transition encompasses a range of interventions needed to improve the social acceptability of climate policies and regulations to secure jobs and livelihoods when economies are shifting towards sustainable economic models.

³¹ UNDP. (2022, 26 August). Issue Brief: Just Transition. <https://www.undp.org/publications/issue-brief-just-transition>

³² EBRD. (2021, 3 March). Just Transition Diagnostics: Serbia. <https://www.ebrd.com/work-with-us/projects/tcpsd/14896.html>



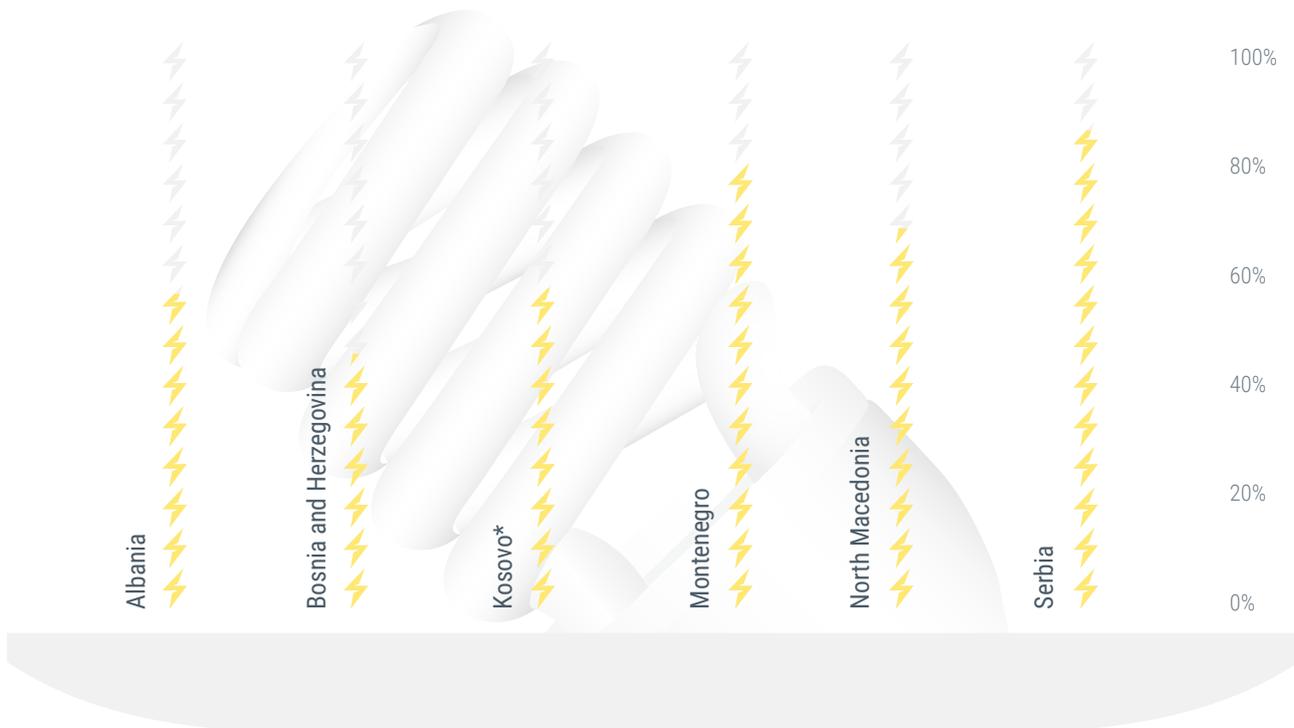
and poverty). Therefore, each economy should develop just transition strategy taking these considerations into account. In this regard, EnCS organises the Just Transition Forum to facilitate implementation, and in addition, as provided in 20th Ministerial conclusions, it requested its Energy and Climate Committee to establish a dedicated working group to further explore and develop common approaches to just transition, to identify pilot projects and support implementation.³³

Action 10 Prioritise energy efficiency and improve it in all sectors

As a foundation for improving energy efficiency, the Western Balkan economies must complete the adoption of relevant laws and by-laws that are in line with the EU acquis. On the positive side, all WB economies managed to meet their primary and final energy efficiency 2020 targets, except Bosnia and Herzegovina, which did not meet its targets when it comes to final energy. New targets were adopted for each economy at the Energy Community Ministerial Council meeting in December 2022.

Most energy efficiency actions have been implemented in the manufacturing sector (driven by private sector investments) and in the buildings sector (driven by authorities for public building investments, and by increased energy prices and soft loans for individuals in the residential building sector). All Western Balkan economies still need to meet the energy efficiency targets and policy measures indicator (so far Serbia and Montenegro made the largest progress).

Energy efficiency targets and policy measures



Source: Energy Community Secretariat³⁴

³³ Energy Community Secretariat. (2022). Energy Community Just Transition Forum. <https://www.energy-community.org/events/2022/07/JTF.html>

³⁴ Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf



Albania transposed the Energy Efficiency Directive through the amendments to the Energy Efficiency Law adopted in March 2021. Three implementing by-laws (on local energy efficiency action plans, monitoring and verification platform, and scope of application of building requirements) have been drafted, but their adoption is pending and remains a priority. The economy introduced 2030 energy efficiency targets and policy measures in the first version of its National Energy and Climate Plan (NECP) adopted in February 2022. The Plan is in the process of being updated to reflect new ambition levels. In October 2022, the Government introduced mandatory 15% energy saving targets for the public sector and new measures for households, including a financing scheme for subsidising the installation of solar water heaters.

In **Bosnia and Herzegovina**, Energy Efficiency Law in Brčko District, compliant with the energy efficiency acquis, was adopted in 2022, and by-laws at the entity level were drafted. However, transposition of the amended Energy Efficiency Directive and the Energy Labelling Regulation through amendments of the existing primary legislation in the two entities, and the implementation of Energy Efficiency Law in Brčko District remain of utmost priority for Bosnia and Herzegovina. Policy actions, including the assessment of energy efficiency targets and policy measures under the National Energy Efficiency Action Plan 2019-2021, are ongoing.

Kosovo* increased expertise and tools for certification of buildings. Monitoring and reporting framework for policy measures has been improved with a new regulation and platform for reporting. 2018 Law on Energy Efficiency set an energy efficiency obligation with 0.7% target and 1% annual central government buildings renovation target. However, the Law needs to be amended to reflect more ambitious energy efficiency targets set by the amended Energy Efficiency Directive.

As a top performer, **Montenegro** progressed with adoption of new labelling regulations, finalisation of amendments to the Law and tools for certification of buildings. Amendments to the Law on Efficient Use of Energy to transpose the latest amendments of the Energy Efficiency Directive were adopted in December 2022. NECP is under preparation to incorporate the 2030 energy efficiency policy framework and extend the targets for renovation of central government buildings and alternative measures for achievement of the energy efficiency obligation target, set previously by the National Energy Efficiency Action Plan (NEEAP).

North Macedonia's progress is reflected in drafting rulebooks for energy efficiency in buildings and assessment of building renovation and heating and cooling potential. 2020 Law on Energy Efficiency transposed the Energy Efficiency Directive and set the specific targets required under Articles 5 and 7, but the adoption of the by-law on operationalisation of the energy efficiency obligation scheme is pending. The 2030 energy efficiency targets and policy measures were introduced in the Energy Strategy and in NECP adopted in May 2022.

Serbia made progress with adoption of the Long-term Building Renovation Strategy, implementation of the Law on Energy Efficiency and Rational Use of Energy and creation of a sustainable financing framework. After the adoption of the Law in April 2021, more than 30 secondary and implementing acts were adopted to improve compliance with the amended Energy Efficiency Directive 2018/2002 (on energy management and energy audits, calculation of cumulative energy savings, public procurement and energy services, reporting, etc.), such as the recent Regulation on minimum energy efficiency requirements that must be met by new and reconstructed energy facilities ("Official Gazette of RS" number 44/22). The 2030 energy efficiency targets and policy measures are being integrated into the draft NECP³⁵.

35 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf



Action 11 Transposition and full enforcement of the Energy Performance of Buildings Directive

All WB economies have made some progress in implementing the Energy Performance of Buildings Directive; however, more efforts are required to achieve full compliance, particularly in terms of adopting and implementing long-term building renovation strategies. Albania made progress with the implementation of Energy Performance of Buildings Directive, including energy audits and issuing of building energy performance certificates. After the adoption of relevant by-laws implementing the 2016 Law on Energy Performance of Buildings, Albania established an operational energy performance certification scheme. A long-term building renovation strategy has not been adopted yet.

In **Bosnia and Herzegovina** amendments to primary legislation and long-term building renovation strategies to align with the energy efficiency provisions under the Clean Energy Package have been drafted at the central and entity levels, but their adoption is pending. Both entities are working on updating the existing by-laws, including improvements in energy audits and certification of building procedures.

Kosovo* adopted the necessary by-laws to implement the Law on Energy Performance of Buildings. Activities to strengthen expertise and tools for certification of buildings are ongoing, including on the new registry and certification software. Kosovo* drafted plans to boost nearly zero-energy buildings and a building renovation strategy, but their adoption is pending.

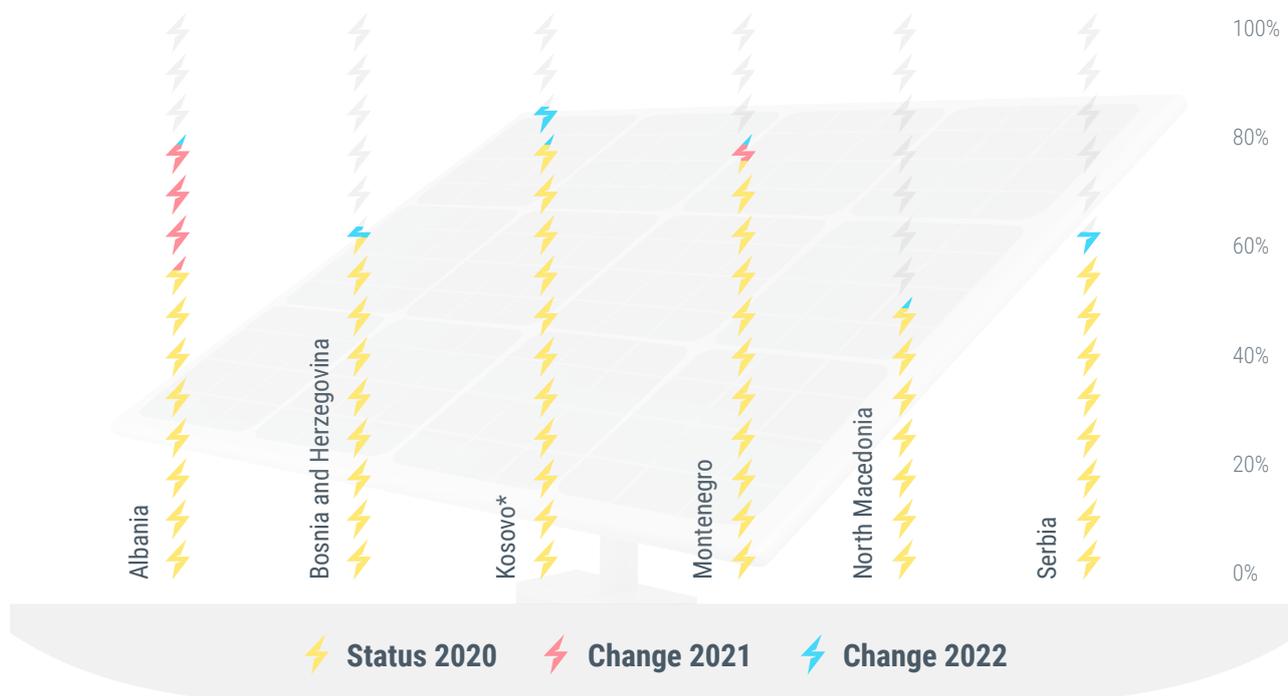
In **Montenegro**, the Buildings Directive and implementing rulebooks were transposed already in 2015. The Ministry has set new energy efficiency requirements based on the cost-optimal calculation as well as new national software for energy performance certification of buildings, in line with the latest requirements under the Energy Performance of Buildings Directive. Several building renovation programmes are ongoing, although a long-term building renovation strategy is still missing.

North Macedonia Law on Energy Efficiency transposed the Energy Performance of Buildings Directive. The economy drafted rulebooks on energy performance of buildings and energy audits of buildings. It also updated its energy performance certification software, but adoption is pending. The long-term buildings renovation strategy is still not finalised, while the guidelines for its development were adopted as part of the programme for implementation of the energy strategy.

Serbia adopted its long-term building renovation strategy until 2030 in February 2022, with the vision to renovate and decarbonise the existing public building stock by 2050. On the other hand, little progress has been achieved on the finalisation and adoption of regulation on minimum energy performance requirements and certification to achieve full compliance with Energy Performance of Buildings Directive. Hence, adoption of the updated regulation for full alignment with the Energy Performance of Buildings Directive remains a key priority.



Implementation of energy efficiency in buildings



Source: Energy Community Secretariat³⁶

Action 12 Support private and public buildings renovation schemes and secure appropriate financing

Western Balkan economies could investigate guarantee and regulatory options, such as energy efficiency service companies, to mobilise private financing for energy efficiency improvements (ESCOs). Although an appropriate legislative and regulatory framework for facilitating ESCO development has been adopted, implementation is lagging. The investments in building renovations in the Western Balkans amounted to approximately EUR 514.4 million between January 2021 and June 2022. With the largest energy efficiency gains in the buildings sector, it is important that current public and private funding is sufficiently scaled up³⁷.

Currently, there is no financing framework (government fund) for energy efficiency in **Albania**. Amendments to the Energy Efficiency Law promote development of energy service (ESCO) market model, and the relevant regulation and model contracts for energy performance contracting are in the drafting phase. Several international technical assistance and investment programmes support energy efficiency improvements, especially in the building sector.

In **Bosnia and Herzegovina**, each entity has established an energy efficiency and environmental fund, covering monitoring of implementation and reporting on achieved savings. Activities aimed to establish new

³⁶ Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf

³⁷ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf



models of financing for public and residential buildings are ongoing. The energy efficiency laws of both entities and the Brčko District recognise ESCOs and energy performance contracting. However, ESCO market remains underdeveloped, with the adoption of secondary legislation needed to remove implementation gaps still pending, e.g. in public procurement, multi-year budgeting and adoption of model ESCO contracts. **Kosovo***'s Energy Efficiency Fund continued to regularly publish public calls for improvement of energy efficiency, and signed 73 agreements with 22 municipalities worth 9 million EUR in 2022. There are ongoing activities to extend financing for residential and private sector in the near future. Rules on energy efficient public procurement, ESCOs and energy performance and supply contracts are in line with the acquis.

The Eco Fund of **Montenegro** finances energy efficiency and environmental projects. Several projects related to the public and residential sector are ongoing, supported either by public subsidies or international loans. A new project for installation of solar PV panels on rooftops is being implemented by public power utility EPCG with the support of Eco Fund. The ESCO contracts and enabling framework are incorporated in the Law on Efficient Use of Energy.

With the support of the World Bank, **North Macedonia** analysed options for establishment of National Energy Efficiency Fund, but the legal and regulatory framework for its establishment and operationalisation still remains to be adopted. The Government provides financial initiatives through the government programme for renewables and energy efficiency, while several international financial institutions are implementing renovation programmes in buildings³⁸. The implementation of ESCO projects is possible from 2020, when the economy passed the new Energy Efficiency Law³⁹.

In **Serbia**, the framework for sustainable energy efficiency financing was improved with the establishment of Administration for Financing and Promotion of Energy Efficiency as a legal authority within the Ministry of Mining and Energy, allocation of more public funding and adoption of the annual programme for financing activities and measures for energy efficiency improvements as well as new procedures enabling subsidies to the household sector. Since 2021, public calls are being regularly launched to support financing of energy efficiency projects in public and residential buildings. In 2022 support schemes covered energy efficiency measures for improvement of the building envelope and heating and cooling systems, as well as installation of PVs. An enabling legal framework for energy service contracting was updated in 2022, with several ESCO projects already being implemented in buildings, public lighting and district heating⁴⁰.

Action 13 Increase the share of renewable energy sources and provide the necessary investment conditions

To increase the share of modern renewables in the energy supply, market-based support mechanisms for both large-scale projects and self-consumers are required. To enable faster deployment of renewables, permitting procedures in all WB economies must be simplified and streamlined. Only Albania and Montenegro have fulfilled their 2020 target for the use of renewable energy in gross final energy consumption. Bosnia and Herzegovina, Kosovo*, and Serbia came close, while North Macedonia did

38 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf

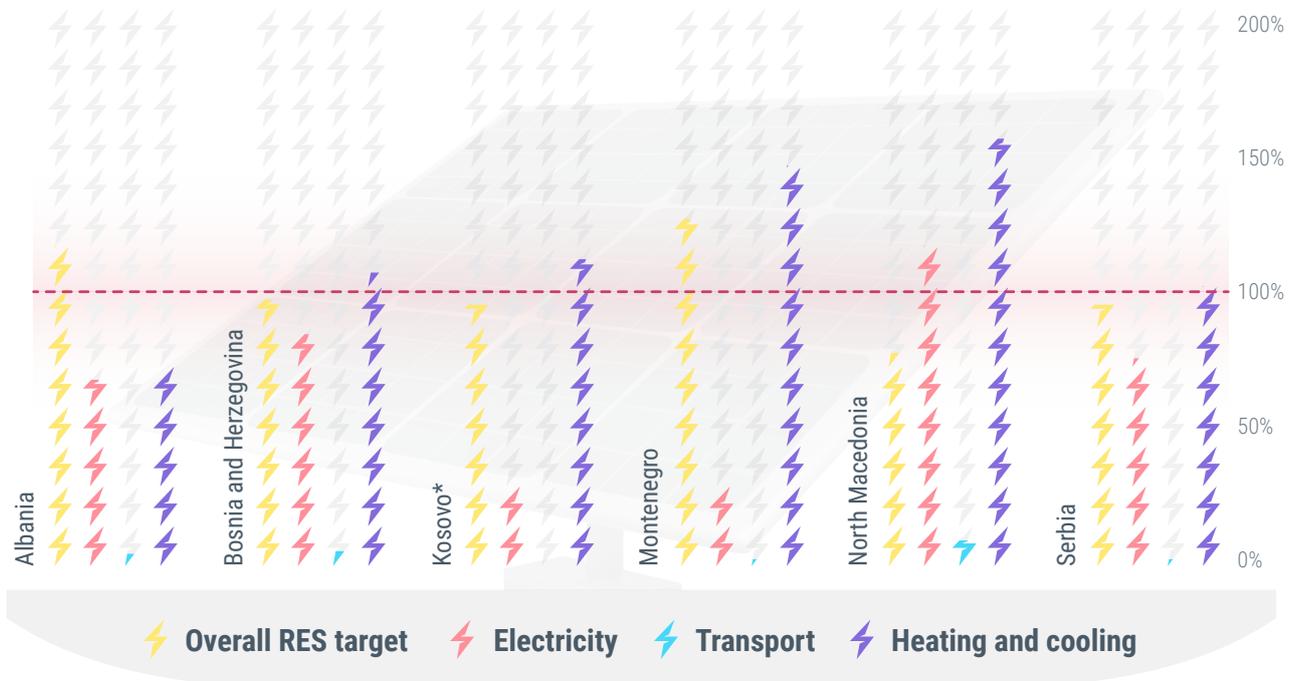
39 EBRD. (2020, August 5). EBRD and EU support energy efficiency in North Macedonia. <https://www.ebrd.com/news/2020/ebrd-and-eu-support-energy-efficiency-in-north-macedonia-.html>

40 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf



not manage to meet the 2020 target. New targets (for each economy) have been adopted by the Ministerial Council of the Energy Community in December 2022.

Meeting renewable energy targets (2020)



Source: Energy Community Secretariat⁴¹

In **Albania**, the pre-phase of the first wind auction is ongoing, and the construction of first solar PV power plant granted market-based support started. Albania's Renewables Law defines support schemes in the form of administratively set feed-in tariffs and the Contract for Difference (CfD). In practice, auctions with a fixed purchase price were conducted, envisaging conversion into CfD once a day-ahead market is operational and liquid. A decision on making all renewables producers balance responsibility was adopted on 1 April 2021.

However, no progress has been made to simplify administrative procedures and establish a one-stop shop. The same goes for **Bosnia and Herzegovina** where legal regulations differ by entity. Until draft amendments enabling renewables auctions are adopted in the Federation of Bosnia and Herzegovina, 2013 Law on Renewable Energy remains in force. Renewable energy producers under feed-in tariffs remain fully released from balancing responsibility as the adoption of the methodology for allocating balancing costs is still pending. Republika Srpska adopted a new Renewables Law in February 2022, which enables market premiums and full balancing responsibility for all projects above 500 kW.

Kosovo's* law currently prescribes a support scheme based on administratively set feed-in tariffs. However, since December 2020, the allocation of feed-in tariffs has been suspended. Existing renewable energy producers under the feed-in tariff are liable for 25% of their total imbalance costs. The electronic registry

41 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf



for guarantees of origin in Kosovo* was created and can be utilised as soon as the energy regulator, as the designated issuing body, signs a direct agreement with the service provider (this applies to all WB economies, except Serbia).

The situation regarding guarantees of origin is similar in **Montenegro**⁴². Currently, privileged renewable energy producers receiving support are exempt from payment for their imbalances. In addition, they have the right to construct energy plants in accordance with relevant administrative procedure, which is applied to projects below 1 MW only, or in a competitive procedure⁴³. Based on the Energy Law, administratively set feed-in tariffs are applicable to privileged renewable energy producers which acquired that right based on a relevant decision issued by Energy Regulatory Agency (REGAGEN), regardless of whether such projects are below 1 MW or whether the producers have acquired that right in a competitive procedure. Montenegro's first renewable energy law transposing and implementing the Renewable Energy Directive (REDII) is yet to be adopted. This law will, among others, stipulate conditions for implementation of renewable energy auctions.

Administratively set feed-in tariffs (FiT) are still granted for wind projects in **North Macedonia** with an installed capacity of up to 50 MW and hydropower plants with an installed capacity of up to 10 MW based on available quotas. Another support mechanism is a fixed feed-in premium (FiP) granted on a competitive basis. Producers under the FiT scheme are exempt from balancing responsibility, whereas producers with support granted via tenders bear balance responsibility. The electronic registry for guarantees of origin in North Macedonia was created and can be utilised as soon as the designated issuing body signs a direct agreement with the service provider. The amendments to the Energy Law, adopted in November 2022, envisage that the economy-level electricity market operator (NEMO) takes over the role of the issuing body⁴⁴. The Law on the Use of Renewable Energy Sources of **Serbia**, adopted in 2021, provides a legal basis for creation of a market-based support scheme. Renewable energy projects with capacity of less than 500 kW and 3MW for wind are entitled to a feed-in tariff, while auctions based on the feed-in premium will be held for other projects. In addition to long-term contracts providing for an incentivised price for the off-take of electricity, renewable producers are exempt from balancing responsibility by law until an intraday market is liquid. Although a quota of 400 MW and a ceiling price of 5.57 cEUR/kWh for the first wind auction were already defined, the launch of the auction is blocked due to the absence of a by-law on balance responsibility of renewables⁴⁵. On 16 March a proposal for a law on amendments to the Law on the Use of Renewable Energy Sources was adopted and is harmonised with Renewable Energy Directive. Harmonisation of the by-laws will follow after the adoption of the proposal. No progress was made to simplify administrative procedures and establish a one-stop shop. Elektromreža Srbije (EMS), as the designated issuing body, implemented requirements related to guarantees of origin and established the electronic registry. EMS also became full member of the European Association of Issuing Bodies⁴⁶. Elektrodistribucija Srbije is faced with a large number of requests for connection of energy producers, as well as prosumers, to the MV and LV levels of distribution network, with installed power ranging from few kW to 10 MW.

42 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf

43 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

44 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf

45 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

46 Energy Community Secretariat. (2022). Annual Implementation Report. https://www.energy-community.org/dam/jcr:3706068e-9a3d-47d5-ae22-f7af0bbd1097/EnC_IR2022.pdf



The number of renewable energy self-consumers is small but growing. WB economies are in various stages of implementing prosumer and/or other self-consumption schemes. While transposition deadline for REDII is yet to expire, all economies have already put in place, at least partially, an enabling legal framework for renewables self-consumption. Nevertheless, many obstacles remain to be overcome for citizens to fully participate in the energy market.

Albania is yet to adopt the methodology defining the price at which the surplus of electricity from self-consumers is to be redeemed. Despite this drawback, the number of installations using the existing net metering scheme and sending the surplus to the network without remuneration has grown significantly.

In the **Federation of Bosnia and Herzegovina** there is still no scheme enabling self-consumption, while **Republika Srpska** enabled a net metering scheme for self-consumers with an installed capacity of less than 10.8kW and a net billing scheme for installations between 10.8 and 50kW through the new Renewables Law.

In **Kosovo***, any electricity customer connected to the low voltage distribution network with installed capacity not higher than 100kW can apply to its supplier to obtain the status of a self-consumer using the net billing scheme in place. In the draft Energy Strategy, the proposed target for prosumers is 10MW by 2025 and 100MW by 2031.

Montenegro has a net metering scheme for self-consumption in place. Final customers which produce electricity from renewables for their own needs have the right to sell surplus electricity to the supplier, which is obliged to buy it. It is envisaged that the power utility Elektroprivreda Crne Gore (EPCG) will provide solar panels to eligible consumers and citizens will repay the equipment in the form of a loan within a period of seven years. The power utility EPCG and the Investment and Development Fund signed a 30mil EUR contract to finance the project in March 2022.

In June 2022, **North Macedonia** adopted amendments to the rulebook on renewable energy increasing the installation limit for self-consumers using a net-billing scheme from 4 to 6kW for households and from 20 to 30kW for other small consumers. In the recently adopted NECP, the target of 400MW for solar rooftop plants by 2040 is kept. In **Serbia**, the Renewable Energy Law enables self-consumption schemes, while a secondary act adopted in August 2021 provides details on the net metering scheme for households⁴⁷.

Action 14 Decrease and gradually phase out coal subsidies, strictly respecting state aid rules

Instead of providing targeted assistance to help with the energy transition, WB economies continue to subsidise⁴⁸ coal mining and coal-fired electricity generation. With the exception of Bosnia and Herzegovina, the level of subsidies to coal mining and coal-fired electricity generation appears to be declining in all WB economies that rely on coal for electricity generation.

The total amount of direct coal subsidies in 2020 fell by 25% compared to 2019 and 5% compared to the 2016-2020 average. In the period from 2016 to 2020, a continuous decrease in the amount of subsidies to

⁴⁷ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

⁴⁸ Term "subsidies" in this report has the same meaning as in the reports of the Energy Community Secretariat and is being defined as "any financial contribution by a government, or an agent of a government, that confers a benefit on its recipients".

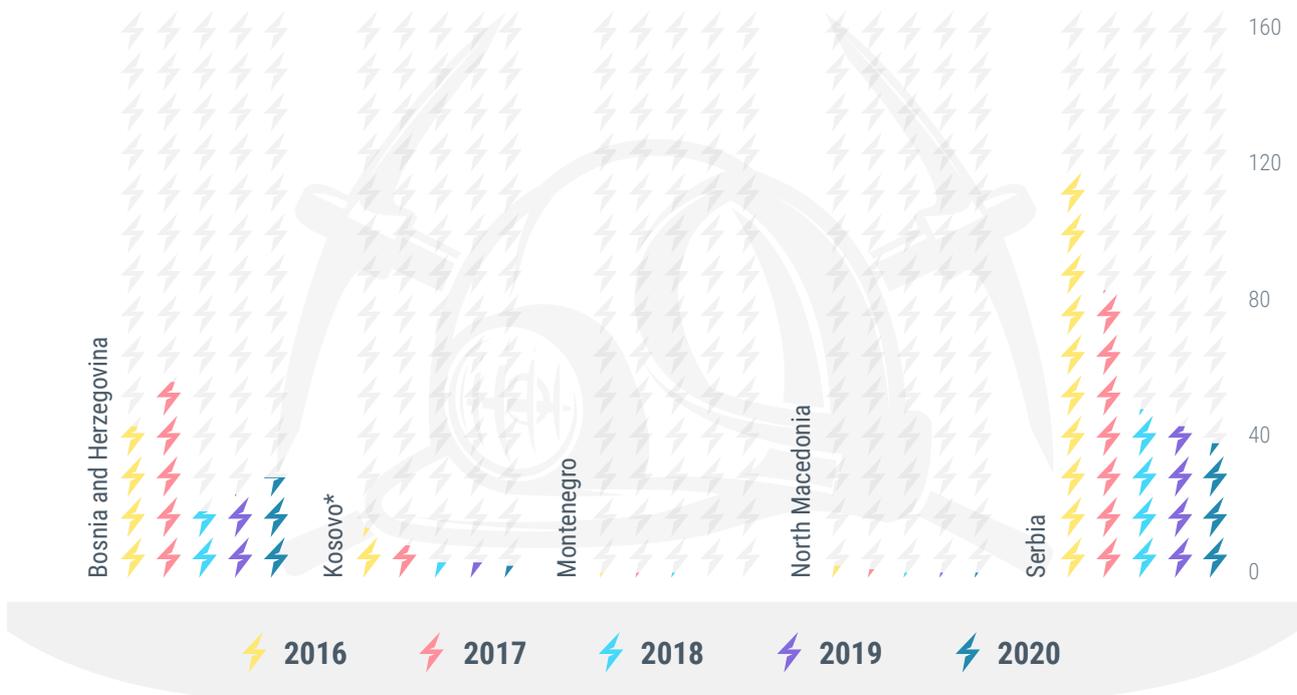


coal-based production was recorded in **Kosovo***, **Montenegro**, **North Macedonia** and **Serbia**, suggesting that these WB economies may have reached a turning point in their coal subsidy policies.

Serbia recorded a decrease in direct subsidies in 2020 compared to the previous year, with a substantial portion of that decrease resulting from falling market interest rates on government bonds and comparable commercial loans used to calculate direct subsidies.

On the other hand, **Bosnia and Herzegovina** increased the level of direct subsidies in 2020. The increase primarily resulted from issuing additional government guarantees for loans to thermal power plants and continuing the policy of tolerating non-payment of due liabilities for taxes and contributions by coal mines⁴⁹. As for **Albania**, this economy does not have coal-fired electricity generation capacity and therefore there are no coal subsidies⁵⁰.

Subsidies to coal fired production of electricity 2016-2020 [mio EUR]

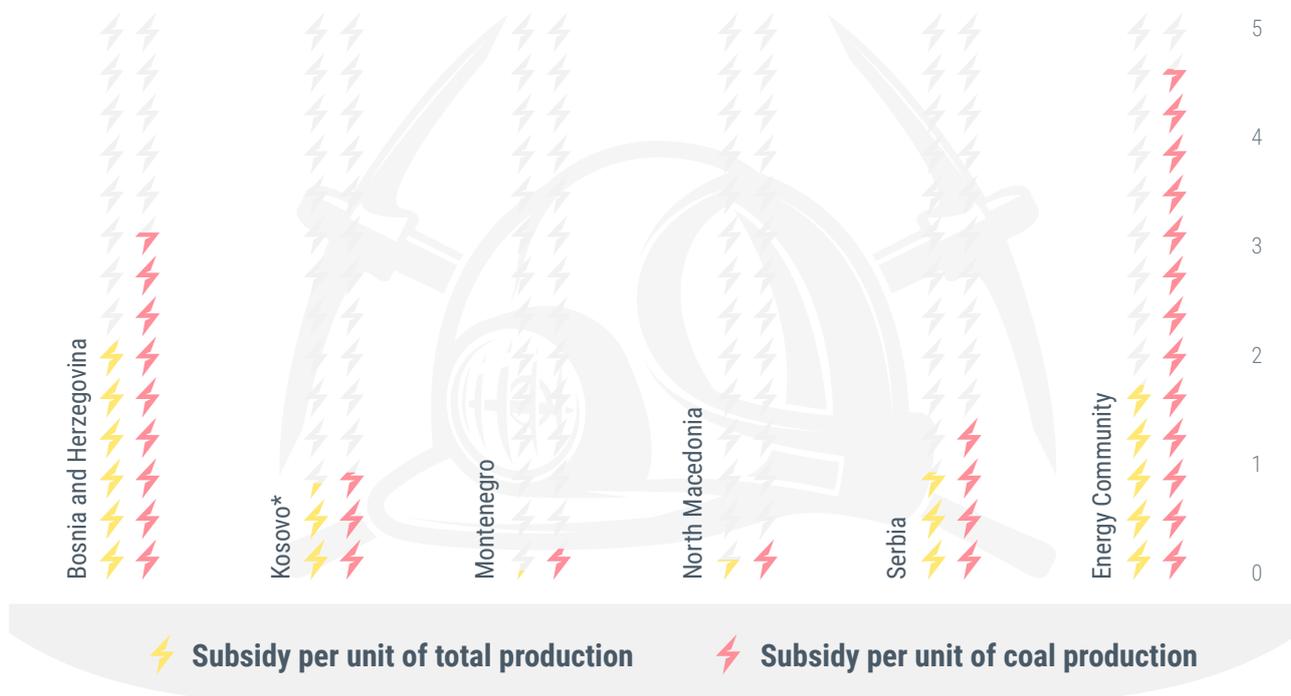


49 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

50 Miljevic, D. (2022, May). Investments into the past: Analysis of Direct Subsidies to Coal and Lignite Electricity Production for the year 2020 in the Energy Community Contracting Parties. Energy Community. https://www.energy-community.org/dam/jcr:9548dd16-b9ed-4bcc-a562-4ebd5061b082/Coal_Subsidies_Study_070222.pdf



Coal subsidies per unit of electricity production [EUR/MWh]



Source: Energy Community Secretariat, WB6 Energy Transition Tracker⁵¹

Action 15 Ensure participation in the Coal Regions in Transition initiative for the Western Balkans

The Initiative for Coal Regions in Transition in the Western Balkans and Ukraine could assist Western Balkan economies in addressing social challenges and job losses caused by the phase-out coal and mine closures, which appears to be already recognised. The initiative delivers support to coal regions in EU neighbouring economies, namely in **Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, Serbia, and Ukraine.**

It was launched in December 2020 and is being managed by the European Commission, as a joint effort of six collaborating international principals: the World Bank, Energy Community Secretariat, European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Poland's National Fund for Environment Protection and Water Management and the College of Europe in Natolin, working together with partners in the Western Balkans and Ukraine to deliver knowledge to coal regions and governments for planning and preparing for transition⁵².

An initial screening has identified at least 17 regions (out of which 13 regions in the Western Balkans, excluding Ukraine) with significant coal mining activities and coal-based energy production that are eligible

⁵¹ Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

⁵² Energy Community. (n.d.). Coal Regions in Transition in the Western Balkans and Ukraine. <https://www.energy-community.org/regionalinitiatives/Transition/coal.html>



to participate in the initiative. Their participation in the activities of the initiative is voluntary, and it will remain at their discretion to actively engage. Moreover, the initiative is open to any region with coal mining activities and possibly coal use for energy purposes in the six economies covered by the initiative⁵³. The last annual meeting of the Initiative was held in November 2022 and was attended by representatives of all WB economies⁵⁴.

Action 16 Develop programmes for addressing energy poverty and financing schemes for household renovation and providing basic standards of living

Development of programmes to address energy poverty, as well as financing schemes for household renovation and basic living standards is still in its early stages. Energy poverty levels in the WB economies are amongst the highest in Europe. The COVID-19 pandemic and the unprecedentedly high energy prices further exacerbated the situation. According to EUROSTAT, the share of households in the Energy Community unable to keep homes adequately warm is much higher than the EU-27 average, with the highest levels in **Kosovo***, **Albania** and **North Macedonia**, followed by **Montenegro** and **Serbia**. For **Bosnia and Herzegovina** adequate energy poverty statistics are not available⁵⁵, which makes it even more difficult to address this problem.

All WB economies have already implemented some short-term measures aimed at alleviating energy poverty. In addition, the EU's new Energy Support Package, worth EUR 1 billion in grants, was an important deliverable of the Tirana Declaration.⁵⁶ Under this package and via IPA III the EU provided EUR 500 million in grants for immediate support towards vulnerable families and SMEs. The rest of the package will be dedicated to investments supporting the energy transition and energy independence of the region. More importantly, the package reiterated that in times of crisis the EU is able and willing to support the WB region's resilience towards external shocks. In most cases, this refers to direct financial support schemes to the most vulnerable customers, typically from socially vulnerable categories. In the light of the current supply insecurities and the dramatic increases in energy prices, short-term measures are of utmost importance to directly relieve the financial situation of households. Current measures are primarily aimed at alleviating the consequences of energy poverty rather than addressing its root causes. They are a good short-term approach, but not sufficient to reduce energy poverty in the long-term.

The only exception is **North Macedonia**, where part of the assistance in the form of energy efficiency and promotion of renewable energy programmes is directed towards vulnerable consumers⁵⁷. In 2021, **Serbia** prepared the definition of energy poverty and included energy poverty in the energy efficiency frame-

53 European Commission. (n.d.). Initiative for coal regions in transition in the Western Balkans and Ukraine. <https://energy.ec.europa.eu/topics/oil-gas-and-coal/coal-regions-western-balkans-and-ukraine/initiative-coal-regions-transition-western-balkans-and-ukraine-en#:~:text=The%20Initiative%20for%20coal%20regions,that%20this%20transition%20is%20just>

54 European Commission. (n.d.). Annual meeting of the Initiative for coal regions in transition in the Western Balkans and Ukraine. https://commission.europa.eu/events/annual-meeting-initiative-coal-regions-transition-western-balkans-and-ukraine-2022-11-22_en

55 Energy Community Secretariat. (2022). Energy Transition Tracker. https://www.energy-community.org/dam/jcr:a09255dc-ac8a-47b1-b664-3463705906de/EnC_Tracker_07_2022.pdf

56 EU-Western Balkans summit, Tirana Declaration, 6 December 2022. <https://www.consilium.europa.eu/media/60568/tirana-declaration-en.pdf>

57 Energy Community Secretariat. (2022). Policy Guidelines on identifying and addressing energy poverty in the Energy Community Contracting Parties. https://www.energy-community.org/dam/jcr:56632fbf-baf6-49c5-ad23-d997b552e1e6/PG2022-02-ECS_poverty-082022.pdf



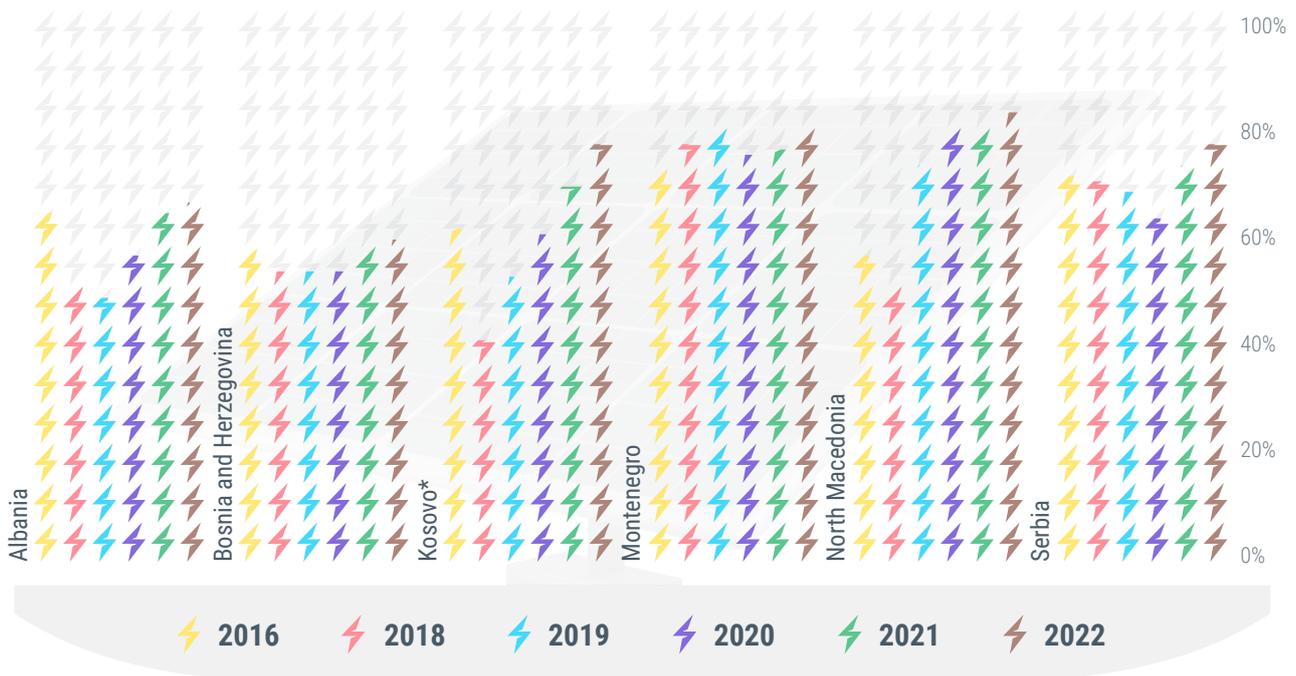
work⁵⁸. **Other economies** still need to define their energy poverty and are encouraged to utilise Energy Community Secretariat's Policy Guidelines⁵⁹ on identifying and addressing energy poverty.

2.2.2 Monitoring the implementation of Energy Roadmap

The analysis only focuses on providing an overview of historical trend of energy indicators from 2016 to 2022. Data for two indicators (implementation ratio gas and electricity) for the year 2016 is available only for Albania.

The **implementation ratio electricity** has been mostly increasing throughout the years for every analysed economy. Stagnation is visible due to lagging implementation of the power market mechanisms until 2019 when the first cases of market coupling were recorded. Kosovo* and Albania marked significant progress of implementation ratio in the past three years due to forming the wholesale electricity market and mutual regional connection.

Implementation ratio electricity (%)



Source: Energy Community Secretariat⁶⁰

58 Peretto, M. (2022, October). Policy measures to combat energy poverty among low-income household groups in Serbia: a multi-disciplinary analysis. IEECP. <https://ieecp.org/wp-content/uploads/2023/02/Report-IEECP-2022-Marco-Peretto.pdf>

59 In August 2022, Energy Community Secretariat published Policy Guidelines on identifying and addressing energy poverty in the Energy Community Contracting Parties providing guidance on: defining energy poverty indicators at national and local level, defining what constitutes a significant number of energy poor households in the Contracting Parties, and on long- and short-term measures which could be used to address energy poverty, including those covered by the relevant sections of integrated National Energy and Climate Plans.

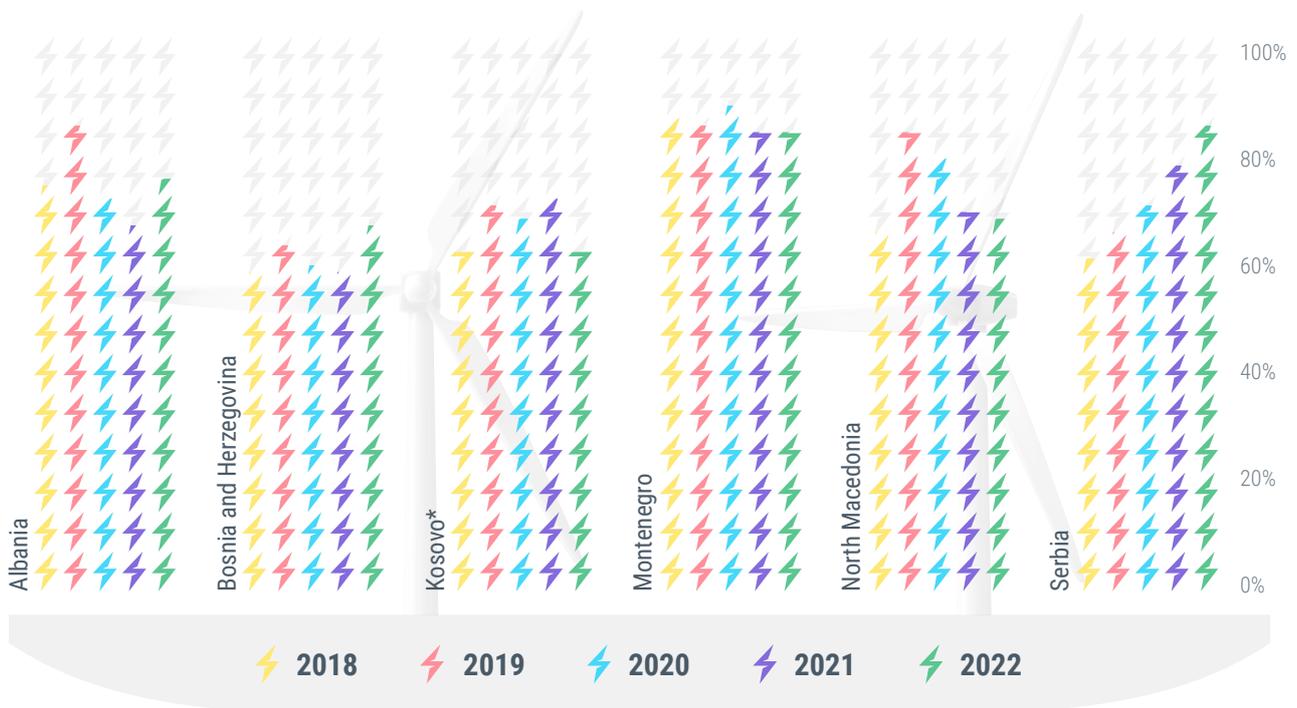
60 Energy Community. <https://www.energy-community.org/>



Prior to 2020, a high level of implementation of projects that encourage the use of renewable energy sources is visible. In 2020, Kosovo*⁶¹ came closer to abandoning coal and North Macedonia publicly announced a coal phase-out programme which resulted in marking progress in development of National Renewable Energy Action Plan component in **implementation ratio renewable energy**.

The small increase in the implementation ratio renewable energy is the consequence of economies' failure to meet the mandatory 10% of renewable energy in transport target by 2020. Serbia marks progress by drafting and adopting the Law on the Use of Renewable Energy Sources. Albania achieved 100% electricity consumption from renewables, but the share in heating and cooling, as well as in the transport sector is very low.

Implementation ratio renewable energy (impl. status) (%)



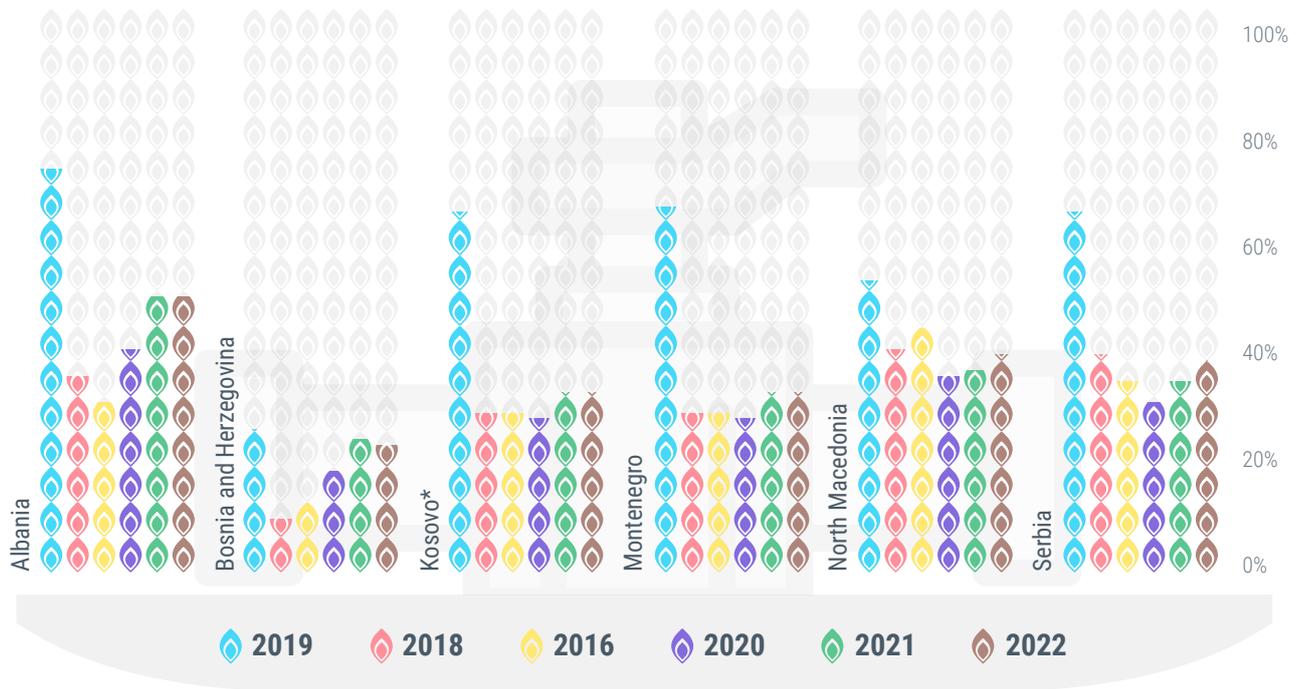
Source: Energy Community Secretariat⁶¹

Insufficient **implementation ratio gas** of each economy is recorded due to low District Heating Systems of rural areas, lagging reform of energy markets and unbundled energy operators. The situation in Bosnia and Herzegovina is the most critical because of the economy's internal structure. The progress in Kosovo* is achieved by forming interconnectivity with neighbouring economies. Serbia has adopted the gas network codes and needs the reform of energy markets to achieve higher implementation ratio gas. When it comes to Montenegro, a detailed plan is needed to increase the implementation ratio. Under the current reconstruction project of TPP Pljevlja, conditions for implementation of district heating in Pljevlja are being created. North Macedonia needs to revise its national code, as well to unbundle the transmission system operator.

⁶¹ Energy Community. <https://www.energy-community.org/>



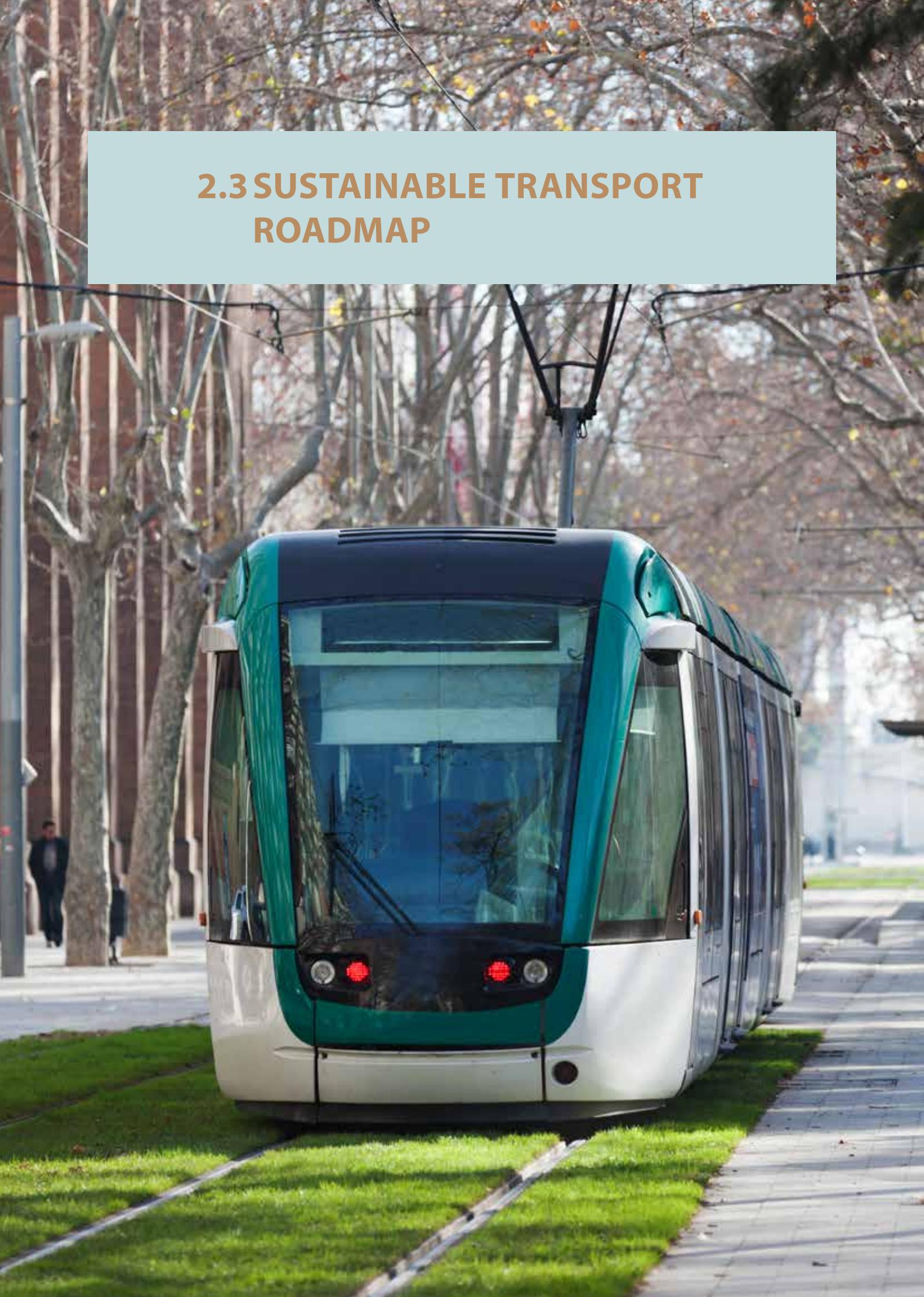
Implementation ratio gas (%)



Source: Energy Community Secretariat⁶²

62 Energy Community. <https://www.energy-community.org/>

2.3 SUSTAINABLE TRANSPORT ROADMAP





2.3.1 Progress in implementing the Roadmap across the actions and the region

Action 17 Support the development of smart transport infrastructure, promote fostering of innovative technologies (such as paperless transport, artificial intelligence, multimodal passengers ticketing, mobility as a service, border/boundary crossing applications, 5G corridors, etc.)

TCT Secretariat provided technical assistance regarding deployment of e-freight in the Western Balkans aiming to enable an interoperable electronic freight information exchange system in the region, reducing the administrative burden for logistics operators, and facilitating multimodal transport. New Computerised Transit Systems, which streamlines customs formalities by using electronic exchange for transit, is so far in operation in **North Macedonia** and **Serbia** while **Bosnia and Herzegovina** adopted the necessary legislation.

The legislative framework for deployment of the European Rail Traffic Management System (ERTMS) has been set by transposition of interoperability directive, which was done by all WB economies. There are several planned/in the pipeline projects for ERTMS, but so far it was not introduced on any section.

The ITS (Intelligent Transport Systems) Directive 2010/40/EU⁶³ is partially transposed in **Albania, North Macedonia** and **Serbia** and fully transposed in **Montenegro**, where ITS equipment is installed on the newly built highway. **Serbia** has ongoing projects while Albania is planning to apply to IPA for an ITS deployment project. TCT Secretariat signed a MoU with Shift2Rail JU (now: Europe's Rail Joint Undertaking, EU-Rail) to modernise the rail sector and is cooperating with EU-Rail and Southeast Europe Strategic Alliance for Rail Innovation (SEESARI) on innovative projects.

Action 18 Implement the Regional Action Plan for Rail Reforms

According to the TC Action Plans and the EU Acquis Progress Report on Rail Reforms, overall progress is leisurely⁶⁴. **Montenegro** established an institutional framework in full capacity and granted independence to the Railway Directorate (National Safety Body and Rail Regulatory Agency). **Albania** drafted all the necessary legal documents for implementing the new institutional framework and started publishing the Network Statement for the service facility for the port of Vlore. **Serbia** has published the Network Statement 2023, and a service-facility description for ports.

North Macedonia has done preparatory work on establishing its Register of Vehicles. **Kosovo*** has drafted a multiannual maintenance contract and submitted it to the relevant authorities for approval (pending). **Kosovo*** authorities are urged to take all necessary steps to finalise the contract. **Bosnia and Herzegovina** (entity of Republika Srpska) has published three by-laws regarding the transposition of EU rail legislation (Rulebook on certification of drivers and centres for education, and Rulebook on passenger rights and obli-

⁶³ Official Journal of the European Union. (2010). Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:207:0001:0013:en:PDF>

⁶⁴ Transport Community. (2022). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



gations). **Bosnia and Herzegovina** and **North Macedonia** have not progressed on measures for the opening of rail market at domestic level. However, **North Macedonia** has initiated activities related to drafting of necessary legislation.

All WB economies actively contributed to activities related to the start of operations of the Network of Infrastructure Managers (IMs). Moreover, IMs contributed to the first regional project – Safety Improvement of Level Crossings, a project supported and managed by the TCT Secretariat and JASPERS.

In the Western Balkans, 55.5% of the Comprehensive Rail Network and 74% of the Core is electrified. Rail market opening is progressing; however, preparation and adoption of laws and by-laws is not moving at the pace needed to swiftly achieve a regional railway market. Restructuring of rail companies is an ongoing activity in all economies. Currently, four economies have opened the market at the domestic level, all except for North Macedonia and Bosnia and Herzegovina. Operational speeds on the Core Railway Network have decreased by 1%, from 14.55% (2021) to 13.58% (2022). Currently, less than 14% of the Core Railway Network allows for speeds above 100 km/h⁶⁵.

Action 19 Define rail freight and inland waterway transport corridors

The Proposal for Revision of TEN-T Regulation which includes a Rail Freight Corridor for the Western Balkans (December 2021) is under the revision of the European Commission, while the implementation of the Action Plan for Waterborne Transport and Multimodality can be considered as moderate in the pillars of infrastructure but lagging in areas of legislation. Once adopted, the new RFC will become an essential tool for coordinated cooperation to improve international freight traffic.

As part of the Rail Corridor Initiative, the Western Balkans is to join the Rail Freight Corridors (RFCs) that represent a key initiative of the European Commission to revitalise the European rail freight system by achieving a smooth path allocation process, ensuring sufficient capacity for freight trains, monitoring corridor traffic performance and coordinating investments and maintenance works. The Regulation includes provisions regarding the possible inclusion of third economies if there is an interest from the EU Member States and certain conditions are met.

TCT Secretariat will coordinate between WB economies and neighbouring EU Member States, along with the European Commission, to check the possibility of including the economies in the RFC and its structures. At the moment, this proposal is still under the revision of the European Commission (indicative timeline 2027). Currently only Serbia is a part of Western Balkans Railway Corridor, which connects Austria, Slovenia, Croatia, **Serbia**, Bulgaria and goes towards Turkey (RFC10).

As landlocked economies, **Bosnia and Herzegovina**, **Kosovo***, and **North Macedonia** have not prioritised the transposition of maritime legislation and are making slow progress in this area. The two economies more related to this mode of transport, **Albania** and **Montenegro**, have reported moderate progress in maritime legislation. Railway freight line design speed has risen by 7.58%, from 71.99% (2021) to 79.57 (2022) on the Core Network. 2022 also marks the first railway sections in the region to meet ERTMS criterion, with the overall compliance rate increasing from zero to 2.72% on the Core and 2.39% on the Comprehensive Network.

⁶⁵ Transport Community. (2022). TEN-T Annual Reports. <https://www.transport-community.org/reports/ten-t-annual-reports/>



Action 20 Define an overall strategy to shift traffic from road to more environmentally-friendly modes

All economies are revisiting their transport strategies to include sustainable and smart mobility elements. A Sustainable and Smart Mobility Strategy for the Western Balkans⁶⁶ was prepared by the TCT Secretariat and adopted in July 2021. The purpose of this document is to mirror the EU's Sustainable and Smart Mobility Strategy and to adjust goals, milestones, and actions of the EU to the realities in the Western Balkans region in addition to providing the region with a roadmap for decarbonisation and digitalisation of its transport sector. Actions proposed in this document are based on the needs identified in the Gap analysis - Sustainable and Smart Mobility Strategy for the Western Balkans.

Action 21 Identify the EU technical standards and ensure their implementation and digitalisation of all transport modes

Annex I of the Transport Community Treaty includes EU legislation for all regulatory areas relevant to the transport. The chapter *Monitoring the transposition of Annex I of the Transport Community Treaty* of the TCT Secretariat Action Plans and the EU Acquis Progress Report (II year- November 2022) gives an overview of the current state of play (fully transposed, partially transposed, not transposed) of EU acquis transposition per regulatory area.

Implementation scoring across the measures of ITS						
Measures	Economy					
	Albania	Bosnia and Herzegovina	Kosovo*	Montenegro	North Macedonia	Serbia
Rail Interoperability	33%	33%	53%	60%	53%	73%
Road border/boundary crossing/ common crossing measures	67%	58%	58%	58%	67%	67%
Rail border/boundary crossing/ common crossing measures	67%	33%	67%	67%	33%	67%
ITS Deployment on Core/ Comprehensive Road Network	61%	28%	28%	33%	56%	56%
Actions related to infrastructure, digital, and green elements of seaports	50%	22%	0%	39%	0%	0%
Legislation applicable to inland waterways green elements of seaports	0%	36%	0%	0%	0%	97%
Introduction of digital solutions to improve multimodality	33%	33%	33%	33%	33%	33%

Source: Transport Community⁶⁷

66 Transport Community. (n.d.). Strategy for Sustainable and Smart Mobility in the Western Balkans. Retrieved on 20 November 2022 from <https://www.transport-community.org/strategy-for-sustainable-and-smart-mobility-in-the-western-balkans-2/>

67 Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



Action 22 Implement the Regional Transport Facilitation Action Plan

According to the TC Action Plans and the EU Acquis Progress Report - Transport Facilitation, overall progress is moderate. The implementation of the **EU-WB Green Lanes initiative** has achieved significant progress. The exchange of pre-arrival information for goods carried by road between the **Western Balkans** and **Greece** has started, and similar arrangements have been agreed for maritime transport between **Italy, Albania, and Montenegro**. Negotiations between **Albania and Montenegro, and Kosovo*** and **North Macedonia** for establishing one-stop control in road transport, and between **Serbia and Bosnia and Herzegovina** in rail transport, are advancing well, although the agreements have not yet been defined.

Action 23 Implement the Regional Road Safety Action Plan

According to the TC Action Plans and the EU Acquis Progress Report on Road Safety, overall progress is moderate. The Road Safety Action Plan⁶⁸ supports the zero deaths objective and encourages the exchange of regional best practices. The highlight of 2021/2022 period is that the Western Balkans Road Safety Observatory⁶⁹ became operational, bringing together transport, police and health sectors in a unified platform aiming to provide tailored solutions, monitor road safety targets, and improve harmonised road safety data in the region.

All economies have embraced the new goals of the Second Decade of Action 2021-2030 with aspirational targets of halving serious injuries and road deaths by 50%. Their vision is aligned with that of the UN and EU for introducing the Safe System approach (Vision 0) in their new Road Safety National Strategies linked to the implementation of their Action Plans.

Serbia has finalised the draft Road Safety Strategy 2023-2030 and Action Plan, which are expected to be adopted in 2023. **Kosovo*** will adopt the Multimodal Transport Strategy at the beginning of 2023, which encompasses road safety. **Albania** has sent its request to the EUD for support for the new strategy under IPA Programming. In terms of improving road safety management, **Bosnia and Herzegovina** has finalised the terms of reference for developing a road traffic crash database at the central level.

Montenegro has achieved significant progress in developing the road crash database. During this period, several training sessions were delivered for traffic police officers in the collection of road traffic crash data based on CADaS Protocol. Montenegro has finalised the programme for the protection of vulnerable users and the methodology for collecting Key Performance Indicators. **North Macedonia** has prepared the proposal for amending the Law to establish a new Leading Road Traffic Safety Agency.

68 Transport Community. (n.d.). Actions Plans endorsed by Transport Ministers of the Western Balkans. Retrieved on 20 November 2022 from <https://www.transport-community.org/action-plans/>

69 Transport Community. (n.d.). About WBRSO. <https://www.transport-community.org/wbrso/>



Statistics related to fatalities across Western Balkans

Economy	Fatalities per million 2019	Fatalities per million 2020	Fatalities per million 2021	% change 2019/2021	% change 2020/2021
Albania	80	63	69	-13%	8.8%
Bosnia and Herzegovina	74	69	74	0%	8%
North Macedonia	63	60	56	-12%	-7%
Kosovo*	60	43	59	-1,8%	37%
Montenegro	76	77	88	17%	15%
Serbia	77	71	75	-2,4%	5.9%
Western Balkans	73	66	70	-4%	8%

Source: Transport Community⁷⁰

Action 24 Implement the Road Action Plan

According to the TC Action Plans and the EU Acquis Progress Report on Roads, overall progress is incremental. The Core Road Network compliance rate has increased by 1.94%, from 44.86% (in 2021) to 46.80% (to date). In **Albania** and **Serbia**, progress related to road maintenance measures is stagnant due to delays in setting up a Road Asset Management System (RAMS) and the pending signing of Service Level Agreements (SLAs).

RAMS has gained a new impetus in **Bosnia and Herzegovina, Kosovo* and Montenegro**. **Kosovo*** has planned a budget for RAMS in its 2022-2024 budget, and **Montenegro**, through EBRD's grant, reached an agreement at the end of 2021 on establishment of RAMS; in **Bosnia and Herzegovina**, JP Autoceste FBiH is expected to have RAMS established by March 2023.

Preparation of strategies for deployment of ITS is progressing well for all economies – **Albania** has already adopted its ITS strategy (in 2020) and is planning the construction of a Traffic Control Centre. ITS Directive 2010/40/EU has been partially transposed in **Albania, North Macedonia, and Serbia**, and fully transposed in **Montenegro**.

Kosovo* is progressing with the finalisation of Administrative Instruction of ITS Directive. Further efforts are needed by **Bosnia and Herzegovina**. **Serbia** is already constructing two Traffic Management Centres (Belgrade and Nis). However, transposition of the EU Directives and ITS standards is not progressing at the same pace. **Montenegro** has progressed in transposition of Directives related to ITS and e-tolling. **Albania, Montenegro, and Serbia** progressed in the preparation of domestic framework on Energy Efficiency and Climate Plan. **Serbia** is the leader in the region in supporting its green transition with the installation of solar panels by the Public Enterprise Roads of Serbia. Regarding climate resilience, TCT Secretariat contracted a TA that will support the region in assessing climate vulnerability and preparing resilience action plans that will further enhance progress on this measure.

⁷⁰ Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. Retrieved on 20 November 2022 from <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



Action 25 Develop and implement climate resilience plans for Western Balkan economies' transport networks

None of the WB economies have prepared nor approved any targeted climate change adaptation strategy for transport sector. When it comes to transport infrastructure, the importance of climate resilience has been recognised. **Montenegro, Albania** and **Serbia** have adopted a series of documents to tackle climate change. Climate resilience has been a focus of regional ClimaProof project, on the results of which TCT Secretariat will prepare a Road and Rail Resilience Action Plan.

Action 26 Promote preparation and implementation of Sustainable Urban Mobility Plans for urban areas in the Western Balkans

Major regional urban centres (Sarajevo, Tirana, Skopje, Belgrade, Pristina, Podgorica) have Sustainable Urban Mobility Plans with the progress continuing even in smaller cities. As for interurban transport, a MoU has been signed between Infrastructure Managers for regular consultation and coordination on a variety of issues including international transport.

Action 27 Define sustainable mobility solutions at the regional level including plans for deployment of alternative fuels

Renewable energy share in the transportation sector is currently near zero, and no economy has adopted the Alternative Fuel Infrastructure Directive⁷¹. This Directive provides a basis for alternative fuel infrastructure deployment and specifies minimum requirements for building this infrastructure. Directive (EU) 2018/2001 on the promotion of the use of energy from renewable energy sources (RES) has not been transposed in any economy.

Action 27a. Define a plan for deployment and building of charging stations for electric vehicles

Progress is reported in Albania and Serbia on deployment of e-charging stations. Deployment of e-charging stations is mainly located in cities across the region, while they are located at toll stations only in **Serbia**. CONNECTA's TA project **Strategic framework for the deployment of e-charging stations in the Western Balkans** is expected to be finalised by March 2023 and will serve the economies in starting deployment of e-charging stations. Incentives (tax exemption, subsidies) for electric/hybrid vehicles have been introduced in **Albania, Bosnia and Herzegovina, Kosovo***, **Montenegro** and **Serbia**.

Action 28 Increase regional cooperation in the area of alternative fuels infrastructure development

⁷¹ Official Journal of the European Union. (2014). Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure Text with EEA relevance. <https://eur-lex.europa.eu/legal-content/EN/TX/?uri=CELEX%3A32014L0094>



The overall progress in regional cooperation in the area of alternative fuels infrastructure development has been limited⁷². Albania, Montenegro and Serbia progressed in preparation of the domestic framework for Energy Efficiency and Climate Plan. **Albania** and **Serbia** reported progress on deployment of e-charging stations. **Serbia** remains the most advanced in efforts towards decarbonisation of road transport and is the only economy to have issued a seven-year green bond, worth one billion euros, in September 2021, which it intends to use for funding infrastructure projects.

Table 4: Overall assessment of improvement in the field of climate resilience and alternative fuels⁷³

Time period	Economy					
	Albania	Bosnia and Herzegovina	Kosovo*	Montenegro	North Macedonia	Serbia
2020/2021	25%	8%	8%	8%	8%	42%
2021/2022	8%	0%	0%	9%	0%	8%

2.3.2 Monitoring the implementation of Sustainable Transport Roadmap

The analysis only covers a period following the adoption of Green Agenda for Western Balkans as the first reporting period for TEN-T and TC Action Plan Reports is 2021. The following graphs indicate the state of play related to the **implementation of regional action plans for rail, road, transport facilitation, road safety and waterborne**.

⁷² Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. Retrieved on 20 November 2022 from <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>

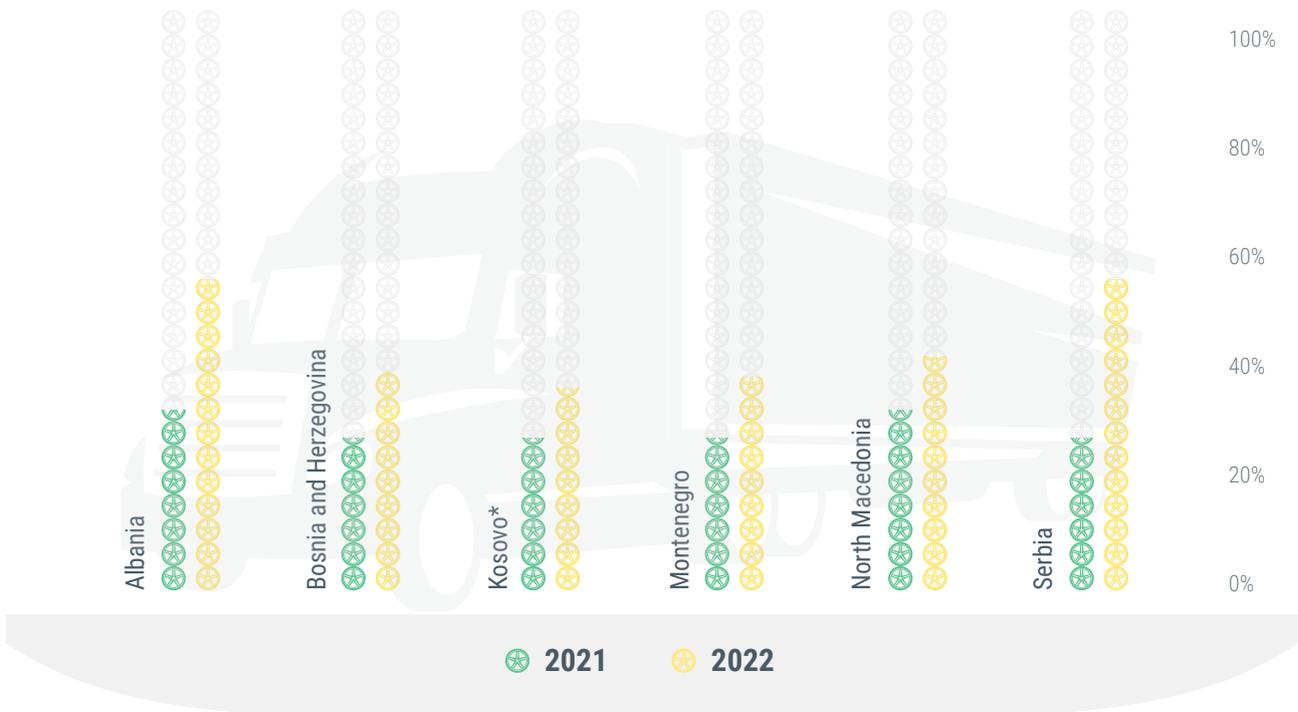
⁷³ Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. Retrieved on 20 November 2022 from <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



Rail Action Plan - State of Play (%)

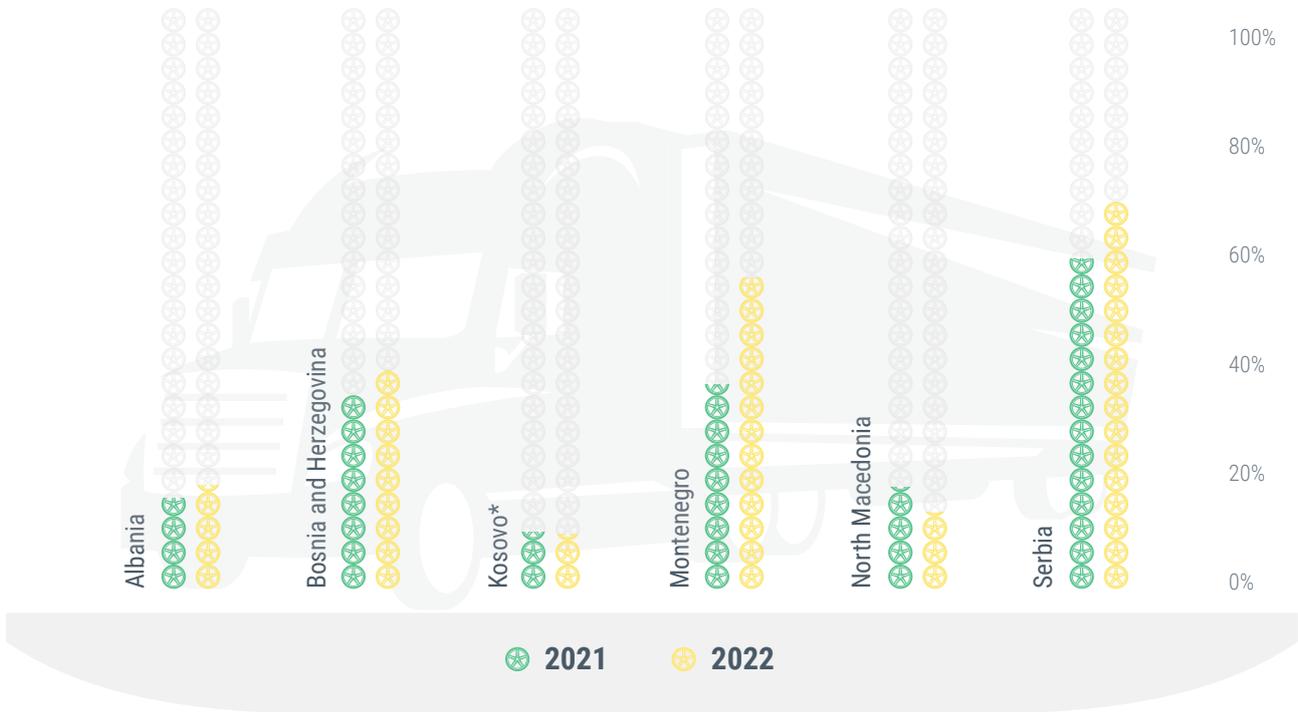


Transport Facilitation Action Plan - State of Play (%)

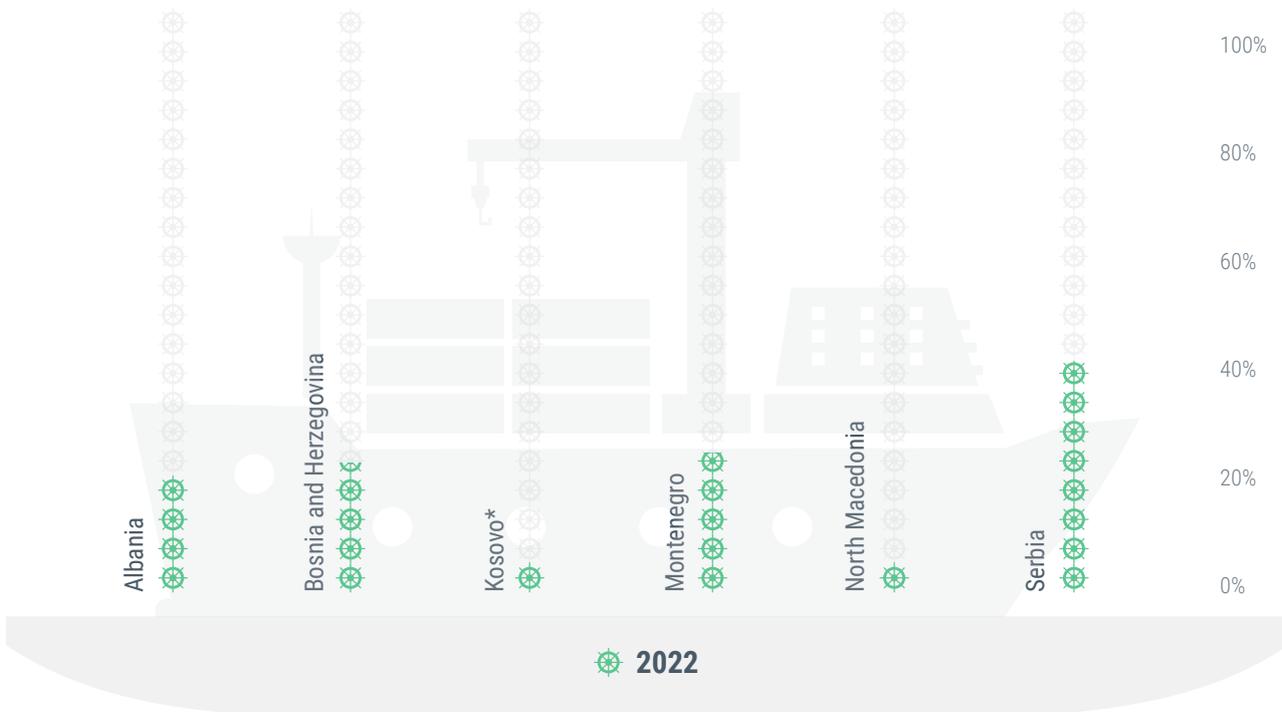




Road Safety Action Plan - State of Play (%)

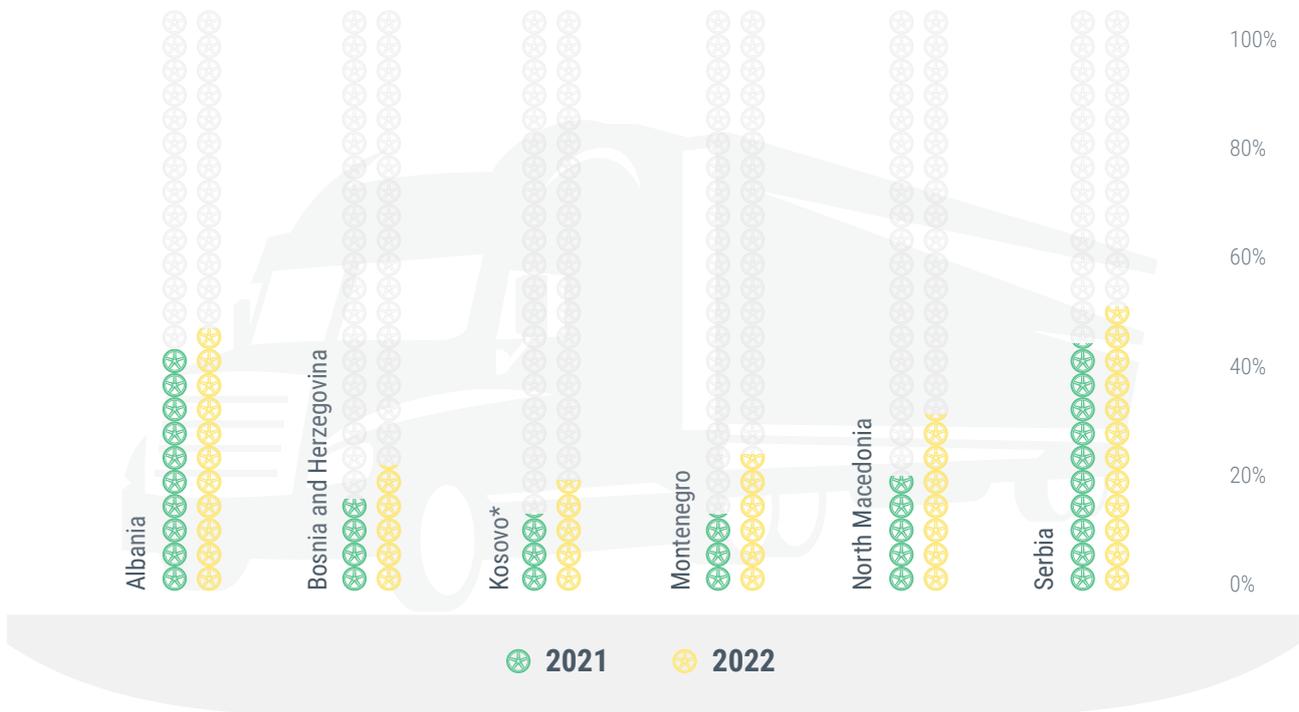


Waterborne Transport & Multimodality Action Plan - State of Play (%)





Road Action Plan - State of Play (%)



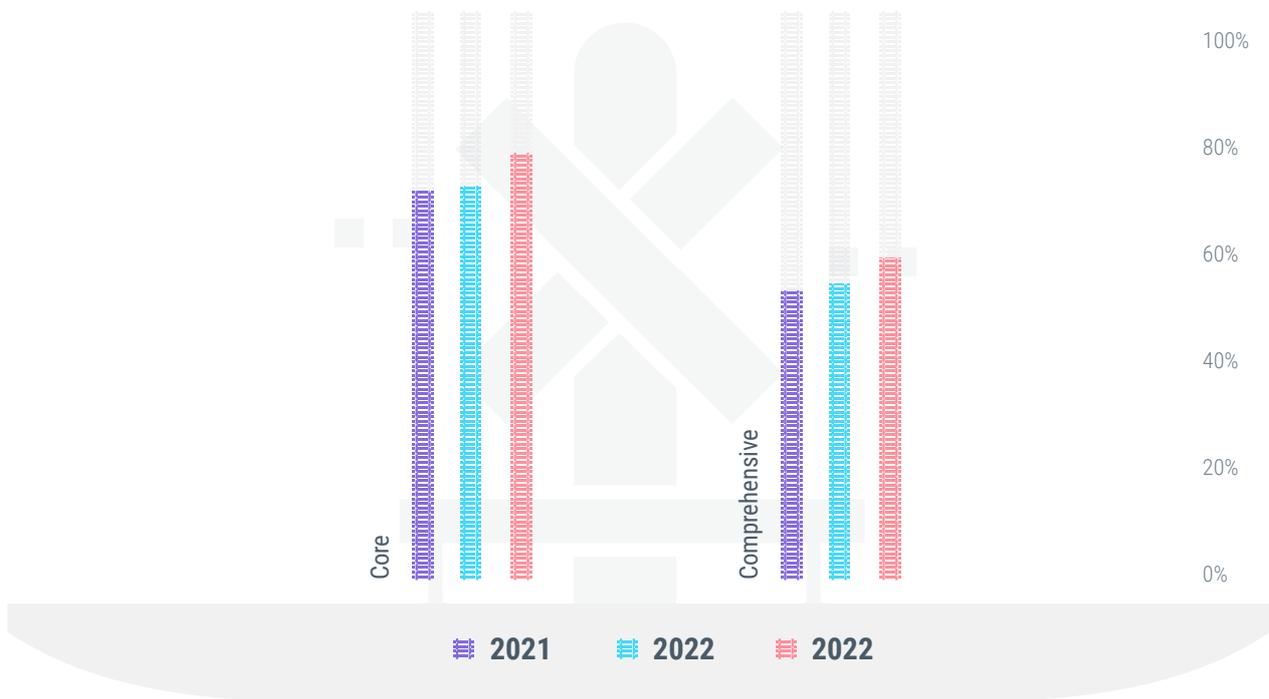
Source: Transport Community⁷⁴

Rail electrification compliance of the operational network is already 74% on the Core and 55.5% on the Comprehensive Network, based on 2022 data. Certain segments, mainly in Albania and North Macedonia (Corridor VIII), are still under construction and are not part of this analysis. There are no significant differences between electrification compliance rates in 2021 and 2022.

⁷⁴ Transport Community. (n.d.). TEN-T Annual Reports. <https://www.transport-community.org/reports/ten-t-annual-reports/>



Electrification - rail network to be electrified (% of Core and Comprehensive)



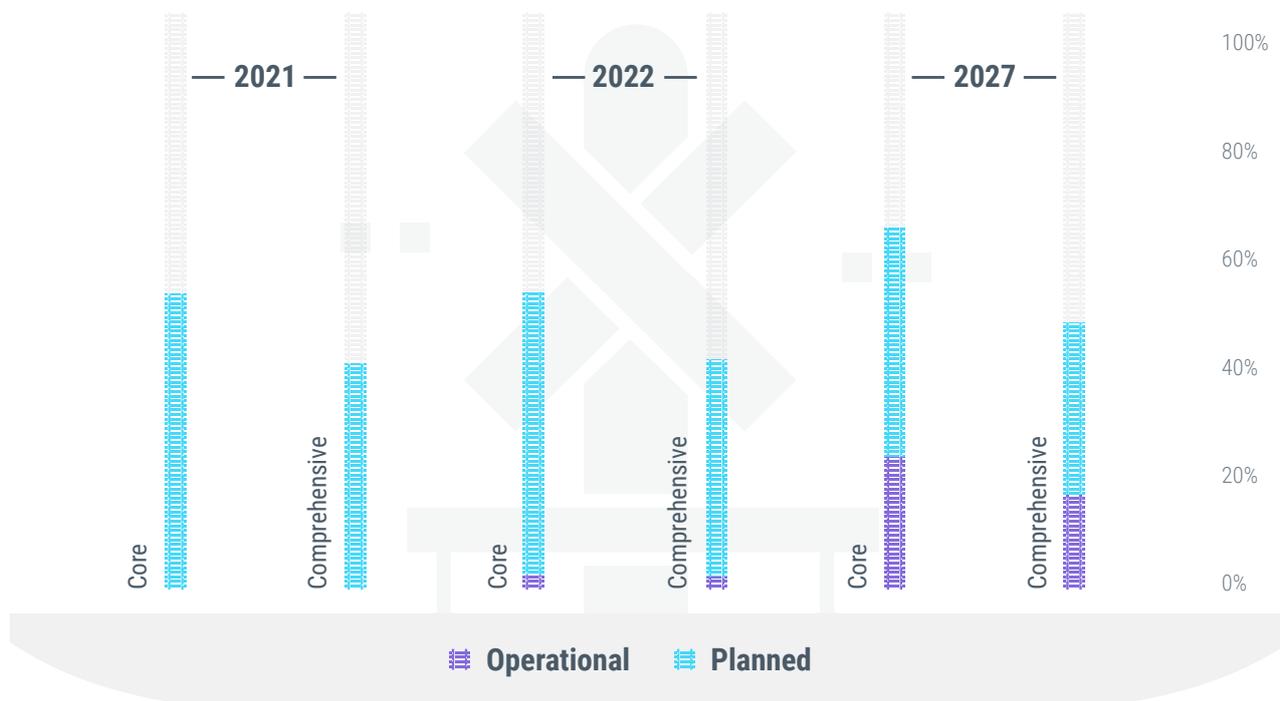
Source: Transport Community⁷⁵

ERTMS (European Railway Traffic Management System) deployment (track-side) is included in some of the projects planned for the future, but improvement by 2027 will be mainly confined to just one quarter of the Core Network. It is worth mentioning that in 2022, 2.71% of operational ERTMS were on the Core Network, thanks to the newly-reconstructed Belgrade – Novi Sad line. Nevertheless, significant efforts are focused on at least the Core Network being equipped with ERTMS in future.

⁷⁵ Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



ERTMS (% of Rail Core and Comprehensive)



Source: Transport Community⁷⁶

Alternative fuels availability has been measured against the provisions of Directive no. 2014/94/EU and indicators currently used by the European Commission for assessing EU Member States' compliance in this regard. Only a few of the alternative fuel stations listed are actually located on TEN-T. All are in Serbia where 8 electrical charging points have been deployed on Corridor X (of which 3 are ultra-fast).

Road alternative fuels availability						
2021						
	Albania	Bosnia and Herzegovina	Kosovo*	Montenegro	North Macedonia	Serbia
Electricity	4	22	3	15	11	46
CNG	0	2	0	0	5	26
LNG	0	0	0	0	0	0
Hydrogen	0	0	0	0	0	0
2022						
Electricity	3	42	3	18	17	55
CNG	0	3	0	0	6	30
LNG	0	0	0	0	0	1
Hydrogen	0	0	0	0	0	0

Source: Transport Community⁷⁷

76 Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>

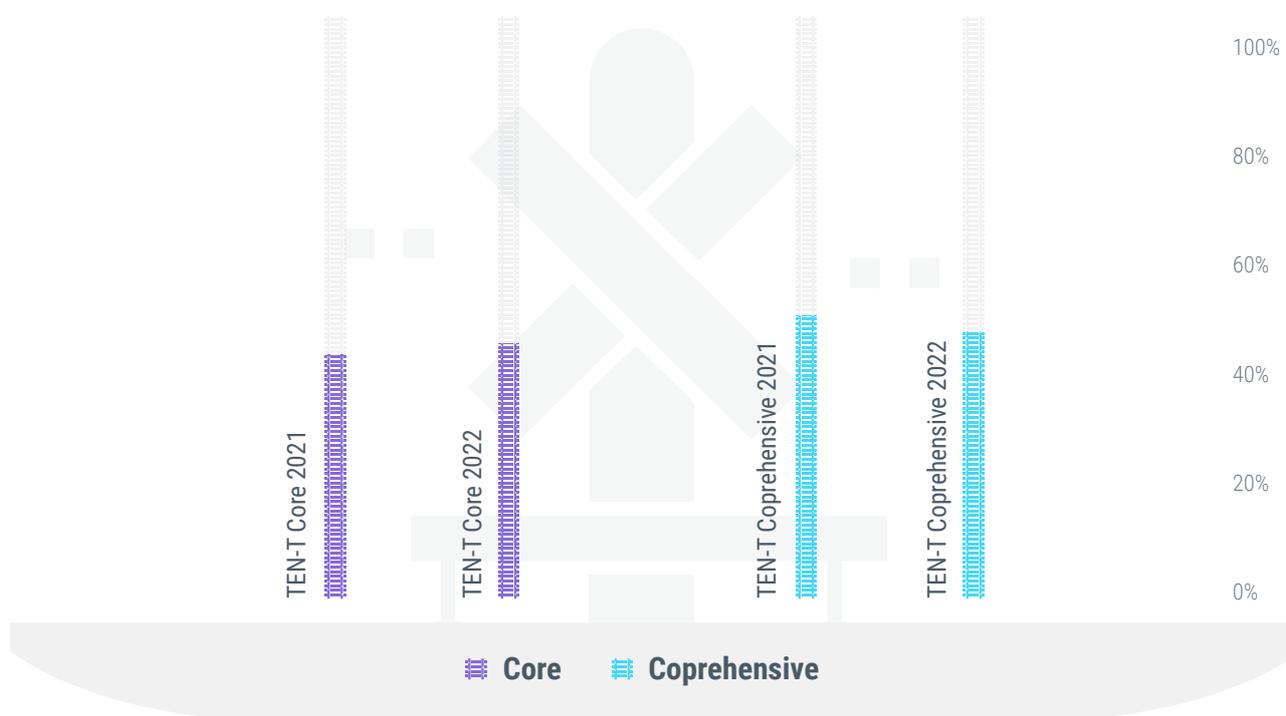
77 Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



The adoption of Road Action Plan leading to **ITS related measures** is gaining momentum, and some progress was achieved in this regard. Preparation of ITS strategies is back on track after the delays experienced at the outset of the projects supported by the World Bank and the EU-financed CONNECTA. As a result of these projects, it is expected that all regional partners will have adopted strategies for ITS deployment by the end of 2023.

ITS compliance on road network						
2021						
	Albania	Bosnia and Herzegovina	Kosovo*	Montenegro	North Macedonia	Serbia
Length [km]	0	153	0	0	0	946.8
Traffic Control Centre	0	3	0	0	0	0
2022						
Length [km]	0	224.3	0	40.8	0	944.6
Traffic Control Centre	0	3	0		0	2

ITS compliance on road network (%)



Source: Transport Community⁷⁸

78 Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>



The Port of Vlore in Albania is the only comprehensive maritime port in the Western Balkans; no comprehensive inland waterway ports have been identified in the extended TEN-T. The indicator for **clean fuels availability** in maritime ports is not applicable to the Port of Vlore since it is applicable only to Core Network ports. Some of the ports on the Danube and Sava have promising potential to become core or comprehensive ports in the ongoing TEN-T revision, as they comply with the requirements, including statistical data.

The only currently non-compliant indicator for **inland waterway ports** is the **availability of alternative fuels**, which has not been planned for in the near future. The Transport Community Permanent Secretariat will try to encourage the relevant Regional Partners to develop concepts and studies to address this indicator with a proper analysis and approach. This will be done through implementing the Action Plan for Waterborne Transport and Multimodality. However, it is to be expected that none of the core inland ports will be compliant with this indicator before 2030.

Availability of clean fuels in inland waterway ports		
	2021	2022
Core		
Belgrade	Not available	Not available
Novi Sad	Not available	Not available
Brčko	Not available	Not available
Bosanski Šamac	Not available	Not available
Comprehensive		
Non-existing		
Availability of clean fuels in maritime ports		
	2021	2022
Core		
Durres	Not available	Not available
Bar	Not available	Not available
Comprehensive		
Vlore	Not available	Not available

Source: Transport Community⁷⁹

Progress in implementation of the last transport indicator on **Western Balkans Strategies updated with sustainable and smart elements** is unchanged and it counts zero for all Western Balkan economies. To make a shift in this area, it is advisable to make better use of the Roadmap of the Strategy for Sustainable and Smart Mobility in the Western Balkans⁸⁰ that is envisaged as a guiding document for the region in preparation for government strategies.

⁷⁹ Transport Community. (n.d.). Progress Reports on Action Plans and Acquis Implementation. <https://www.transport-community.org/reports/progress-reports-on-action-plans-and-acquis-implementation/>

⁸⁰ Transport Community. (n.d.). Strategy for Sustainable and Smart Mobility in the Western Balkans. <https://www.transport-community.org/strategy-for-sustainable-and-smart-mobility-in-the-western-balkans-2/>

2.4 CIRCULAR ECONOMY ROADMAP





2.4.1 Progress in implementing the Roadmap across the actions and the region

Action 29 Improve sustainability of primary production of raw materials

The West Balkan Mineral Register facilitates establishment of WB mineral community and accelerates the region's integration into the pan-European mineral market. With the support of EU-funded RESEERVE project two mineral registers were created, serving as a good starting point to map out new business opportunities within the WB region. The register of primary raw materials is concerned with mineral deposits and mineral endowment and maps 473 locations of primary mineral resources, whereas the register of secondary raw materials collected data on 1461 mine and metallurgical waste sites⁸¹.

The WB region's major strength that can facilitate sustainable development of raw material sector is related to its geological potential and the presence of a number of ores as well as its long mining tradition. However, all economies have reported a need to extend exploration activities to increase their geological potential for certain primary raw materials. There is also a need to increase the level of confidence for inferred resources and unknown reserves for specific primary raw material deposits, as well as the estimation of mineral resources and reserves by type.

Research and technology transfer are also deemed necessary, particularly when added-value materials can be produced after the primary raw materials have been treated.⁸² Another identified need is to upgrade and expand the capacity of processing plants. The use of innovative processing technologies in higher capacity plants is directly related to the raw material sector's competitiveness and sustainability, given that existing mines and processing facilities frequently use outdated techniques and machinery.

WB economies have recently upgraded their legal frameworks in the raw material sector and business environment regulatory areas. However, it is acknowledged that mineral policy, land planning, mineral laws and regulations for exploration and mining require further reforms in order to integrate spatial planning legislation and provide a clear mineral policy and strategy regarding access to resources and reserve safeguarding.

Resource efficiency and sustainable management of mineral resources, including mine life extension and access to depleting mineral resources, are strategic objectives reported by stakeholders, as is the need to define mineral deposits of public interest⁸³. Social acceptance was identified as a threat to the sector's long-term development.

Some of the actions reported to improve sector's acceptance by the wider society include transparency during permitting procedures, extensive public consultation, and measures implemented as part of mining operators' corporate social responsibility. There is a need to properly inform authorities and communities

81 EIT Raw Materials. (2021). Mapping of the available business opportunities in the ESEE region. https://reseerve.eu/upload/files/D.6.1_RESEERVE_website%20version_FINAL_MR.pdf

82 EIT Raw Materials. (2021). Roadmap of actions for the exploitation of RM sector in the ESEE region. https://reseerve.eu/upload/content/446/d6-4-final_executive-summary_web.pdf

83 EIT Raw Materials. (2021). Mapping of the available business opportunities in the ESEE region. https://reseerve.eu/upload/files/D.6.1_RESEERVE_website%20version_FINAL_MR.pdf



at all administrative levels, as well as to promote their efficient cooperation during permitting and enable stakeholder participation in permitting processes and legislation preparation actions⁸⁴.

Secondary raw material sources across the WB region have great potential for strengthening WB economies and increasing raw material supply competitiveness with other European states; however, the waste management policy framework requires further harmonisation to reach this potential. Mining waste management is currently based on a linear economic model whereas recent political instabilities and unforeseen events such as the COVID-19 pandemic demonstrated how mining waste, as a commodity, can both provide solutions to limited metal supplies and transform linear into circular thinking. When it comes to secondary raw materials, most waste disposal sites are related to mining waste landfills, which account for 1371 of 1461 sites examined, or 94%, with **Albania** accounting for more than half of the sites. Other examined sites are related to processing waste and slag landfills. The main element found in mining waste landfills is copper amounting to 37%. Mining waste could potentially be used as construction material for restoring old mining sites, and as aggregates in embankment, road, pavement, foundation, and building construction. However, adequate mining and processing waste management as well as quality standards are a prerequisite for the mining sector's future development⁸⁵.

As part of RESEERVE project, a general roadmap for raw material sector exploitation was developed to guide the WB region towards the sector's sustainable development. It focuses on six key actions: promoting stakeholder consent through awareness campaigns; improving the quality of geological potential data through scoping studies of major primary and secondary raw materials, followed by exploration and research programmes; promoting mineral policy legislation reforms, licensing and permitting procedures for exploration and exploitation, fees and compensatory benefits, spatial plan harmonisation, and alignment with EU environmental legislation; enhancing raw material sector competitiveness; attracting financing; and finally, building human resource capacities⁸⁶.

Action 30 Apply an industrial ecosystem approach to attain environmentally sustainable, balanced economic recovery

The WB region is a step closer to EU Single Market with the endorsement of the Common Regional Market (CRM) 2021-2024 Agenda at the Western Balkans Sofia Summit in November 2020. Being firmly anchored in EU recovery efforts, the CRM agenda aims to reduce the gaps with the EU Single Market and diversify supplies to create jobs, and enable people to work throughout the region. The efforts towards the establishment of a Regional Supplier Development Programme were initiated in targeted regional sectors/supply chains recognised by the CRM agenda: automotive sector, agri-food industries, and green and circular supply chain, led by WB6 CIF and in close cooperation with RCC.

A mapping exercise was conducted in 2021 with the aim to facilitate linkages of WB economies' domestic suppliers and multinationals in targeted sectors, namely mapping automotive, light manufacturing and agri-food sectors, including their clusters. Based on the mapping results, a total of 2104 companies have been registered, with 54% belonging to the light manufacturing, 33% to agri-food industry and 13% to au-

⁸⁴ EIT Raw Materials. (2021). Roadmap of actions for the exploitation of RM sector in the ESEE region. https://reseerve.eu/upload/content/446/d6-4-final_executive-summary_web.pdf

⁸⁵ EIT Raw Materials. (2021). Roadmap of actions for the exploitation of RM sector in the ESEE region. https://reseerve.eu/upload/content/446/d6-4-final_executive-summary_web.pdf

⁸⁶ EIT Raw Materials. (2021). Roadmap of actions for the exploitation of RM sector in the ESEE region. https://reseerve.eu/upload/content/446/d6-4-final_executive-summary_web.pdf



tomotive industry. Additionally, 38 clusters have been mapped in these sectors. These databases facilitate gathering and presenting information regarding suppliers and investors in the mapped sectors, including products and services that suppliers offer⁸⁷.

While the region's green policies, including those aimed at boosting circular economy targeted at businesses, are increasingly being integrated into strategic frameworks, implementation of the envisaged measures remains limited. Changing production patterns and increasing the resource and energy efficiency of industries in the Western Balkans requires a strong and integrated approach. This in turn requires close cooperation of industry and environment sectors in developing and implementing effective policy measures that would enable green transformation of industry. The Business Investment and Development Strategy (2021–2027) in **Albania** has a specific focus on circular transition, as part of the “green and digital transformation” pillar.

Montenegro developed an industrial strategy for the period from 2019 to 2023 and Roadmap for Circular Economy, which are aligned with the EU industry policy and other relevant strategies. In order to improve waste management efficiency, Montenegro will adopt a new Law on Waste Management in 2023 and a new State Waste Management Plan. While the SME Strategy (2018-2023) for **North Macedonia** includes environmental policies targeting SMEs, none of the measures planned have been implemented so far.

The Strategy for Industrial Development of Republika Srpska in **Bosnia and Herzegovina** (2021-2027) aims to develop an efficient waste management system aligning its goal with the Waste Management Strategy (2017-2026) which outlines a comprehensive list of objectives that promote circular economy, use of clean technologies and rational use of natural resources. In the Federation of **Bosnia and Herzegovina**, the Action Plan for Development of SMEs (2019-2020) has encouraged greening measures, with a specific budget to implement “Strengthening competitiveness and technological development, energy efficiency and green entrepreneurship” project, which has raised awareness on green measures and promoted international quality standards.

While **Kosovo's*** Private Sector Development Strategy (2018-2022) does not include any greening objectives, environmental policies relevant to SMEs are covered in its Development Strategy (2016-2021), namely through sustainable and green economic development pillars. Several recently adopted strategic documents for **Serbia** include green policies targeting the private sector, in part driven by the long-awaited adoption of the Law on Climate Change in 2021. In addition to the Roadmap for Circular Economy in Serbia (2020), which serves as a guiding document outlining courses of action for the transition from a linear to circular economy, the Industrial Policy Strategy (2021-2030) envisions sustainable, green and resource-efficient industrial production⁸⁸. The Programme for development of circular economy for the period 2022-2024 was adopted in December 2022.

Although each economy has a strategic framework to boost circular economy of business sector, the region is still lagging in the effort to shift business operations to the circular economy model, with one-third of surveyed businesses unsure if their business model allows for this shift, followed by another third which stated that they either did not consider shifting to circular economy at all or that it would be difficult to achieve it without proper incentives. From a business perspective, the key constraints to move towards circular

87 Regional Cooperation Council. (2022). Common Regional Market Report on Implementation for 2021. <https://www.rcc.int/download/docs/CRM-report-2022.pdf/b81fbff99cd855376c9e65b70237e4bc.pdf>

88 OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe, SME Policy Index. <https://doi.org/10.1787/b47d15f0-en>



economy model are the additional cost (46% of respondents claimed), lack of skills and expertise (16%), lack of a regulatory framework (15%), lack of government subsidies (14%) and lack of consumer demand (9%)⁸⁹.

Lack of sufficient access to capital presents an important barrier to business growth and technology acquisition across all economies in the WB region. Policy measures need to be backed by sufficient and subsidised financial resources in line with best practices, and companies should be adequately informed about financial services and products available to finance CE related initiatives.

Majority of investments are aimed at energy efficiency and renewable energy projects, as expected given the EU carbon border adjustment mechanism, which will affect the export performance of certain industry groups as well as the current energy crisis. This, however, is an insufficient means to finance technology acquisition and undertake more risky investments.

Some progress has been achieved in introducing financial incentives for enterprise greening, in particular in **Montenegro** (through the Programme for Improving Competitiveness of the Economy for 2021 and 2022) and **North Macedonia** (through the Programme for Competitiveness, Innovation and Entrepreneurship 2021). Circular economy was also promoted via non-financial incentives, such as the environmental management systems in **Bosnia and Herzegovina, Montenegro and North Macedonia**⁹⁰.

While green public procurement measures and regulatory instruments have been introduced in legislative frameworks to support businesses in their greening efforts, their implementation remains insufficient. Laws and strategies on public procurement envisage introduction of environmental impact criteria, such as life-cycle costs, in **Montenegro, North Macedonia and Serbia**. Nevertheless, this option has been insufficiently used in practice and limited activities have been organised in **North Macedonia** in this regard.

Promisingly, activities to encourage the use of green public procurement have been conducted in **Montenegro and Serbia**. The government of Montenegro has been implementing a project since 2021 dedicated to increasing awareness and capacities of public administrations and enterprises to facilitate green public procurement. In the case of Serbia, a specific training was organised in 2021 by the Public Procurement Office to educate contracting authorities and equip them with practical tools and examples to facilitate the application of green public procurement⁹¹. In addition, 650 green public procurements were conducted in 2021, according to the Office for Public Procurement 2021 Report. In this regard, inclusion of energy efficiency criteria in public procurement is also made obligatory according to the Law on Energy Efficiency and Rational Use of Energy.

Action 31 Develop circular economy strategies looking at the entire lifecycle of products

Most economies are advancing in developing circular economy roadmaps. Serbia was the first economy in the region to develop a Circular Economy Roadmap in 2020. The main objective of the roadmap is to

⁸⁹ ACIT Centre & Finance Think. (2021). Balkan Barometer 2021: Business Opinion: Analytical report. Regional Cooperation Council. <https://www.rcc.int/download/docs/2021-06-BB2021-Business.pdf/439939a7489554684db46d2c266bfdbc.pdf>

⁹⁰ OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe. <https://doi.org/10.1787/b47d15f0-en>

⁹¹ OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe. <https://doi.org/10.1787/b47d15f0-en>



stimulate a change in corporate operations through the introduction of creative and sustainable solutions, as well as to urge the private sector to embrace circular business models which will lead to creation of new jobs.

Following the approval of the roadmap, more steps are being made in this direction with the adoption of the Programme for Development of Circular Economy (2022-2024). One of the specific goals set out in the Programme includes government's support to businesses in reducing waste from the supply chain, recycling materials and components, switching to renewable energy, and extending the lifespan of their products.

Montenegro published the Roadmap towards Circular Economy in April 2022, followed by the adoption of economy-level Circular Transition Strategy until 2030, with an Action Plan for 2023 and 2024 in December 2022. The Roadmap and Strategy prioritise agriculture, forestry, construction, and tourism sectors that are strongly interconnected and have the potential to bring about systemic change through the concepts of industrial symbiosis and synergy. The roadmaps are currently being drafted in **Bosnia and Herzegovina** and **Kosovo***, with a launch date set for 2023. Work on the roadmaps for **North Macedonia** and **Albania** has been initiated by OECD's new project Supporting Green Transition through Circular Economy Roadmaps.

Action 32 Make further progress in the construction and maintenance of waste management infrastructure for cities and regions

Waste legislation underpinning separate collection is increasingly being adapted to or inspired by EU directives, but the portfolio of well-designed and governed implementation remains limited. Each economy has set goals for separate collection or recycling. Furthermore, economies have implemented or plan to implement extended producer responsibility (EPR) schemes in the near future as they provide opportunities for additional funding for separate collection of end-of-life products and their proper management via the polluter-pays principle. Packaging EPR systems have been implemented in **Bosnia and Herzegovina, North Macedonia** and **Serbia**.

Bosnia and Herzegovina and **North Macedonia** also have an EPR system for electrical and electronic equipment waste in place, while **Kosovo*** and **Montenegro** are in process of establishing such systems. **Albania** has begun to draft legislation to lay the groundwork for an EPR system. However, there are still concerns about the effectiveness of the current EPR systems, particularly in terms of ways in which fees are defined, collected, and used. Separate collection practices are limited to a few municipalities throughout the region rather than being widespread.

For instance, **Albania, Bosnia and Herzegovina, Kosovo*** and **Serbia** reported pilot projects to collect some recyclables separately, and in some municipalities in **Bosnia and Herzegovina** and **Montenegro**, citizens can take certain recyclable wastes to collection points or civic amenity sites. In **North Macedonia** and **Serbia**, producer responsibility organisations have collection points for packaging waste, but these are uncommon. Aside from pilot projects and certain initiatives to encourage household composting, bio-waste is not yet targeted systematically for separate collection⁹².

92 EEA. (2022). Municipal waste management in the Western Balkan Countries. <https://www.eea.europa.eu/publications/municipal-waste-management-in-western>



Surveying the waste management practices in the Western Balkans reveals that landfilling remains predominant waste management option. In all WB economies, most municipal waste is disposed of in non-sanitary landfills, some of which are operated by municipalities and others are illegal⁹³. There are a few recycling centres and sorting plants scattered throughout the region, but their financial viability is frequently called into question due to region's underdeveloped separate collection system. Recycling rates for municipal waste in the region remain extremely low.

The informal sector plays an important role in all WB economies, especially by collecting recyclables with high value. **Albania** recycles approximately 18.5% of its municipal waste, the highest rate in the region⁹⁴ followed by Serbia with 16.8%. Other economies recycle less than 5% of their municipal waste, with the rest being landfilled. There is a record of waste-to-energy treatment, precisely incineration plants in **Albania**, and utilisation of waste derived fuels by the cement industry in **Bosnia and Herzegovina**, **Serbia**, and **North Macedonia**.

Mechanical-biological treatment plants intended for production of waste derived fuels are only recorded in **Bosnia and Herzegovina** and **Serbia**, owned by private companies, with a very small capacity that cannot meet domestic market requirements. Waste recycling facilities are not widely present in the region because they are risky investments that require clean raw materials, which economies are unable to provide due to insufficient waste separation at the source.

Waste collection and disposal fees are too low to cover the costs of municipal waste collection, let alone the costs of building or maintaining proper treatment infrastructure. As a result, the infrastructure for waste collection and treatment is heavily reliant on donor funding. Nonetheless, larger infrastructure projects currently underway include construction of a sorting and composting facility in **Kosovo***, mechanical-biological treatment facility in **North Macedonia**, three new sorting facilities in **Montenegro** (along with four already in place), and two new waste incineration facilities in **Albania**⁹⁵.

Waste statistics are primarily based on estimates, which has a significant impact on strategic planning and investment in infrastructure required for continued development of waste management systems. However, data quality is gradually improving, as evidenced by the installation of weighing bridges in **Albania**, development and implementation of a waste management information system in **Bosnia and Herzegovina**, and improvement of annual statistical survey response rate by conducting interviews in **Montenegro**.

The implementation of electronic data collection systems in **Bosnia and Herzegovina** and **North Macedonia** will also help to improve data quality, however substantial efforts will be needed to build the adequate infrastructure for data collection and sharing⁹⁶.

93 OECD. (2021). Competitiveness in South East Europe 2021: A Policy Outlook, Competitiveness and Private Sector Development. <https://doi.org/10.1787/dcbc2ea9-en>

94 EEA. (2021). Albania – Municipal waste factsheet for 2021. <https://www.eea.europa.eu/themes/waste/waste-management/municipal-waste-management-country/albania-municipal-waste-factsheet-2021/view>

95 EEA. (2022). Municipal waste management in the Western Balkan Countries. <https://www.eea.europa.eu/publications/municipal-waste-management-in-western>

96 EEA. (2022). Municipal waste management in the Western Balkan Countries. <https://www.eea.europa.eu/publications/municipal-waste-management-in-western>



Action 33 Design and implement consumer-targeted initiatives to raise awareness of citizens on waste prevention, separate collection and sustainable consumption

Awareness-raising programmes are recognised as indispensable activities for achieving strategic waste management goals; however, economies should support promotion of all aspects of circular economy, including sustainable consumption. The Balkan Barometer Public Opinion reports that an average of more than three-quarters of survey participants are unaware of what elements the circular economy consists of, reaching as high as 95% in some economies while only 2% mentioned recycling of products/waste/plastic as elements of the circular economy.⁹⁷

While some strategic documents, such as **Kosovo's*** Integrated Waste Management Strategy, **Montenegro's** Waste Management Programme, and **Albania's** Waste Management Strategy and related Waste Management Plan, envisioned raising public awareness activities with a particular emphasis on waste prevention and proper waste management, government-led public awareness programmes are generally lacking across the economies.

Certain progress has been made in **Kosovo***, where the Ministry of Environment and Spatial Planning frequently organises awareness campaigns, such as workshops in public schools on how to reduce waste generation, with the target group being the younger generations⁹⁸. **Following the adoption of the Green Agenda, initiatives and projects relating to circular economy have emerged.** Many of these initiatives are concerned with raising awareness and building capacity with non-governmental organisations playing an important role in their implementation. Home-composting campaigns are becoming more common, with **Montenegro** and **Kosovo*** leading the way.

There are also various cleaning campaigns that are followed by education on proper waste separation, reduction of single-use plastics, all with the common goal of raising citizens' awareness on hot topics and involving the public in decision-making. Although, there is no official and centralised data on CE initiatives neither in an economy nor at regional level, it is obvious that CE initiatives emerged after the adoption of GAWB.

Many of those initiatives relate to awareness raising and capacity building. Several regional projects such as EIT Climate KIC Cross-KIC: Circular Economy in the Western Balkans and Circular Economy Beacons produced significant impacts at the regional level, and so have other initiatives led by OECD, UNECE and UNEP. The regional project EU4Green is currently being implemented, and it will work to support the WB economies in developing circular economy policies, raising awareness, and increasing their capacity to implement circular measures.

Action 34 Conclude and implement a regional agreement on the prevention of plastic pollution, including specifically addressing the priority issue of marine litter

⁹⁷ Regional Cooperation Council. (2022). Balkan Barometer 2022: Public Opinion. <https://www.rcc.int/pubs/139/balkan-barometer-public-opinion-2022>

⁹⁸ EEA. (2021). Municipal waste management country profiles 2021. <https://www.eea.europa.eu/themes/waste/waste-management/municipal-waste-management-country>



A dedicated regional instrument is being developed for the WB region to address the entire lifecycle of plastics, from production and design to waste prevention and management, in order to prevent plastic pollution in the marine and other environments. As part of its contribution to the implementation of Green Agenda, EU Environment Partnership Programme for Accession (EPPA) put forward a draft joint statement on preventing plastic pollution including marine litter which was submitted for agreement to the six economies in the RWG ENV coordinated by RCC. In September 2019, a joint statement was proposed, and a draft version of the regional agreement is expected to be finalised by the end of 2023.

As Contracting Parties to the Barcelona Convention, Albania, Bosnia and Herzegovina, and Montenegro are bound by commitment to implement preventive measures related to marine litter; however, these economies have not yet implemented such measures. The findings of the Policy Gap Analyses for the three economies show that legal frameworks for waste management, including plastic packaging waste, have been established; however, implementation and enforcement are lagging as policy instruments such as eco-labels, extended producer responsibility schemes, economic incentives and disincentives, and green procurement are not fully utilised.

In addition, plastic sorting and recycling rates are very low in quantity and quality. In these economies, large amounts of food and beverage plastic packaging are not captured by existing waste management systems, leading to significant amounts of plastic packaging leaking into the environment⁹⁹. GIZ is currently implementing the Integrated Waste Management and Marine Litter Prevention in the Western Balkans regional project to improve implementation of coordinated marine litter reduction strategies.

Various test tools were developed as part of the initiatives and projects to assess the leakage of (plastic) waste into the environment and, as a result, further into the rivers (ending up as marine litter), but the results cannot be used as relevant sources of information due to unreliable input of data.¹⁰⁰ Reliable information on the sources, quality (e.g. knowing the composition of marine and terrestrial litter), routes and transport mechanisms of the litter are required to put effective measures against marine litter pollution in the Western Balkans into place¹⁰¹.

Action 35 Further implement Smart Specialisation Strategies, place-based, innovation-led transformation agendas for sustainability

Smart specialisation is advancing across the region with the support from the European Commission's Joint Research Centre. Smart specialisation strategies (S3) are also recognised by the Common Regional Market 2021-2024 Agenda as one of the expected results under the regional industrial and innovation priority area that aims to transform industrial sectors, shape value chains they belong to, and prepare them for the realities of today and challenges of tomorrow¹⁰².

⁹⁹ Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC). (2019). Priority areas of intervention to curb marine litter from food and beverage plastic packaging in Albania, Bosnia and Herzegovina and Montenegro. <http://www.cprac.org/en/news-archive/general/scp/rac-releases-priority-areas-of-intervention-to-curb-marine-litter-from-food>

¹⁰⁰ GIZ. (2022). Integrated Waste Management and Marine Litter Prevention in the Western Balkans. <https://www.giz.de/en/downloads/giz2022-factsheet-marine-litter.pdf>

¹⁰¹ GIZ. (2022). Integrated Waste Management and Marine Litter Prevention in the Western Balkans. <https://www.giz.de/en/downloads/giz2022-factsheet-marine-litter.pdf>

¹⁰² RCC. (2020). Common Regional Market. www.rcc.int/docs/543/common-regional-market-action-plan



Smart specialisation strategies have already been launched in **Montenegro** (2019) and **Serbia** (2021), while **Kosovo*** and **North Macedonia** are still in planning stage followed by **Albania** that has initiated the process. The S3 process has not yet begun in **Bosnia and Herzegovina**¹⁰³. **Serbia** stands out for the effectiveness of its approach and continuous entrepreneurial discovery process, while **Montenegro** has been recognised for its efforts to successfully engage stakeholders, including SMEs.

The implementation progress remains uneven, partially impacted by continuing complex coordination mechanisms across most economies. Reflecting the highly interdisciplinary nature of innovation, numerous stakeholders are often involved in the design, implementation, and oversight of innovation approaches, while a single and uniquely mandated body appears to be present only in **Montenegro** in the form of the Council for Innovation and Smart Specialisation¹⁰⁴.

The cumulative and dynamic process of learning and acquiring technological capabilities coherent to circular and digital (twin) transition is riddled with imperfections that demand systematic government support. There are new business opportunities emerging in which businesses can find their paths in different and emerging sectors such as green growth or those identified within smart specialisation entrepreneurial discovery processes.

Supporting enterprises with skills development to reskill and upskill will help improve their capacity to adjust to new circumstances and opportunities. There is not yet sufficient focus on training to support industries coping with ongoing major structural transformations for key themes such as digitalisation and green transition. The implementation gap between policy and training remains significant with not all economies providing government funded support or training across all the key themes of resource efficiency, sustainability, circular economy, and digital technologies for tracking resources¹⁰⁵.

Serbia is currently the frontrunner in terms of assisting businesses through the Digital Platform for Circular Economy, which was launched in 2021. It includes a Circular Economy HUB, which acts as a virtual classroom for circular economy. It aims to increase companies' understanding of the potential of circular economy, activities in the EU, available grants, and financial support.

The HUB also includes a green alliance, a virtual space for businesses to network, connect, and form new business collaborations, as well as share best practices¹⁰⁶. As opposed to the scarcity of training opportunities across WB region, employees generally show readiness to acquire new knowledge with 56% of surveyed businesses across the region quoting that their employees were interested in acquiring additional qualifications. Furthermore, governments should mainstream SME skills into S3 development and implementation, and prioritise training for SMEs that will support the twin transition¹⁰⁷.

103 European Commission. (2022). Communication on EU Enlargement policy. https://neighbourhood-enlargement.ec.europa.eu/2022-communication-eu-enlargement-policy_en

104 OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe. <https://doi.org/10.1787/b47d15f0-en>

105 OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe. <https://doi.org/10.1787/b47d15f0-en>

106 OECD. (2022). SME Policy Index: Western Balkans and Turkey 2022: Assessing the Implementation of the Small Business Act for Europe. <https://doi.org/10.1787/b47d15f0-en>

107 ACIT Centre & Finance Think. (2021). Balkan Barometer 2021: Business Opinion: Analytical report. Regional Cooperation Council. <https://www.rcc.int/download/docs/2021-06-BB2021-Business.pdf/439939a7489554684db46d2c266bfdbc.pdf>

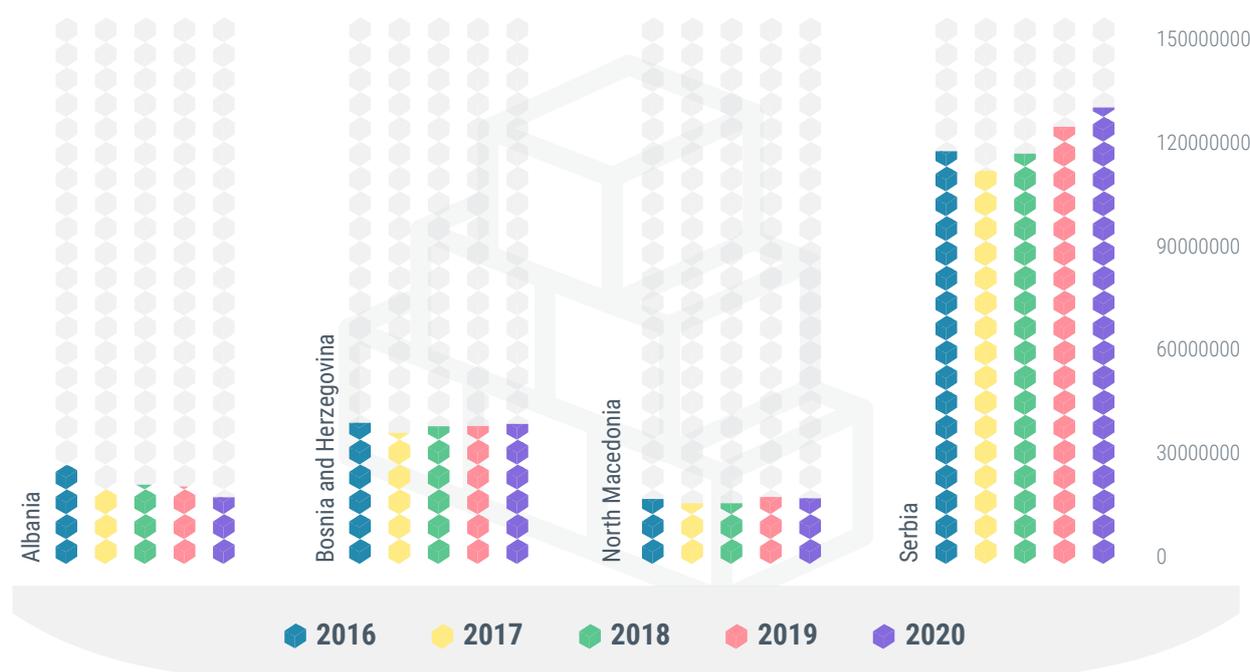


2.4.2 Monitoring the implementation of Circular Economy Roadmap

The analysis only covers a retrospective overview of the circular economy indicators trend from 2016 to 2020, as data for 2021 and 2022, following the adoption of the Green Agenda for Western Balkans, are still being compiled by statistical institutes.

Between 2016 and 2020, the amount of materials consumed in the Western Balkans in terms of **domestic material consumption** (DMC) and **per capita levels** shows a different trend across economies. Albania is the only economy where DMC and DMC per capita decreased by 32.5% and 31.6%, respectively, due to lower domestic extraction in 2020 (28.470 tonnes) compared to 2016 (28.470 tonnes), while import and export data have remained nearly constant. Bosnia and Herzegovina and North Macedonia maintained nearly identical values, whereas Serbia increased DMC and DMC per capita values by 10.5% and 13.6%, respectively, during the mentioned period, indicating that the trend has a negative connotation. Overall, the average level of DMC per capita remains lower in the WB area (11.6 tonnes per capita in 2020) compared to the EU average value of 13.4 tonnes per capita.

Domestic material consumption (tonnes)



Source: Institute of Statistics of Albania¹⁰⁸; Agency for Statistics of Bosnia and Herzegovina¹⁰⁹; Statistical Office of North Macedonia¹¹⁰; Statistical Office of Serbia¹¹¹

108 INSTAT. (2020). Material Flow Accounts. <http://www.instat.gov.al/media/9943/material-flow-accounts-2020.pdf>

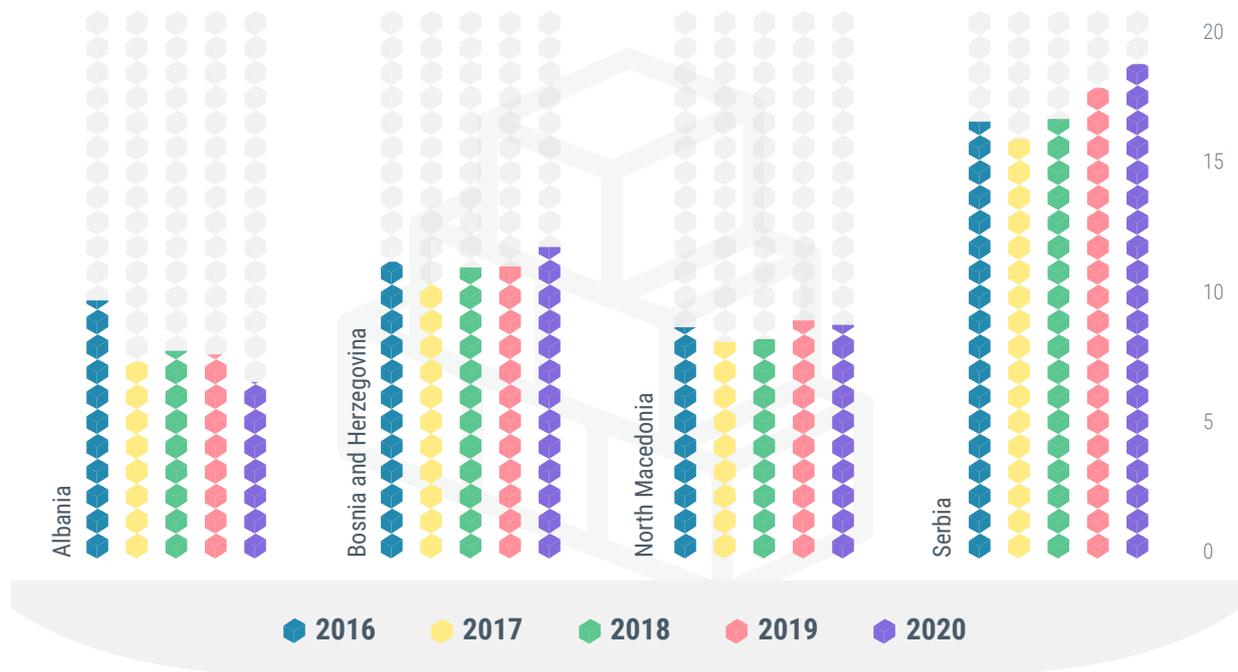
109 Agency for Statistic of Bosnia and Herzegovina. (18 November 2021). ENVIRONMENTAL ACCOUNT: Material Flow Accounts, 2016–2020. https://bhas.gov.ba/data/Publikacije/Saopstenja/2021/ENV_11_2020_Y5_BS.pdf

110 North Macedonia: Statistical Office. (2022, November 30). Economy-wide material flow accounts, 2020 and 2021. https://www.stat.gov.mk/PrikaziSoopstenie_en.aspx?rbtxt=130

111 Statistical Office of Serbia. (3 December 2021). Material flow indicators, 2020. <https://publikacije.stat.gov.rs/G2021/Pdf/G20211312.pdf>



Domestic material consumption per capita (tonnes per capita)



Source: Eurostat¹¹²; Agency for Statistics of Bosnia and Herzegovina¹¹³

Resource productivity was increasing in all economies between 2016 and 2020, indicating a positive trend. The COVID-19 recession caused a moderate decrease in Bosnia and Herzegovina, Serbia, and North Macedonia between 2019 and 2020, however resource productivity increased by more than 10% between 2016 and 2020. Albania’s resource productivity more than doubled. Overall, the WB region’s average level of resource productivity remains lower (0.52 Euro per kg in 2020) than the EU average of 2.21 Euro per kg. During the 2016-2020 period, gross domestic product increased in all economies¹¹⁴, as did resource productivity values. However, with the exception of Albania, domestic material consumption is increasing, implying that WB economies have only achieved a relative decoupling of economic growth from resource consumption.

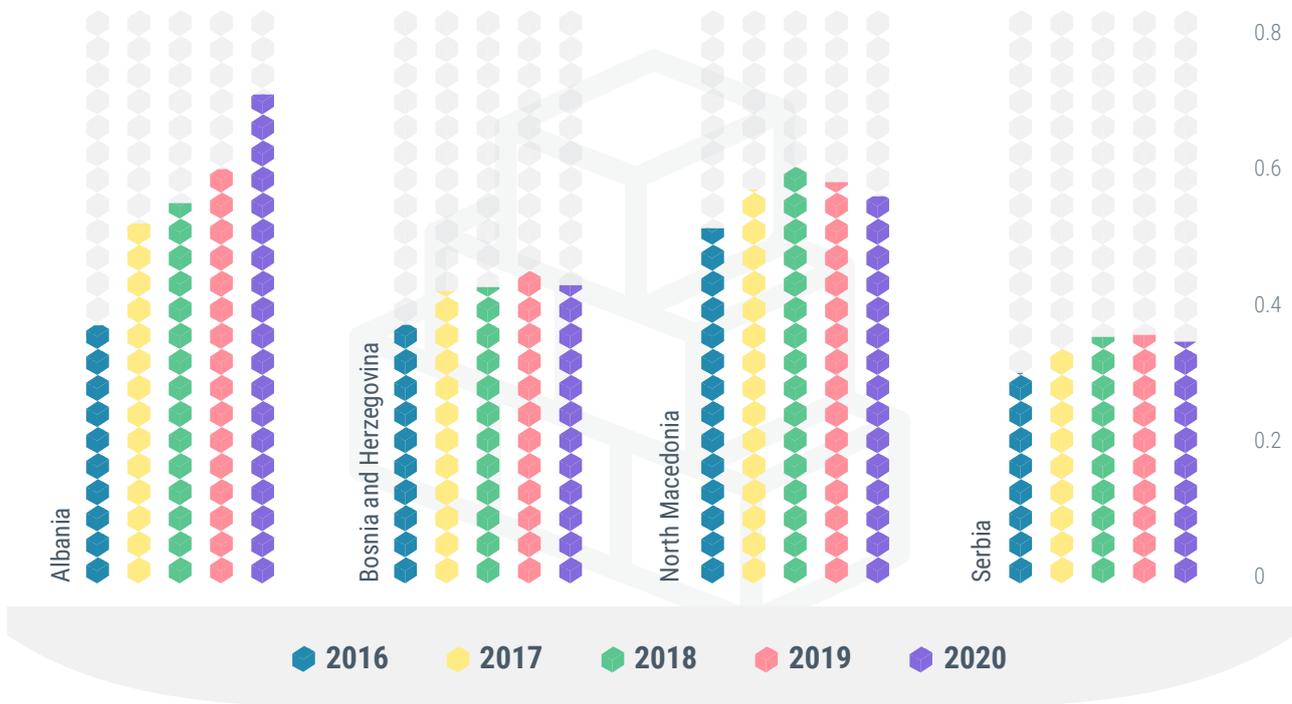
112 Eurostat. (n.d.). Domestic material consumption per capita. Last update 28 October 2022. <https://ec.europa.eu/eurostat/data-browser/view/ten00137/default/table?lang=en>

113 Agency for Statistics of Bosnia and Herzegovina (n.d.). <https://bhas.gov.ba/Calendar/Category/27>

114 Eurostat. (n.d.). Gross domestic product at market prices. Last update 6 February 2023. <https://ec.europa.eu/eurostat/databrowser/view/tec00001/default/table>



Resource productivity (Euro per kg)



Source: Eurostat¹¹⁵; Institute of Statistics of Albania¹¹⁶

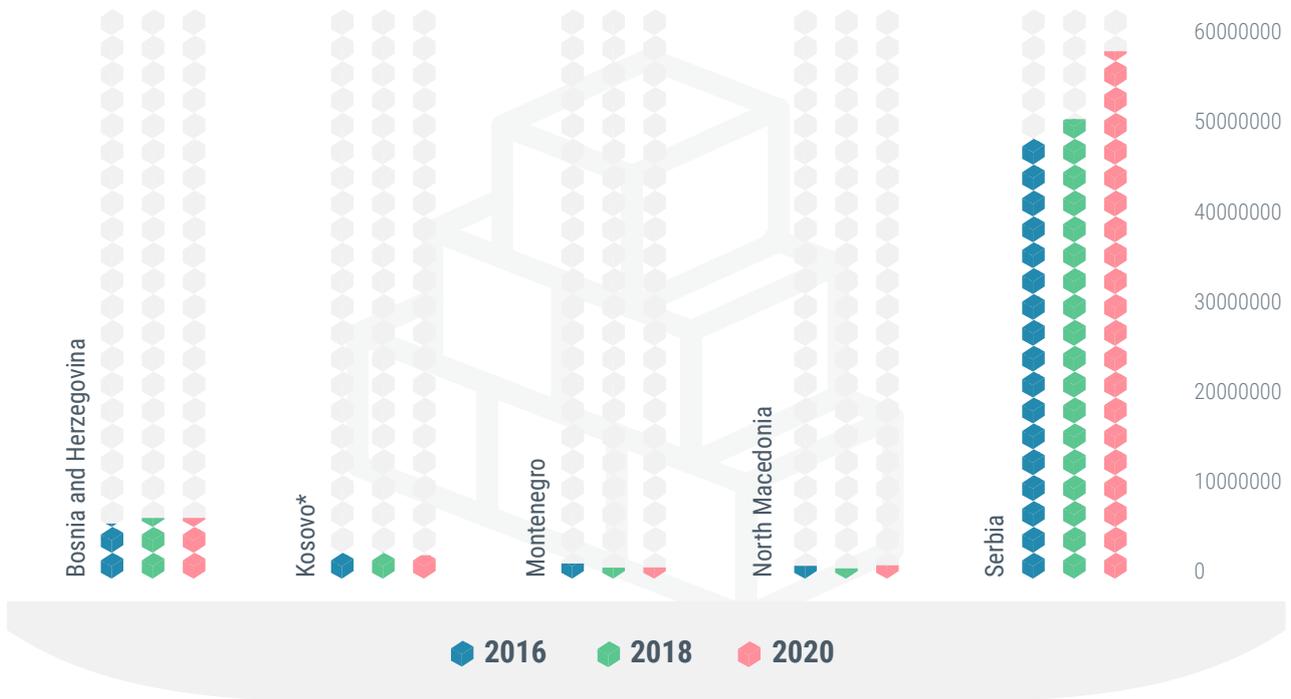
Statistical data for **total waste generation** indicate that Kosovo* and Montenegro are the only economies to reduce amounts of waste by 9% and 26% respectively, between 2016 and 2020, while also showing an increasing trend in GDP. This indicates that waste generation decoupled from the economic growth. In the same period, Bosnia and Herzegovina, North Macedonia and Serbia continued to generate increasing amounts of waste.

115 Eurostat. (n.d.). Resource productivity. Last update 1 July 2022. https://ec.europa.eu/eurostat/databrowser/view/env_ac_rp/default/table?lang=en

116 INSTAT. (2020). Material Flow Accounts. <http://www.instat.gov.al/media/9943/material-flow-accounts-2020.pdf>



Generation of waste - total (tonnes)



Source: Eurostat¹¹⁷

117 Eurostat. (n.d.). Generation of waste by waste category, hazardousness and NACE Rev. 2 activity. Last update 13 January 2023. https://ec.europa.eu/eurostat/databrowser/view/env_wasgen/default/table?lang=en (For the consistency purposes, EUROSTAT data has been used, which may vary from the data collected by national statistics)

2.5 DEPOLLUTION ROADMAP





2.5.1 Progress in implementing the Roadmap across the actions and the region

Action 36 Finalise the process of ratification of Convention on Long-range Transboundary Air Pollution and its protocols

All WB economies except Kosovo* have ratified the Convention on Long-range Transboundary Air Pollution¹¹⁸. North Macedonia is the only economy that has ratified all the protocols of this convention¹¹⁹. Albania ratified two out of eight protocols, Bosnia and Herzegovina ratified one protocol, while Montenegro and Serbia ratified three protocols. All economies ratified the EMEP protocol¹²⁰, while North Macedonia is the only signatory that is party to the original Gothenburg Protocol, but has not yet ratified the amended Protocol¹²¹.

Action 36a Support modelling to establish economy-wide emission reduction commitments for the five main pollutants covered by the NEC Directive and the Gothenburg Protocol under the Convention on Long-range Transboundary Air Pollution

Use of modelling to establish economy-wide emission reduction commitments in WB economies is not widespread. Current practices are mainly based on air quality monitoring conducted at public monitoring stations located in urban areas, as well as monitoring performed by industrial facilities in accordance with the issued environmental permits.

In all WB economies, air quality targets are set mainly through air quality limit values defined by the domestic legal framework for air protection. However, WB economies have set an overall objective to improve air quality, especially in urban areas and around industrial plants, with the aim of protecting human health and fulfilling the EU Directives and international agreements on environmental quality of air and limiting the amount of gases released to the atmosphere. The results of existing air quality measurements can be used to establish multi-year analyses and targets for reducing air pollution.

Five main pollutants covered by the NEC Directive and the Gothenburg Protocol are: PM_{2.5}, NO_x, SO₂, NH₃ and NMVOCs and not all these parameters are monitored in WB economies. In Albania, the systematic measurement of emissions of the basic polluting substances includes continuous 24-hour measuring of PM₁₀, NO_x, SO₂, O₃ and Pb¹²². There are seven automatic air monitoring stations, five of which are present in main cities of Korçë, Elbasan, Fier, Durrës, Shkodër, and one static station in Tirana. The measured parameters are according to the EU Directives and Albanian legislation. In Bosnia and Herzegovina, the following

118 United Nations Treaty Collection. (n.d.). Convention on long-range transboundary air pollution. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-1&chapter=27&clang=en

119 But not all most recent amendments to the protocols.

120 The 1984 Geneva Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)

121 United Nations Treaty Collection. (n.d.). Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on Long-term Financing of the Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-1-a&chapter=27&clang=en

122 EEA. (2010). Air pollution - State and impacts (Albania). <https://www.eea.europa.eu/soer/2010/countries/al/air-pollution-state-and-impacts-albania>



parameters are measured at the monitoring stations: PM₁₀, PM_{2.5}, O₃, NO_x and SO₂, CO and H₂S¹²³. Air quality dispersion modelling was done within the framework of different projects¹²⁴. However, relevant public institutions do not conduct air quality modelling.

Air quality monitoring stations in **Kosovo*** monitor the following parameters: PM₁₀, PM_{2.5}, O₃, NO₂, SO₂ and CO. To provide accurate estimates of air quality and air quality forecasts for Kosovo* as a whole, a mathematical model has been developed which is used to generate the 3-day forecasts. The model utilises weather forecasting and air pollution dispersion models based on a reduced number of 4 pollutants: PM₁₀, PM_{2.5}, O₃ and NO₂¹²⁵. The second phase of Capacity Development for Air Quality Monitoring project in Kosovo*, supported by the Government of Japan, will increase the capacities to perform source apportionment studies and air quality modelling¹²⁶. Air quality monitoring stations in **Montenegro** monitor the following parameters: PM₁₀, PM_{2.5}, O₃, NO, NO₂, NO_x, SO₂, CO, CH₄, C₆H₆ and THC¹²⁷.

In **North Macedonia**, the following parameters are measured at monitoring stations: PM₁₀, PM_{2.5}, O₃, NO, NO₂, NO_x, SO₂, and CO¹²⁸. Support for Implementation of Air Quality Directives project funded by the EU in North Macedonia is expected to start in 2023. One of the goals of the project is to strengthen administrative capacities for emission inventories, modelling, monitoring and air quality assessment¹²⁹. The network of air quality monitoring stations in **Serbia** measures the following parameters: PM₁₀, PM_{2.5}, O₃, NO, NO₂, NO_x, SO₂, CO, C₆H₆ and Pb¹³⁰. In 2017, a project with the Secretariat for Environmental Protection of the City of Belgrade to develop an Air Quality GIS has been completed. The Air Quality GIS allows: (i) collection and maintenance of air quality data, (ii) modelling the spread of pollutants in the air, and (iii) generation of air quality maps¹³¹. In December 2022, the Air Protection Programme for the period from 2022 to 2030 was adopted with an Action Plan, which defines the measures and activities that will be implemented in the future in order to improve air quality. For the first time, Serbia received a strategic document in the area of air protection, the implementation of which will require investment of 2.6 billion euros in the coming years.

Action 37 Develop and implement Air Quality Strategies

At present, only three WB economies have adopted Air Quality Strategies, while others have environmental public policy documents covering air quality issues and undertake activities to develop new specific public policy documents regarding air quality with the support from EU and other developmental partners.

The National Air Quality Strategy in **Albania** provides an overview of the situation in 2014 regarding con-

123 Federal Hydro-Meteorological Institute. (2022). Annual air quality report in the Federation of Bosnia and Herzegovina (2021). <https://www.fhmzbih.gov.ba/PUBLIKACIJE/zrak/izvjestaj-2021.pdf>

124 Indeks kvaliteta zraka. (n.d.). About the project. <https://zrakubih.ba/bs/tekst/o-projektu/24>

125 Hydrometeorological Institute of Kosovo*. (n.d.). About the Air Quality Portal. <https://airqualitykosova.rks-gov.net/en/about-air-quality-portal/>

126 EU4Green Project

127 LLC Centre for Ecotoxicological Research Podgorica. (2022). Air quality monitoring in Montenegro for November 2022. <https://epa.org.me/wp-content/uploads/2022/12/Novembar-2022.pdf>

128 Golubov, N. (16 December 2020). Air quality monitoring in Republic of North Macedonia. Macedonian Environmental Information Centre. https://unece.org/sites/default/files/2021-01/7%20NM_AirQualityMonitoring_Golubov.ENG%20pdf.pdf

129 Golubov, N. (16 December 2020). Air quality monitoring in Republic of North Macedonia. Macedonian Environmental Information Centre. https://unece.org/sites/default/files/2021-01/7%20NM_AirQualityMonitoring_Golubov.ENG%20pdf.pdf

130 SEPA. (2022). Annual Report on the state of air quality in the Republic of Serbia in 2019. http://www.sepa.gov.rs/download/Vazduh_2021.pdf

131 <https://www.cadcorp.com/air-quality-gis-in-serbia/>



centrations and air pollution sources. However, set limit values and target values for air pollutants as laid down in relevant EU legislation are still pending¹³². The Strategy needs to be updated given the year of its adoption (2014) and lack of implementation. Entities and Brcko District in **Bosnia and Herzegovina** adopted Environmental Strategy and Action Plan including a chapter on Air Quality, Climate and Energy. The economy-wide Environmental Strategy and Action Plan is in the adoption phase.

Kosovo* has the legal basis for development of Air Quality Strategy including the Law on Air Pollution adopted in July 2022. Development of environmental protection strategy that includes a section on air quality is planned with the international support. **Montenegro** prepared a Draft government Strategy on Air Quality Management¹³³ but the adoption of the Strategy and action plan remain pending¹³⁴. The draft Strategy was developed in 2019 and should be updated, considering new air pollutant monitoring, air pollutant emission inventories and projections, and air quality modelling results.

North Macedonia does not have an Air Quality Strategy even though the economy produced public policy documents in this field in the past¹³⁵ and has a track record of implementation of activities aiming to reduce air pollution from different sources. Preparation of an air quality plan and air pollution control programme is envisaged for 2023 with EU support. **Serbia** adopted key public policy document – National Programme on Air Quality in December 2022¹³⁶. The document estimates health effects of air pollution proposing a set of measures that may bring air pollution to the legally prescribed levels by 2030. Each of the scenarios presented in the programme envisages compliance of emissions from large combustion plants with the domestic and EU legislation. The programme also proposes fundamental changes in the heating practices required to reduce PM concentrations to legally accepted levels by 2030 in major cities in Serbia.

Action 37a Increase the uptake of Best Available Techniques in accordance with the Industrial Emissions Directive

The alignment with the EU legislation on industrial pollution and risk management is still at an early stage in the WB economies¹³⁷, including the use of best available techniques (BAT). The region is struggling with the effective implementation of Industrial Emissions Directive (IED), which requires additional capacity building and investment¹³⁸. There is a need to translate relevant BAT conclusions and parts of best available techniques reference documents (BREFs) into the official languages and to increase the capacity of environmental inspection¹³⁹.

132 European Commission. Albania 2022 Report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Albania%20Report%202022.pdf>

133 Ministry of Ecology, Spatial Planning and Urbanism (Montenegro). (2021). Draft Strategy for Air Quality Management 2021-2029. <https://www.gov.me/dokumenta/11674b76-fe5c-4fcc-b0ac-9b3f681e633b>

134 Progress Report Montenegro. (2022).

135 AIR POLLUTION REDUCTION PROGRAMME. https://www.moep.gov.mk/wp-content/uploads/2015/01/Plan_Programa.pdf

136 Ministry of Environmental Protection of Serbia. (8 December 2022). The Air Protection Programme in Serbia for the period from 2022 to 2030 with an Action Plan was adopted. <https://www.ekologija.gov.rs/saopstenja/vesti/usvojen-program-zastite-vazduha-u-republici-srbiji-za-period-od-2022-do-2030-godine-sa-akcionim-planom>

137 European Commission. Albania 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Albania%20Report%202022.pdf>

138 European Commission. (6 October 2020). Guidelines for the Implementation of the Green Agenda for the Western Balkans Accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. https://neighbourhood-enlargement.ec.europa.eu/system/files/2020-10/green_agenda_for_the_western_balkans_en.pdf

139 EU4Green project



In **Albania**, the status of transposition of IED is at around 70%. IPA III programming includes objectives to support implementation of IED through further regulatory framework development and improved administrative capacities (monitoring and inspection)¹⁴⁰. In **Bosnia and Herzegovina**, the IED Directive is transposed through the laws on environmental protection. In Federation of Bosnia and Herzegovina, the procedure for issuing an integrated environmental permit is transposed through the new Law on Environmental Protection¹⁴¹. Limit values of emissions are prescribed and included in the environmental permit, based on the regulations that define limit values of emissions, which are harmonised with BAT. The status of harmonisation of the Law on Environmental Protection in Republika Srpska¹⁴² with IED is around 48%¹⁴³.

In **Kosovo*** the government prepared a new draft Law on Integrated Prevention and Control of Pollution and submitted it to the Assembly at the beginning of May 2022. Progress in drafting the legislation is very slow¹⁴⁴. There are 42 identified IED installations in Kosovo*. There are 12 issued permits, while another 30 are in the process of being issued¹⁴⁵. **Montenegro** has a high level of transposition of the EU acquis in industrial pollution control and risk management. Implementing legislation was adopted by means of the Law on Industrial Emissions. In 2019, the Ministry of Ecology, Spatial Planning and Urbanism completed an initial inventory of operators and plants falling under the IED and submitted it to the Nature and Environmental Protection Agency of Montenegro for further development and use in permitting and enforcement. The economy has been investing in growing its administrative capacities to implement IED requirements¹⁴⁶. Also, they prepared Instructions on the use of conclusions regarding the best available techniques, which were adapted for use in Montenegro and were published on the website of the Ministry. All documents prepared will help in adequate application of regulations in the field of industrial pollution.

In **North Macedonia**, a new Law on IPPC is in a final phase of preparation and is waiting adoption¹⁴⁷. At the level of the economy, 461 IPPC A and IPPC B permits have been issued. In November 2021, **Serbia** postponed the deadline for issuing integrated permits for large polluters from 2020 to 2024. Inspection and law enforcement remain areas of concern. There is not enough capacity to manage the integrated permitting processes. Polluter pays principle is not implemented¹⁴⁸. Of the estimated 220 installations that require a permit, only 47 had it (21%) in 2023. The process is facing a number of problems. The permitting authorities are faced with incomplete applications, operators often have financial constraints, do not keep proper documentation or simply do not take the requirement seriously¹⁴⁹.

140 EPPA. (2020). Event Report: EPPA Regional Workshop on Industrial Emissions Directive – Current Status, New Developments. https://eppanetwork.eu/wp-content/uploads/2020/07/EPPA_IED_2Workshop_Report-Jun2020_final.pdf

141 Official Gazette of Federation of Bosnia and Herzegovina, No. 15/21

142 Official Gazette of RS, No. 71/12

143 EPPA. (2020). Event Report: EPPA Regional Workshop on Industrial Emissions Directive – Current Status, New Developments. https://eppanetwork.eu/wp-content/uploads/2020/07/EPPA_IED_2Workshop_Report-Jun2020_final.pdf

144 European Commission. Kosovo* 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Kosovo%20Report%202022.pdf>

145 EPPA. (2020). Event Report: EPPA Regional Workshop on Industrial Emissions Directive – Current Status, New Developments. https://eppanetwork.eu/wp-content/uploads/2020/07/EPPA_IED_2Workshop_Report-Jun2020_final.pdf

146 EPPA. (2020). Event Report: EPPA Regional Workshop on Industrial Emissions Directive – Current Status, New Developments. https://eppanetwork.eu/wp-content/uploads/2020/07/EPPA_IED_2Workshop_Report-Jun2020_final.pdf

147 European Commission. North Macedonia 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/North%20Macedonia%20Report%202022.pdf>

148 European Commission. Serbia 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Serbia%20Report%202022.pdf>

149 EPPA. (2020). Event Report: EPPA Regional Workshop on Industrial Emissions Directive – Current Status, New Developments. https://eppanetwork.eu/wp-content/uploads/2020/07/EPPA_IED_2Workshop_Report-Jun2020_final.pdf



Action 38 Establish an adequate air quality monitoring system, including through accreditation of air quality monitoring networks

Air quality monitoring networks are established in all WB economies. However, the network usually covers only a few cities. To establish an adequate air quality monitoring system, WB economies will need to improve the coverage of monitoring networks (number of monitoring stations), number of parameters monitored, as well as data validation and reporting. Establishment of national reference laboratories is still pending in all WB economies except **Montenegro**. In **Albania**^{150,151,152}, the air quality monitoring network is operated by the National Environment Agency with additional stations operated by the Institute of Public Health¹⁵³. The monitoring network is not accredited while the reference laboratory has not been established or assigned. Albania does not report monitoring data to the European Environment Agency (EEA).

In **Bosnia and Herzegovina**^{154,155}, a well-functioning, economy-wide harmonised air monitoring network still needs to be established¹⁵⁶. Data are partly reported to EEA. However, an economy-wide data validation and reporting process has not been established yet. Accreditation of the calibration laboratories has not been done yet. No central reference laboratory has been established or assigned. **Kosovo*** has an air quality monitoring network^{157,158} that comprises 12 fixed and one mobile station¹⁵⁹. The monitoring network has not been accredited by the competent authority and a reference laboratory has not been established or assigned. Data are partly reported to EEA.

Montenegro has an air quality monitoring network, and all required parameters are monitored¹⁶⁰. Montenegro established National Reference Laboratory for air quality monitoring and testing in the Centre for Ecotoxicological Testing in Podgorica, which is also accredited for air quality monitoring and laboratory tests. Calibration of monitoring equipment is done by a laboratory in Croatia. Data for 2021 were submitted to EEA. **North Macedonia** has an air quality monitoring network that comprises 20 fixed and one mobile

150 EEA. (2010). Air pollution - State and impacts (Albania). <https://www.eea.europa.eu/soer/2010/countries/al/air-pollution-state-and-impacts-albania>;

151 UNECE. (2018). AIR POLLUTION RELATED POLICIES, STRATEGIES AND MEASURES, IN ALBANIA. https://unece.org/DAM/env/documents/2018/Air/WGSR/Laureta_Dibra.pdf;

152 UNECE. (n.d.). Albania Environmental Performance Reviews. https://unece.org/DAM/env/epr/epr_studies/Leaflet/Booklet_3rdE-PRAlbania.pdf

153 In Albania, the network needs improvement in terms of coverage and number of parameters to be monitored. Data validation is also missing.

154 Sarajevo Times. (12 November 2022). When will the air quality Monitoring Stations Network be operational in FBiH?. <https://sarajevotimes.com/when-will-the-air-quality-monitoring-stations-network-be-operational-in-fbih/>;

155 Federal Hydro-Meteorological Institute. (n.d.). Air quality assessment and management in Bosnia and Herzegovina. <https://www.fhmzbih.gov.ba/latinica/projekti/projekti-SZS-07KZ.php>

156 In Bosnia and Herzegovina, separate monitoring networks operate in entities. Increase in coverage, and number of parameters monitored is required.

157 Federal Hydro-Meteorological Institute. (n.d.). About the Air Quality Portal. <https://airqualitykosova.rks-gov.net/en/about-air-quality-portal/>;

158 Federal Hydro-Meteorological Institute. (n.d.). Monitoring network: Establishment of the Kosovo National Air Quality Monitoring Network. <https://airqualitykosova.rks-gov.net/en/monitoring-network/>

159 In Kosovo*, the network needs improvement in terms of coverage and number of parameters to be monitored. Data validation process needs improvement.

160 Zarkovic, J. (2021, May). MONTENEGRO: EU SUPPORT FOR AIR QUALITY MANAGEMENT AND MONITORING. Economisti Associati information. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2021-09/20210716%20MNE%20eval%20CS%204%20Air%20quality.pdf>



station with ongoing procurement processes for additional station^{161,162}. The calibration laboratory requires accreditation while reference laboratory has not been established or assigned. North Macedonia is already a following institute of AQUILA. Parameters, such as heavy metals, benzene and PAH, need to be monitored regularly while indicative monitoring of these parameters is in place. The available data is reported to EEA.

Serbia has an air quality monitoring network^{163,164} that comprises around 66 fixed stations. The results are published in annual reports by Serbian Environmental Protection Agency. National reference laboratory has not been established or assigned. Serbia is already a following institute of AQUILA.

Action 39 Implement relevant EU water-related acquis (Water Framework Directive, Urban Waste Water Treatment Directive and Nitrates Directive)

The water-related legislation in all WB economies is still not fully harmonised with the relevant EU acquis, the Nitrates Directive having the least observed progress. The primary legal and policy framework for water resources management is in place in **Albania** but the level of alignment remains incomplete with two laws on water resources and marine waters still waiting adoption. The Directive on Specific Implementation Plans (DSIP) for the Urban Wastewater Treatment Directive (UWWTD) is under preparation. A complete new legal package for full transposition of the Water Framework Directive (WFD) and 9 other water directives has been drafted and is under public consultation with the perspective to be adopted by 2023^{165,166}.

A consistent and harmonised economy-wide strategy and sustainable investment plan on water management and urban wastewater management is still missing in **Bosnia and Herzegovina**. The Water Law is mostly harmonised with the EU Water Directive¹⁶⁷. The River Basin Management Plans (RBMPs) are completed for all basins and approved. Environmental Strategy and Action Plan including a chapter on Water Management are adopted at the Entity and Brcko District levels. The economy-wide Environmental Strategy and Action Plan is in the adoption phase. A revision of the action plan for flood protection and river management is needed¹⁶⁸. The draft proposals on the Nitrates Directive transposition are being prepared by public authorities, using an interdisciplinary approach amongst water and agriculture¹⁶⁹.

In **Kosovo*** the level of alignment and monitoring mechanism of the 2017-2036 Water Strategy remain insufficient, as well as the implementation of the Law on Water. The river basin district authority needs to become operational as a matter of urgency. The management plan for the White Drin basin has not been

161 WB. (2019, October). AIR POLLUTION MANAGEMENT IN NORTH MACEDONIA. <https://documents1.worldbank.org/curated/en/116521576516981237/pdf/Air-Quality-Management-in-North-Macedonia.pdf>;

162 AQICN. (n.d.). Air Pollution in North Macedonia: Real-time Air Quality Index Visual Map. <https://aqicn.org/map/macedonia/>

163 SEPA. (n.d.) NATIONAL NETWORK OF AUTOMATIC STATIONS FOR AIR QUALITY MONITORING. <http://www.amskv.sepa.gov.rs/>;

164 SEPA. (2022). Air Quality in the Republic of Serbia in 2021. http://www.sepa.gov.rs/download/Vazduh_2021.pdf

165 In Albania, River Basin Management Plans (RBMPs) for Drini-Buna and Semani River were adopted in 2020 and five RBMPs: the Ishem, Erzen, Mati, Shkumbini and Vjosa remain to be completed and adopted, some of them being in the advanced phases of completion.

166 European Commission. (2022). Albania 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Albania%20Report%202022.pdf>

167 EnvNet. (n.d.). Country Situation in Bosnia-Herzegovina 2021. <http://env-net.org/matrixpost/country-situation-in-bosnia-herzegovina-2015/>

168 European Commission. (2022). Bosnia and Herzegovina 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Bosnia%20and%20Herzegovina%20Report%202022.pdf>

169 In Bosnia and Herzegovina, establishment of codes of good agricultural practices and national action programmes started in September 2022 with the support of the World Bank.



completed and progress is slow for the other river basin management plans. The flood risk and hazard maps need to be completed. Agglomerations and sensitive areas remain to be identified in line with the Urban Waste Water Treatment Directive¹⁷⁰.

In March 2022, the government of **Montenegro** adopted the water management plans for the Danube and Adriatic basins. Transposition of Water Framework Directive, Urban Wastewater Treatment Directive, and Nitrates Directive has finished and River Basin Management Plans have been adopted. An analysis of the existing flood protection infrastructure has been done, a preliminary risk assessment has been carried out, and development of maps of flood hazards and flood risks started¹⁷¹. Water Management Strategy needs to be updated. Montenegro started to review the concessions granted for the construction of small hydro-power plants and revoked some of them. Transposition of Nitrates Directive is complete with defined sensitive areas in relation to urban wastewater treatment and designated vulnerable zones for nitrate pollution from agriculture. Agglomerations have been defined according to the UWWTD.

The government of **North Macedonia** included the establishment of wastewater collection and treatment infrastructure as one of the structural reform measures in the Economic Reform Programme 2022-2024. Activities to align with the EU acquis on water quality management have continued. The groundwater cadastre, which aims to better manage and report on groundwater resources, is in the final stage of development. River Basin Councils have been nominated but are not yet operational¹⁷². Amendments to the Law on Water are prepared with the aim to harmonise with the requirements of WFD and other relevant EU legislation. The implementation of Nitrates Directive is at an early stage¹⁷³.

The level of alignment with the EU acquis on water quality is moderate in **Serbia**¹⁷⁴. Serbia adopted its action plan for implementing water management strategy and held public hearings on the draft river basin management plan in 2021. Work on developing flood risk management plans is ongoing¹⁷⁵. Limited progress was achieved regarding development of flood risk management plans. A new Law on Water fully complying with the Floods Directive is under preparation/adoption. Transposition of the Nitrates Directive is at an early stage¹⁷⁶.

Action 40 Modernise water monitoring infrastructure and reach good status for all water bodies

Although the water monitoring network is established in all WB economies, the number of stations, monitoring parameters and management practices are insufficient. The water quality and quantity

170 European Commission (2022). Kosovo* 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Kosovo%20Report%202022.pdf>

171 European Commission. Montenegro 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Montenegro%20Report%202022.pdf>

172 In North Macedonia, RBMPs for Lake Prespa and the Bregalnica River have been developed, while RBMPs for the Strumica and Vardar River Basins have been drafted. The management plan of the Ohrid Lake sub-basin has been prepared but implementation of all RBMPs remains a concern as no RBPM has been adopted by the Government. RBMPs also suffer a lack of data in some areas, due to the poor state of the qualitative and quantitative water monitoring system.

173 European Commission. North Macedonia 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/North%20Macedonia%20Report%202022.pdf>

174 Pollution by nitrogen and phosphorus originates from the energy sector, waste and wastewater public companies and chemical and mineral industries in Serbia. Non-compliance with water quality standards remains a big concern in some areas, such as those where arsenic is present.

175 European Commission. Serbia 2022 report. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/Serbia%20Report%202022.pdf>

176 Preliminary works exist, e.g. 49% of the area is delineated as nitrate vulnerable zones.



monitoring in **Albania** is insufficient compared to the current compliance, management and protection needs. The water quality monitoring of rivers¹⁷⁷ in Albania is conducted by the National Environment Agency¹⁷⁸.

No central information system on water resources to support monitoring exists apart from the systems in river basin agencies in **Bosnia and Herzegovina**¹⁷⁹. However, existing environmental quality data, based on the risk monitoring and assessment procedures compliant with the WFD, show that good water status has not been achieved in most of the economy. Status of 49.80% of surface water bodies was bad with only 7.05%¹⁸⁰ of high quality in 2020¹⁸¹. The goal is to reduce the percentage of watercourses with bad water to 15% by 2030. The key challenges are untreated municipal wastewater, nutrient pollution, hydromorphological changes, as well as the presence of priority substances¹⁸².

Monitoring of surface water quality is satisfactory in **Kosovo***, while the ground water resource-monitoring network progressed with its establishment in 2022 and the installation of sensors in 40 wells for monitoring. Untreated sewage and discharge remain the main sources of water pollution¹⁸³, particularly in rivers¹⁸⁴. The Hydrometeorological Institute is running the water quality and quantity monitoring in **Montenegro**. An integrated environmental information system has been developed only partially, and no automatic information flows have been ensured. Data reporting by enterprises is still limited¹⁸⁵.

Since 2018, 38 groundwater and 65 surface water stations have been operational in **North Macedonia** but systematic, and representative ground water and surface water monitoring and evaluation across the economy still does not exist. The National Hydrometeorological Service is entrusted to implement monitoring in accordance with WFD guidelines but faces difficulties in monitoring some quality elements¹⁸⁶.

A WFD compliant groundwater and surface water monitoring programme is needed in **Serbia**. Further development of a monitoring network based on existing assessments and studies is needed as well as supply of laboratory equipment for water monitoring. There is no sufficient capacity (in terms of the number of

177 These cover the main rivers (Drini, Mati, Ishmi, Erzeni, Shkumbini, Semani, Vjosa), the natural lakes of Ohrid, Prespa and Shkodra and include most of the polluted areas and environmental "hot spots".

178 SULÇE, S., RROCO, E., MALLTEZI, J., SHALLARI, S., LIBOHOVA, Z., SINAJ, S. & QAFOKU, N. P. (2018, January). Water quality in Albania: An overview of sources of contamination and controlling factors. https://www.researchgate.net/profile/Evan-Rroco/publication/346942150_Water_quality_in_Albania_An_overview_of_sources_of_contamination_and_controlling_factors/links/5fd32f5645851568d154e8ae/Water-quality-in-Albania-An-overview-of-sources-of-contamination-and-controlling-factors.pdf

179 EU4Green project

180 Length based percentages

181 Down from 18% in 2015.

182 Bosnia and Herzegovina. (2022). Economic Reform Programme 2022-2024. <http://www.dep.gov.ba/naslovna/?id=2581>

183 Kosovo* (2022). Kosovo Economic Reform Programme 2022-2024. <https://kryeministri.rks-gov.net/wp-content/uploads/2022/07/Economic-Reform-Programme-2022-24.pdf>

184 In Kosovo*, illegal exploitation of alluvium in rivers, regulation of rivers without ecological/hydromorphological criteria, implies the urgent need for restoration of rivers, according to protective and ecological criteria. These actions directly affect the conservation of biodiversity of water environment.

185 With the EU support the Water Administration in Montenegro acquired hardware and software equipment for the establishment of Water Information System in the form required by the current legislation. It is expected that such functionality will be achieved in the coming period.

186 Due to the lack of appropriate and modern laboratory equipment in North Macedonia, only heavy metals (Cd, Pb and Ni) are analysed. Some biological quality criteria are not defined; hence the ecological status cannot be determined, and the reference conditions of surface water bodies are still not established. Methodology for determining the parameters for measuring and monitoring the quality and quantity of all water bodies was prepared.



people, knowledge, equipment and financial resources) within the Serbian Environment Protection Agency for the implementation of surface and ground water and sediment monitoring¹⁸⁷.

Action 41 Build the necessary infrastructure for wastewater treatment

All WB economies are characterised by insufficiently developed infrastructure for wastewater treatment and management. The performance of water supply and sewerage services sub-sector remains low in **Albania** with 16 wastewater treatment plants (WWTPs) being operational in 2022¹⁸⁸. There are around 20 operational municipal WWTPs in **Bosnia and Herzegovina**, all facing the issue of sludge disposal or utilisation. There are no sustainable and cost-effective solutions for industries or municipalities in terms of handling or final disposal/utilisation of sludge¹⁸⁹.

The planning and construction of WWTPs¹⁹⁰ in bigger cities in **Kosovo*** is advancing¹⁹¹. There is one operational WWTP, one in the testing phase, while one WWTP is in the implementation phase¹⁹². The investments in sewerage networks, collector systems and treatment plants are envisaged in the Water Strategy 2012-2042 of **North Macedonia**¹⁹³. Apart from the regional sewerage systems to protect the natural lakes, only 12 cities have constructed separate sewerage systems. There were 24 WWTPs under operation in 2019, which accounts for 24.5% of the required capacity. As the economy's capital Skopje still lacks a WWTP, whose construction started in 2020 but was delayed due to the COVID-19 pandemic¹⁹⁴.

In **Montenegro**, there are 10 WWTPs that are functional or have been put into testing phase¹⁹⁵. Construction of WWTP for Podgorica is planned in the Economic Reform Programme of Montenegro¹⁹⁶. A Directive Specific Implementation Plan (DSIP) for UWWTD in **Serbia** foresees to construct all WWTPs by 2044. Clean Serbia¹⁹⁷ project, which started in 2021, envisages construction of a system for wastewater treatment and

187 EU4Green project analysis

188 Investigative Network Albania. (21 July 2022). 112 million euros for wastewater treatment plants, but the polluted waters are discharged into the sea untreated. <https://ina.media/?p=6193&lang=en>

189 EU4Green project

190 Kosovo*. (2022). Kosovo Economic Reform Programme 2022-2024. <https://kryeministri.rks-gov.net/wp-content/uploads/2022/07/Economic-Reform-Programme-2022-24.pdf>

191 This is of paramount importance for Kosovo* given the average annual volume of less than 100 m³/s in local watercourses.

192 Currently, the WWTP for the Skenderaj and Prizren area are in operation, WWTP for the Peja area in the testing phase, whereas WWTP for Gjakova area is in the implementation phase in Kosovo*. Prishtina, Mitrovica, Ferizaj and Gjilan are in the initial stages of administrative procedures for contracting consulting companies.

193 The Strategy for North Macedonia establishes the construction of sewage systems and wastewater treatment plant, and discharges from agglomerations of more than 15,000 PE should be covered in the first phase. Secondary treatment should be provided for discharges from agglomerations of more than 2,000 PE, and more advanced treatment for agglomerations of more than 10,000 PE in designated sensitive areas and their catchments. For the implementation of this measure, financial sources have been provided through IPA II (2014-2020) and loans from EIB and EBRD.

194 North Macedonia (2022). North Macedonia Economic Reform Programme 2022-2024. <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-05/North%20Macedonia%20ERP%202022-2024.pdf>

195 Government of Montenegro: Ministry of Sustainable Development and Tourism. (2019). Municipal Wastewater Management Plan of Montenegro (2020-2035). <https://wapi.gov.me/download/06b0403a-923c-4f3c-8422-8caffae8c0f?version=1.0>

196 Government of Montenegro. (2022). Montenegro Economic Reform Programme 2022-2024. <https://wapi.gov.me/download/7049c66a-5b87-4102-9d2e-6fde9c24fd5d?version=1.0>

197 Cistija Srbija. (n.d). Clean Serbia: The Project of construction of municipal (sewage) infrastructure and infrastructure for disposal of solid, municipal waste in Serbia. <https://cistasrbija.rs/en/home-page/>



a sewerage network at the level of municipalities and cities. The project¹⁹⁸ is planned to cover 65 local self-government units¹⁹⁹.

Action 42 Integrate soil protection in other policy areas and establish a regional soil partnership to improve knowledge exchange and identify examples of best practices for soil protection from pollution and degradation

The WB economies do not have a comprehensive legal framework that covers soil protection, restoration, sustainable use, and soil monitoring, however the commitment to integrated soil protection is made by signing the Communiqué/Memorandum of Understanding on Soil Partnership. Soil management in **Albania** lacks appropriate implementation of the legislative framework and necessary awareness from farmers. So far, the soil survey under the Agriculture Land Inventory of Albania Programme carried out by QTTB, the government centre for soil information, has covered 425,541 ha or 62% of agriculture land. The Ministry of Agriculture, Rural Development and Water Management aims to complete this soil survey for all agriculture land in the economy over the next 3 years. However, an urgent update of its soil information system is needed to improve soil data availability and use.

As in other WB economies, the existing legislation in **Bosnia and Herzegovina** covers mainly agricultural land. The primary goals defined in the Action Programme for Combating Land Degradation and Mitigating Consequences of Drought in Bosnia and Herzegovina are institutional strengthening for better management of land resources and reduction of soil degradation, along with international cooperation in the field of soil protection²⁰⁰. In **Kosovo***, the Law on Agriculture and Law on Environmental Protection are in force which imply continuous control and monitoring of the state of environment. However, there is a lack of regular implementation. The main challenge for sustainable management of soil contamination is the lack of human resources and, in consequence, non-application of the legislation in force.

Well structured, adequate soil monitoring is still to be put in place in **Montenegro**. Regular reporting on the state of soil that is presented within the annual Information on the State of Environment, adopted by the Government, needs to be improved. Currently, there is no soil monitoring programme with standardised methodology in place in **North Macedonia** despite numerous past activities on soil mapping. 32 monitoring sites in about 50 raster squares exist today. There is no specific legal document or by-law addressing the overall issues related to soil in the economy. Elaboration of a new Law on Soil Protection and Soil Strategy is envisaged with the support of Global Environmental Facility²⁰¹. In **Serbia**, Environment Protection Agency publishes annually a report on the state of environment in which information on the state of land and soil is provided. The Agency also publishes the report on the state of soil biennially. It has developed a centralised information system for environmental protection, which also contains soil data. The Regulation on System-

198 Government of Serbia. (2022). Serbia Economic Reform Programme 2022-2024. <https://rsjp.gov.rs/wp-content/uploads/Economic-Reform-Programme-2022-2024.pdf>

199 The deadline for implementation of each individual project in Serbia is 39 months from the date of issuance of the first construction permit. Support is needed for implementing activities defined in the Sludge Management Programme.

200 UNCCD. (n.d.) ACTION PROGRAMME TO COMBAT LAND DEGRADATION AND MITIGATE THE EFFECTS OF DROUGHT IN BOSNIA AND HERZEGOVINA. https://www.unccd.int/sites/default/files/naps/2019-10/AP%20BIH%20BHAM_eng_FINAL%202017%20-%20adopted%20by%20the%20BIH%20Council%20of%20Ministers.pdf

201 GEF. (n.d.). Promoting Sustainable Land Management (SLM) Through Strengthening Legal and Institutional Framework, Capacity Building and Restoration of Most Vulnerable Mountain Landscapes. <https://www.thegef.org/projects-operations/projects/9759>



atic Monitoring of Soil Condition and Quality²⁰² was adopted in 2019 and replaced with the new regulation in 2020²⁰³.

WB economies, except Kosovo*, have supported the Regional Land Degradation Neutrality Decision Support System and implemented activities in the framework of UNCCD Land Degradation Neutrality Programme²⁰⁴. Representatives of Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, and Serbia signed the Communiqué/Memorandum of Understanding on Soil Partnership of the Western Balkans²⁰⁵ in November 2022²⁰⁶.

To support reform practices in the agri-food sector and policy measures that will ensure compatibility amongst organic farming and soil management SWG RRD has established REAWGs on Organic Agriculture and on Soil. As a part of the activities, three interim meetings of the SWG RRD REAWG on Soil were organised during 2022. It was agreed that significant effort was invested and could contribute further to developing tools for adequate soil management. The first integrated assessment on state of the art of soil management in the Western Balkans with gaps and recommendations was published. In 2023, the detailed operational plan will be developed and all necessary administrative and technical preparatory activities will be undertaken to establish a fully functional Sub-regional WB Soil Partnership. Initial activities are undertaken to work on WB soil maps and mapping of soil contaminated sites data in the WB²⁰⁷.

Action 43 Prepare and sign regional agreements on transboundary air and water pollution

There has been no specific regional agreement on transboundary air and water pollution signed to date. WB is home to several international river basins. In such situation a larger body of international law mandates coordination amongst the economies to achieve, amongst others, environmental goals. WFD and Floods Directive need to be implemented in coordination amongst the participating economies including coordinated preparation of RBMP. Some of the international basins such as Drin/Drim-Buna/Bojana

202 The Regulation stipulates the contents of Soil Monitoring Programme at the government and local network level, the methodology for systematic monitoring of soil quality and condition, criteria for determining the number and arrangement of measuring points, list of parameters for various soil types, list of methods and standards used for soil sampling, analysis of samples and data processing, scope and frequency of measurements, indicators for assessing the risks of soil degradation, deadlines and method of data.

203 Official Gazette of RS, No. 88/20

204 Food and Agriculture Organisation of the United Nations. (2022). OVERVIEW OF LAND DEGRADATION NEUTRALITY (LDN) IN EUROPE AND CENTRAL ASIA. <https://www.fao.org/3/cb7986en/cb7986en.pdf>

205 European Soil Partnership. (n.d.). Western Balkans Soil Partnership. <https://www.europeansoilpartnership.org/about-us/subregional-partnerships/western-balkans>

206 The main objectives of the partnership are to: (i) identify and restore degraded soils to improve productivity and the provision of ecosystem services; in particular, the role of soils to secure healthy and sufficient food, to contribute to social stability, water resources, protection of biodiversity, and adaptation to climate change, (ii) improve national/regional technical capacity, in particular, soil monitoring and advisory, (iii) enhance public awareness about the importance of soil while ensuring broad stakeholder involvement, to successfully implement soil-related actions related to the GAWB. Representatives also agreed on the approach to be deployed in achieving the objectives of the partnership as follows: (i) improved soil monitoring, based on indicators set out by EU and international (FAO Global Soil Partnership) entities (e.g. EU Soil Strategy 2030, GSP Action Framework 2022-2030) and national legislation including development of regional soil characteristics statistics (Eurostat Agri environmental indicators), (ii) regional guidance on sustainable soil management, and exchange of best practices and demonstration projects, (iii) establishment of a database of soil degradation processes including inventory of contaminated sites, and assessment of environmental and health risk, (iv) improved national capacities to report soil characteristics statistics (SDG, UNCCD/LDN, Eurostat regional statistics, agri-environmental indicators, indicators for sustainable soil management), (v) developed (sub)regional soil assessment in support of European and global soil assessments, (vi) established regional soil information system for soil monitoring, soil degradation assessment and science policy support.

207 SWG RRD. (2022, October 5). The Third Interim Meeting of the Regional Expert Advisory Working Group on Soil within the SEDRA II Project – 02-05 October 2022, Durres, Albania. https://seerural.org/news/the-third-interim-meeting-of-the-regional-expert-advisory-working-group-on-soil/?doing_wp_cron=1672041573.7442879676818847656250



river basin and Drina River basin are exclusively on the territory of WB economies and require initiative and coordination within the WB region.

In May 2022, representatives of water, energy, and environment sectors of **Bosnia and Herzegovina, Montenegro, and Serbia** - the three riparians of the Drina River Basin agreed on a Nexus Roadmap for the basin²⁰⁸, which lays out 10 key objectives for coordinated cross-sectoral policy and transboundary governance. The objectives include suggested lines of action to unlock solutions in infrastructure development, information exchange, flow regulation, wastewater treatment, sediment management, sustainable renewable energy and agricultural development²⁰⁹. Signatories are also entering in bilateral and multilateral agreements with non-WB economies. Serbia, Bosnia and Herzegovina, and Montenegro are parties to ICPDR²¹⁰, while Serbia and Bosnia and Herzegovina are members of the Sava Commission²¹¹.

2.5.2 Monitoring the implementation of Depollution Roadmap

The analysis presented in the following section includes a graphical overview of depollution indicators. Datasets, if available, are presented for the period 2016-2020, retrospective overview, and for the period 2020-2022, following the adoption of the Green Agenda for Western Balkans.

To evaluate the annual ambient concentrations of air pollutants in relation to the defined EU and World Health Organisation standards, measurements are taken at fixed sampling points, which are officially reported by the analysed economies for each year. Usually, data from a subset of the total number of monitoring stations in an economy are reported in near-real time. However, the final analysis that is carried out for a year using officially validated data is based on annual mean concentration values. The number of stations considered and the lowest, highest and average values (in $\mu\text{g}/\text{m}^3$) recorded at the stations are given for each economy. The classification of monitoring stations depends on the predominant emission sources, and they are categorised as traffic, industrial, or background stations. Furthermore, the area surrounding the monitoring station is classified as urban, suburban, or rural based.

The reduction in **annual ambient concentrations of $\text{PM}_{2.5}$** in 2019 was recorded for each economy. In 2019, many parts of Europe had been experiencing the worst snowfall in decades. Changes in meteorological conditions such as snow had the biggest impact on the annual ambient concentrations of $\text{PM}_{2.5}$, but other factors such as wind, temperature, and humidity also played a significant role in determining the concentration and distribution of pollutants in the atmosphere. Industrial process improvement, encouragement of low-emission vehicles and public transportation, implementation of stricter regulations on emissions and improvement of open burning practices in order to reduce the $\text{PM}_{2.5}$ concentrations lag

208 NEXUS. (n.d.). A NEXUS ROADMAP FOR THE DRINA RIVER BASIN: TOWARDS SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES IN THE DRINA

RIVER BASIN THROUGH ENHANCED COOPERATION ACROSS SECTORS. <https://www.gwp.org/globalassets/global/gwp-med-files/list-of-programmes/see-nexus/final-reports/drina-roadmap-final.pdf>

209 UNECE. (2022, May 11). Drina countries agree on a cross-sectoral roadmap to improve transboundary cooperation in the management of natural resources in the basin. <https://unece.org/climate-change/press/drina-countries-agree-cross-sectoral-roadmap-improve-transboundary-cooperation>

210 International Commission for the Protection of the Danube River. (n.d.). Contracting Parties. <https://www.icpdr.org/main/icpdr/contracting-parties>

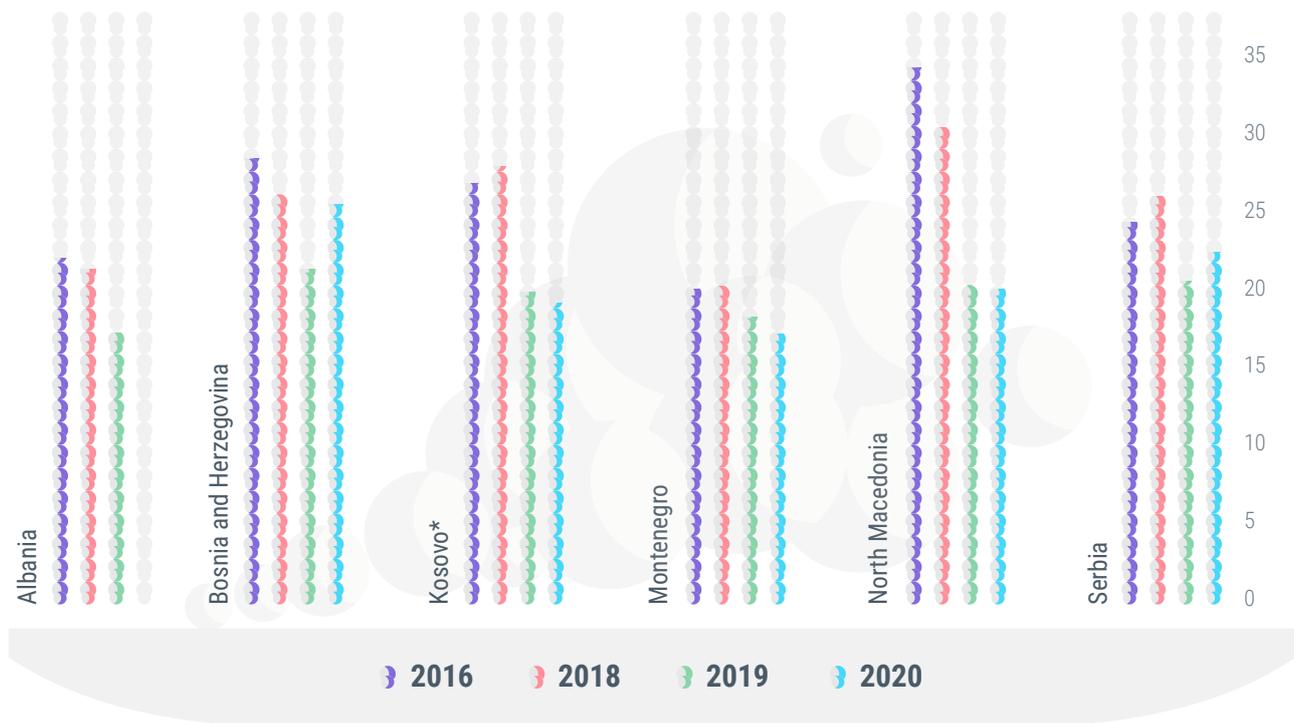
211 International Sava River Basin Commission. (n.d.). Parties to the FASRB. <https://savacommission.org/about-us/structure-and-functioning/parties-to-the-fasrb/236>



in the analysed economies. It can be noted that annual ambient concentrations of PM_{2.5} in the economies exceeded the EU ambient air quality standard²¹² – 25 µg/m³, as well as the air quality guideline value of the World Health Organisation (WHO)²¹³ – 5 µg/m³.

Levels of PM_{2.5} in the Western Balkans region vary between economies and have shown both increases and decreases over time. In **Bosnia and Herzegovina**, the largest decrease was noted in 2019 with a concentration of 21.6 µg/m³, although concentrations in other years still exceeded the EU ambient air quality standard of 25 µg/m³. **Kosovo*** had its highest annual ambient concentration in 2018 with a value of 28.2 µg/m³, but saw a decrease in 2019 and 2020. Montenegro had the lowest PM_{2.5} ambient concentration in the region, with a highest recorded value of 20.3 µg/m³ in 2016, and decreasing values in both 2019 and 2020. **North Macedonia** was the only economy in the region with a negative trend, with its highest value recorded in 2016 (34.6 µg/m³) and a significant decrease to 20.3 µg/m³ in 2021. **Serbia** also saw an increase in PM_{2.5} annual concentrations in 2020, with its highest value recorded in 2018 at 26.3 µg/m³ and a decrease in 2019. Overall, it is important for these economies to continue monitoring and addressing their PM_{2.5} concentrations to ensure compliance with air quality standards and promote public health.

Annual ambient concentrations of PM_{2,5} (µg/m³)



Source: European Environment Agency²¹⁴

212 Official Journal of the European Union. (2008). DIRECTIVE 2008/50/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on ambient air quality and cleaner air for Europe. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX-:32008L0050&from=EN>

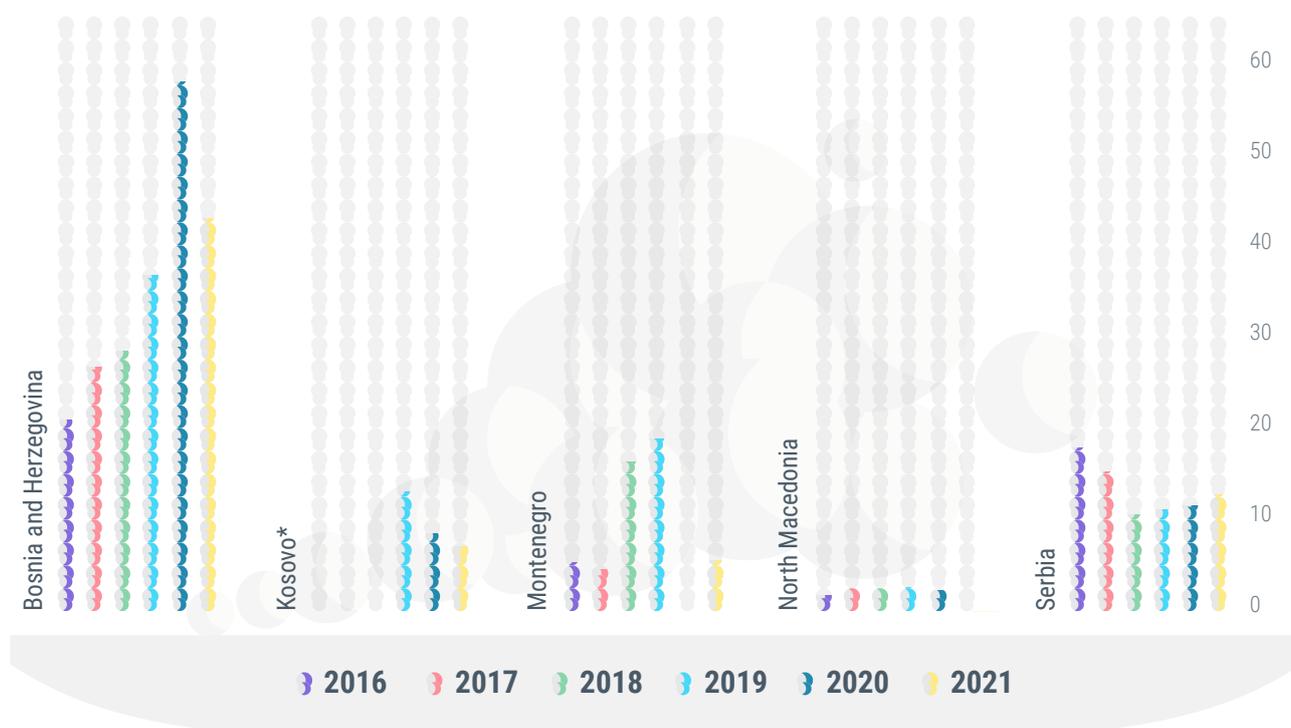
213 WHO. (2006). Air Quality Guidelines: Global Update 2005. https://www.euro.who.int/_data/assets/pdf_file/0005/78638/E90038.pdf

214 EEA. <https://www.eea.europa.eu/>



The following graphs indicate the **SO₂** and **NO_x concentrations**, but they directly show which type of combustion facilities were mostly used during the period 2016-2021 since SO₂ and NO_x mostly arise from the burning of fossil fuels, particularly coal and oil. The SO₂ limit value⁷ is set to 350 µg/m³ and it should not be exceeded more than 3 times in one calendar year. The 24-hour mean value is set to 20 µg/m³.

Annual ambient concentrations of SO₂ (µg/m³)



Source: EEA statistics²¹⁵

In **Bosnia and Herzegovina**, a positive trend in SO₂ annual concentrations was observed between 2016 and 2020. In 2021, a decrease of 15 µg/m³ was recorded compared to 2020 (58.2 µg/m³). In 2020, the value doubled compared to 2018 (28.6 µg/m³), and an increase of approximately 6 µg/m³ was noted in 2019 (36.9 µg/m³) compared to 2018. In **Kosovo***, a negative trend in the annual ambient concentrations of SO₂ was observed for the period 2019-2021, with a decrease of almost 5 µg/m³ recorded in 2020 compared to 2019 (13.09 µg/m³). The trend continued in 2021, with a value of 7.08 µg/m³.

In **Montenegro**, the SO₂ ambient concentrations are highly variable, with a maximum recorded in 2019 of 18.9 µg/m³, which is approximately 4.5 times higher than the values recorded in 2016 (5.32 µg/m³), 2017 (4.58 µg/m³), and 2021 (5.58 µg/m³). As of 2021, concentrations in Montenegro remain amongst the lowest in the region. North Macedonia is the only economy in the region with zero concentrations of SO₂. Analysis shows that concentrations mostly remained at around 2.5 µg/m³, with slightly lower values recorded in 2016 (1.69 µg/m³).

In **Serbia**, a negative trend in SO₂ annual ambient concentrations was observed between 2016 and 2018, with values decreasing from the highest in 2016 to the lowest recorded in 2018 (10.60 µg/m³). However, from

215 EEA. <https://www.eea.europa.eu/>



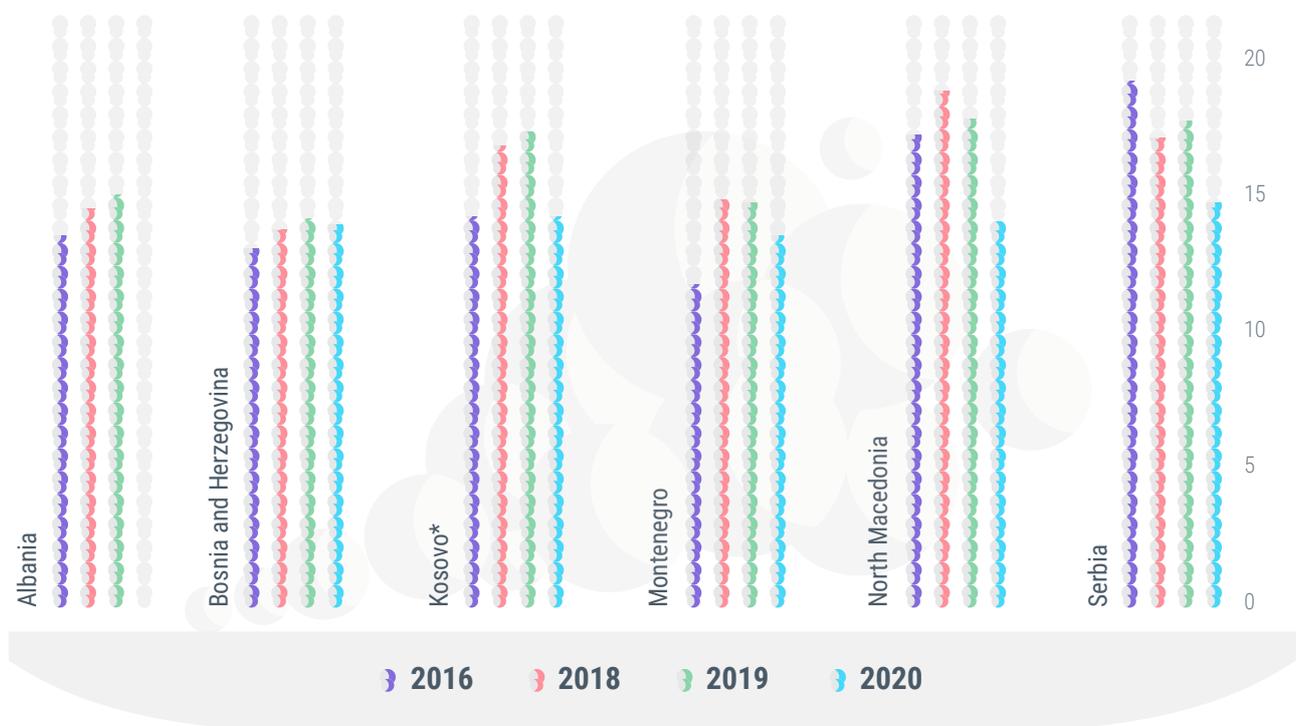
2019 (11.1 µg/m³) to 2021 (12.8 µg/m³), the annual ambient concentrations of SO₂ began to increase and it is expected that this trend will continue in the future based on available data.

Upper assessment threshold for the protection of vegetation and natural ecosystems for **NO_x** is set to 24 µg/m³. The economies' values for the noted period do not exceed the given threshold. **Albania** marked the positive trend of NO_x annual concentrations for period 2016-2019 with an average yearly increase of 0.7 µg/m³. In **Bosnia and Herzegovina**, a positive trend of NO_x annual concentrations for period 2016-2019 was recorded with the average yearly increase of 0.4 µg/m³. In 2020 (14.10 µg/m³), a reduction of NO_x annual concentrations of 0.3 µg/m³ compared to 2019 was recorded.

Kosovo's* annual ambient concentrations of NO_x increased to 17 µg/m³ in 2018 and 17.5 µg/m³ in 2019, compared to 2016 and 2020 when the amount of NO_x concentration was at 14.4 µg/m³. **Montenegro's** NO_x ambient concentrations recorded a negative trend in period 2018-2020, with the highest decrease in 2020 (13.7 µg/m³) of 1.2 µg/m³ compared to 2019 (14.9 µg/m³). The amount of 11.9 µg/m³ in 2016 was the lowest one reported.

North Macedonia marked the highest value in 2018 (19 µg/m³) which is significantly higher than the amounts in 2019 (18 µg/m³) and 2020 (14.2 µg/m³). In **Serbia**, a general decrease in annual ambient concentrations of NO_x is visible throughout the whole analysed period. The amount of 19.4 µg/m³ in 2019 is the highest one reported and during 2019 the amount slightly increased compared to 2018 (by 0.6 µg/m³). A significant decrease was achieved in 2020, when annual ambient concentrations of NO_x fell to 14.9 µg/m³.

Annual ambient concentrations of NO_x (µg/m³)



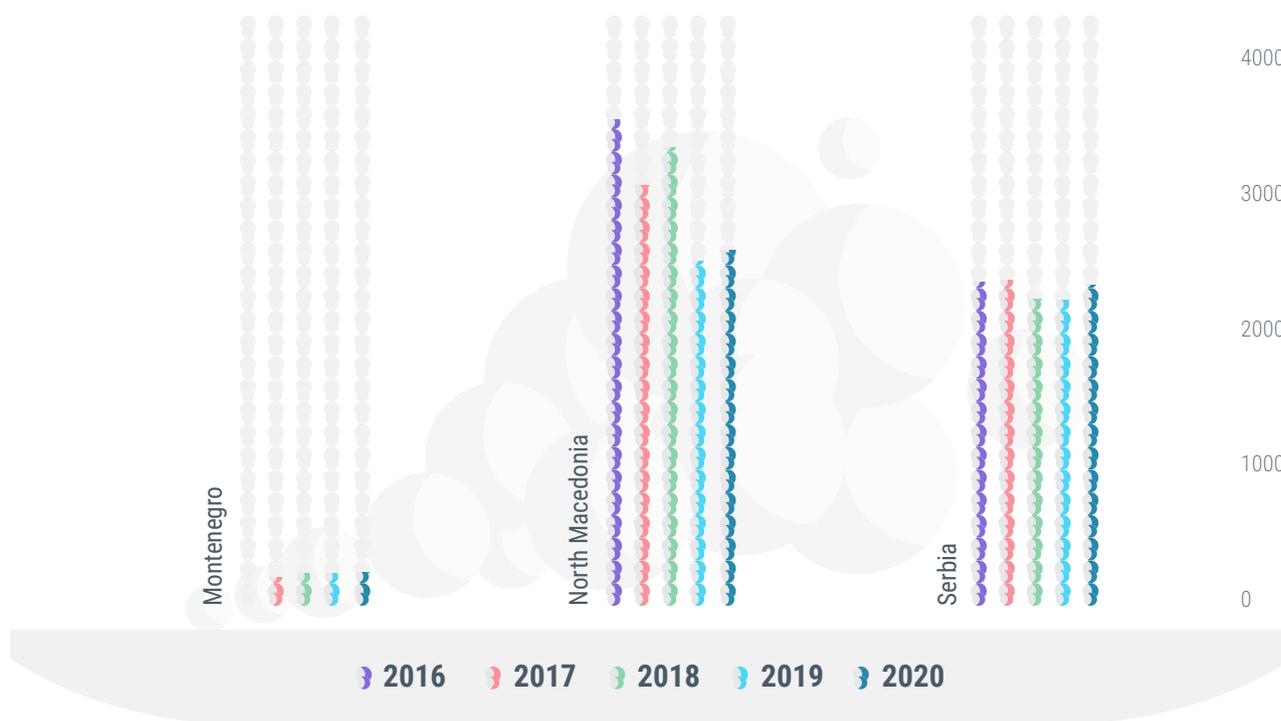
Source: European Environment Agency²¹⁶

216 EEA. <https://www.eea.europa.eu/>



PM₁₀ emissions from LCP were not available for **Albania, Bosnia and Herzegovina** and **Kosovo***. For other WB economies the PM₁₀ emissions from LCP are available from 2016 to 2020, except for Montenegro for which the data is available for the period 2017-2020. PM₁₀ emissions in **Montenegro** show the lowest levels in the region, with a gradual increase over the years. **North Macedonia** reported the highest annual PM₁₀ emissions in 2016, but a significant decrease has been achieved in the following years. In **Serbia**, PM₁₀ emissions have remained steady, with a slight fluctuation in the analysed period from 2016 to 2020.

Annual emissions of PM₁₀ from large combustion plants (tonn)



Source: EMEP Centre on Emission Inventories and Projections²¹⁷

In **Bosnia and Herzegovina**, the thirteen plants falling under the **LCPD reached SO₂ emissions** of 213,539 tonnes in 2021, which was less than the emissions in 2020 (248,154 tonnes), but not by as much as would be expected considering the installation of desulphurisation equipment at the Ugljevik plant. In fact, although the largest decrease was noted at Ugljevik, several other units also emitted somewhat less SO₂ than in 2020, presumably due to lower operating hours or better-quality coal. In absolute terms, Ugljevik plant had the highest SO₂ emissions – 86,774²¹⁸ tonnes in 2021 – by far the highest in both Bosnia and Herzegovina and the Western Balkans as a whole. This was lower than in 2020 but similar to 2019, showing that the desulphurisation equipment clearly did not work during 2021.

Kosovo's* five coal-fired units emitted an absolute value of 14,631 tonnes of SO₂ in 2021. SO₂ recorded a considerable decrease in emissions compared to 2020, from 19,987 tonnes. It is difficult to explain this sudden drop, especially because there has not been any desulphurisation equipment fitted. It could be due to a smaller number of operating hours or due to estimates considering Kosova A TPP lacks continuous monitoring equipment and Kosova B's monitoring equipment is hardly ever operational²¹⁹.

217 EMEP. (n.d.). EMEP Centre on Emission Inventories and Projections. <https://www.ceip.at/>

218 Comply or Close. <https://www.complyorclose.org/>

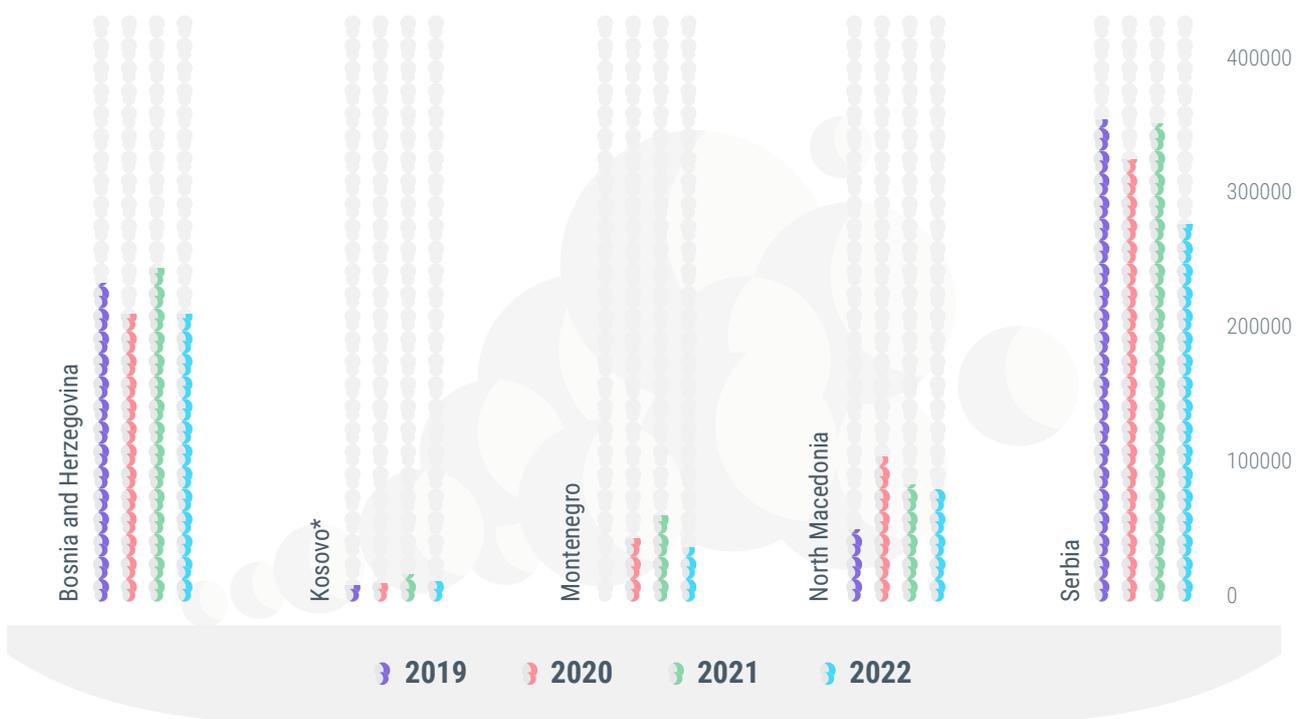
219 Comply or Close. <https://www.complyorclose.org/>



Montenegro's SO₂ emissions amounted to 40,502 tonnes in 2021, around a third less than in 2020 (63,922 tonnes). The reason for the large variations in the plant's SO₂ emissions is unclear, and they are not fully accounted for by differences in operating hours in different years. SO₂ emissions in **North Macedonia** remained extremely high for a third year in a row. The three coal-fired large combustion plants emitted 83,059 tonnes of SO₂, a slight decrease compared to 2020 (86,700 tonnes). In 2021, Bitola coal-fired power plant remained the biggest source of SO₂ emissions in the economy.

In **Serbia**, in absolute numbers, the SO₂ emissions of 17 coal-fired units falling under the LCPD amounted to 280,652 tonnes, a significant decrease from 2020 (355,842 tonnes). The SO₂ emissions were at the lowest level since 2018, but Serbia is still in severe breach of LCPD and the emissions are deadly for public health. At the plant level, the biggest emitters were Nikola Tesla A4-A6, whose SO₂ emissions alone accounted for 66,314 tonnes – comparable to the previous year. Kostolac A1 and A2 reported considerably higher emissions compared to the previous year, in spite of running for a similar number of hours, which raises questions about the quality of lignite burned and about the emissions calculation.

Annual emissions of SO₂ from large combustion plants (tonn)



Source: Energy Community²²⁰

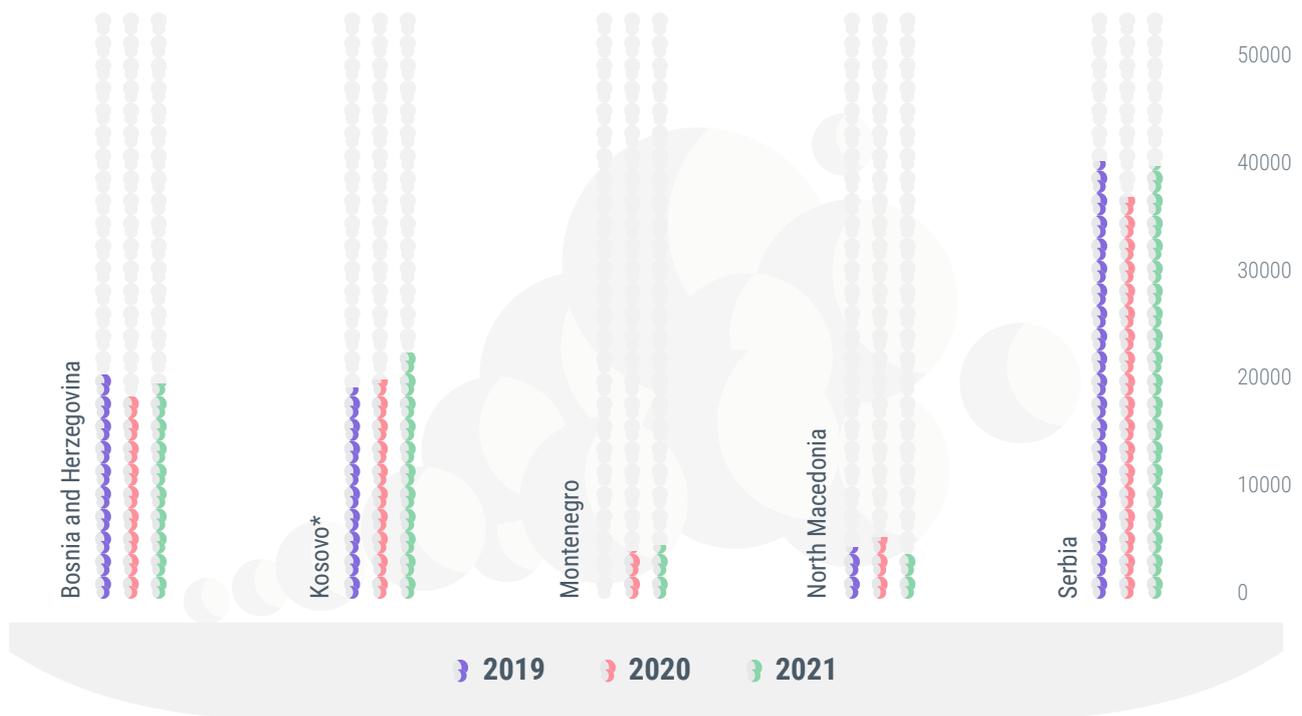
In 2021, NO_x emissions in **Bosnia and Herzegovina** decreased slightly to 18,963 tonnes, compared to 20,004 tonnes in 2020. However, Gacko had the highest exceedance for NO_x, with more than double the allowed emissions, and the reason for the increase is not clear. In **Kosovo***, NO_x emissions decreased to 17,447 tonnes in 2021, compared to 22,846 tonnes in 2020. All units but Kosova A3 breached their individual ceilings.

220 Energy Community. <https://www.energy-community.org/>



In **Montenegro**, NO_x emissions decreased significantly to 3,459 tonnes in 2021, compared to 4,989 tonnes in 2020. **North Macedonia** had NO_x emissions of 3,862 tonnes in 2021, a slight decrease from 4,090 tonnes in 2020. In **Serbia**, NO_x emissions remained high, but decreased to 36,003 tonnes in 2021, compared to 40,198 tonnes in 2020. Kostolac A2 was the only plant that emitted above its individual ceiling, and the ceiling will continue to drop abruptly each year, leading to potential breaches in the absence of investments in equipment to decrease NO_x emissions.

Annual emissions of NO_x from large combustion plants (tonn)



Source: Energy Community²²¹

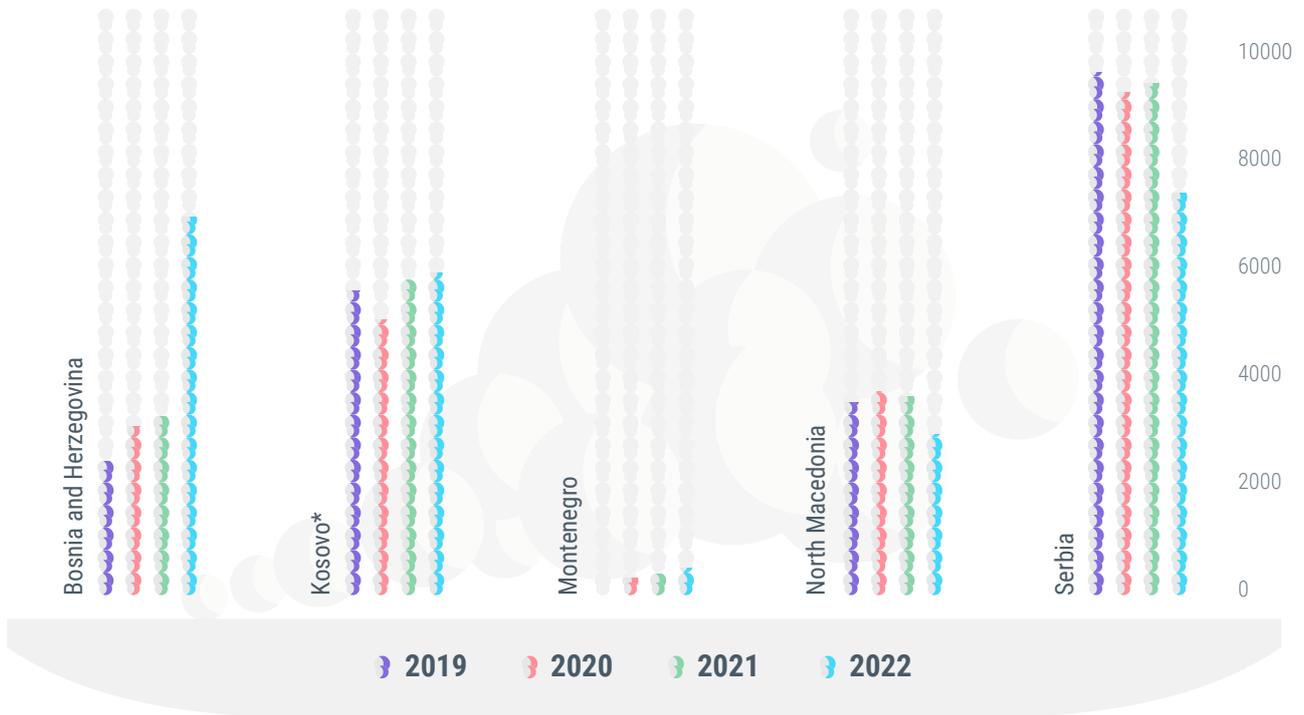
In 2021, **Bosnia and Herzegovina** recorded 7,038 tonnes of dust emissions from coal-fired units, which is a significant increase from 2020 (3,320 tonnes) and similar to 2019 (3,126 tonnes). The increase was mainly due to high emissions from Gacko plant, which exceeded the ceiling by 16 times, compared to 5 times in 2020. The cause of this is unclear, as the plant operated slightly more hours in 2020. **Kosovo*** saw a slight increase in dust emissions to 5,993 tonnes in 2021, compared to 2020 (5,867 tonnes), the highest level since 2018. The largest contributor was Kosova B's two units, releasing a total of 5,440 tonnes of dust, with unit B1 alone emitting 6.75 times above its individual ceiling.

In 2021, **Montenegro** recorded a significant increase in dust emissions to 503 tonnes, compared to 2020 (381 tonnes) and 2019 (307 tonnes). **North Macedonia** saw a slight decrease in dust emissions to 2,985 tonnes in 2021, the lowest level since 2018. The Bitola B1+B2 stack was the highest emitter, releasing 1,983 tonnes of dust. **Serbia** recorded 7,474 tonnes of dust emissions in 2021, significantly less than 2020 (9,526 tonnes), but similar to 2019 (9,341 tonnes) and 2018 (9,723 tonnes). Nikola Tesla A1-A3 units were the highest emitters, releasing 1,805 tonnes in 2021 and breaching the ceiling, with Kostolac A1 and A2 also breaching their individual ceilings.

²²¹ Energy Community. <https://www.energy-community.org/>



Annual emissions of PM_{total} from large combustion plants (tonn)



Source: Energy Community²²²

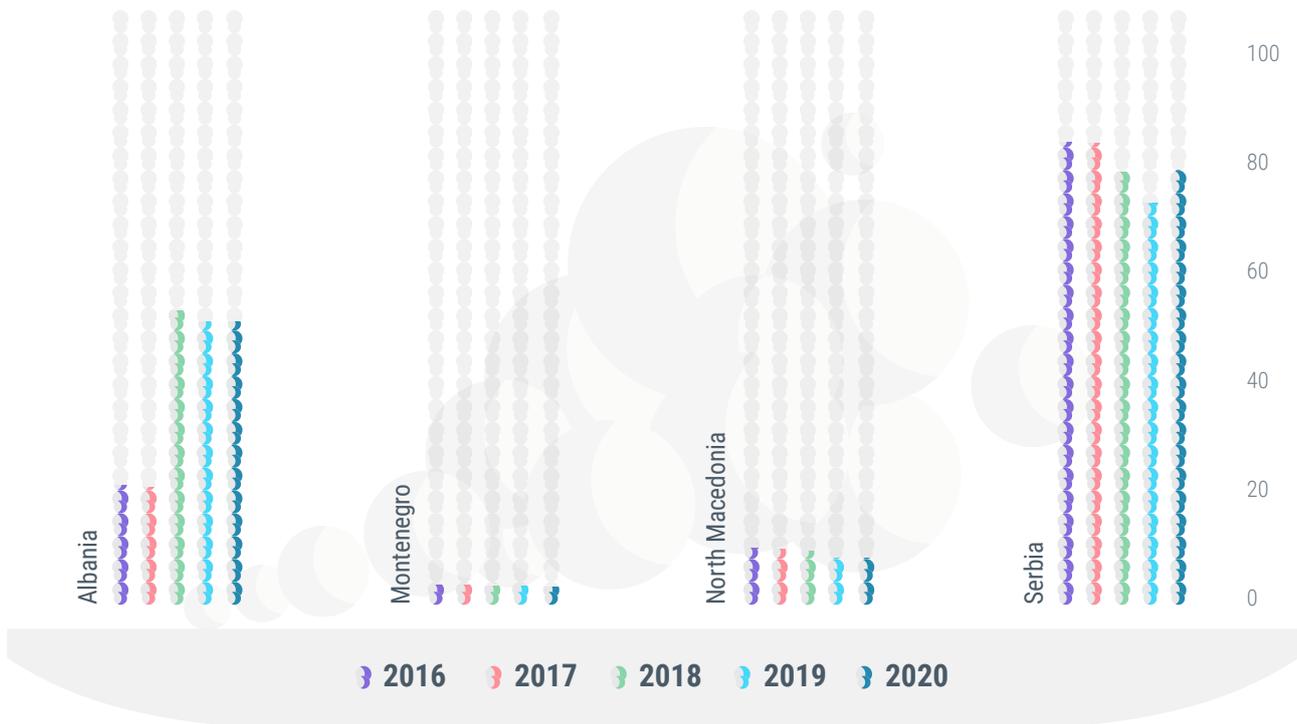
NH₃ emissions data is not available for **Bosnia and Herzegovina** and **Kosovo***. In **Albania**, NH₃ emissions were 51.98 kilotonnes in 2020, 51.98 kilotonnes in 2019, and 53.98 kilotonnes in 2018. These values are double that of 2017 (21.46 kilotonnes) and 2016 (21.84 kilotonnes). In **Montenegro**, NH₃ emissions showed a slight decrease from 2016 to 2020, with values at 5.28 kilotonnes in 2020, 3.35 kilotonnes in 2019, 3.44 kilotonnes in 2018, 3.56 kilotonnes in 2017, and 3.65 kilotonnes in 2016.

North Macedonia saw a slight decrease in NH₃ emissions, which were at 8.47 kilotonnes in 2020, 8.58 kilotonnes in 2019, 9.79 kilotonnes in 2018, 10.26 kilotonnes in 2017, and 10.42 kilotonnes in 2016, the lowest level since 2016. In **Serbia**, NH₃ emissions increased slightly from 73.71 kilotonnes in 2019 to 79.76 kilotonnes in 2020, but overall there has been a decrease from 2018 (79.41 kilotonnes), 2017 (84.69 kilotonnes), and 2016 (84.90 kilotonnes).

²²² Energy Community. <https://www.energy-community.org/>



Annual emissions of NH₃ (kilotonnes)



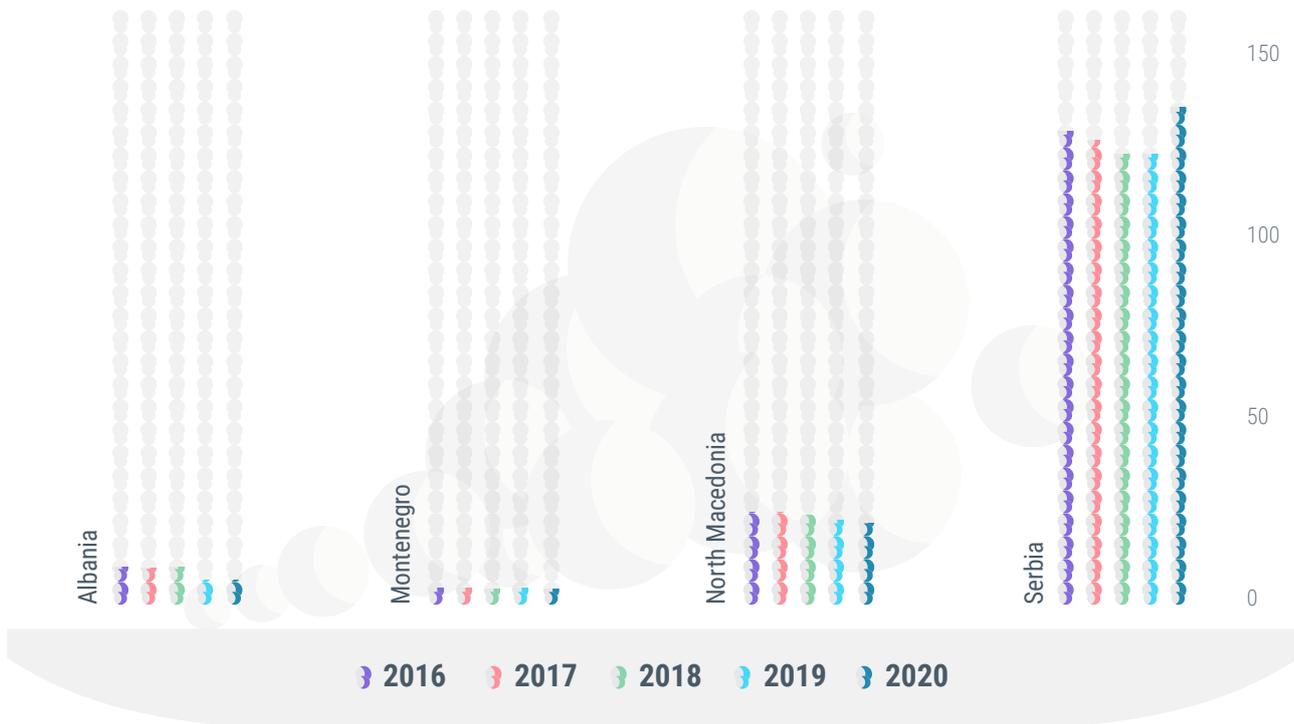
Source: EMEP Centre on Emission Inventories and Projections²²³

NMVOCs emissions data are not available for **Bosnia and Herzegovina** and **Kosovo***. In **Albania**, NMVOCs emissions were 10.29 kT in 2016, remained similar in 2017 and 2018, and decreased significantly in 2019 to 6.26 kT. NMVOCs emissions in 2020 remained the same as in 2019. In **Montenegro**, NMVOCs emissions were steady from 2016 to 2020, ranging from 4.41 to 4.58 kT. In **North Macedonia**, NMVOCs emissions decreased slightly from 25.34 kT in 2016 and 2017 to 22.34 kT in 2020. In **Serbia**, NMVOCs emissions were the highest in the region, averaging 128 kT, with a high of 137 kT in 2020 and 123.9 kT in 2018 and 2019.

²²³ EMEP. (n.d.). EMEP Centre on Emission Inventories and Projections. <https://www.ceip.at/>



Annual emissions of NMVOCs (kilotonnes)



Source: EMEP Centre on Emission Inventories and Projections²²⁴

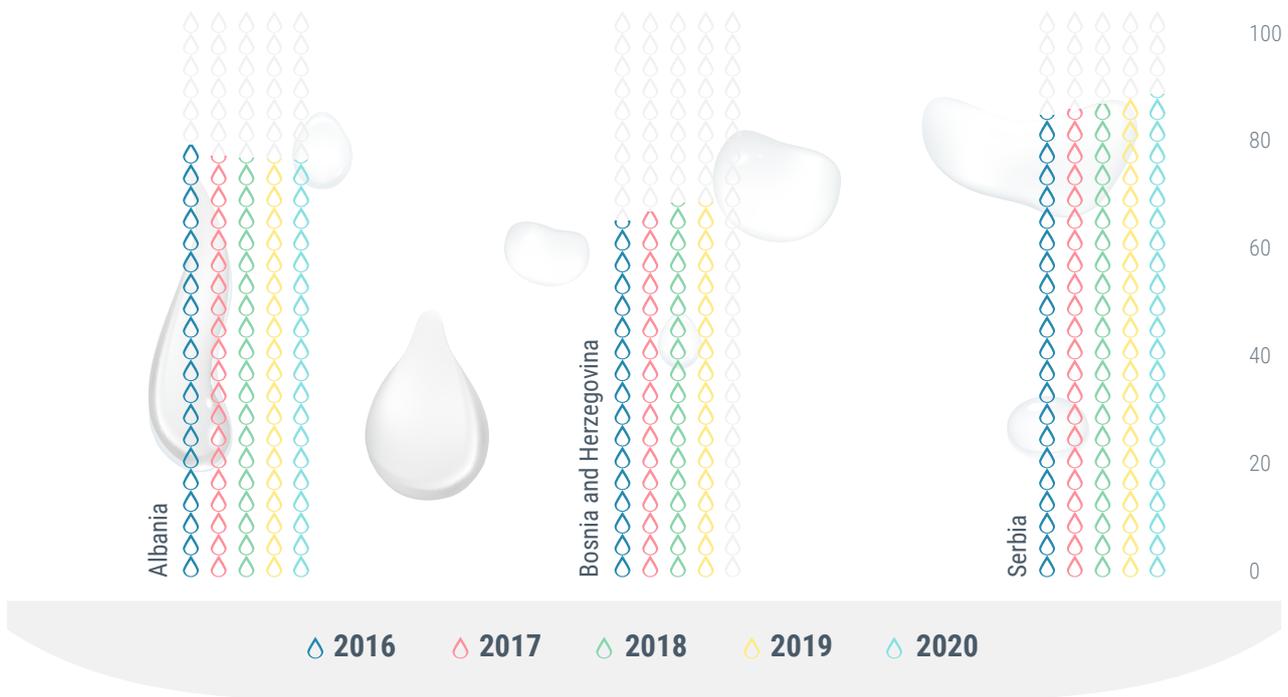
Data regarding the **population connected to public water supply** was not available for **Kosovo***, **Montenegro** and **North Macedonia**. For other WB economies the data is available from 2016 to 2020 from EUROSTAT (data is missing for 2020 for Bosnia and Herzegovina). The percentage of population connected to public water supply is the highest in Serbia, with a connection rate close to EU standards (EU average of 90%). In **Albania**, the population connected to public water supply amounted to 77.53% in 2020, 77.70% in 2019 and similar in 2018 (78.00%), 2017 (78.30%) and in 2016 (80.40%). There is a slight decrease in the connection rate over the years.

In **Bosnia and Herzegovina**, the population connected to public water supply amounted to 69.70% in 2019, 69.67% in 2018, and similar in 2017 (67.90%) and 2016 (66.20%). There is a slight increase in the connection rate over the years. In **Serbia**, the population connected to public water supply amounted to 89.86% in 2020, 89.00% in 2019, and similar in 2018 (87.89%), 2017 (86.94%) and in 2016 (85.87%). There is a slight increase in the connection rate over the years.

²²⁴ EMEP. (n.d.). EMEP Centre on Emission Inventories and Projections. <https://www.ceip.at/>



Population connected to public water supply (%)



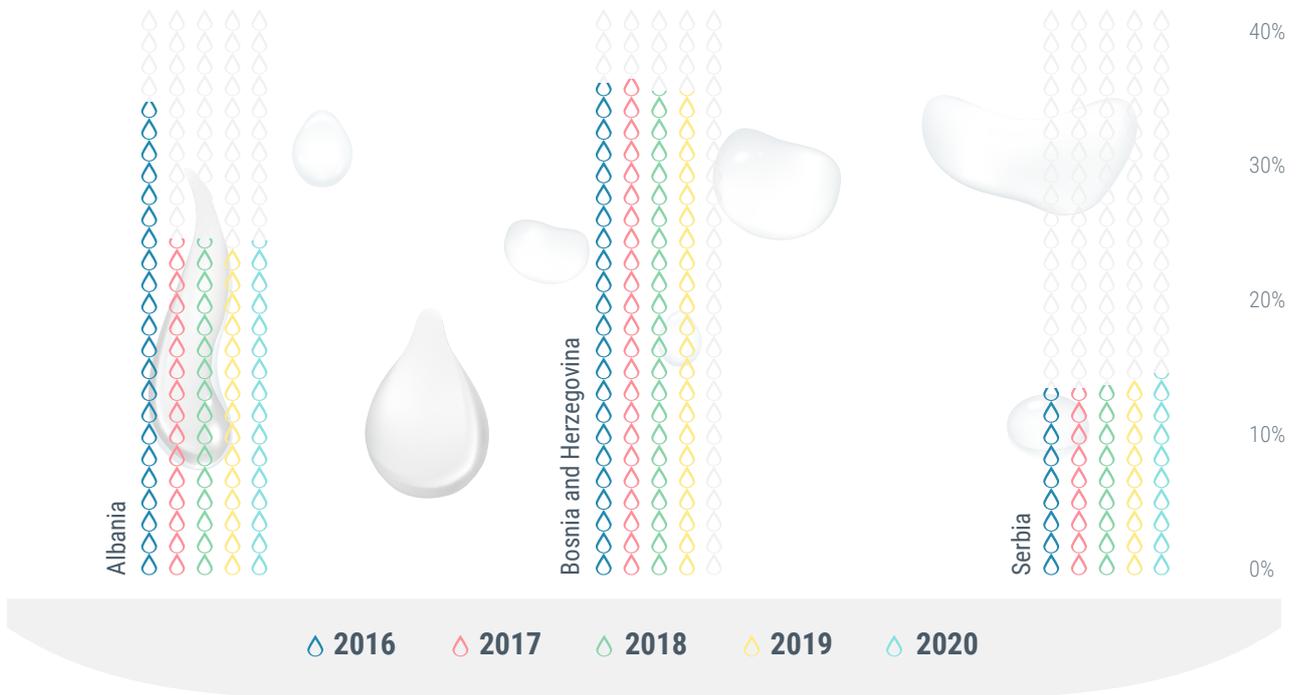
Source: Eurostat²²⁵

The percentage of **population connected to wastewater treatment plants** is the highest in Bosnia and Herzegovina, while Serbia is expecting progress in the future, after implementation of the Trans-Balkan corridor and eight wastewater treatment plants. Data regarding the population connected to wastewater treatment plants were not available for **Montenegro and North Macedonia**. For other WB economies the data is available from 2016 to 2020 from EUROSTAT (data is missing for 2020, 2017 and 2016 for Kosovo*, and 2020 for Bosnia and Herzegovina).

225 Eurostat. <https://ec.europa.eu/eurostat>



Population connected to wastewater treatment plants (%)



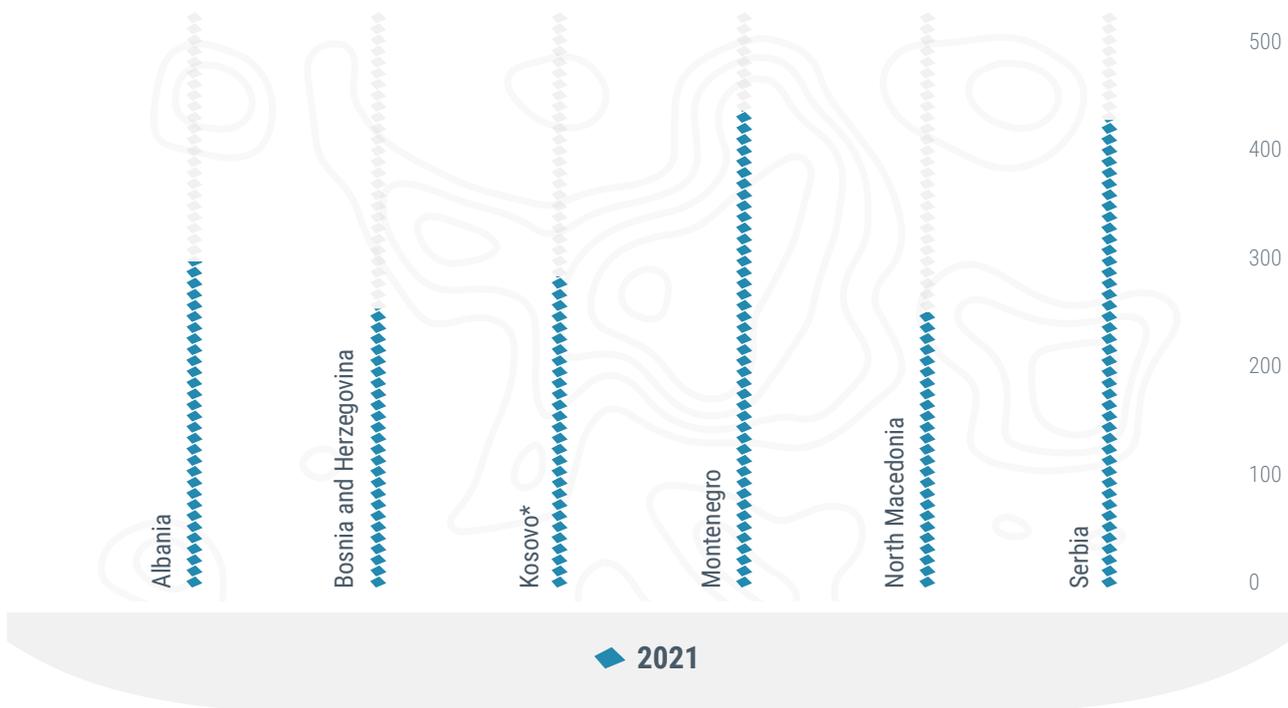
Source: Eurostat²²⁶

The artificial land cover per capita, which represents the quantity of human-made constructions, infrastructure, and land utilisation per person in a specific area, does not have fixed limit values. This is because the suitable levels may differ greatly based on variables like population density, urbanisation, environmental situations, and local laws. Despite this, excessive artificial land cover can have harmful effects on the environment, including the loss of natural habitats and heightened carbon emissions. Hence, there is a common desire to reduce or manage artificial land cover in an environmentally-friendly manner. Data regarding artificial land cover per capita is available for **each economy** but only for the year 2021. The provided data is not sufficient for any further analysis.

226 Eurostat. <https://ec.europa.eu/eurostat>



Artificial land cover per capita by type (mq)



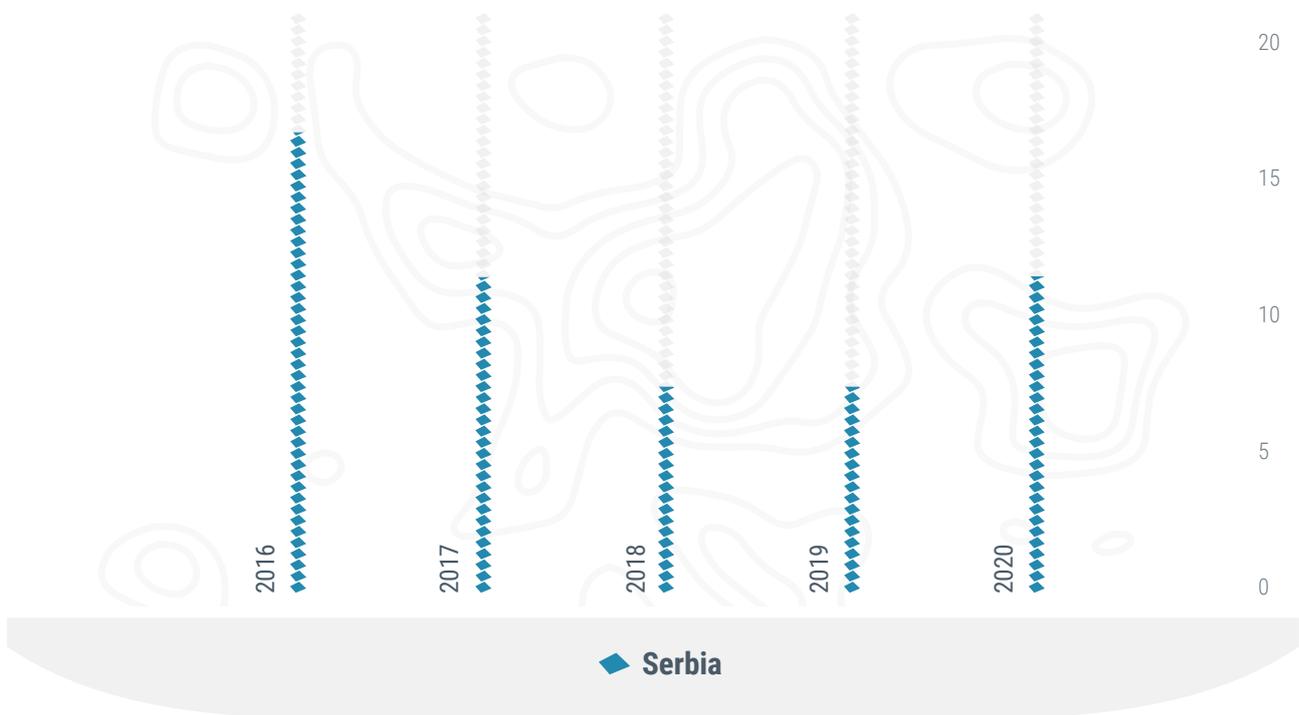
Source: EEA statistics²²⁷

The purpose of the Nitrates Directive (91/676/EEC) is to regulate nitrogen contamination, and it mandates EU economies to identify groundwater sources that have a nitrate concentration exceeding 50 mg/l, or could reach this level without preventative actions. Furthermore, the Drinking Water Directive (98/83/EC) establishes a nitrate limit of 50 mg/l as the maximum acceptable level. The same aim and policy, as well as threshold may be applied to Western Balkan economies. The data regarding **nitrate in groundwater** is only provided for **Serbia**. The highest amount is recorded in 2016 (16.89 mg/l) which is significantly higher than amounts in 2018 and 2019 (7.56 mg/l). Values in 2017 and 2020 are similar at 11.6 mg/l.

227 EEA. <https://www.eea.europa.eu/>



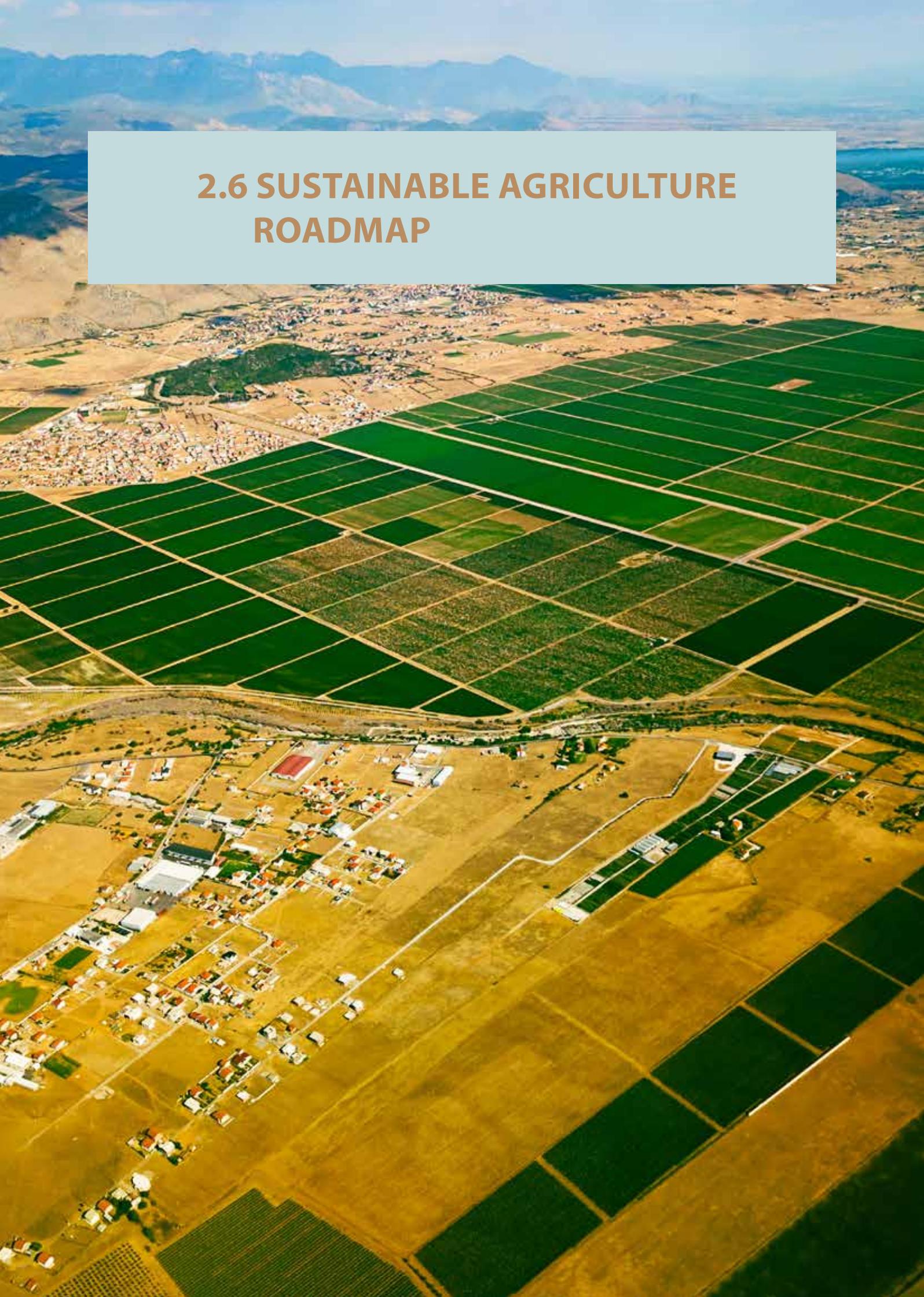
Nitrate in groundwater (mg/l)



Source: Eurostat (available and presented only for Serbia)²²⁸

228 Eurostat. <https://ec.europa.eu/eurostat>

2.6 SUSTAINABLE AGRICULTURE ROADMAP





2.6.1 Progress in implementing the Roadmap across the actions and the region

Action 44 Align the agri-food and primary production sector with the EU standards on food safety, plant and animal health and welfare and environment, and address effluent, manure and waste management

Agri-food has been identified as a common priority area for economic growth in the Western Balkans, which has, to some extent, contributed to fairly good harmonisation with EU policies on food quality and safety. Albania has continued to align with the EU acquis on microbiological criteria of food products, specific hygiene requirements for meat and meat products, establishment of detailed rules concerning the market standard and trade in eggs, maximum level of pesticide residues in fruits, vegetables, fresh and processed seeds and on food additives. However, a coherent food safety policy which is designed by the Ministry of Agriculture is expected to be adopted and implemented to speed up the progress²²⁹.

Bosnia and Herzegovina needs to step up its efforts in improving its system to fulfil the public and animal health requirements for the export of bovine, ovine and caprine meat. There is also a need for alignment of legislation on food safety, veterinary and phytosanitary policy with EU standards and for strengthening its administrative capacities.²³⁰

Montenegro made good progress by implementing the government strategy for aligning with and implementing the EU acquis. In the coming years Montenegro needs to continue to implement and update the revised strategy for aligning with and implementing the EU acquis, step up strengthening of administrative capacity and infrastructures, in particular on food safety controls, and to implement robust disease surveillance and vaccination. The specific action plan for classical swine fever was implemented according to schedule and further implementing legislation was adopted. The 2021 programme for food and feed safety measures was implemented.²³¹

Serbia shows a more advanced context following the adoption of the framework law on common market organisation, start of implementation of the Law on Plant Protection Products and the provisions regarding the training of professional users and periodic inspections of pesticide application devices. Serbia needs to adopt a strategy and action plan for alignment with the acquis on food safety, veterinary and phytosanitary policy, as well as framework legislation on genetically modified organisms aligned with the acquis²³².

229 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Albania. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0332>

230 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Bosnia and Herzegovina. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0336>

231 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>

232 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>



North Macedonia demonstrates a good level of preparation in the area of food safety, veterinary and phytosanitary policy as legislation is aligned with the EU acquis on food additives, food contact materials and maximum levels for certain contaminants in foodstuffs. Further aligning the legislation on official control with the respective new EU legislation, strengthening capacities for data analysis in the Food Veterinary Agency and implementing actions to achieve sustainable use of pesticides are recommended.²³³

Kosovo* progressed in developing the food control and traceability system as well as the management of food safety and veterinary laboratory information. Legislation on genetically modified organisms, plant protection and forestry still needs to be aligned²³⁴. **SWG RRD, as a regional coordinator for the pillar, continues its efforts to assist the WB economies in developing evidence-based policies and standards underpinned by regional cooperation.**

The SWG RRD Regional Expert Advisory Working Group (REAWG) on Wine was established and is constantly working on harmonising wine regulation with EU regulations as well as promoting marketing and quality aspects of the wine and viticulture sector, including promotion of organic grape and wine production, traceability, and accompanying documents in the respective WB economies and in line with EU standards. REAWG previously focused on the state of the art of SEE region's viticulture and wine sector; an assessment of the current situation of official vineyard registers and wine control systems; various seminars and tutorials; a study tour to Germany; analyses of regional organic viticulture and winemaking; and analyses of viticulture and oenology stakeholders. The REAWG worked on developing preliminary economy and regional level assessments of the status of fruit and vegetable production, as well as market standards for fresh fruits and vegetables in WB economies.

Action 45 Strengthen the official sanitary controls along the entire food chain and improve traceability and labelling of food products

Official control along the agri-food chain is still a work in progress, as economies must further align official control legislation with the new EU framework and step up strengthening of administrative capacity and infrastructure. The **Albanian** Food Authority carries out regular official controls in accordance with the annual risk-based plan, but the authority must improve the quality of inspection statistics. Similarly, the Veterinary and Plant Protection Authority has already been established, but the authority has not yet acquired full operational capacity and it is far from alignment with the EU acquis on official controls, animal health and plant health.²³⁵ In the coming year, Albania should adopt a consolidated food safety policy and align relevant laws on official controls, animal health and plant health.

Bosnia and Herzegovina needs to accelerate the setting-up of reference laboratories for food and feed-stuff, hygiene, veterinary and phytosanitary controls, notably by increasing the accreditation of laboratory methods used for these controls and also providing an updated Salmonella Control Plan and maintaining

²³³ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – North Macedonia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0337>

²³⁴ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Kosovo*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0334>

²³⁵ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Albania. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0332>



the vaccination against rabies and brucellosis.²³⁶ Bosnia and Herzegovina should introduce inter-laboratory comparative tests as a regular practice, particularly between laboratories in the economy that are in charge of the analysis of samples for notifiable diseases, to increase controls and administrative capacity.

Montenegro is still implementing its alignment with the EU requirements. Specifically, it is strengthening administrative capacity and infrastructure on food safety controls and is broadly implementing disease surveillance and livestock vaccination.²³⁷ It is also recommended to continue to implement and update the revised strategy for aligning with and implementing the EU acquis and to increase the share of food establishments compliant with EU standards.

An integrated multiannual control plan was prepared by the Agricultural Inspection of **Serbia**, while this remains to be done by other inspection services within the Ministry of Agriculture. Monitoring and official control programmes were adopted for food of animal and plant origin as well as animal feed; however, Serbia still needs to improve its risk-based approach for imported foods.²³⁸

North Macedonia amended the Law on Food Safety to align with the EU acquis on official controls. The Rapid Alert System for Food and Feed as well as the Agency's internal audit and training systems are operational. Progress was made on control measures for animal diseases. The 2022 monitoring programme on control of residues of veterinary medicinal products and contaminants in live animals and food stuffs of animal origin is in line with the EU acquis on bovine, ovine/caprine, porcine, poultry, aquaculture, milk, eggs, wild game and honey.²³⁹ In any case, in the coming years, the economy should further align the legislation on official control with the new EU legislation on official controls and strengthen capacities for data analysis in the Food Veterinary Agency.

Kosovo* made some progress in developing relevant IT infrastructure for the control of food safety and traceability. The Food and Veterinary Agency has not yet completed the necessary procedures and standards to ensure that sanitary and phytosanitary inspectors are conducting official inspections in accordance with safety standards, and no progress was achieved in obtaining international accreditation.²⁴⁰ In principle, the economy should timely secure the means and resources required for effectively operating the Food Control and Traceability Management System and the Laboratory Information Management System developed with EU support as they are instrumental in securing compliance of the foodstuff produced or marketed by Kosovo*.

236 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Bosnia and Herzegovina. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0336>

237 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>

238 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Serbia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0338>

239 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – North Macedonia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0337>

240 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Kosovo* <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0334>



Action 46 Promote environmentally-friendly (zero pollution) and organic farming and reduction of synthetic chemical products used in food production

Organic agriculture remains a niche activity in the WB region; however, economies are in the process of aligning their legislation with the EU acquis. Albania continues with the alignment of its legal framework for organic production with the EU acquis but, despite, some private-led initiatives addressed to the implementation of agroecological organic farming, the systematic labelling and certification for organic products is pending.²⁴¹ In the coming years, Albania should complete the farm register and adopt an implementation plan for the establishment of farm accountancy data network to provide validated data for policy-making.

Bosnia and Herzegovina demonstrates slow progress on organic farming. The framework law still needs to be developed in line with the EU acquis and regulatory framework harmonised across all levels of government. Support measures remain unevenly implemented across the economy.²⁴² Similarly, in the coming years Bosnia and Herzegovina should adopt a central-level law on organic production and on wine, in line with the EU acquis.

The organic farming sector in **Montenegro** has the required infrastructure in place including the competent authority and accreditation system for control bodies and a certification system. The law on organic production, to align with the EU acquis, is being drafted. However, the potential for further development and expansion of the sector remains to be supported²⁴³. In general, the action plan for alignment with the EU acquis on agriculture and rural development should be implemented, and the strategy on agriculture and rural development 2022-2028 adopted.

The area under organic production continues to grow in **Serbia**, with fruit and cereal production having the most significant increase. New law on organic production has been drafted in line with the EU acquis but its adoption is still pending²⁴⁴ and should be implemented in the coming years. **North Macedonia** established relevant legislation, competent authority, control bodies and the accreditation and certification system; however, a new law on organic production in line with the EU acquis needs to be adopted.²⁴⁵ Action to enhance monitoring and control of organic certification and products has been limited but there is potential for further developing the sector and using the support opportunities under IPARD III programme.

241 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Albania. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0332>

242 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Bosnia and Herzegovina. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0336>

243 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>

244 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>

245 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – North Macedonia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0337>



In **Kosovo***, the sector is still in early stages of development; however, relevant implementation is based on a systematic and clear framework. Current legislation on organic farming is aligned with the EU regulations on organic production and labelling of organic products²⁴⁶. In general, it should be necessary to take effective action towards developing organic farming and quality policy sectors.

To support reforming practices in the agri-food sector and policy measures that will ensure compatibility amongst organic farming and soil management SWG RRD has established REAWGs on Organic Agriculture and on Soil. Under this framework, SWG RRD has started the regional assessment of organic agriculture and submitted a pre-draft Law on Organic Agriculture in line with EU Regulation 848/18²⁴⁷ to all six economies of the Western Balkans. SWG RRD, in cooperation with the German Federal Ministry of Agriculture and Food, Agricultural Policy Dialogue Project – Western Balkans and GIZ – SEDRA II Project is continuing activities in the implementation of the Action Plan of the Green Agenda for the Western Balkans. As part of the activities, three interim meetings of the SWG RRD REAWG on Soil were organised in 2022. It was agreed that a significant effort was invested and could contribute further to developing tools for adequate soil management.

The regional soil partnership was established. A Communique and a MoU for Soil Partnership was prepared and approved by the Ministers of Agriculture at the Ministerial Meeting in Budva, Montenegro, in November 2022. In the year 2023, the detailed operational plan will be developed and all necessary administrative and technical preparatory activities undertaken to establish a fully functional Sub-regional WB Soil Partnership. Initial activities are undertaken to work on WB soil erosion maps and mapping of soil pollution sites in the WB.²⁴⁸

Action 47 Cooperate with scientific, education, business and agricultural holdings to facilitate transfer to innovative and environmentally-friendly technologies and farming methods

To facilitate the transfer of innovative and environmentally-friendly technologies and farming methods in the WB region, the Regional Agricultural Knowledge and Innovation System (AKIS) REAWG was established by SWG RRD, following preparation of AKIS roadmaps and action plans. Two meetings were organised with aim to present the proposed draft economies' AKIS plans, discuss AKIS regional priorities, and possible options for implementation of sectoral or thematic actions.

Meetings were attended by domestic and international experts, representatives of relevant ministries, education, science and international organisations from the Western Balkans. Economies have updated and prioritised economy-wide SWOT matrixes, developed AKIS maps including a joint regional AKIS map and national roadmaps for development of functional and integrated AKIS systems, and drafted AKIS action plans.²⁴⁹

246 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Kosovo*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0334>

247 SWG RRD. (2022). Expected activities based on the outcomes from the first the Regional Expert Advisory Working Group on Organic Agriculture meeting. <https://seerural.org/wp-content/uploads/2022/03/REAWG-on-Organic-Agriculture--2022-activities-pdf>

248 Regional Rural Development Standing Working Group. (5 October 2022). The Third Interim Meeting of the Regional Expert Advisory Working Group on Soil within the SEDRA II Project – 02-05 October 2022, Durres, Albania. https://seerural.org/news/the-third-interim-meeting-of-the-regional-expert-advisory-working-group-on-soil/?doing_wp_cron=1672041573.7442879676818847656250

249 SWG RRD. (2022). Agricultural Knowledge and Innovation Systems (AKIS) Progress report (Sep 2021 – Mar 2022). <https://seerural.org/wp-content/uploads/2022/04/2.-Progress-report-AKIS-Dori-Pavloska-Gjorgjieska.pdf>



It is observed that AKIS action plans submitted include, amongst others, actions which are considered key elements of a successful AKIS strategy in various EU documents, as follows: enhancement of knowledge flows and strengthening links between research and practice; strengthening farm advisory services within AKIS; enhancement of interactive innovation; and supporting digital transition in agriculture to minimise digital divide.²⁵⁰

Action 48 Devise actions to reduce waste in rural and coastal areas

So far, no specific and targeted actions to reduce waste in rural and coastal areas have been implemented across the WB region. Aside from poorly managed landfills, other problems that plague the Western Balkans are relatively low collection rates, especially in rural areas. The share of population served by public waste collection ranges from 70% (Albania) to 86% (Montenegro and Serbia) and has slightly increased in all economies over the past few years. It is largely rural areas that are not covered by public waste collections.²⁵¹ This action has several links and connections with the circular economy and depollution pillars, as waste management in rural and coastal areas is essentially a cross-cutting action that should be managed through a framework approach.

Action 49 Step up efforts for sustainable development of rural areas with implementation of LEADER

With the preparation of economy-wide roadmaps, economies made progress towards sustainable rural development. The Roadmaps for each economy were developed, guided and supported by the SWG RRD REAWG on LEADER to strengthen and intensify the effort to anchor LEADER approach at the policy level, amongst local stakeholders, and rural networks in the WB. These roadmaps will serve as a to-do list for all WB stakeholders involved in LEADER implementation.²⁵² REAWG assessed the current state and continuously monitors progress of the roadmaps for implementing LEADER approach in the WB's Agriculture and Rural Development policies.

Economies with access to IPARD funding need to focus on increasing the pace of IPARD implementation to ensure timely use of financial support from the EU so as to avoid further loss of funds. In **Albania**, IPARD implementation continued in a satisfactory manner in terms of contracting targets. It implemented a 4th call for applications under IPARD II. However, efforts are needed to avoid de-commitments in 2022 and 2023, due to delays in project implementation.²⁵³

As for **Montenegro**, altogether nine IPARD calls under IPARD II programme were implemented for the following measures: investments in physical assets of agricultural holdings; investments in physical assets concerning processing and marketing of agricultural and fishery products; and farm diversification and

250 SWG RRD. (2022). Agricultural Knowledge and Innovation Systems (AKIS) Progress report (April – May 2022). <https://seerural.org/wp-content/uploads/2022/06/12.-AKIS-WB-Regional-Priorities.pdf>

251 EEA. (2022). Municipal waste management in the Western Balkan Countries. <https://www.eea.europa.eu/publications/municipal-waste-management-in-western>

252 SWG RRD. (2021). Standing up for LEADER in South East Europe. https://seerural.org/wp-content/uploads/2021/07/Standing-up-for-LEADER_1.pdf

253 European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Albania. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0332>



businesses development. Slow implementation led to the first de-commitment of funds after the end of 2021 financial year and there is a considerable risk of further loss of IPARD funding.²⁵⁴

North Macedonia displays good progress in the absorption of EU funds under IPARD II. However, the number of staff in the Managing Authority and IPARD agency needs to be increased. IPARD III programme has been adopted and greater operational commitment is needed by IPARD authorities to expand the number of measures available to farmers and rural areas to make use of the increased budget allocation under IPARD III.²⁵⁵

Serbia is entrusted with budget implementation tasks for four measures under IPARD II Programme, however implementation of Technical Assistance measure is still pending. The delays in payments under IPARD II Programme in 2021 resulted in a loss of EUR 3.7 million in IPARD funds, with considerable risk of further losses in 2022 and 2023. It is important that Serbia fully implements its action plan for better absorption of funds. IPARD III programme was prepared in an efficient and timely manner and approved by the European Commission in March 2022.

Preparation for the implementation of measures under 'Agri-environment-climate and organic farming', 'Implementation of local rural development strategies (LEADER)' and 'Investments in rural public infrastructure' programmes needs to start well in advance of their planned entrustment with budget implementation tasks.²⁵⁶ **Bosnia and Herzegovina** and **Kosovo*** do not have access to IPARD funding, preventing the two economies from participating in the IPARD REAWG for knowledge and experience sharing amongst the WB, as well as lacking access to agriculture and rural development funding, and being denied the opportunity to practice policies and invest in actions consistent with the GAWB Action Plan.

Action 50 Support investments in renewable energy production and technologies as well as GHG emission reductions and adaptation to climate change measures in agriculture

Rural areas in the WB region that can significantly contribute to renewable energy production have yet to be defined. However, in the long run, IPARD programmes could make significant contributions by encouraging the spread of conservative agricultural practices to secure and possibly enhance carbon sequestration in the soil. These practises aim at increasing the OC (Organic Carbon) and in general improve the quality of soils which is one of the most relevant available carbon sinks in nature. This approach might respond to the need to face climate change issues with an adaptation strategy instead with a mitigation approach. Moreover, IPARD III will support agricultural renewable energy production, and more intensive implementation of measures addressing this issue are expected.

SWG RDD published the Initial Regional Study on the Impact of Climate Change on Agriculture and Recommendations for Adaptation Measures in the Western Balkans. This report was prepared for the

²⁵⁴ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Montenegro. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0335>

²⁵⁵ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – North Macedonia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0337>

²⁵⁶ European Commission. (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2022 Communication on EU Enlargement policy – Serbia. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022SC0338>



bilateral cooperation programme of the German Federal Ministry of Food and Agriculture implemented by the GFA Consulting Group GmbH. The report intends to support SWG in its mission to foster sustainable development and rural livelihoods in South East Europe.

The need to improve availability of agricultural statistics and meteorological observations, provide institutional frameworks that incentivise nature-based solutions, and diversify farming systems for climate adaptation and mitigation by adapting the choice of varieties and cropping cycles, efficient resource use, and soil-conserving cropping practices and agroforestry are amongst the key identified recommendations.²⁵⁷

2.6.2 Monitoring the implementation of Sustainable Agriculture Roadmap

The availability of data for analysing sustainable agriculture indicators is obtained from multiple sources, which can result in varying timeframes for trend analysis. In general, it covers a retrospective overview period from 2016 to 2020, with no more recent data for 2020 and 2021, following the adoption of the Green Agenda for Western Balkans.

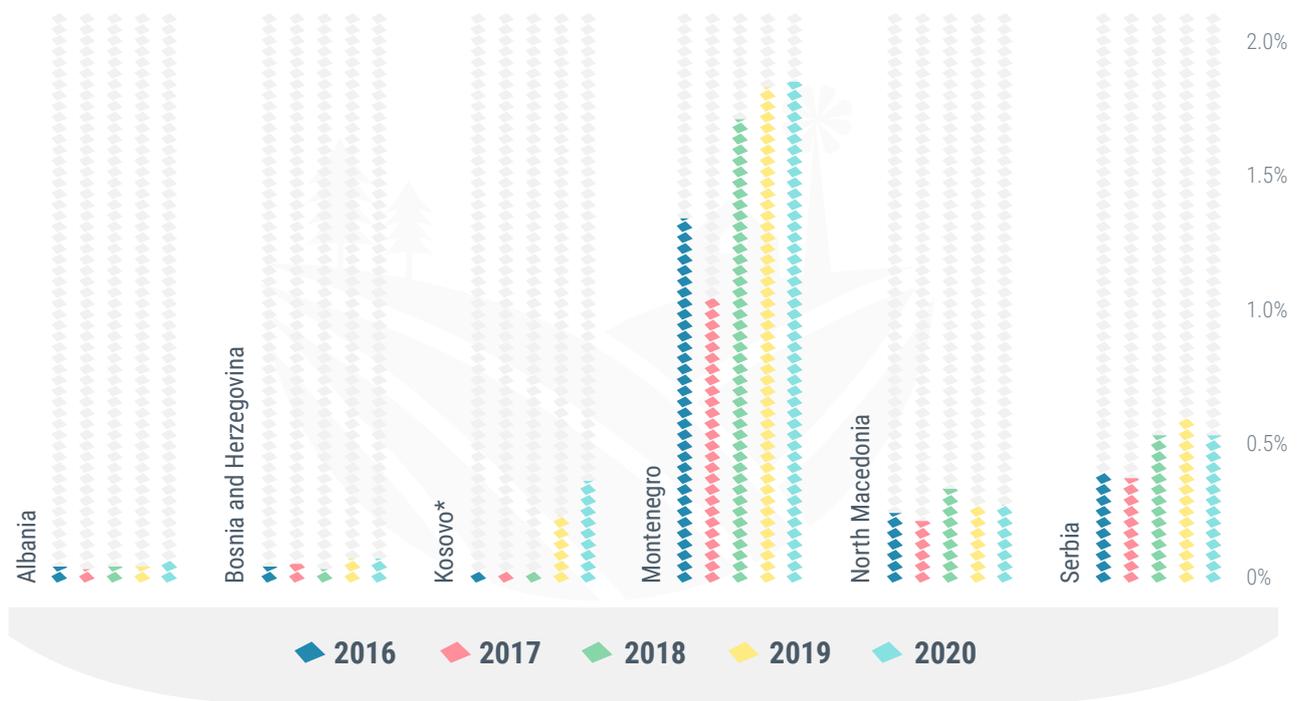
Starting from the data provided by FiBL, the area under organic farming in the total utilised agriculture area in all Western Balkan economies increased from 2016 to 2020, but not with a regular trend. Montenegro and Kosovo* registered the highest growth with a relative increase of 0.51% and 0.24%, respectively. Other economies' growth, namely Albania, Bosnia and Herzegovina and North Macedonia, is far lower than 0.10%. In any case, the indicator value remains generally low if compared with the EU27 mean that was 9.1% for 2020²⁵⁸.

257 SWG RDD. (2022). Impacts of climate change on agriculture and recommendations for adaptation measures in the Western Balkans. <https://seerural.org/wp-content/uploads/2022/07/Impact-of-climate-change-on-agriculture-in-WB.pdf>

258 Eurostat. (n.d.). Area under organic farming. Last update: 18 January 2023. https://ec.europa.eu/eurostat/databrowser/view/sdg_02_40/default/table?lang=en



Share of the area under organic farming in the total utilised agriculture area (%)



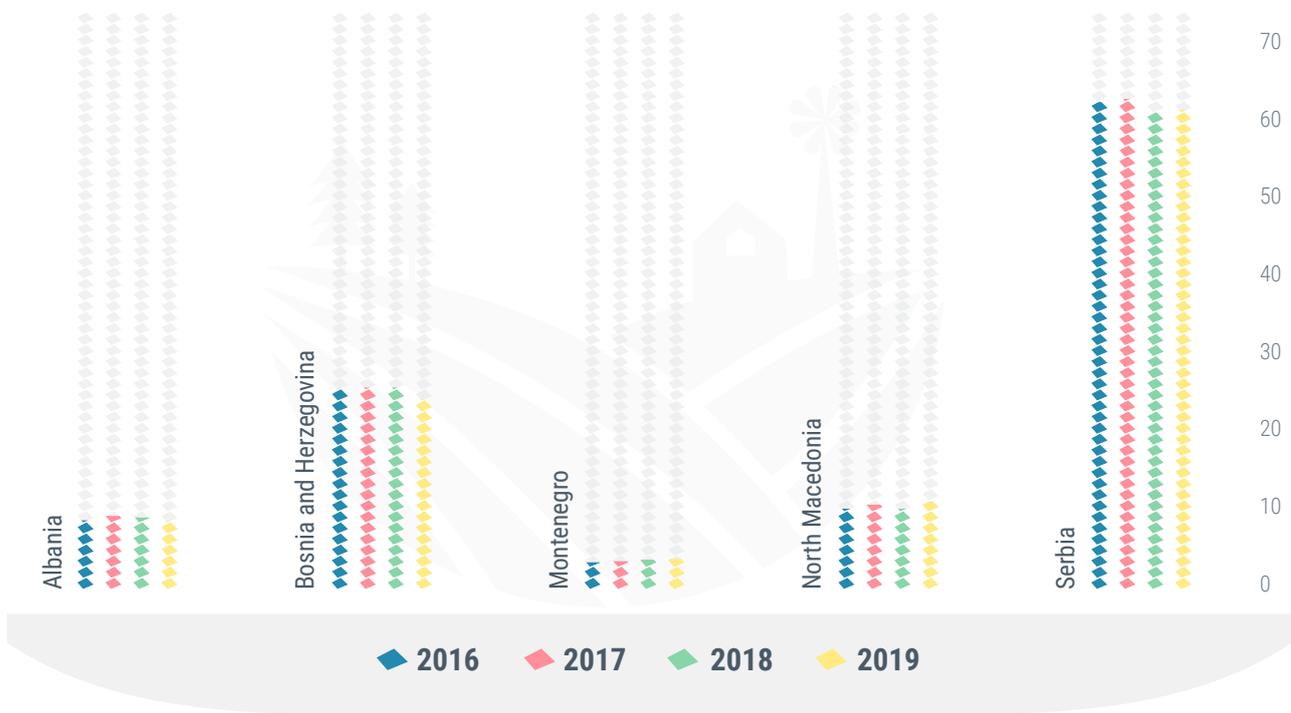
Source: Research Institute of Organic Agriculture²⁵⁹

The indicator on **GHG emissions from agriculture** is reported as a total of Gtonnes of CO₂ related to the agricultural land extent and not referred to related units (i.e. hectare). Therefore, Serbia and Bosnia and Herzegovina show the highest and Montenegro the lowest values. Moreover, data do not provide any information about land cover, different crop production or agricultural practises which may affect GHG emissions significantly. Regarding the trend, generally there is no significant variation amongst the analysed years.

259 FIBL. (n.d.). FIBL Statistics - European and global organic farming statistics. <https://statistics.fibl.org/index.html>



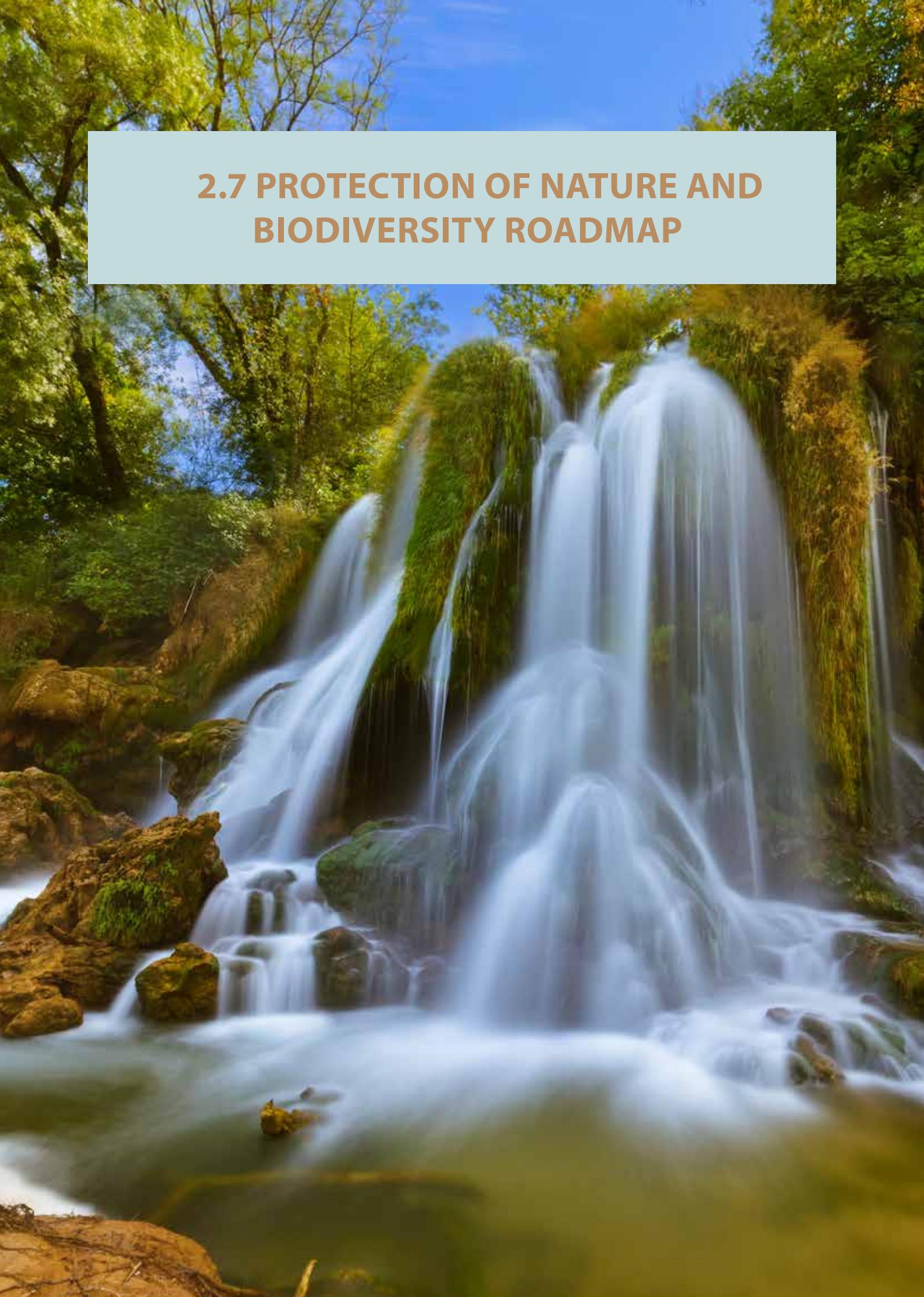
GHG emissions from agriculture (Gtonnes of CO₂eq)



Source: Climate watch, section agriculture²⁶⁰

260 CLIMATE WATCH. (n.d.). Agriculture: Drivers of Emissions. <https://www.climatewatchdata.org/sectors/agriculture>

2.7 PROTECTION OF NATURE AND BIODIVERSITY ROADMAP





2.7.1 Progress in implementing the Roadmap across the actions and the region

Action 51 Develop and implement a Western Balkans 2030 Biodiversity Strategic Plan

Action 51a Develop a Western Balkans Biodiversity Report

Up to now, there was no shared Western Balkans Biodiversity Report; however government biodiversity strategies provide sufficient information on the status of biodiversity in Western Balkans. The first phase (2021-2022) that was aimed at developing baseline studies and assessments can be considered completed. However, the quality of data depend on type of research done and may require more systematic and comprehensive data collection if to be used in the WB Biodiversity Strategic Plan. Economy-wide nature conservation programmes and biodiversity strategies and action plans that provide information on the status of biodiversity in the WB economies and identify major threats and causes of biodiversity loss are available across the region²⁶¹.

With the exception of Kosovo*, the economy reports to CBD were submitted for all economies in the period from 2018 to 2020. Thus, an overview of the state of biodiversity according to the established indicators of the Convention is available. Given the same or similar methodology used, they are quite feasible for compilation at the regional level.²⁶² Several regional projects can help collate relevant information and data on biodiversity.²⁶³ The baseline information from the existing domestic and regional documents and reports still needs to be integrated into a single Western Balkans Biodiversity Report that will set the baseline to measure the progress across the region.

Action 51b Develop a Western Balkans Biodiversity Strategic Plan

Development of a Western Balkans Biodiversity Strategic Plan is pending publishing of the Western Balkans Biodiversity Report. The second phase (2022-2024) that is aimed at developing regional strategic plans has a starting point in the economy nature conservation programmes and biodiversity action plans that propose actions, timeframes, and indicators at the domestic level. Some of the existing economy-level action plans are currently under revision²⁶⁴. Following the revision process, a comprehensive analysis of domestic targets and actions and their alignment with the EU 2030 Biodiversity Strategy, EU Green Deal and

²⁶¹ Kosovo* has National Biodiversity Strategy (https://mmphi.rks-gov.net/assets/cms/uploads/files/Publikimet/publikim/Eng_SAPB_2016-2020_188255.pdf) while other economies have National Biodiversity Strategies and Action Plans (NBSAPs) developed under the Convention on Biological Diversity (<https://www.cbd.int/nbsap/about/latest/>), but some have expired and/or are under revision.

²⁶² Convention on Biological Diversity. (n.d). National Reports. <https://www.cbd.int/reports/>

²⁶³ USAID. (2020). Monitoring and evaluation support activity (Measure II): Bosnia and Herzegovina biodiversity analysis and addressing the biodiversity needs. <https://measurebih.com/uimages/BiH20Biodiversity20Analysis2C20Final20Report.pdf>

²⁶⁴ This refers to: Albania that received funds from GEF and is working on updating the National Biodiversity Strategy; Bosnia and Herzegovina that expects adoption of the new Environmental Strategy and Action Plan for 2030 and beyond (ESAP 2030+) beginning of 2023; and Kosovo* that is currently working on the National Strategy and Action Plan that will include an aspect of biodiversity. The National Biodiversity Strategy and Action Plan of Montenegro for the period 2016-2020 needs to be updated. North Macedonia Strategy and Action Plan for Biodiversity (2018-2023) and Nature Protection (2017-2027), and Nature Protection Programme of Serbia for the period 2021-2023 are still valid although not aligned with the EU Biodiversity Strategy 2030.



CBD Kunming-Montreal Global Biodiversity Framework will have to be done. Finally, the Western Balkans Biodiversity Strategic Plan will have to be developed by 2024.

Action 52 Prepare nature protection and restoration plans including for marine areas

All WB economies have developed strategies and set targets on nature protection at the domestic level²⁶⁵. The focus of all economy plans is on protection rather than restoration of nature and marine areas. As a result of adequate planning and development of site-specific plans, protected area (PA) coverage has improved in all WB economies since 2016. The most progress has been made in **Montenegro** where currently 14% of the territory is protected compared to only 4% in 2016. The least progress has been observed in **Bosnia and Herzegovina** and **Serbia** with only 2% increase in the total PA coverage over the years. By the end of 2022, the territorial share of protected areas in the WB economies ranged from as low as 4% in **Bosnia and Herzegovina** to 21.3% in **Albania**²⁶⁶. The percentages refer to both terrestrial and marine PAs. Data for **Kosovo*** is not available²⁶⁷.

As a response to insufficient coverage of marine protected areas (MPAs) in the European seas, the latest 2021 *Study on proposals for new marine protected areas (MPAs) in Albania, Bosnia and Herzegovina and Montenegro* identified 5 new marine sites that are proposed for protection based on national contributions²⁶⁸. In 2021, Montenegro established first three marine protected areas Platamuni, Katič and Stari Ulcinj, and preventively protected two smaller areas of Sopot and Dražin Vrt which means that the procedure of official protection is in the process. In total, 1.79% of the marine part of the economy is protected. All economies have plans to continue increasing the PA coverage. This said, economies still lag behind when it comes to PA management effectiveness. Despite some individual efforts, e.g. METT analysis in Albania²⁶⁹, no comprehensive data is available on PA effectiveness nor are there established processes to track it on a regular basis.

When it comes to restoration, it has not yet been recognised as mandatory and is not regulated by laws in the Western Balkans, hence comprehensive information and system-wide landscape restoration plans are lacking. Landscape restoration is different to afforestation plans which are mandatory and dealt with by responsible forest authorities, and exist across the region.

Action 53 Develop and implement a Western Balkans Forest Landscape Restoration Plan

Action 53a Prepare Restoration Opportunities Assessment Report

Up to now, no shared Restoration Opportunities Assessment Report existed. Domestic restoration plans do not exist. Information on restoration opportunities is sparse and insufficient and is avail-

265 Convention on Biological Diversity. (2022). Search NBSAPS and National Reports. <https://www.cbd.int/nbsap/search/>

266 The World Bank. (n.d.). Terrestrial protected areas (% of total land area). <https://data.worldbank.org/indicator/ER.LND.PTLD.ZS>

267 Protected Planet. (n.d.) Protected Areas (WDPA). <https://www.protectedplanet.net/en/thematic-areas/wdpa?tab=WDPA>

268 Two MPAs are in Albania (Porto Palermo, Lalzi Bay Rodoni/ Cap Paton), one cross-border MPA in Bosnia and Herzegovina (Neum-Klek Bay and Mali Ston Bay) and two MPAs in Montenegro (Platamuni, Katič-Ratac) were proposed. https://eppanetwork.eu/wp-content/uploads/2022/02/KH0722030ENN.en_.pdf

269 IUCN. (2016). How effective are Albanian Protected Areas?. <https://www.iucn.org/news/eastern-europe-and-central-asia/201607/how-effective-are-albanian-protected-areas>



able through several projects implemented across the region. The SWG RDD Regional Expert Advisory Working Groups on Sustainable Forest Management prepared *National assessments on the state of art of sustainable forest management in WB economies*, including recommendations for improved institutional, policy and legal setup and alignment with EU policies. Draft regional synthesis reports and recommendations are also developed while an Action Plan is yet to be prepared²⁷⁰.

There are several projects and initiatives about forest restoration opportunities across the region. *Generating momentum on forests and water in the Balkans (GeMBalkans)* regional project addressed the need for forest restoration and established two pilot sites for integration of water management measures in forestry, one in **North Macedonia** and one in **Albania**²⁷¹.

Albania has two restoration projects, *Albania Clean and Green 2020*, and *Create your O2*, that aim to plant trees throughout the economy in areas that were subject to forest fires²⁷². **Bosnia and Herzegovina** has two restoration projects, *Sustainable forest and landscape management project*²⁷³ and *Your CO2.ba*²⁷⁴ that aim to demonstrate sustainable management of forests and forest land through restoration of degraded areas. **Kosovo*** is working on the issue by promoting an awareness raising campaign that aims to mobilise citizens, institutions, and other stakeholders to plant 1.8 million trees²⁷⁵.

Montenegro has several domestic restoration targets, including improving forest quality through sustainable forest management, protecting biodiversity and other ecosystem services, and maintaining a mosaic of forests and open land²⁷⁶. Some information on improvement of forest restoration in Montenegro could be found in 6th National Report to the Convention on Biological Diversity (CBD). *Reforestation in North Macedonia: History, current practice and future perspectives* study is available in **North Macedonia** and provides relevant information on land restoration needs²⁷⁷. North Macedonia has also prepared Idea Note project to apply to the Green Climate Fund for a major forest landscape restoration in a highly degraded natural oak forest²⁷⁸.

Serbia incorporates restoration efforts in forest management practices within government projects. The Forest Directorate (Ministry of Agriculture, Forestry and Water Management of Serbia) is implementing “Enabling environment at policy, field and market levels for Forest Landscape Restoration (FLR) to achieve Land

270 Head Office / Secretariat of the Regional Rural Development Standing Working Group in South-Eastern Europe (SWG) – Skopje. (n.d.). TOR for Short-term Consultancy. https://seerural.org/wp-content/uploads/2022/06/ToR-National-Expert_Forestry.pdf

271 GeM Balkans. (n.d.). <https://gembalkans.org>

272 Committee on Forests and the Forest Industry. (2020.) Forest Landscape Restoration in Eastern and South-East Europe. Economic Commission for Europe. https://unece.org/fileadmin/DAM/timber/meetings/2020/20201104/ECE_TIM_2020_Inf2-final-edited.pdf

273 The World Bank, (n.d.). Bosnia and Herzegovina - Sustainable Forest and Landscape Management Project (English). <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/797841468200646107/bosnia-and-herzegovina-sustainable-forest-and-landscape-management-project>

274 Izračunajte svoj karbonski otisak i poduzmite akciju za zdravu okolinu. <https://www.tvojco2.ba>

275 Global Giving. (n.d.) Planting 1.8 Million Trees in Kosovo. <https://www.globalgiving.org/projects/planting-1-million-trees-in-kosovo/reports/>

276 Global Giving. (n.d.) Planting 1.8 Million Trees in Kosovo. <https://www.globalgiving.org/projects/planting-1-million-trees-in-kosovo/reports/>

277 Kolevska, D.D., Blinkov, I., Trajkov, P., Maletic, V., (2017, July). Reforestation in Macedonia: History, current practice and future perspectives. REFORESTA. https://www.researchgate.net/publication/319009777_Reforestation_in_Macedonia_History_current_practice_and_future_perspectives/fulltext/598b03c545851519f10f86bf/Reforestation-in-Macedonia-History-current-practice-and-future-perspectives.pdf

278 United Nations. (2020). Forest Landscape Restoration in Eastern and South-East Europe. https://unece.org/fileadmin/DAM/timber/meetings/2020/20201104/ECE_TIM_2020_Inf2-final-edited.pdf



Degradation Neutrality (LDN) in Serbia”, project funded by GEF 7. Under the ADAPT Initiative²⁷⁹, financed by Sida and implemented by IUCN ECARO, a complementary analysis of restoration opportunities was conducted using Restoration Opportunities Assessment Methodology (ROAM) which resulted in identification of sites for intervention in the Gledic Mountains, City of Kraljevo²⁸⁰.

The proposed intervention involves implementing Forest Landscape Restoration (FLR) activities to prevent future flooding and enhance community resilience in Gledic village and its vicinity²⁸¹. The designed FLR interventions include planting in clear-cut areas, enrichment planting, natural forest rehabilitation, bio-engineering measures such as creation of loose stone check dams to reduce soil erosion and establishment of a silvopastoral system with the aim of improving livelihood conditions for vulnerable, rural communities. Under the ADAPT initiative, in Albania, a team of international and local experts finalised a NbS baseline assessment for a pilot project in Elbasan municipality, based on a series of environmental, socio-economic and gender analyses. Consultations conducted from the onset with local stakeholders enabled identification of an appropriate site for implementation of NbS measures – Gurra and Shushices watershed, a tributary of Shkumbin River. The NbS measures recommended restoring forest landscape, controlling run-off and reducing soil erosion. Building stone check-dams within the northward torrent of Gurra catchment is also envisaged to slow sediment transport downstream towards the village and to possibly mitigate flash flood peaks.

Action 53b Prepare Forest Landscape Restoration Plan (including a financial plan)

Not all WB economies have a relevant forestry policy document where forest protection, restoration and management are regulated. **Albania** is implementing a Forestry Policy Document for the period 2018-2030 which aims to adopt sustainable use and management in order to prevent forest losses and deforestation due to erosion, flood, diseases, pests and fires and loss of biodiversity.

Bosnia and Herzegovina adopted its Development Strategy that emphasises the need to manage forests sustainably through continuous investments in organised reforestation. In addition, Bosnia and Herzegovina NBSAP and ESAP2030+ define the need for adoption of a unified legal and strategic approach to forest management and restoration. Moreover, one of the entities, Republika Srpska, developed its Forestry Strategy for the period 2022-2032 with an Action Plan in which, under ADAPT initiative, a chapter on the importance of NbS implementation for the purpose of Forest Landscape Restoration was drafted. This document is expected to be adopted in 2023.

Kosovo* adopted its Forest Strategy 2021-2030 and **North Macedonia** adopted the Strategy for Sustainable Development of Forestry for the period 2006-2026, both having forest landscape restoration as one of the priorities. **Montenegro**’s Forest Strategy (2014-2023) and **Serbia**’s Nature Protection Programme 2021-2023 underline the importance of forests for conservation of biological diversity, though these documents do not cover all the details related to Forest Landscape Restoration. It is worth mentioning that Serbia draft-

279 IUCN. (n.d.). ADAPT: Nature-based Solutions in the Western Balkans. <https://www.iucn.org/our-work/region/eastern-europe-and-central-asia/adapt-nature-based-solutions-western-balkans>

280 IUCN. (n.d.). ADAPT: Nature-based Solutions in the Western Balkans. <https://www.iucn.org/our-work/region/eastern-europe-and-central-asia/our-work>

281 IUCN. (n.d.). REŠENJA ZASNOVANA NA PRIRODI I OBNOVA ŠUMSKIH PREDELA odgovor na rizike od poplava i jačanje otpornosti lokalnih zajednica na klimatske promene u KRALJEVU. https://www.iucn.org/sites/default/files/2022-08/nature-based-solutions-and-flr_gledic_serbia.pdf



ed a Forestry Strategy that has not been adopted yet. At the economy level, sustainable management and conservation are considered a better option than restoration, and government policies choose to prioritise the fight against forest degradation threats²⁸². Restoration is often more costly than sustainable forest management as it assumes high levels of forest degradation are already present.

National documents that are available for analysis of restoration opportunities are *Forest Management Plans* that provide information on the status of public-owned forest and management activities including restoration activities (mainly focus on forest protection and afforestation) but without a clear connection with landscape restoration and adaptation to climate change. The ongoing EU for Green Agenda in **Serbia** (2022-2024) project intends to develop three Forest Landscape Restoration Plans²⁸³. In addition, the project aims to establish a Body for Sustainable Afforestation, identify abandoned agricultural lands suitable for afforestation, develop three feasibility studies for afforestation, and implement afforestation measures. A regional Forest Landscape Restoration Plan for Western Balkan economies needs to be prepared by 2024.

Action 54 Analyse biodiversity benefits of Nature-based Solutions and opportunities for their integration into the development of climate and other plans

Several projects in South East Europe analysed how Nature-based Solutions (NbS) can contribute to increase in ecosystem and community resilience to climate change and environmental degradation. Regional project *ADAPT: Nature-based Solutions for Resilient Societies in the Western Balkans* aims to demonstrate how Nature-based Solutions can complement engineering solutions in disaster risk reduction²⁸⁴. The project is identifying solutions on how nature can improve disaster risk reduction, and solutions for climate adaptation in Western Balkans with pilots in **Albania** and **Serbia** and assessments in **Bosnia and Herzegovina, Montenegro, North Macedonia** and **Kosovo***.

The initiative is intended to be completed in 2023 and it offers opportunities to analyse national ecosystem management and biodiversity policy from a climate change perspective. A further study on *Nature-based solutions for flood risk prevention in South-Eastern Europe* aims to promote the use of NbS for disaster risk reduction and climate change adaptation across the WB region²⁸⁵. The results of these projects can improve the action. Integration of Nature-based Solutions into climate and other plans is yet to be implemented²⁸⁶.

As part of the ADAPT Initiative, IUCN ECARO carried out a comparative policy analysis on the role of NbS in climate change adaptation and disaster risk reduction, offering insights for policymakers in the Western Balkans on the status of Nature-based Solutions (NbS) in existing policy and opportunities for advancing NbS

282 For example, Albanian Forestry Policy Document for the period 2018-2030 does not refer to any concrete measures regarding forest restoration, but aim at good administration that will lead to a positive trend in stock volume growth. Kosovo*s Forest Strategy 2021-2030 is a programme document that focuses on forest restoration.

283 UNDP. (n.d.). EU for Green Agenda in Serbia 2022-2024. https://unece.org/sites/default/files/2022-07/2.3-UNDP_GoranSimunovic.pdf

284 IUCN. (n.d.). ADAPT: Nature-based Solutions in the Western Balkans <https://www.iucn.org/our-work/region/eastern-europe-and-central-asia/our-work>

285 BfN: Federal Agency for Nature Conservation. (n.d.). BfN Schriften 511 - Nature-based solutions for flood risk prevention in South-Eastern Europe. <https://www.bfn.de/en/publications/bfn-schriften/bfn-schriften-511-nature-based-solutions-flood-risk-prevention-south>

286 NbS term is mentioned only in North Macedonia National Strategy for Nature Protection 2017-2027.



in these policies; and also tested for the first time the application of IUCN Global Standard for Nature-based Solutions™ to policy analysis.²⁸⁷

Within the EU for Green Agenda in Serbia project, the Ministry of Environmental Protection of Serbia and UNDP launched the 5-year programme “Protecting and investing in biodiversity and water for enhance climate resilience” financed by Sweden for the restoration of wetlands and their flora and fauna. The Project will focus on biodiversity, water and wetlands and climate resilience by strengthening policy and base-conditions and supporting further work on Nature-based Solutions (NbS).

It is common in many Western Balkan economies that the role of biodiversity conservation is considered in sectoral planning, but NbS are not explicitly considered as an option for CCA or DRR. This highlights the importance of an NbS concept embedded in policy that identifies multiple benefits, including for CCA and DRR that are the result of nature and ecosystem restoration and conservation. Such an NbS concept in policy is needed to overcome the ‘silos’ of sectoral planning observed in nearly all Western Balkan economies. Looking forward, new developments at the EU and regional level, i.e. the EU Adaptation Strategy and the Green Agenda for the Western Balkans, could be an excellent political vehicle to further enable embedding of NbS but also Ecosystem-based Adaptation (EbA)²⁸⁸ concepts in policies addressing CCA and DRR in the Western Balkans.

In terms of barriers to NbS (and EbA) integration in CCA and DRR policies, several observations are applicable across multiple Western Balkan economies. The National Adaptation Planning (NAP) processes were found as highly relevant for integrating better biodiversity and climate change aspects, including mainstreaming NbS into NAP documents. However, NAP processes in several economies have been informed by the NAP-Technical Guidelines, which have only limited focus on NbS-related approaches.

There is a need for NAP development to make use of updated guidance, which integrates NbS approaches to a greater extent. In addition, for nearly all Western Balkan economies, the role of nature or biodiversity for social and economic development goals is recognised, but there is little recognition of the role of nature or biodiversity for CCA and DRR in particular. This may be partly due to NbS for CCA/DRR being a relatively new concept for which time is needed to compile or generate evidence to prove its effectiveness and applicability in the region. Overcoming this barrier requires embedding NbS concepts in policy, which can be supported through accumulation and dissemination of evidence on NbS for CCA and DRR in diverse settings. Lastly, sectoral planning often operates in ‘silos’ and considers only its primary policy objectives. This is a barrier because NbS are often attractive precisely because they produce multiple co-benefits and thus can address policy objectives of multiple different sectors in an integrated manner. Overcoming this barrier means embedding NbS concepts in CCA and DRR policies and thus encouraging development of concrete NbS measures, for example in climate change adaptation plans.

Action 54a Report on climate change and biodiversity linkages

Up to now, there has been no shared comprehensive report on climate change and biodiversity linkages in the Western Balkans. Only a few studies and reports that explore the link between climate change and biodiversity are available. The *Study on climate change in the Western Balkans region*

²⁸⁷ Bisaro, A., Meyer, K., (n.d.). Integrating Nature-based Solutions into policies for climate change adaptation and disaster risk reduction. IUCN. <https://portals.iucn.org/library/sites/library/files/documents/2022-030-En.pdf>

²⁸⁸ Ecosystem-based Adaptation (EbA) is a nature-based solution that harnesses biodiversity and ecosystem services to reduce vulnerability and build resilience to climate change (<https://www.iucn.org/resources/issues-brief/ecosystem-based-adaptation>). Particularly in Albania, the term is used (more) frequently, which ought to be considered when addressing policy objectives in Albania.



conducted by RCC in 2018 indicates that the Balkan economies are particularly sensitive to climate change, with weather related events becoming more frequent and intense²⁸⁹. In the study, though, the linkage between climate change and biodiversity is addressed only marginally.

In general, strategies^{290,291,292,293,294} of the Western Balkan economies identify the loss of biodiversity as being one amongst the major threats of the climate change, but only few studies and reports related to the issue have been developed^{295,296} and most of them are focused on forest ecosystems. OSCE's report from 2021 explores climate related security implications on land degradation and biodiversity loss and suggests cooperation around nature protection in the Shar/Šara Mountains and Korab Massif area while fostering climate change adaptation. **Bosnia and Herzegovina** is maybe the only economy that deepens the issue in its first economy-wide report to the CBD stating high vulnerability of landscapes to the climate change²⁹⁷.

Action 55 Strengthen the mechanisms for regional cooperation and strategic planning on biodiversity conservation and implementation of commitments under the Convention on Biological Diversity

The Biodiversity Task Force South-East Europe (BDTF SEE) is a coordination entity/body that has worked in the Western Balkans region since 2017. This regional structure acts as a technical and advisory body to the Regional Working Group on Environment. Its goal is to facilitate better coordination and planning of biodiversity conservation in the economies across the region.

BDTF has established itself as a key regional mechanism on biodiversity coordination and planning in the Western Balkans and has high potential to contribute to implementation of global goals. This would entail providing support to economies in aligning domestic biodiversity strategies and action plans and developing biodiversity finance plans.

Action 56 Reinforce the engagement with the United Nations Rio Conventions (and synergy between the three), and join efforts in preparing a regional position on a global post-2020 biodiversity agenda

289 Regional Cooperation Council. (6 June 2018). Study on climate change in the Western Balkans region. <https://www.rcc.int/pubs/62/study-on-climate-change-in-the-western-balkans-region>

290 North Macedonia: Ministry of Environment and Physical Planning. (2021). LONG-TERM STRATEGY ON CLIMATE ACTION AND ACTION PLAN: EXECUTIVE SUMMARY. [Long-term Strategy on Climate Action and Action Plan](#)

291 Albania: Ministry of Environment. (2015). Document of Strategic Policies for the Protection of Biodiversity in Albania. [Document of Strategic Policies for the Protection of Biodiversity in Albania](#)

292 Montenegro: Ministry of Sustainable Development and Tourism. (2015). NATIONAL BIODIVERSITY STRATEGY WITH THE ACTION PLAN FOR THE PERIOD 2016-2020. [National Biodiversity Strategy with the Action Plan for the period 2016 – 2020](#); UNDRR. (2015). MONTENEGRO: NATIONAL STRATEGY IN THE FIELD OF CLIMATE CHANGE BY 2030. [National Strategy in the Field of Climate Change by 2030](#)

293 GFA Consulting Group GmbH. (2019). Climate Strategy & Action Plan. Serbia: Ministry of Environmental Protection. [Climate Strategy and Action Plan](#)

294 Kosovo*: Ministry of Environment and Spatial Planning. (2018). CLIMATE CHANGE STRATEGY 2019- 2028: ACTION PLAN ON CLIMATE CHANGE 2019- 2021. [Climate Change Strategy 2019 - 2028 with Action Plan on Climate Change 2019 - 2021](#)

295 USAID. (n.d.). Where We Work. <https://www.climatelinks.org/where-we-work>

296 Montenegro: Ministry of Sustainable Development and Tourism (MSDT) and UNDP. (2020). MONTENEGRO THIRD NATIONAL COMMUNICATION ON CLIMATE CHANGE. [Montenegro Third National Communication on Climate Change 2020](#)

297 Federal Ministry of Environment and Tourism. (2009). Bosnia and Herzegovina – Land of Diversity, First National Report of Bosnia and Herzegovina for the Convention on Biodiversity. <https://www.cbd.int/doc/world/ba/ba-nr-01-en.pdf>



Up to now, there has been no shared regional position on a global biodiversity agenda. All economies of the Western Balkans region, except **Kosovo*** due to its political situation, joined the United Nations Rio Conventions and as active members of UN have obligation to implement those conventions including by submitting regular reports and attending COP meetings.

Action 57 Set up the Western Balkans Biodiversity Information Hub to improve knowledge exchange and availability of information

Action 57a Biodiversity Monitoring and Evaluation Framework

An information Hub on Biodiversity in Western Balkans is still not established while national databases need to be improved in order to provide homogeneous, reliable and comparable data. Legislation in Western Balkan economies introduced an obligation to maintain a biodiversity information system. In practice, information and data on biodiversity are included in larger environmental information systems, which complicates management of data and systems.

A regional assessment on biodiversity information management and reporting for South East Europe²⁹⁸ identified the problems with the current systems and provided recommendations that could be a starting point for the implementation of this action. The draft indicators on nature and biodiversity prepared as part of the Action Plan for the Implementation of GAWB will serve as a basis for further work on regional indicators and their fine tuning. There is an issue of limited open access to existing data, which in turn limits the availability of information. The existing and future databases will need adequate IT support for their maintenance, which is an issue in several WB economies.

Action 58 Development of green infrastructures and ecosystem connectivity

The current ecological connectivity in the Western Balkans is good and less affected by the presence of infrastructure than the rest of the European region, with good opportunities for improvement. However, this situation needs to be maintained, regulated, and managed at a regional and transboundary level. This is the conclusion of the study on *Green Infrastructure Deployment and Ecological Connectivity Status in Albania, Bosnia-Herzegovina, Montenegro, Serbia and North Macedonia* conducted by EPPA (EU Partnership Programme for Accession) and concluded in 2021²⁹⁹. **Serbia, Montenegro** and **Kosovo*** include the improvement of green infrastructure as a target in their economies strategies.

298 GIZ. (2017). REGIONAL ASSESSMENT OF BIODIVERSITY INFORMATION MANAGEMENT AND REPORTING BASELINE FOR SOUTH-EAST EUROPE. https://www.giz.de/en/downloads_els/ORFBDU_Regional-Assessment_ENG.pdf

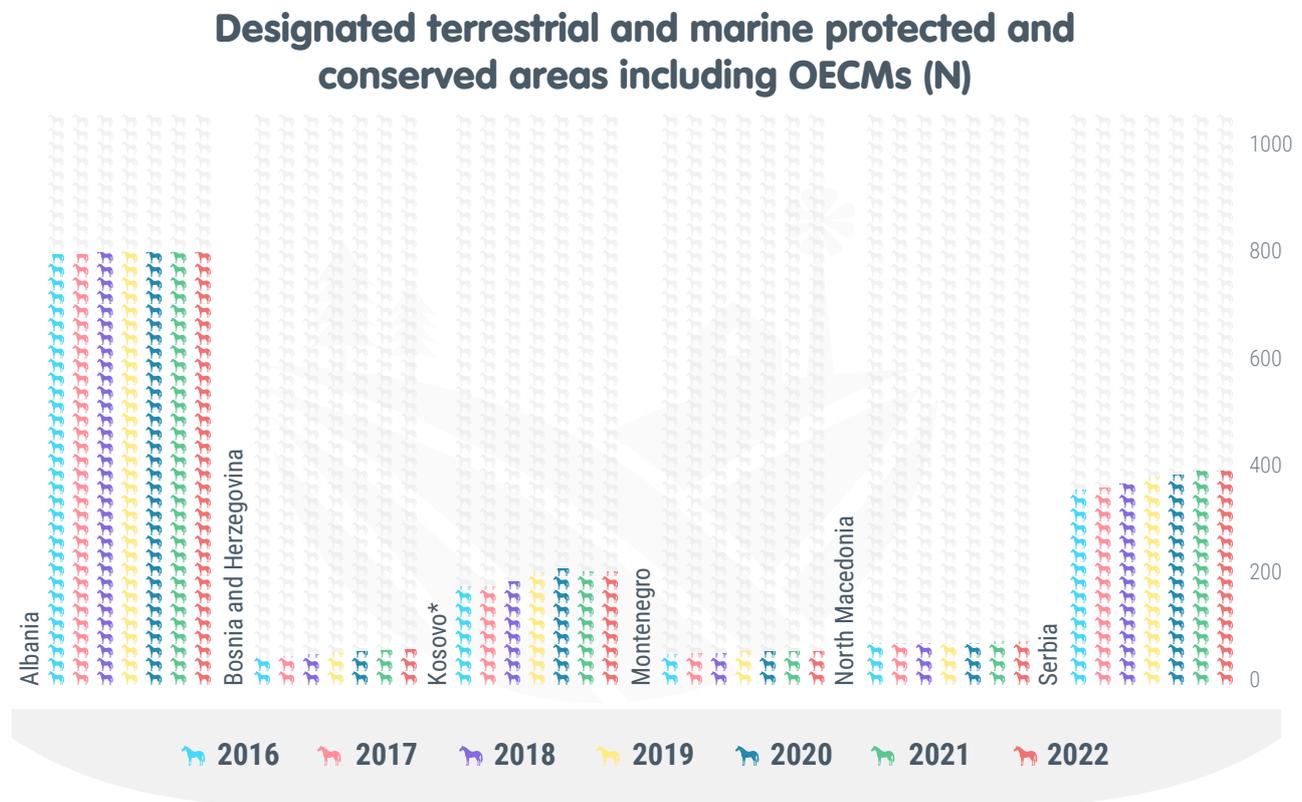
299 Publications Office of the European Union. (2021). Study on green infrastructure deployment and ecological connectivity status in Albania, Bosnia-Herzegovina, Montenegro, Serbia and North Macedonia. <https://op.europa.eu/en/publication-detail/-/publication/04076ba5-8aed-11ec-8c40-01aa75ed71a1/language-en>



2.7.2 Monitoring the implementation of Protection of Nature and Biodiversity Roadmap

Since data for biodiversity and nature protection analysis are gathered from various sources, the timeframe for trend analysis varies according to the indicator and the economy. In general, the analysis covers a retrospective overview of the period from 2016 to 2022, but in some cases data for 2022 are not available.

In the period from 2016 to 2022, data analysis shows an overall growth in the **number of protected and conserved areas including OECMs** across the Western Balkan economies. Albania is the only economy that has not significantly expanded its protected areas network in recent years, although it already has a high number of protected sites at 807. Meanwhile, other economies, such as Serbia and Kosovo*, have been actively working to increase protection by designating new protected sites, with 34 new sites established between 2016 and 2021.



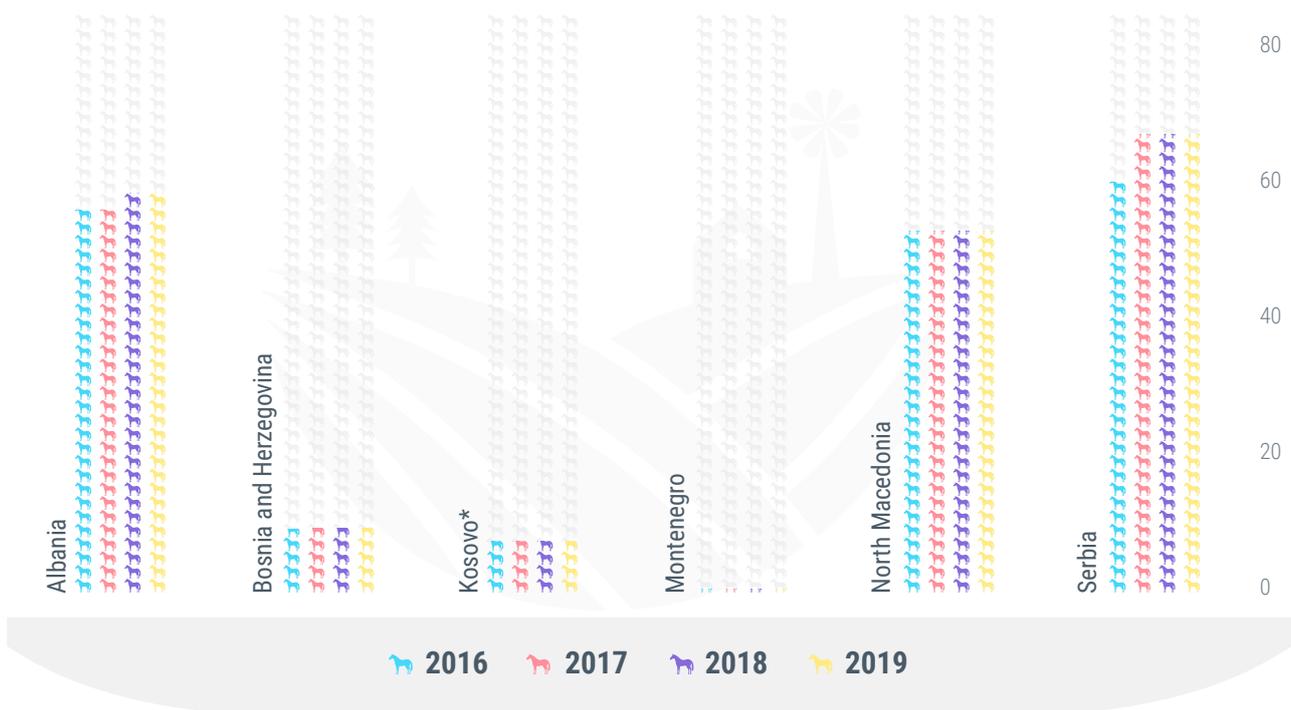
Source: Word Database on Protected Areas (WDPA), Institute of Nature Protection of Kosovo*

Data regarding **potential Natura 2000 sites and economy-wide ecological networks** do not indicate a specific trend as they are dependent on the outcome of national initiatives. According to the presented graphic, Serbia has the largest number of potential Natura 2000 sites at 362 (277 pSCI and 85 SPA or 30% of the territory of Serbia has been covered. Currently official Ecological Network of Serbia with potential Natura 2000 and Emerald networks is 22.70%), followed by Bosnia and Herzegovina with 122 sites. The number of proposed sites in Albania, Montenegro, and North Macedonia is significantly lower at 43, 33, and 12 respectively.



The Species Protection Index (SPI) reflects the relationship between the number of terrestrial protected areas and the extent to which protected terrestrial vertebrate species are represented within these areas. An increase in conservation areas that enhance species representation will result in a corresponding increase in SPI values³⁰⁰. The SPI is measured on a scale of 0 to 100, with a score of 50 or above indicating that, on average, species have a representation that exceeds 50% in conservation areas. WB economies such as Serbia, Albania, and North Macedonia boast a high number of protected sites and therefore have an SPI higher than 50. However, Bosnia and Herzegovina and Kosovo* have an SPI of less than 10, while Montenegro’s value has dropped below 1.

Species Protection Index



Source: Map of Life³⁰¹

The trend for **Protected Area Management Effectiveness** shows no change in the number of assessments performed. This suggests that all evaluations on the management effectiveness of protected areas were carried out in 2016 or prior. Amongst the economies, North Macedonia is the only one with more than 55% of its protected areas being assessed. However, for Albania, Montenegro, and North Macedonia, the number of assessments performed is very low, impacting less than 1% of their protected sites. Similarly, in Serbia, although there is a higher absolute number of assessments if compared to the total number of protected areas (362), it can be observed that the rate of protected areas management effectiveness assessments is only carried out for 0.07% of them.

300 Rudic, T., Ingenloff, K., Rogan, M., Sica, Y., Vigneron, G., & Rinnan, D. S. (24 September, 2021). Measuring progress toward comprehensive biodiversity conservation. SPI. <https://storymaps.arcgis.com/stories/8223a7756fea4c6c8b93eba0ea807794>

301 MOL. (n.d.). https://mol.org/indicators/protection/regions?taxa=all_terr_verts



Based on the information presented in the table, it appears that a significant proportion of the Western Balkan economies, specifically four out of six (Albania, Bosnia and Herzegovina, Kosovo* and Montenegro), have not yet updated their **Biodiversity Strategy and Action Plans (BSAPs)**. Furthermore, it should be noted that the current strategies for these economies have already expired in 2020 and are in need of approval for a new plan.

Nature and Biodiversity and Nature Protection	Biodiversity Strategy and Action Plans for Western Balkan economies (BSAPs)						
	2016	2017	2018	2019	2020	2021	2022
Albania	Y	Y	Y	Y	Y	N	N
Bosnia and Herzegovina	Y	Y	Y	Y	Y	N	N
Kosovo*	N	N	N	N	N	N	N
Montenegro	Y	Y	Y	Y	Y	N	N
North Macedonia	N	N	Y	Y	Y	Y	Y
Serbia	Y	Y	Y	Y	Y	Y	Y

Source: Convention on Biological Diversity³⁰²

302 CBD. (n.d.). NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS (NBSAPS): Latest NBSAPS. <https://www.cbd.int/nbsap/about/latest/>



Annex 1 - Abbreviations

ADAPT	Nature-based Solutions for Resilient Societies in the Western Balkans
AICS	Italian Agency for Development Cooperation
AKIS	Agricultural Knowledge and Innovation System
AL	Albania
AQI	Air Quality Index
BA	Bosnia and Herzegovina
BAT	Best Available Technique
BDTF	Biodiversity Task Force
BREF	Best available technique reference documents
BSAP	Biodiversity Strategy and Action Plan
C ₆ H ₆	Benzene
CADaS	Common Accident Data Set
CBAM	Carbon Border Adjustment Mechanism
CBD	Convention on Biological Diversity
CCA	Climate Change Adaptation to Disaster Risk Reduction
CE	Circular economy
CEIP	Centre on Emission Inventories and Projections
CfD	Contract for Difference
CH ₄	Methane
CO	Carbon monoxide
CONNECTA	Technical Assistance to Connectivity in the Western Balkans
COP	Conference of the Parties
CORINE	Coordination of Information on the Environment



COVID-19	Coronavirus disease 2019
CRM	Common Regional Market
EUD	European Union Delegation
DMC	Domestic Material Consumption
DRR	Disaster Risk Reduction
DSIP	Directive Specific Implementation Plans
EbA	Ecosystem-based Adaptation
EE	Energy efficiency
EEA	European Environment Agency
EEC	European Economic Community
EIB	European Investment Bank
EMEP	European Monitoring and Evaluation Programme
EMS	Elektromreza Srbije
EPPA	Environment Partnership Programme for Accession
EPR	Extended Producer Responsibility
EU	European Union
EUR	Euro
EUROSTAT	European Statistical Office
ESAP	Environmental Strategy and Action Plan
ESCO	Energy Service Company
ETS	Emission Trading Scheme
FiBL	Research Institute of Organic Agriculture
FiP	Fixed Feed-in Premium
FiT	Feed-in Tariffs



FLR	Forest Landscape Restoration
GAWB	Green Agenda for the Western Balkans
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIS	Geographic Information System
GIZ	German Agency for International Cooperation
ICLEI	Local Governments for Sustainability
IED	Industrial Emissions Directive
IMs	Infrastructure Managers
INDC	Intended Nationally Determined Contribution
INSTAT	Institute of Statistics
IPA	Instrument for Pre-Accession Assistance
IPARD	Instrument for Pre-Accession Assistance in Rural Development
IPPC	International Plant Protection Convention
ITS	Intelligent Transport Systems
IUCN	International Union for Conservation of Nature
IUCN ECARO	IUCN Regional Office for Eastern Europe and Central Asia
JASPERS	Joint Assistance to Support Projects in European Regions
JP Autoceste FBiH	Javno preduzeće Autoceste Federacije Bosne i Hercegovine
JU	Joint Undertaking
KIC	Knowledge and Innovation Community
kW	Kilowatt
kWh	Kilowatt-hour



LCP	Large Combustion Plants
LCPD	Large Combustion Plants Directive
LDN	Land Degradation Neutrality
LEADER	Implementation of Local Rural Development Strategies
LUCAS	Land Use and Coverage Area frame Survey
MC	Ministerial Council
ME	Montenegro
METT	Management Effectiveness Tracking Tool
MOL	Map of Life
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MW	Megawatt
N.D.	No date
NAP	National Adaptation Planning
NbS	Nature-based Solutions
NBSAPs	National Biodiversity Strategies and Action Plans
NDC	Nationally Determined Contribution
NEC	National Emission Ceilings
NECP	National Energy and Climate Plan
NEEAP	National Energy Efficiency Action Plan
NEMO	National Electricity Market Operator
NERP	National Emission Reduction Plan
NFOSiGW	National Fund for Environment Protection and Water Management
NH ₃	Ammonia



NM VOC	Non-Methane Volatile Organic Compounds
NO	Nitrogen monoxide
NO ₂	Nitrogen dioxide
NTC	Net Transfer Capacity
O ₃	Ozone
OC	Organic Carbon
OECD	Organisation for Economic Co-operation and Development
OECM	Other Effective Area-Based Conservation Measure
OSCE	Organisation for Security and Co-operation in Europe
PA	Protected Area
PaMs	Policies and Measures
Pb	Lead
PM	Particulate Matter
PM _{2.5}	Particulate matter with a diameter less than 2.5 micrometers
PM ₁₀	Particulate matter with a diameter less than 10 micrometers
PV	Photovoltaic
R&D	Research and development
RAC	Regional Activity Centre
RAMS	Road Asset Management System
RBMT	River Basin Management Plan
RCC	Regional Cooperation Council
REAWG	Regional Expert Advisory Working Group
REDII	Renewable Energy Directive
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency



RES	Renewable Efficiency Source
RESEERVE	Mineral Potential of the Eastern and South-Eastern Region
RFC	Rail Freight Corridor
ROAM	Restoration Opportunities Assessment Methodology
RWG	Region Working Group
S3	Smart Specialisation Strategy
SBI	Società Botanica Italiana
SCP	Sustainable Consumption and Production
SEDRA	Support to Economic Diversification of Rural Areas
SEE	South East Europe or Southeastern Europe
SEESARI	Southeast Europe Strategic Alliance for Rail Innovation
SEPA	Serbian Environmental Protection Agency
Shift2Rail JU	European technology, research and development collaboration programme
SLA	Service Level Agreement
SME	Small and Medium-sized Enterprise
SO ₂	Sulfur dioxide
SOC	Soil Organic Carbon
SoER	State of the Environment Report
SPI	Species Protection Index
SWG RRD	Regional Rural Development Standing Working Group
SWOT	Strengths-Weaknesses-Opportunities-Threats
TA	Technical Assistance
TC	Transport Community
TCT	Transport Community Treaty



TEN-T	Trans-European Transport Network
THC	Tetrahydrocannabinol
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNSCR	United Nations Security Council resolution
UWWTD	Urban Wastewater Treatment Directive
WB	Western Balkans
WB6 CIF	Western Balkans 6 Chamber Investment Forum
WBRSO	Western Balkans Road Safety Observatory
WDPA	World Database on Protected Areas
WFD	Water Framework Directive
WHO	World Health Organisation
WRB	World Reference Base
WRI	World Resources Institute
WWTP	Wastewater Treatment Plant



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