



Shared Research Agenda on Just Green Transitions in the Western Balkans



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Foster Research Excellence for Green Transition in the Western Balkans

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List of Abbreviations

- EPR:** Extended Producer Responsibility
- EUGD:** European Union Green Deal
- ETS:** EU Strategy on Adaptation to Climate Change and the EU Emissions Trading System
- GAWB:** Green Agenda for the Western Balkans
- GT:** Green Transition
- GHG:** green-house gas [emissions]
- IPARD:** EU Pre-Accession Assistance for Rural Development
- JGT:** Just Green Transition
- RAB:** Research Advisory Board
- SRA:** Shared Research Agenda
- WB:** Western Balkans

PREFACE

Just Green Transitions have become a prominent topic in policy discourse and academic debate. The shift to carbon- neutral technologies has a profound impact for Western Balkan societies, economies, and governance processes. The socio-economic challenges and opportunities presented by Just Green Transitions are not necessarily homogenous across Western Balkan countries and regions, with their effects impacting differently across diverse societal groups. Furthermore, the development and implementation of effective green transitions requires interactive collaboration and cooperation between policymakers, sectors, researchers and other key stakeholders at transnational, national, regional, and local levels.

The Shared Research Agenda on Just Green Transitions in the Western Balkans is a joint document facilitated by Nordregio - (Sweden) and cocreated by consortium partners within the Horizon Europe Funded GreenFORCE project, including Co- PLAN, Institute for Habitat Development (Albania), Center for Economic Analyses (North Macedonia), and University of Belgrade, Faculty of Geography (Serbia), and Politecnico di Torino (Italy).

Shared Research Agenda aims at fostering scientific research and innovation excellence in the Western Balkans green transition. The document highlights the role and contribution that academia and research organisations can make to the development and implementation of Just Green Transitions, by outlining future research needs, and data and information requirements under key policy themes in the Green Agenda for the West Balkans (2021-2030) and its Action Plan.

The Shared Research Agenda is targeted at GreenFORCE partner organisations to help direct their future research collaboration initiatives in the short, medium, and long-term. It also serves as an external document that can help build research networks across the Western Balkans. Finally, the shared research agenda aims to bridge the gap between policy and research, by ensuring the development of policy relevant research which can contribute new knowledge, evidence, ideas, and best practices directly to Just Green Transition policymaking processes.

The Shared Research Agenda was approved and finalised by project partners on 28th May 2025.



1. INTRODUCTION

1. INTRODUCTION

The Shared Research Agenda (SRA) on Just Green Transitions (JGT) in the West Balkans (WB) identifies the core research and information requirements needed to facilitate the development and implementation of effective JGTs across the WBs. The SRA is formed as part of the Horizon Europe funded GreenFORCE project which aims at fostering scientific and innovation excellence in the WB JGT. The SRA is designed to be policy relevant by zooming in on research needs under core GT policy themes highlighted in the Green Agenda for the West Balkans 2021-2030 (GAWB) and its corresponding GAWB Action Plan. It focuses on highlighting future research needs across GT themes to ensure that research activities meet the needs of policymakers, stakeholders, and citizens across the WBs.



Clean energy and climate protection

Climate Change (e.g. climate laws / targets and building climate resilience)

Clean Energy Transitions (e.g. renewable energies, energy efficiency in homes / buildings, industrial / business transition to clean energy processes)

Smart and Sustainable Transport



Circular economy

Recycling, waste and plastics

Resources, production and innovation



Depollution

Air

Soil

Water



Building sustainable agriculture and food systems

Sustainable food systems

Developing rural areas



Protecting biodiversity and ecosystems

Protecting Habitats, ecosystems, and species (e.g. protected areas, forest restoration, lakes etc...)

Figure 1: Core GT Themes and sub-themes in the Green Agenda for the Western Balkans

The SRA has multiple functions; firstly, it serves as a foundational document designed by GreenFORCE project partners to develop joint research proposals and projects in areas of shared research interest and expertise under different GT themes. Secondly, the SRA can also be used as an external document to help build new research networks amongst research institutions and practitioners across the WBs and Europe with an interest in developing knowledge and ideas on GTs. Thirdly, the SRA can strengthen the relationship between policy and research by raising the awareness of policymakers to ongoing and future research activities which can contribute new ideas and evidence to GT policymaking processes.

ENHANCE KNOWLEDGE	Establish future research and data needs under key GT policy themes
FOSTER COLLABORATION	Identify areas for joint research collaborations between GreenFORCE consortium partners
RAISE AWARENESS	Showcase the green transition research knowledge, expertise and interests of GreenFORCE consortium partners
BUILD NETWORKS	Illustrate GreenFORCE consortium research interests to help build new research networks.
STRENGTHEN POLICY-RESEARCH CONNECTION	Ensure that research is policy relevant to provide new ideas and evidence to policymaking processes.
IDENTIFY FUNDING	Highlight key funding resources that provide opportunities for financing future joint research initiatives.

Figure 2: SRA Functions

The SRA is targeted at GreenFORCE project partners, policymakers at different levels of governance (EU, national, regional, and local levels), sectoral groups, and other stakeholders interested in GTs across the WB and Europe, including universities, research centres, industries, businesses, NGOs, and societal groups. The SRA is a basis for forming and strengthening relationships between different institutional, research and stakeholder groups, and serves as a starting point for sharing and building new knowledge, expertise, ideas, and best practices on key GT policy themes in the WBs.

The SRA is structured around twelve core GT themes:

1. JGT Conceptualisation
2. Climate Change: risk management and adaptation
3. Industrial Transitions
4. Renewable Energies
5. Energy Efficiency
6. Smart and Sustainable Transport
7. Circular Economy: Recycling, Waste and Plastics
8. Water Management and Depollution
9. Air Depollution
10. Developing Rural Areas
11. Ecosystem Services and Biodiversity protection
12. Just GT Governance and Planning.

Each chapter follows a standard structure, including: a) an overview of the policy theme context in the WB; b) a snapshot the policy theme current trends, challenges and opportunities across the WB; c) an outline of existing partner expertise and knowledge under the theme; d) future research and data needs under the theme; e) key stakeholders relevant to the theme. The final standalone chapter of the SRA provides an overview of potential funding resources available to finance research activities.

2. SRA DEVELOPMENT PROCESS

2. SRA DEVELOPMENT PROCESS

The SRA was developed through an interactive, co-design process involving GreenFORCE project partners and other stakeholders, including the project Research Advisory Board (RAB) and other researchers/actors with expertise and knowledge of the different policy thematic themes of the Green Agenda for the Western Balkans. A 5-stage developmental process was followed, as outlined in Figure 2 below.

- ♦ **Stage 1** project partners mapped key GT policy thematic focus areas through a cross-comparison of existing EU, WB, national and regional/local level GT policy documents. The mapping revealed strong policy overlaps across all governance levels, so it was decided to zoom in on the policy themes of the Green Agenda for the Western Balkans to maximize the policy relevance of the proposed SRA to the WB Region. This stage of the process also mapped WB GT challenges, opportunities, and stakeholder involvement, in addition to searching for suitable research funding resources. This phase was formally kicked off with Workshop 1 (WP1) on 02.12.2022 in hybrid format in Tirana and online.
- ♦ **Stage 2** project partners mapped their own GT research, knowledge, expertise, and interests against the GT thematic policy areas identified in Stage 1. This activity was designed so partners could strategically identify and zoom in their research focus solely on those GT policy themes in the GAWB where they had genuine expertise and shared interests. This was a joint exercise, in which partners picked areas by consensus that were relevant to all. After stage 2, partners agreed to focus on 9 policy themes and two cross cutting themes, outlined in Figure 3 below. This phase was formally concluded with WS 2 on 23.01.2023 in hybrid format in Skopje and online.
- ♦ **Stage 3** A draft SRA was developed. Project partners with knowledge and expertise of each GT policy theme, strategically chosen during Stage 2, provided an initial outline of the policy theme context, main challenges, opportunities, research expertise, future research and data needs, and current stakeholder involvement. For this phase WP3 was organised on 23.01.2023 in Tirana in conjunction with the Research Advisory Board (RAB) meeting.

- **Stage 4** project partners reviewed the first draft of the SRA and held discussions, both internally and with the expert stakeholders, on how to develop and improve the focus of the content, particularly in relation to future research and data needs under each GT policy theme. WS₄ was conducted more in the form of informal meetings in Spring 2024, and validated by stakeholders via written feedback during the summer months of 2024.
- **Stage 5** The full draft of the SRA document was completed using inputs from Stage 4 discussions. WS₅ with the RAB was organised to validate the results during the third RAB meeting in Tirana 16.05.2025. It was then disseminated through various communication and social media channels.

Throughout each stage of the development process, workshops were held to provide a platform for interactive discussion on SRA amendment and improvement between GreenFORCE project partners and other relevant actors (as indicated by WS₁₋₅ in Figure 3 below).

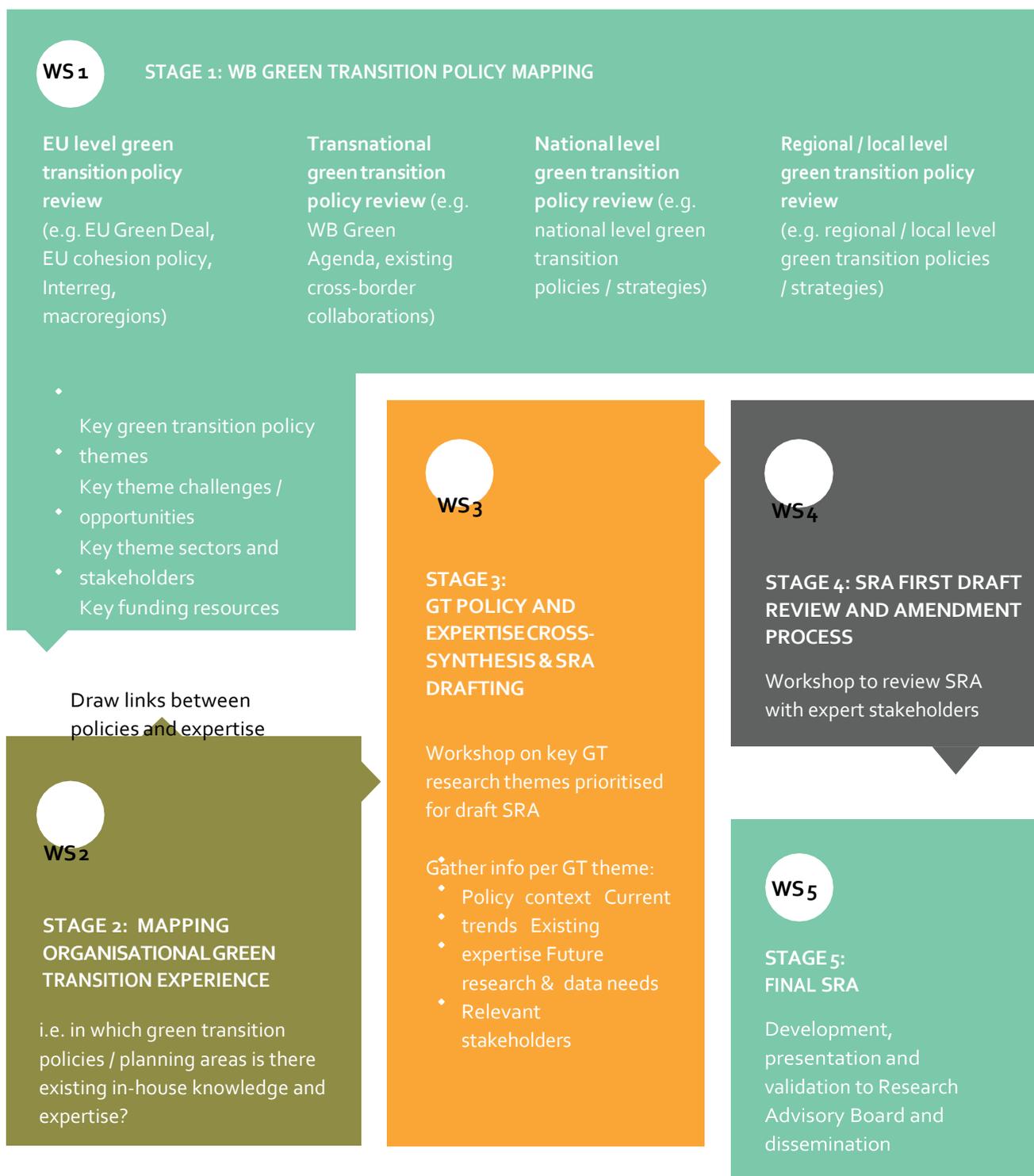


Figure 3: GreenFORCE 5 stage process for constructing a joint Shared Research Agenda on Green Transitions in the Western Balkans

3. RESEARCH THEMES

- 3.1. JGT Conceptualisation
- 3.2. Climate Change: risk management and adaptation
- 3.3. Industrial Transitions
- 3.4. Renewable Energies
- 3.5. Energy Efficiency
- 3.6. Smart and Sustainable Transport
- 3.7. Circular Economy: Recycling, Waste and Plastics
- 3.8. Water Management and Depollution
- 3.9. Air Depollution
- 3.10. Developing Rural Areas
- 3.11. Ecosystem Services and (Urban) Biodiversity Protection
- 3.12. Just Green Transition Governance and Planning

3.1. JGT CONCEPTUALISATION

3.1.2. Research context

The term “Just Green Transition” (JGT) is commonly used in policy discourse to describe the global crusade to shift towards a carbon neutral economy and society. The notion of JGT gained political momentum after the approval of the Paris Agreement (2016) and is now an integral part of the European Green Deal (EGD), the European Union’s (EU) growth strategy. The EGD aims to transform the EU into a modern, resource-efficient, and competitive economy. At the heart of the EGD is the notion of JGT, which has become umbrella term for a range of different climate and environmental policies that promote carbon neutrality, reducing waste and pollution, moving to a circular and resource-efficient economy, and stopping the loss of biodiversity. In addition, the EGD establishes implementation mechanisms for ensuring that green transitions are “just” and address the social challenges and impacts of transitions on Europe’s most vulnerable regions and citizens. The EGD has laid forward “The Green Agenda for the Western Balkans (GAWB), which introduces the JGT, both as a concept and as a policy framework, in the Western Balkan countries. Formalised in 2020 with the Sofia Declaration, the GAWB is the basis for a new growth strategy for the Western Balkan Region, embedded in the EU Economic and Investment Plan for the Western Balkans. The GAWB encourages countries across the Western Balkans to apply EU climate and environmental directives and regulations across a wide range of environmental policies, from climate laws, energy efficiency goals, air, and water quality standards, to implementing waste management frameworks to help limit pollution and promote a circular economy.

3.1.2. Current trends

While the JGT concept has been embraced at a global level, the process towards this transition in the WBs is progressing at a very slow pace with little being done to raise societal JGT awareness and preparedness. Despite this slow progress, the term JGT has started to gain prominence within academic and research circles in response to JGT national level policy developments across WB countries, including the emergence of the GAWB. As a concept, JGT remains in its relative infancy, but academics across the WBs are increasingly exploring and analysing key JGT social, environmental, economic and governance dimensions.

Conceptualizing the JGT within a WB context is a complex task, as the term JGT is mostly used as a buzzword without fully generating the necessary awareness of the scale and transformative nature it implies. This is reflected in the absence of a comprehensive approach to coordinating climate and environmental action at the policy level, where there is a patchwork of policy initiatives tackling specific sectors. Researchers are, therefore, grappling with understanding the ways in which multi-level and cross-sectoral JGTs can be effectively developed and implemented, while delivering on the three pillars of the concept: producing far-reaching technological, institutional, and behavioural changes (transition), reducing environmental impacts and cuts on greenhouse gas emissions (green), and achieving this in a socially and spatially fair way (just).

3.1.3. Existing Research Expertise within the theme

The Horizon Europe GreenFORCE project explores the JGT concept within a WB context. Co-PLAN, CEA, and UB-GEF have contributed to the GreenFORCE “Report on Western Balkans Just Green Transition Conceptualisation”, which defines key JGT concepts, maps the collaborative governance structures and stakeholder engagement needed to develop and implement effective JGTs, as well as examining the socio-economic challenges and opportunities (costs and benefits) that JGTs present to WB countries. GreenFORCE partners have also written the policy brief “Just Green Transition in the Western Balkans: Overcoming ‘Transitions Fatigue’”. The policy brief clarifies the practical implications of JGT for the WB Region, while offering recommendations for how to achieve better policy implementation and increased societal support.

3.1.4. Future Research and data needs

The GreenFORCE project has laid the foundations for further academic research around the conceptualisation of JGTs in the WBs. Further policy relevant research is needed, however, which can contribute to the formulation and delivery JGTs, including:

- ♦ Continue to define the concept of JGT and its key dimensions with a specific focus on implications for Western Balkan countries.
- ♦ Develop new impact evaluation metrics, indicators and tools to measure the social, economic and spatial impacts of JGTs across the WBs.

- ♦ Enhanced knowledge of inclusive participatory policymaking tools that can be used by public authorities to design and implement JGTs to increase societal awareness and understanding of the social and spatial impacts of green transitions, focusing on least engaged communities.
- ♦ Map major localised industrial and non-industrial emitters in each WB country;
- ♦ Provide studies on the labour market impacts of the green transition, focusing on negative as well as positive outcomes on a sector by sector basis.
- ♦ Explore the consumption aspects of JGTs by assessing the potential implications of the green transitions on the cost of living and how this may affect different social groups based on income levels (distributional justice).
- ♦ Identify specific job categories and social groups that are directly exposed to the green transitions (recognitional justice).
- ♦ Enhance awareness about the territorial implications of JGTs in the WBs and how they affect specific geographical areas within the region (spatial justice), particularly remote areas and sourcing regions in the Global South (cosmopolitan justice).
- ♦ Provide new knowledge on the potential challenges and opportunities that JGTs present to different WB countries, especially at regional and local levels.
- ♦ Explore cross-sectoral and public-private collaboration models in the preparation of JGTs.
- ♦ Design policy recommendations that mitigate the negative impacts of JGTs on labour markets, including re-skilling strategies for jobs in industries that will be phased out in the transition.
- ♦ Produce roadmaps for the green (re)industrialization of the WB, boosting the potentials of green industries and underpinning sectoral and sub-national planning strategies.

3.2. CLIMATE CHANGE: RISK MANAGEMENT AND ADAPTATION

3.2.1. Policy context

By endorsing the GAWB at the Summit in Sofia in 2020, WB countries committed to introducing new EU climate law from 2021 onwards in alignment with the EU Strategy on Adaptation to Climate Change and the EU Emissions Trading System (ETS). **North Macedonia** introduced the law on the environment giving central and local governments obligations and rights for environmental protection. The Law on Climate Action is pending but the national energy and climate plan has been adopted. Climate change law in **Serbia** sets the ground for climate adaption with an emphasis on facilitating innovations and supporting sectors in their transitions to carbon neutral processes. The law establishes a system for monitoring and verifying greenhouse gas (GHG) emissions, regulates the conditions and procedure for issuing GHG emissions permits. The Strategy of Low-carbon Development, and the Program of Adaptation to Changed Climate Conditions aim to establish guidelines for economic development coupled with low GHG emissions. Furthermore, to align with long-term policy objectives of the EU, UNFCCC and Energy Community, Serbia is obliged to develop and adopt (due in 2023) the Integrated National Energy and Climate Plan for 2021 to 2030, with visions to 2050. The **Albanian** government have strongly advocated the need to prevent the effects of climate change and support climate adaption. National laws for climate change and civil protection provide a legal basis, supported by the Strategy and Action Plan of Climate Change, and National Plan of Energy and Climate. However, bylaws per sector related to climate adaption are yet to be adopted and there is no clear monitoring plan to evaluate the performance of climate laws and strategies.

3.2.2. Current trends

Climate change is having a drastic effect on the WB environment, especially on forests, rivers, and meadows, on the availability of food and water, on agricultural yields and sources of income, infrastructure, and quality of life, especially in large urban areas.

Climatic extremes are becoming more common in the WBs, with periods of extreme heat and drought in summertime followed by periods of heavy precipitation and floods in the winter. Climate change has led to the appearance of new disease vectors affecting forests and agriculture. Mountains are experiencing reduced snow cover increasing winter, spring flooding and an increased frequency in wildfires. The existing dependence of WB economies on carbon (fossil fuels) may threaten the competitiveness of economic development in the medium and long term. World Bank assessments estimate grave economic losses caused by climate change particularly on agriculture sector and its spillovers to other sectors. Losses will be greater during potential extreme weather events.

3.2.3. Existing Research Expertise within the theme

CEA has experience conducting market and risk analyses in the renewable electricity sector, in addition to experience with performing cost-benefit analyses in relation to the decarbonization or closure of large power plants. **UB-GEF** is currently working on several research projects related to the topic of climate change and its impact on the environment, including impact monitoring, adaptation and mitigation. Faculty experts are also involved in the preparation of local, regional and national policies and spatial plans regarding energy efficiency and the use of energy from renewable sources, including wind and hydro energy. **Co-PLAN** has extensive experience in research on Disaster Risk Reduction (DRR) and climate resilience working under the United Nations Development Programme (UNDP) to conduct vulnerability and capacity assessments, risk assessments, the development of a DRR Strategy and supporting the preparation of a Civil Emergency Plan. Through World Bank financing, Co-PLAN supported Albanian municipalities in the improvement of local DRM databases, and DRM management. Moreover, Co-PLAN is financially and technically supporting other environmental CSO-s in Albania in bringing forth key environmental agendas, including climate resilience, depollution and nature protection, through the GreenAL¹ project.

3.2.4. Future Research and data needs

The ability of WB countries to respond (be resilient) to climate change depends on their vulnerability, including exposure, sensitivity, and adaptation capacity to climate hazards.

¹ <https://greenal.al/grants/>

Future research is needed on:

- ♦ Evaluating the levels of exposure of each WB country to different types of climate hazards (e.g. droughts, floods, wildfires) and their variation as a consequence of climate change.
- ♦ Assessing the sensitivity of WB countries to different types of climate hazards and the potential harm they can cause, including the broader socio-economic impacts and vulnerabilities on local communities.
- ♦ Examine the adaptive capacity of WB countries to climate hazards, assessing existing institutional, economic and social structures and their preparedness to cope with the disturbances caused by climate change.
- ♦ Conduct assessments of the socio-economic and the impact of decarbonisation efforts in response to climate-related risk.
- ♦ Identify best practice climate management policy responses and strategies, including mitigation and adaptation measures.
- ♦ Assess the potential of carbon pricing mechanisms to support disaster management and post-disaster remedy.
- ♦ Investigate the development and implementation of advanced tools and technologies for monitoring climate hazards.
- ♦ Simulate deployment of nature-based solutions to mitigate and adapt to climate change.
- ♦ Evaluate gaps in quantitative and qualitative data on climate hazards.
- ♦ Enhance Climate Resilience and Preparedness through collaborative governance and develop strategies for national and local authorities.
- ♦ Explore place-based collaborative policymaking responses to climate management and disaster risk reduction.

- ♦ Evaluate the effectiveness of policies and regulations in addressing climate change impacts, including climate justice and equity.
- ♦ Investigate the role of participatory governance mechanisms for ensuring that local communities are involved in climate change decision-making processes.
- ♦ Provide policy impact assessments that reassess monitoring frameworks and indicators to ensure achievable and measurable climate targets.
- ♦ Support the systematic assessment of distributional and socioeconomic impacts of drafted climate policies and measures.

3.3. INDUSTRIAL TRANSITIONS

3.3.1. Policy Context

A central goal of the GAWB is the reduction of green-house gas (GHG) emissions which entails phasing out of carbon intensive industries or assisting these industries to shift towards more carbon neutral processes. Coal is still vitally important energy source in the WBs, with a huge portion of electricity (around 70%) produced in coal-fired power plants. The WB also has other carbon intensive industries, including construction, textiles, plastics, and electronics, that use raw materials and products, such as iron, steel, cement, non-metallic minerals, basic chemicals, and aluminium. North Macedonia is heavily dependent on the steel and mining industries, which contribute with a high share of GHG emissions. Sectoral roadmaps are required that outline what kinds of transitions carbon intensive industries will undertake and their potential impacts on regions, employers, and other interconnected businesses. WB countries have to implement the European Union Green Deal (EUGD) as a condition for pre-accession dialogue and resources, so it is important for policymakers to identify which WB regions are the heaviest polluters, particularly those regions whose economies and employment structures are still dependent on traditional carbon intensive industries. The EU Just Transition Fund is dedicated towards facilitating large scale industrial transition processes within the most carbon intensive regions and where high numbers of jobs relate to fossil fuel-dependent industries. The European Bank for Reconstruction and Development (EBRD) is a particularly important actor by supporting the transition to a low-carbon economy through investments in clean energy and climate-related projects via funding, primarily loans. Transformation of energy intensive industries towards climate-neutrality will require integrated actions, including e.g. creation of markets for climate-neutral products, developing new technologies and speeding up their uptake as well as ensuring availability of climate-neutral energy and feedstock at globally competitive prices.

3.3.2. Current Trends, Challenges and Opportunities

Phasing out from coal and other fossil-based industries presents both important opportunities and major socio-economic challenges for the WB. Large scale industrial closures, or shifts towards carbon neutral processes, can have profoundly negative socio-economic consequences for regions, including job losses, emigration, and rapid economic decline.

Transition can also have serious knock-on effects for other smaller industries and businesses dependent on the resources and materials larger industries provide. Policymakers need to be informed about the potential socio-economic impacts of industrial transitions, so they can develop policies that help regions mitigate and adapt to changing circumstances, avoid citizen unrest and growing geographies of discontent. Industrial transitions, however, also present opportunities for WB industries to diversify into innovative areas, which can generate new employment opportunities and in migration to regions. It is important to assess what skills and training is needed to ensure that employee education levels meet the needs of employers within new business areas. It is also vital to consider what spatial planning needs are required to accommodate a potential influx of new residents to a region. Effective transitions require collaboration between policymakers, industries, technical experts, and employees, so the mapping of regional governance structures is an important step in identifying which key actor groups need to work together to develop and implement smooth transition processes.

3.3.3. Existing Expertise

UB-GEF has related expertise scientific research and education activities in preparation of local and regional policies regarding industrial transition (programmes, strategies, etc.).

3.3.4. Future Research Needs

- Conduct environmental impact assessments focused on identifying the highest polluting regions across the WB and assess the implications (cost impacts) of decarbonisation in the respective regions;
- Perform socio-economic impact assessments on the potential (positive and negative) effects of industrial transitions across WB regions; across various economic sectors such as coal, textiles, and manufacturing, including job displacement risks, potential for new green job creation, and effects on local economies covering social equity dimensions.
- Analyse the fiscal impacts of industrial transitions on local (subnational) and national budgets (e.g. revenue losses and gains) and identify potential revenue streams from new industries or sectors that have potential to replace declining ones.

- ♦ Identify transition best practice business models for industries and businesses and map existing industrial clusters to assess their potential for growth and development.
- ♦ Identify best practice examples of JGT technologies and technological processes used to de-carbonise industrial sectors and businesses.
- ♦ Assess the role of spatial planning in delivering JGTs (e.g. spatial implications of industry closures, reorganisation, co-location, communities transformation process of de- and re-industrialisation, impacts in mobility, physical amenities, etc.);
- ♦ Monitor labour market trends and identify changes in skills and competences needed as well as which ones become obsolete.
- ♦ Identify what types of education and training needs are required within transition regions (from basic education, to academic, vocational and life-long learning opportunities)
- ♦ Evaluate the effectiveness of existing policies and regulations in supporting industrial transitions with identification of gaps and recommendations for policy reforms to facilitate industrial transition processes.
- ♦ Explore the role of collaborative cross-sectoral partnerships in delivering transitions.
- ♦ Develop strategies/plans for community engagement and participation in transition planning and decision-making processes.
- ♦ Develop monitoring and evaluation frameworks to track progress towards industrial transition goals.
- ♦ Create a methodology for tracking the spending of national budgets on climate transitions i.e. climate impact of spending with assessment and reporting.

3.4. RENEWABLE ENERGIES

3.4.1 Policy context

Signing the Energy Community Treaty indicates a clear commitment of the WB region towards further development regarding renewable energy sources and establishing an integrated energy market. The positive effects of diversification of energy sources have raised policy commitments within the WB region towards increasing the share of solar and wind energy sources. To ensure integrate with the European Energy Policy Framework, WB countries need to continue implementing the provisions of the Third Energy Package and the Clean Energy Package in the electricity and gas sectors. Many segments of the renewable energy policy are already incorporated into the legal frameworks and various strategic documents of the WB region.

Serbia is focusing on long-term goals, such as lowering the dependency on fuel imports, investing in research and innovation, and strengthening competitiveness of renewable energies. The focus is mainly centred on wind and solar energy in Serbia, but to some extent also on hydro, biofuels, and geothermal energy sources, as well as seizing the potential of biodegradable waste, landfill gas, and wastewater. Instead, North Macedonia and Albania are oriented towards more specific issues such as infrastructure and developing a good environment for investment. More specifically, **Albania** is building new hydropower plants in the Drini river, windfarms in Kryevidh and the largest windfarm in the SEE in Vicol as well as solar power plants in Karavasta, Lezha region etc.. The Government is promoting the installation of solar panels in private buildings via subsidies. Moreover, the construction process for development of 2 eolic parks in the seaside areas of Spitalla and Karavasta are underway, with an installed capacity of 222.6 MGW/h. In **North Macedonia**, interest has been raised in investing in photovoltaic energy production as a result of changes in the law. However, regulatory obstacles and cumbersome administrative procedures slows down development. The government is planning to introduce a tax on emissions, but the focus is centred on creating an enabling environment for renewables.

3.4.2. Current Trends

The potential benefits of increasing the share of renewable energies are widely recognized in the WBs, especially in terms of economic development, energy efficiency and reducing GHG emissions. However, insufficient resources, and outdated and incomplete policy frameworks represent obstacles on the way forward, as well as the threat to jobs of closing fossil-based power plants. The WB energy sector is heavily reliant on fossil fuels, obsolete technologies and ageing production and distribution facilities. In North Macedonia, the electricity production and energy sector is the biggest contributor to CO₂ emissions (~74%), and therefore, the decarbonization of the energy sector is of key priority. However, renewable energy sources already make a significant proportion of the electricity production in the WB region, with a long legacy of hydropower (up to 99% of the total energy production in Albania). Phasing out fossil fuels and switching to renewable energy in time to meet the global objectives is a key challenge. WB countries are struggling with overwhelming regulatory demands and evermore complex administrative burdens. Implementation of current obligations based on the Energy Community Treaty, such as the creation of competitive and integrated energy markets, is progressing slowly while at the same time, paradigm changes taking place in the EU establishing new sets of objectives to be integrated into policy and legal frameworks. Moreover, the transition brings serious socio-economic challenges which the WB region have to address to prevent unwanted consequences such as unemployment, economic disruption, brain/labour-drain and other potential negative impacts (e.g. increase in energy prices). In spite of the many initiatives in place to support investment in infrastructures and create an enabling environment, there are many obstacles on the way for implementation. For instance, distribution systems and complex administrative procedures still represent major obstacles, for solar projects, despite costs of panels installed in private buildings are subsidized. The opportunities are based on a clear recognition of the main benefits and investment possibilities that renewable energy sources may bring and the growing interest and initiatives of the national governments to improve the legal framework and investment climate in this sector.

3.4.3. Existing Expertise within the theme

UB-GEF have prepared spatial and urban planning documents relating to the use of energy from renewable sources with an emphasis on wind and hydro energy. Faculty experts participated in the preparation of local, regional and national policies regarding energy efficiency and use of energy from renewable sources (regulations, strategies, programs, action plans, etc.). **Co-PLAN** works intensively on environmental protection, preservation, and sustainable development in connection with renewable energies, conducting Environmental Assessment Impacts at local, neighbourhood or site level. In collaboration with Polis University, Co-PLAN is active in developing teaching curricula for professional courses on Energy Efficiency. Lastly, the research case developed by Co-PLAN in the framework of the GreenFORCE project explores the costs and benefits of installing PV and thermal panels in large-panel buildings in Tirana, further nurturing the experience in renewables harvesting. **CEA** have experience in preparation of CBA for wind power plants and state aid efficiency in renewable energy (analyses of feed-in- tariffs and feed-in-premiums). CEA participates in REN21 activities as well and volunteering as reviewer.

3.4.4. Future Research and data needs

Increasing and diversifying the share of renewable energy in the gross final energy consumption, as well as designing and implementing economically sustainable support schemes are the main directions of the WB region's endeavours concerning the renewable energy sector. Research can contribute to this in the following areas:

- Evaluate the social, economic, and territorial preconditions needed for effectively increasing renewable energy production and consumption (i.e. energy community, self-organised community of energy prosumers, energy cooperatives).
- Analyse the social and economic benefits of community-based projects, including job creation and local economic development.
- Conduct impact assessments on the social, economic, territorial implications of increasing renewable energy production and consumption.

- ♦ Assess the different types of governance and stakeholder collaboration needed to increase renewable energy production infrastructures.
- ♦ Identify areas for the potential harmonisation of existing legal, policy, and institutional renewable energy frameworks within each country and in cross-border areas.
- ♦ Assess the potential for implementing energy cooperatives/communities in rural areas.
- ♦ Assess the energy policy framework's effectiveness in addressing energy poverty in WB.
- ♦ Integrate renewable energies knowledge and skills into WB countries' educational systems, adjusted to specific groups i.e. educational levels and professions.
- ♦ Examine the role of targeted communication, community engagement, and public policy in fostering a broader understanding and support of renewable energy solutions.
- ♦ Identify and examine relevant technological models for the generation, transmission, and distribution of renewable energies.
- ♦ Assess different investment frameworks, planning, financing, standards, and procedures relating to renewable energies.
- ♦ Explore capacity-building needs at different governmental (incl. local) levels to enhance their ability to develop, finance, and implement renewable energy projects, and identify skills gaps and design training programs.
- ♦ Identify opportunities for public-private partnerships and other innovative financing mechanisms (e.g. green bonds, crowdfunding, cooperative financing, tax incentives)
- ♦ Evaluate the effectiveness of existing policies and regulations supporting renewable energy development (national and cross-national borders).

3.5. ENERGY EFFICIENCY

3.5.1. Policy context

Through membership of the Energy Community for South-East Europe, WB countries are committed to adopting EU rules, norms and standards, via the implementation of the directives on energy efficiency, energy performance of buildings and legislation on energy labelling. All WB countries have started the process of transposing directives with varying rates of success and progress. **Albania** made progress with the implementation of the Energy Performance of Buildings Directive, including energy audits and issuing of building energy performance certificates. **BiH** is well underway in amending the Energy Efficiency Directive according to the EU standard. Kosovo is still refining the bylaws for the implementation of the Energy Efficiency Law; and is drafting a plan to boost nearly zero- energy buildings, accompanied by a monitoring and verification platform (MVP) for energy savings. **Montenegro** has progressed well in terms of establishing a system for monitoring and reporting on implementation of the energy efficiency obligation scheme, as well as assessing of high-efficiency cogeneration and efficient district heating and cooling systems. In **North Macedonia**, great efforts have been mobilized in establishing an Energy Efficiency Fund and the Energy Efficiency Law, as well as finalizing all secondary legislation for EE. Finally, Serbia is underway in adopting the remaining by- laws for implementation of the Law on Energy Efficiency and Rational Use of Energy, with an emphasis on the regulations for energy labelling and application of consumption- based metering and billing. The second priority remains the adoption of the updated regulation for implementation of the Energy Performance of Building Directive. The Regional Energy Efficiency Programme (REEP) for the Western Balkans, as well as other donors (GIZ, World Bank Group, KFW, IPA programmes etc) supports policy dialogue, offer grants for energy efficiency and renewable projects, and finances promoting renewable energy industries and supporting energy efficiency transitions in other industries and businesses.

3.5.2. Current trends

Energy intensity of the six WB countries is around three times higher than the EU average. On the demand-side, low energy efficiency in buildings and heating contributes to high levels of GHG emissions and pollution in the WB. This is often the result of aged, obsolete energy infrastructure and poorly maintained and/or outdated energy-using

capital stock, which wastes large amounts of energy due to high distribution network losses, the use of electrical heaters for space heating, and a lack of household insulation. Cross-border energy trade is limited. Despite commitments to facilitate energy trade and improve interconnections, the market remains highly fragmented, and the exported energy from WB to Europe carries a heavy carbon pollution. Data on energy consumption at urban or household level is nearly inexistent. Some countries collect data through census, but it is not recurrently updated. The WBs also need to strengthen capacities in the design of energy efficiency policies, particularly amongst staff in ministries responsible for energy/ energy efficiency agencies. The GAWB includes recommendations for widespread renovation of buildings and adaptation of **Building Renovation Strategies**, which presents an opportunity for the improvement of socio-economic conditions and the built environment in settlements deteriorated in the post-communist period. The **building sector** has a high potential for energy cost savings. Different financial instruments (guarantee facilities, energy performance contracts, on-tax and on-bill financing) could be used to achieve higher renovation rates of both private and public buildings. Extending the “EU renovation wave” to the WB could stimulate investment and create jobs, with **digital upgrades** improving buildings energy efficiency by 15-25%.

3.5.3. Existing Research Expertise within the theme

Co-PLAN has expertise in assessing energy performance in buildings and examining the potential (cost and benefit) of Net Zero Emission (NZE) neighbourhoods. Co-PLAN has implemented several projects addressing energy efficiency in the built environment, including the development of the ‘Energy Efficiency Report on the Status of transposition of EE’, which addressed the progress and monitoring of the implementation of the EU energy efficiency directive.

Additionally, Co-PLAN and POLIS University were part of the SEERMAP project (Southeast European Electricity Roadmap), which modelled the impact of the transition of the electricity sector to low carbon and energy security by 2050 in line with EU 2050 Roadmap; and developed of a Long-Term Electricity Roadmap for the SEE region. UB- GEF is often involved in the preparation of spatial and urban plans and other strategic documents as well as preparation of local, regional and national policies (regulations, strategies, programs, action plans, etc.) concerning energy efficiency.

3.5.4. Future Research and data needs

Research can significantly support Energy Efficiency initiatives, particularly in the following areas:

- ♦ Examine different multi-level governance structures and stakeholder collaboration models required to implement the outstanding provisions of the Third Energy Package and Clean Energy Package.
- ♦ Support data gathering and methodologies for establishing functional trading platforms and integrated energy markets.
- ♦ Conduct background research to support the development of national and local building renovation strategies, focusing on typologies of energy efficiency classifications (e.g., energy classes) for buildings and include feasibility studies on integrating energy-efficient technologies in the building and construction sector, with a particular emphasis on public-purpose buildings and social housing policies
- ♦ Examine the potentials and challenges of implementing eco-design and eco-labelling.
- ♦ Assess the costs and benefits of applying community-based co-financing schemes and Net Zero buildings and communities in urban areas and public buildings.
- ♦ Promote the availability and cross-sector sharing of data on energy efficiency through innovation systems.
- ♦ Explore methodologies for collecting, verifying, and maintaining emissions data, as well as the institutional frameworks needed to ensure data transparency, accountability, and compliance with national and international climate goals.
- ♦ Develop appropriate monitoring, reporting and verification mechanisms for energy efficiency.
- ♦ Provide policy impact assessments on the development and implementation of energy efficiency policies, measures and targets.

- ♦ Support the integration of energy issue within existing spatial planning documents and ad hoc plans (at each relevant level)
- ♦ Contribute to gathering new data on energy consumption and loss at city, neighbourhood and building level.

3.6. SMART AND SUSTAINABLE TRANSPORT

3.6.1. Policy context

Smart mobility integrates digital technologies, automation, and real-time data analytics into transport systems to increase efficiency, sustainability, and safety in passenger and freight mobility. This approach is central to the Sustainable and Smart Mobility Strategy for the WB, developed in 2021 by the Transport Community Permanent Secretariat (TCPS). The strategy aligns with EU decarbonisation and digitalisation goals, providing a tailored roadmap for the WB region to transform its transport sector. It outlines short- and medium-term actions for making transport greener, more efficient, and healthier for citizens, focusing on reducing reliance on fossil fuels and increasing modal shifts toward rail and public transport. The Regional Rail Strategy aims to position rail as a credible alternative to road transport, emphasizing modernization and electrification.

At the Western Balkan Rail Summit (2021), transport ministers committed to these goals through a joint declaration. The development of railways heavily relies on EU financial instruments, such as the Connecting Europe Facility and the Instrument for Pre- Accession Assistance, which help ensure alignment with broader European transport and environmental policies. Various municipalities in the WB are already drafting and implementing Smart Urban Mobility Plans (SUMPs), a key element in achieving sustainable transport. In Serbia, these plans align with the EU Transport Policy (Chapter 14 of Serbia's EU accession negotiations) and the national strategy for sustainable urban development. However, in other WB countries like Albania, the process is less structured, with no national-level regulatory framework for sustainable transport. North Macedonia's 10-year National Transport Strategy (in effect since 2018) aims to integrate its transport modes with European TEN-T plans.

3.6.2. Current trends

The poor condition of road, rail, and inland waterway connections in the WB poses significant challenges to achieving Smart and Sustainable Transport, limiting efforts to reduce fossil fuel dependency and hindering economic growth. The transport sector, combined with energy, is responsible for two-thirds of GHG emissions in the region, with NOx emissions also presenting a serious concern. The GAWB offers an opportunity to reevaluate and modernize transport strategies, with rail network revitalization as a top priority. The wide availability of data technologies, such as IoT and real-time analytics, has the potential to transform public transport systems, making them smarter, less polluting, and more user-friendly. For example, turning existing railway infrastructure into light rail systems is being explored in the Tirana-Durres metropolitan area of Albania. Furthermore, promoting multimodal transport solutions, especially through policies that incentivize modal shifts and investment in inland waterways, is increasingly recognized as vital to creating sustainable and efficient transport networks. Electrification and the use of cleaner fuels, combined with policies for increasing fuel efficiency, are crucial in reducing the environmental and health impacts of transport across the WB region. However, challenges vary by country. Serbia has made significant progress in modernizing key international rail corridors over the past decade, while Albania and North Macedonia have yet to initiate major projects. Financial and administrative difficulties, such as insufficient funds, governance issues, and corruption, continue to hinder the implementation of strategic goals in both Serbia and North Macedonia, complicating efforts to align with the Sustainable and Smart Mobility Strategy for the WB.

3.6.3. Existing Research Expertise within the theme

UB-GEF have been involved in the preparation of spatial and urban planning documents concerning sustainable transport at the national and local levels. **Co-PLAN** has substantial experience with integrated urban and territorial planning processes, from drafting general local plans, to supporting urban mobility research and design.

Co-PLAN has supported 10 municipalities in Albania in drafting their general territorial plans, which include in-depth territorial dataset on infrastructure network, traffic solutions and public transport/ mobility proposals. It has supported 5 municipalities increasing internal capacities for developing sustainable mobility plans.

Co-PLAN experts participated in designing the SUMP of Tirana municipality. It has gained knowledge on traffic safety via the Horizon2020 Project 'Trasacu - Traffic Safety Cultures and the Safe Systems Approach', and has developed multi-layered mobility and infrastructure analyses using GIS tools and space syntax principles.

3.6.4. Future Research and data needs

To implement the Sustainable and Smart Mobility Strategy, WB countries need to transform their transport sectors in many ways (modernisation of infrastructure, multimodality, alternative fuels, deployment of various software, artificial intelligence for optimisation of transport activities etc.). Although the importance of climate resilience of transport infrastructure has been recognised, of the WB countries has prepared nor approved targeted transport sector strategies for adaptation to climate change.

To support the implementation of policy goals, future research should contribute to the following areas:

- ♦ Explore differences and similarities in the legal, strategic, and institutional framework for transport policies across the WB countries to help identify areas for regional collaboration in sustainable mobility planning.
- ♦ Develop methodologies for assessing road infrastructure and mobility efficiency based on proximity, accessibility and permeability.
- ♦ Explore practical mechanisms for promoting Smart and Sustainable Transport and provide best practice examples of smart transport processes and technologies.
- ♦ Examine the preparation and implementation of SUMPs, disseminating and communicating best practice SUMP examples across the WB Region.
- ♦ Evaluate current state of multi-modality in WB cities using the MAAS approach.
- ♦ Analyse the nature of cooperation and collaboration between the constituent institutions of the Transport Community (e.g., joint research, support in policy improvements within the Ministerial Council etc.).

- ♦ Research ways of integrating smart transport and mobility knowledge and skills into WB countries' education curricula (e.g., in engineering, legal and organisational profiles).
- ♦ Help promote awareness and education on the benefits of Smart and Sustainable Transport, adjusted to specific groups (urban/rural population, different age contingents, professions, authorities etc.).
- ♦ Evaluate the merits of different investment frameworks, standards, and procedures for facilitating sustainable transport processes.
- ♦ Use GIS-based space syntax analysis to assess potential of 15-minute cities and 20- minute neighbourhoods
- ♦ Employ advanced spatial analysis tools to simulate low-emission zones for high- density cities in WB
- ♦ Develop climate-resilient transport strategies that account for the impacts of extreme weather events (floods, heat waves, changing precipitation patterns), incorporating this into infrastructure planning and risk assessments.
- ♦ Investigate the role of emerging technologies like autonomous vehicles, IoT, and Big Data analytics in reducing emissions and optimizing traffic flow, as well as their integration into the current infrastructure.
- ♦ Conduct research into the development and integration of multimodal transport systems in urban centres to reduce traffic congestion and lower emissions, with a focus on linking rail, road, and water transport more effectively.
- ♦ Explore the infrastructure requirements for alternative fuels such as hydrogen, electric, and biofuels, assessing their feasibility and potential environmental impact across WB countries.
- ♦ Research the accessibility and transparency of transport data for public and private stakeholders, aiming to create open data platforms that support decision-making in sustainable transport development.

- ♦ Investigate the potential for financial incentives and subsidies for sustainable transport practices, such as electric vehicle grants, pollution taxes, and other economic policies that can promote green transport alternatives.
- ♦ Explore how smart and sustainable transport can improve social equity, ensuring access to mobility solutions for marginalized groups, lower-income communities, and rural areas.

3.7. CIRCULAR ECONOMY: RECYCLING, WASTE AND PLASTICS

3.7.1. Policy context

Within the Sofia Declaration on the GAWB, WB countries committed to transitioning to a circular economy, among other ways, by minimising waste generation. Actions consist of improving waste management infrastructure and developing circular economy strategies to prevent plastic pollution and improve primary production of raw materials.

Furthermore, transposing the EU **Waste Management Framework** is a precondition to WB countries as candidates for EU accession. The Waste Framework Directive aims to reduce waste by 55 %, 60% and 65% by weight by 2025, 2030 and 2035 respectively.

Another objective is to minimize the overall amount of waste landfilled while introducing waste recovery practices across WB countries in line with the UN Sustainable Development Goal (SDG-12) that aims to cut food waste by 50% per capita by 2030.

However, the implementation rate of the waste management framework (e.g., extended producers' responsibility, polluters pay principle, etc.) and targets are challenged by the lack of human and financial resources as well as due to insufficient cross-institutional cooperation (EEA European Environmental Agency, 2022). Enforcement is difficult in cases where the objectives set in strategies are not regulated in the legislation, as in the case of Albania for instance, whereas the national strategy envisaged higher rates waste being treated through incineration whilst treatment costs appear unaffordable for municipalities. In Serbia, the goals set by the former Waste Management Strategy (2010- 2019) have not been fully achieved due to the inadequate implementation of the existing regulations. In the meantime, the EU set new, more comprehensive, goals in relation to a transition to the circular economy, which have been transposed to the Waste Management Program in Serbia for 2022 – 2031.

3.7.2 Current trends

Although waste collection services reach 81% of WB inhabitants (86.4% in Serbia), up to 92% of collected waste is disposed of in non-sanitary landfills. These landfills frequently fail to meet basic standards such as sanitary buffer zones and emission control.

Incineration is also prevalent, bypassing the circular economy principles of reduce, reuse, recycle, and recover. Informal recycling by marginalized groups, such as the Roma, continues to dominate, leading to significant environmental harm and the loss of valuable materials (Balkan Forum, 2021). In addition, health and other repercussions of pollution affect vulnerable socio-economic groups disproportionately. Significant progress was made on data collection and transparency during the last 5 years, however, the quality and credibility of data is questionable. One exception is Serbia, which has a more consolidated and accurate data management provided by the Statistical Office of the Republic of Serbia, government institutions and agencies, but also supported by various NGOs and environmental associations. Serbia, Bosnia and Herzegovina, and North Macedonia have partially implemented an Extended Producer Responsibility (EPR) system for packaging, which transfers the costs and responsibility for managing the resources upstream to the producer. Bosnia and Herzegovina and North Macedonia EPR systems, however, apply only for electrical and electronic waste streams. Kosovo and Montenegro plan to implement EPR system by 2024 while Albania is still drafting the relevant legislation. North Macedonia has a law on packaging where the waste plastic is regulated. All in all, countries struggle in setting up effective and appropriate waste management systems with standardized service delivery and quality across the WB territory.

3.7.3. Existing Research Expertise within the theme

Co-PLAN has implemented several projects and supported more than 1/3 of Albanian municipalities with drafting their Local Integrated Waste Management Plans, developing mechanisms for monitoring and reporting, setting up performance indicators, extending service coverage and improving distribution of collection points and routes. Together with partners from Serbia and North Macedonia, Co-PLAN implemented the project Waste to Energy for Cement Industry in Western Balkans (2019-2022) to identify the potential of using municipal and industrial waste to produce alternative fuel.

UB-GEF is often involved in the preparation of waste management segments within spatial and urban plans and other strategic document on all levels. In addition to participating in the creation of Local and Regional Waste Management Plans (Local Waste Management Plan of the City of Belgrade 2010-2020 and 2021-2030), there is considerable expertise in the preparation of national policies regarding recycling and waste management (laws, regulations, strategies, etc.).

3.7.4. Future Research and data needs

There is significant potential for research on the following waste management fronts:

- ♦ Provide information and data to support the development of national, regional and municipal circular economy policies and strategies.
- ♦ Explore the potential of digital technologies, such as blockchain, artificial intelligence (AI), and the Internet of Things (IoT), for promoting transparency, tracking materials in the supply chain, and fostering collaboration between key circular economy stakeholders.
- ♦ Identify multi-level governance circular economy models that promote cooperation within regions and across borders.
- ♦ Investigate circular economy opportunities within high-impact economic sectors, such as construction, tourism, and food services, focusing on strategies to minimize resource use, waste generation, and emissions across each sector's value chain.
- ♦ Examine sector-specific barriers and enablers for CE adoption in construction, tourism, and food services, including potential for material reuse, waste reduction practices, and resource-efficient technologies, with a view to creating industry-tailored CE policies and support mechanisms.
- ♦ Explore and evaluate different service fees and tariff models that promote a just and equitable distribution of waste treatment tariff across the communities within one region or city.

- ♦ Identify best practice circular economy practices and solutions that are most effective in reducing the use of virgin resources, such as water and minerals.
- ♦ Investigate the role of industrial symbiosis systems in promoting resource efficiency.
- ♦ Assess the level of adaptation and implementation capacities (human, technical, financial) regarding waste management targets, with a specific focus on SMEs and startups.
- ♦ Develop monitoring and performance indicators for reporting on and assessing circular economy policies and initiatives, integrating digital technologies for better data accuracy and transparency.
- ♦ Evaluate the obstacles and opportunities for implementing circular business models, particularly in SMEs, and the socio-economic impacts of circular economy strategies on marginalized communities.
- ♦ Investigate the resilience of waste management infrastructure and strategies in adapting to climate change, with a focus on the ability to maintain effective operations during extreme weather events or in situations of increased demand, such as those resulting from temporary population displacements.
- ♦ Explore green entrepreneurship models that can support business community in urban and rural areas to apply sustainable investments, circular design, and to pledge under the European Climate Pact

3.8. WATER MANAGEMENT AND DEPOLLUTION

3.8.1. Policy context

WB countries are in the process of adopting and implementing the EU water-related legislation (i.e. Water Framework Directive, Urban Wastewater Treatment Directive, Drinking Water Directive) that contain provisions on water monitoring and reporting, planning, coordination across relevant sectors, and impact assessment capacity.

However, significant work (e.g. measures, tools, investment) is needed to ensure implementation to achieve the goal of good water status for all aquatic ecosystems. The Albanian government has prioritised water management taking several steps towards harmonising the national sectoral law with the EU Water Directive, but implementation is slow and lacks concrete instruments to put strategies into action. Serbia and North Macedonia have not aligned to EU legislation, and are instead focusing on practical actions, such as rational and sustainable water use, draught and floodings, and conservation of water ecosystems. Significant efforts are being made in North Macedonia to improve the capacity of existing wastewater plants, as well as to construct new ones, with the aim of reducing the discharge of untreated or inadequately treated wastewater into rivers, lakes, and the sea. Transboundary water cooperation is often politically sensitive, especially where water bodies show receding levels due to climate change and over-consumption or deterioration of water quality downstream. Additionally, the implementation of Integrated Water Resources Management principles is becoming increasingly important in the region, as it promotes the coordinated development and management of water, land, and related resources to maximize economic and social welfare without compromising the sustainability of vital ecosystems.

3.8.2. Current trends

The WB are home to some of the last pristine rivers in Europe. Yet, they are being threatened by the steep increase in hydropower capacity as much as fourfold between 2015 and 2017. Additional pressures derive from the rapid development of small hydropower plants (SHPPs). Furthermore, water quality is threatened by pressures from industry, agriculture, public water supply and untreated wastewater. A high percentage of wastewater is currently discharged directly into water courses. Some 30 to 50% of the population living in rural areas uses only basic sanitary facilities and wastewater collection. In urban areas, wastewater collected via sewer networks is mostly untreated and discharged back into water courses. Despite the relative abundance of water in the WBs, the region finds itself unprepared for climate change, at risk of droughts and floods, as well as experiencing drinking water shortages in some areas, most notably due to the poor state and outdated water distribution utility networks (with losses up to 50%) and dysfunctional purification systems (chemical and microbiological treatment). The widespread droughts in recent years have underlined the importance of securing water availability and resilience. The region is also struggling with increasing water demand due to citizen's overconsumption of water, urbanisation, and economic development, putting additional stress on water resources. This is also challenged by the inefficient irrigation practices in agriculture, which is a significant water consumer in the region. Moreover, there's a growing recognition of the need to balance human water needs with environmental flow requirements to maintain healthy ecosystems. The main task ahead is to improve the implementation of legislation, which requires investments in infrastructure and improving governance structures for sustainable water management (monitoring and reporting, planning, coordination across relevant sectors, impact assessment capacity, etc.). Priority could initially go to investing in monitoring infrastructure based on a mapping of the needs at river basin level, followed by the development and implementation of appropriate measures to reduce pressures on water bodies.

3.8.3. Existing Research Expertise within the theme

Co-PLAN has been involved in studies and the development of plans regarding water supply and sustainable utilization of natural springs, waste water collection and treatment, as well as rain water drainage for urban and rural areas and its re-use.

UB-GEF has worked in the preparation of spatial planning documents from national to local level concerning various water quality-related issues (accumulations, water supply systems, wastewater treatments). **CEA** has participated in research, scientific and policy activities within the Ministry of Environment and physical planning hydrometeorological services, and public water enterprises. This includes the preparation of in depth analysis of policy documents from national to local level on water quality-related issues, water treatment technologies, and water resource management, policy and regulation, and direct stakeholder engagement.

3.8.4. Future Research and data needs

Future research can contribute to the following areas:

- ♦ Assess the potential for developing transboundary water cooperation mechanisms: exploring specific models of cooperation, such as joint monitoring, data sharing agreements, and shared management committees, to address political sensitivities and enhance collaborative water management.
- ♦ Assess the current state of water management and depollution equipment and tools (infrastructural capacities)
- ♦ Develop indicators for monitoring and reporting on water policies, strategies, and actions: evaluating the existing criteria and creating additional standardized metrics for assessing water quality, wastewater treatment efficiency, and access to clean water, with a focus on consistency across different regions.
- ♦ Provide comprehensive assessments of socio-economic, environmental, and health impacts of wastewater from industry and agriculture: conducting epidemiological studies, environmental impact assessments, and economic analyses to quantify the effects of wastewater on health and the environment.
- ♦ Research best practices in water supply systems and wastewater treatment facilities: identifying and documenting successful models and technologies from other regions and countries to improve water management practices in the WB.

- ♦ Identify and evaluate mechanisms for improving access to quality water and water recycling/reuse: exploring innovative approaches and technologies for enhancing water access, efficiency, and recycling, such as decentralized water treatment and advanced filtration systems.
- ♦ Assess multi-level governance and stakeholder collaboration and participation mechanisms in water depollution policy processes: evaluating how different levels of government and stakeholders interact and collaborate, identifying best practices for effective participation and coordination.
- ♦ Identifying and evaluating water depollution challenges and opportunities across the WBs: conducting a comprehensive analysis of the specific challenges and opportunities related to water pollution in each WB country, including infrastructure needs and policy gaps.
- ♦ Providing data and information to support the development of water depollution policies and strategies at national, regional, and local levels: ensuring that research findings and data are used effectively to inform and shape water management policies and strategies across different levels of governance.
- ♦ Investigate the potential for implementing water-sensitive urban design principles in WB cities.
- ♦ Assess the impacts of climate change on water resources and develop adaptation strategies.
- ♦ Research the potential for integrating traditional and indigenous water management practices with modern approaches.
- ♦ Develop decision support tools for integrated water management at the river basin scale.
- ♦ Investigate the role of ecosystem services in sustainable water management and their economic valuation.

3.9. AIR DEPOLLUTION

3.9.1. Policy context

WB countries monitor air quality in accordance with EU regulations, and reports to the European Environment Information and Observation Network (EIONET), but new air quality management, monitoring, and reporting systems are needed to be able to comply with the Ambient Air Quality Directives. In addition, legal and technical instruments are needed to support local authorities with air quality monitoring and enforcement. The Convention on Long-range Transboundary Air Pollution is pending ratification from some of the WB countries. This will be central to setting a legal framework to begin monitoring and reporting emissions, which in turn is necessary for designing effective mitigation measures. The Energy Community rules introduced in 2018 have triggered a process of emission reduction actions in large combustion plants across the WBs. This represents a first step towards the implementation of the Industrial Emission Directive (IED) minimum requirements. However, significant efforts are needed to ensure that these plants reach EU standards and implement these requirements across all other industrial facilities and businesses. Additional measures and standards are also pending for vehicle emissions and small-scale industry and sectors not covered by the IED.

North Macedonia adopted the Law on the quality of the Ambiental air in 2004 and a National plan for air protection in 2019. The air quality is monitored via fixed monitoring stations and one mobile located in the capital city of Skopje. In **Albania**, the National plan for quality management of the air² is a planning tool by which the Albanian government intends to implement the EU Ambient Air Quality Directive on the assessment and management of ambient air quality, as well as its related subsidiary directives. The plan determines the policy guidelines to achieve the improvement of air quality in areas where the air quality limits, set by law, have been exceeded, as well as in areas where there is a high risk of exceeding these limits.

In addition, it seeks to maintain the level of air quality in the remaining part of the territory. Per this plan, the National Agency of Environment has the right to monitor and identify the polluters to prevent air pollution in the Albanian territory.

² <https://turizmi.gov.al/wp-content/uploads/2021/10/vkm-412-2019-menaxhimi-i-ajrit-1.pdf>

Despite the legislation is harmonized with the EU directives it remains poorly implemented. In 2020, **Serbia** adopted the National Plan for the reduction of emissions of the main pollutants originating from old large combustion plants. Additionally, Serbia has for the first time prepared an Air Protection Program with an Action Plan for its implementation. It defines air quality goals and measures and provides the basis for further development and adoption of by-laws for the implementation of European legislation. At the local level, several communities and cities have prepared or started preparing local air protection plans.

3.9.2. Current trends

Air pollution represents a serious environmental risk in WB countries with direct socio- economic consequences, i.e., ca. 4,000 premature deaths and € 11 billion lost in in health and productivity costs annually. Pollution levels are amongst the highest in Europe and up to five times above the limit values (daily PM₁₀ concentrations) set in EU guidelines. For instance, the North Macedonian cities of Skopje, Bitola, and Tetovo, are among the 10 most polluted in Europe. An estimated of 2.5% of the North Macedonian GDP is associated with pollution costs. The main causes are the coalfired power plants, the burning of coal for domestic heating and cooking, and old vehicles. Indeed, only a mere 12% of buildings are connected with district heating resulting in over 60% of the population using solid fuels (coal and firewood) for domestic heating. In addition, the mountainous topography reduces air circulation, leading to high concentration of pollutants in several WB regions and cities. Data reliability remains a huge problem with inconsistent data reporting, mainly due to poor maintenance of stations, lack of certified calibration laboratories and the absence of air quality modelling.

3.9.3. Existing Research Expertise within the theme

Co-PLAN has experience with measuring and addressing air quality through the Green Lungs project, where alternative methodologies were developed to measure air quality. This was the first time CSOs took it upon themselves to monitor air quality, as well as noise pollution and urban greenery in Albania. The monitoring was conducted in spread out neighbourhoods in 5 municipalities and during the duration of the project, citizens could track online and in real time the air quality in the respective areas. All these allowed a qualitative and quantitative analysis of air quality, noise pollution and urban greenery, which made the methodologies used unique in a national context.

3.9.4. Future Research and data needs

Research can contribute to air pollution policy development and implementation in the following ways:

- Help identify the main sources of air pollution in the WBs
- Provide assessments on the environmental and health impacts of air pollution.
- Develop indicators for monitoring and reporting on air pollution.
- Examine best practice air pollution mitigation policies, strategies and measures.
- Explore multi-level governance transboundary air pollution collaboration initiatives involving municipal, regional, national, and international actors.
- Assess the potential for cross-sector collaborations in the development and implementation of air pollution policies, including health, energy, transport, industry, and agriculture sectors.
- Find new data sources for modelling the impact of limit and target values for ambient air quality.
- Identify the technical barriers for air pollution monitoring and maintenance, focusing on the regulatory, financial, and other systemic barriers to monitoring.
- Examine the socio-economic impacts of pollutions, such as premature deaths, economic productivity, regional attractiveness, and realise cost-benefit analyses of investing in improved systems.

3.10. DEVELOPING RURAL AREAS

3.10.1. Policy context

Rural development policy in some WB countries is outdated or tackles only certain dimensions of rural economy and life. In Albania, the “100 Villages Development Program” has been implemented since 2019 to rehabilitate the infrastructure and public services in rural areas. The government in Albania also supports farmers with the implementation of IPARD funding. Serbia has laws on “Agriculture and Rural Development”, and “Incentives in Agriculture and rural Development” as well as the “Strategy of agriculture and rural development of the Republic of Serbia for the period 2014-2024”, which prescribe measures for rural development. In North Macedonia, the Ministry of Agriculture has the responsibility to develop the National strategy for agriculture and rural development (2021-2027). At the same time, municipalities are incentivised to develop their own rural development strategies as this is a conditionality for requesting funding from the Pre-Accession Assistance for Rural Development (IPARD), a grants scheme aimed at increasing entrepreneurship and strengthening the agriculture sector. The national rural development programme in Serbia defines measures for issues connected to labour market, economic development and entrepreneurship, demography, infrastructure, among other themes. When it comes to agriculture policy, most WB countries apply some instruments similar to the EU Common Agricultural Policy (CAP). However, despite of generous government subsidies for agriculture production, incentives are not properly supported with monitoring and evaluation mechanisms, setting targets and measures. Therefore, subsidies have failed to bolster the agriculture sector and increase food security. Huge efforts are needed to reform and modernise existing rural policies in line with in the GAWB. Beyond regulation and policy, implementation would be enabled by better use of existing financial instruments (e.g., IPARD) and EU support, which currently produce little effect in many regions. Although the situation is more favourable in more developed regions e.g., North Serbia (Belgrade region and the region of the Autonomous Province of Vojvodina), other areas have low absorption capacity. The EU Rural Development Policy, including the Rural Vision and Action Plan, has a key role to play in supporting the transition to the green economy – one that sees economic growth in harmony with social and environmental sustainability.

3.10.2. Current trends

Rural areas across the WBs face numerous challenges: i) economic (low productivity levels, unemployment and limited labour opportunities), ii) ecological (fragmentation and disruption of natural habitats, high level of chemical inputs used in agriculture), iii) demographic (population decline, intensive emigration of young population etc.), iv) technological (use of rudimentary tools), and iv) institutional (lack of capacity and funding). Rural areas in WB countries are struggle with an ageing and impoverished, and a general backwardness compared to the cities. Agriculture remains a stronghold in the rural economies and even a significant economic sector at national level. Agriculture represents a 17.68%³ of the national GDP in Albania, 7.2% in North Macedonia, and 6.3% in Serbia. With some few exceptions, however, rural areas offer little economic and labour opportunities outside the agriculture sector, leading to depopulation and drain of talented labour away from rural municipalities. Policies remain inadequate in supporting the diversification of the rural economies. Entrepreneurs struggle with underdeveloped infrastructure, and accessing to skilled labour, markets, and finance. Without any incentives for education and training, jobs, or support to start new businesses, young people are generally abandoning rural areas. The challenge ahead remains to move ahead from focusing primarily on agriculture to provide strategic and holistic pathways for rural development establishing links between infrastructure, public services, entrepreneurship, skills, labour, demography and overall quality of leaving. This requires seizing the potential of the GT to develop place-based rural policy measures. For instance, via EU Rural Development Programmes (RDPs), stronger cooperation, innovation, rural entrepreneurship, and knowledge transfer across different sectors. Currently, there is no strategy in WB countries addressing skills needs and labour market. Involving of rural communities and actors at all levels will be pivotal in developing suitable measures to support employment, growth, social inclusion, and local development in rural areas.

³ <https://www.statista.com/statistics/444090/albania-gdp-distribution-across-economic-sectors/>

3.10.3. Existing Research Expertise within the theme

Co-PLAN has vast consulting and some research experience in rural development, supported local governments, NGOs, and business communities in addressing rural development issues through the preparation of territorial development strategies, regulatory plans, and regulatory frameworks. **UB-GEF** has considerable multidisciplinary academic and scientific experience in various topics of rural development (spatial analysis and rural development planning, demographic research, rural tourism, sectoral plans etc.). **CEA** has consulting and research experience in rural development working in the preparation of the law on balanced regional development, and secondary legislation for implementation of the law on balanced regional development. They have also been involved in the development of Local Economic Development Strategies, Rural development strategies, and the Strategy for balanced regional development; in addition to performing data mining and statistical analyses for balanced regions.

3.10.4. Future Research and data needs

Aligning future research with IPARD measures and EU agriculture and rural development policy is crucial to ensure that policies are grounded in regional and local evidence and data.

- ♦ Examine measures for improving the quality of life for rural communities and improving access to basic services.
- ♦ Assess the challenges and opportunities of green transitions for rural areas to help policymakers design more effective measures, tailored to specific rural regional needs.
- ♦ Research and training can support capacity-building efforts regarding EU rural policies and funding by facilitating knowledge transfer to rural communities, non-institutional stakeholders (businesses, entrepreneurs), and policymakers to improve their ability to implement policies and programs.
- ♦ Facilitate international cooperation and knowledge-sharing between the WB and other EU countries with similar rural development challenges to identify best practices, lessons learned, and opportunities for collaboration.

- ♦ Examine the challenges faced by rural entrepreneurs to access to finance, and market opportunities to help design policies that promote business development in rural areas.
- ♦ Identify and map economic diversification opportunities in rural areas to reduce the dependence on a single industry or sector.
- ♦ Assess the impact of JGT on rural communities, including analysis of the costs and benefits of the transition, and its impact on jobs and livelihoods, and the potential for social and economic justice.
- ♦ Identify barriers to business development and economic diversification such as the institutional and policy framework, access to support systems, technology, investment, infrastructure, and social and cultural factors.
- ♦ Develop indicators for measuring rural development progress in relation to business development, economic diversification, and social justice.

3.11. ECOSYSTEM SERVICES AND (URBAN) BIODIVERSITY PROTECTION

3.11.1. Policy Context

The Western Balkan region faces significant challenges in protecting its rich biodiversity and ecosystem services, particularly in urban areas experiencing rapid development.

While the region is home to some of Europe's most diverse ecosystems, urbanization, pollution, and climate change pose increasing threats. The EU Biodiversity Strategy for 2030 and the European Green Deal provide important policy frameworks that Western Balkan economies are working to align with as part of their EU accession processes, through the Green Agenda.

Some policy priorities include expanding and effectively managing protected area networks, including in urban and peri-urban zones; mainstreaming biodiversity and ecosystem services considerations into urban planning and development; restoring degraded ecosystems, with a focus on nature-based solutions in cities; improving biodiversity monitoring and data management systems; and strengthening regional cooperation on transboundary ecosystems and ecological corridors.

3.11.2. Current Trends

The protection of ecosystem services and biodiversity in the Western Balkans is evolving, driven largely by EU directives and the GWAB. According to the Implementation Report for GWAB for 2022, Urban biodiversity is increasingly seen as crucial for climate resilience, with cities exploring nature-based solutions to tackle issues such as air pollution, heatwaves, and flooding. However, there are challenges in integrating biodiversity protection into broader urban development strategies and ensuring adequate funding and institutional support.

The use of NbS in the Western Balkans, as noted in scoping studies by the International Union for Conservation of Nature (IUCN), is gaining traction, but is still underutilized. The potentials to use NbS span in different sectors, such as agriculture, forestry and

water resources, all closely related to climate adaptation. In Serbia and BiH there are some initiatives to explore NbS for ecosystem and community resilience, anyhow the lack of up-to-date data is still a challenge. NbS-s are gaining recognition but are not yet systematically integrated into urban planning and climate adaptation strategies.

Protected areas coverage is increasing across the region, but management effectiveness remains a challenge. In 2022, protected area coverage ranged from 4% in Bosnia and Herzegovina to 21.3% in Albania. Urban biodiversity is under increasing pressure from development, with many cities lacking comprehensive green infrastructure strategies.

This makes large-scale biodiversity conservation a challenge for the region.

Ecosystem services valuation and integration into decision-making processes is still in early stages across the region. Regional cooperation on biodiversity conservation is improving, particularly through initiatives like the Biodiversity Task Force for South-East Europe (BDTF-SEE). However, there are significant data gaps and inconsistent monitoring systems. The EU Biodiversity Strategy for 2030 is under transposition in most WB countries at national and local level, and might become essential to ensuring the protection of vital ecosystems undergoing risk from urban development.

3.11.3. Existing Expertise

UB-GEF has expertise in geographic (spatial) aspects of designing green areas and urban greening in context of territorial and urban planning. The Faculty of Geography fosters collaborative interactions with other faculties within the University, including the Faculty of Forestry.

Co-PLAN has been involved in several initiatives related to ecosystem services and urban biodiversity protection. Co-PLAN led a citizen science initiative to assess ecosystem services in the Kune-Vain Lagoon wetland ecosystem, creating a knowledge platform on ecosystem services value, empowering management capacities and promoting knowledge transfer to the local community. As part of the Green-AL project, Co-PLAN supported environmental civil society organizations in addressing conservation issues in protected areas. Moreover, it has conducted research on the economic valuation of ecosystem services, including carbon sequestration, flood protection, recreational and cultural services, micro-climate effect for both, urban greenery, as well as for protected areas. It has experience in assessing climate change impacts on urban ecosystems and developing adaptation strategies using nature-based solutions.

This expertise has been applied in various projects and shared in regional forums on climate change and biodiversity. Through its involvement in the River Cities Network, Co-PLAN has gained experience in addressing the complex challenges of urban river and waterway restoration, focusing on the intersection of biodiversity conservation and social justice.

CEA have worked prominently in relation to governance, policymaking, and stakeholder engagement under several JGT themes, financing for green infrastructures.

3.11.4. Future Research Needs

- Conduct a comprehensive mapping and assessment of ecosystem services across the Western Balkan region, with a focus on urban and peri-urban areas.
- Develop standardized methodologies for urban biodiversity monitoring and reporting across the region.
- Provide economic valuation studies of urban ecosystem services to support policymaking and investment in green infrastructure.
- Research innovative financing mechanisms for urban biodiversity conservation and ecosystem restoration.
- Assess the effectiveness of different urban planning approaches in preserving biodiversity and enhancing ecosystem services.
- Study the role of urban agriculture in supporting biodiversity and providing ecosystem services in Western Balkan cities.
- Evaluate the potential for creating ecological corridors connecting urban green spaces with surrounding natural areas.
- Research public perceptions and engagement with urban biodiversity, including citizen science initiatives.
- Analyse the impacts of climate change on urban ecosystems and the effectiveness of nature-based adaptation measures.

- Perform comparative studies on policy and governance frameworks for urban biodiversity protection across the Western Balkan economies, identifying best practices and opportunities for regional harmonization.

3.12. JUST GREEN TRANSITION GOVERNANCE AND PLANNING

3.12.1. Policy Context

The development and implementation of JGTs requires a holistic multi-actor policymaking approach built on collaborative multi-level governance and planning processes. Proactive institutional and stakeholder co-operation based on open and inclusive dialogue is imperative in responding to the socio-economic challenges and opportunities presented by JGTs. The GAWB highlights the importance of collaborative governance and planning for JGTs in relation to four main elements:

- 1) JGT policies need to be integrated and coherent across multiple levels of governance (transnational, national, regional and local levels);
- 2) Sub-national level institutions and actors should be empowered in policymaking processes to ensure that JGT policies are carefully tailored to meet regional specificities and the needs of citizens in local communities
- 3) Promote platforms and tools for building JGT connections, creating synergies, and sharing knowledge and ideas between key policymakers, sectors, researchers, and societal groups;
- 4) Raise public awareness and support for JGT policies by harnessing the potential of digital tools for facilitating active citizen engagement in JGT policymaking processes.

3.11.2. Challenges and Opportunities

JGT present a unique opportunity to strengthen existing and develop new governance structures and networks that create stronger links and open dialogue between policymakers, researchers and other key actors in multi-level governance and planning processes. There is a strong potential for building transnational and cross-border JGT strategies, programmes, plans, collaborations, and partnerships. Here, the Regional Cooperation Council (RCC), the Western

Balkan Network on Territorial Governance (TG-NET), Regional Working Group on Environment, and South-East Europe Biodiversity Task Force can provide platforms for creating a permanent dialogue between WB national governments on climate and JGT issues. Western Balkans countries are highly fragmented, so existing cross-border institutions and structures provide important forums for overcoming any political, geographical, natural, economic, and sociocultural obstacles to collaboration.

A place-based and bottom-up governance approach to JGTs is required to ensure that policies meet the needs of citizens at regional and local levels. The Network of Associations of Local Authorities of South-East Europe (NALAS) provides a cooperation framework where municipalities can share JGT knowledge and best practices. Municipal authorities need to work closely with key regional sectors to ensure that any sectoral changes address wider local socio-economic issues. Sub-national authorities also require substantial support to strengthen the administrative capacity in conducting citizen participatory processes and environmental assessments in JGT strategic planning, programmes, and projects. JGTs cannot be developed and implemented without cross-sector engagement and integration, so resource-intensive sectors across the WB need to be included in JGT policymaking, such as, the construction, textiles, plastics and electronics industries. Sectoral organisations and groups (e.g. the Energy Community Secretariat, Transport Community Permanent Secretariat, the Standing Working Group on Regional Rural Development, and International Union for Conservation of Nature) can play an important role in helping sectors develop roadmaps for industrial transition processes. The Balkans Chamber Investment Forum can be a key actor in involving businesses that need to adopt more sustainable and circular internal processes.

Non-governmental organisations (NGO) also have a key role in JGT policy processes as transitions can have negative socio-economic and environmental impacts, particularly on the most vulnerable societal groups. The NGO Forum on the Green Agenda for Western Balkans (NGO Forum) has been created to provide a platform for NGOs across the WB to share knowledge and experience on JGT. The NGO Forum primarily includes NGOs with knowledge and experience of working with JGT issues and will play a role in drafting JGT policies and recommendations, monitoring and evaluating the implementation of JGTs, raising citizen awareness, and engaging vulnerable groups in the JGT processes, such as the Roma and other minorities. Youth groups, including the Regional Youth Cooperation Office and the RCCs Youth Lab, have also been identified as important for young people to express their views and concerns regarding JGT.

There has been limited citizen engagement with JGT across the WB and policies and citizen consultation processes need to be framed in a language which raises citizen awareness, proactive engagement, and support.

3.12.3. Existing Expertise

UB-GEF has expertise in geographic (spatial) aspects of planning, legislative issues, and participation mechanisms, in addition to regular involvement in the preparation of spatial and urban plans and related policymaking processes at the national, regional, and local levels. **Co-PLAN**'s works with people and institutions to foster tangible social transformation and positive change on the ground by inducing change-driving knowledge in society for smart management. They have developed several governance tools by assembling knowledge of local contexts and on this basis modifying good governance methodologies for policy operationalization. **CEA** have worked prominently in relation to governance, policymaking, and stakeholder engagement under several JGT themes, including industrial transitions at local levels.

3.12.4. Future Research Needs

- ♦ Identify synergies between EU, national, regional, and local JGT policies and strategies to promote transnational policy and planning collaboration and coherence.
- ♦ Analyse the potential benefits and challenges of the transnational JGT policy coordination and develop recommendations on effective collaboration.
- ♦ Examine which JGT policy themes have the potential for building cross-border strategies and policies between WB countries and EU Member States, as well as between regions and municipalities within WB countries.
- ♦ Investigate mechanisms for fostering collaboration, resource sharing, and integrated approaches to address JGT in the Western Balkans.
- ♦ Examine ways and means for establishing cross-sectoral synergies under JGT policy themes.

- ♦ Identify best practices for cross-sectoral collaboration and develop recommendations for effective stakeholder interaction.
- ♦ Explore the potential for building new macro-regional partnerships/networks under JGT policy themes or creating JGT macroregional partnerships within existing cross-border platforms, including the RCC, NALAS, and TG Network.
- ♦ Identify the main governance and spatial planning challenges and opportunities under each JGT theme to support national, regional, and local authorities with technical and cognitive frameworks for implementing effective JGT measures in their respective territories.
- ♦ Investigate the potential for regional development strategies to support JGT initiatives in the Western Balkans.
- ♦ Identify and examine best practice examples of EU, national, regional and local level platforms that bring together society-science-policy actors in a dialogue around JGTs.
- ♦ Examine how the concepts of active subsidiarity, territorial governance and place-based policymaking can empower sub-national level actors in JGT policymaking processes and develop recommendations for implementing place-based policymaking approaches in the region.
- ♦ Explore the role of digital tools and other citizen engagement methods for enhancing direct citizen involvement in JGT policymaking processes.

4. FUNDING OPPORTUNITIE

4. FUNDING OPPORTUNITIES

The Green Transition is becoming an increasingly salient and topical research area. Policymakers and funding bodies are looking to researchers to provide new knowledge, ideas and best practices in relation to the conceptualization, development and implementation of GT policies. Consequently, multiple avenues for research funding are available that focus on key GT topics. Figure 4 below provides an overview of potential funding sources available to researchers at the EU, national and regional/local level.



Transnational level

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> • Horizon Europe • European Structural and Investment Funds DG Funding • Interreg (ADRION) • EU IPA – national and regional programs • European Bank for Reconstruction and Development (EBRD) • IPARD • EIT Climate-KIC • Macro-region flagship projects World Bank • UNDP • OECD • FAO • Adaptation Fund • CEI – Central Europe Initiative | <p><u>Bilateral – donors</u></p> <ul style="list-style-type: none"> • USAID, German Marshall Fund • Netherlands: DFCD – Dutch fund for climate and development • Italy • Sweden - SIDA, Swedish Institute, • Germany - GIZ, • Norway: EEA Grants • Foreign embassies' funds | <ul style="list-style-type: none"> • Multilateral proposals • Spontaneous proposals |
|--|---|---|



National level

- | | | |
|---|--|------------------------------|
| <p><u>Macedonia</u></p> <ul style="list-style-type: none"> • Green Climate Fund (GCF) - via state institutions not specific for our type of organisations, CAN Europe (to be further examined) • GEFF North Macedonia - the Green Economy Financing Facility | <p><u>Serbia</u></p> <ul style="list-style-type: none"> • Budget of the Republic of Serbia assigned to UB-GEF • Global Fund for Environmental Protection, UNDP and Green Climate Fund – through national institutions (Ministries and Agencies) | <p><u>Albania</u></p> |
|---|--|------------------------------|



Regional level

- | | | |
|--|--|------------------------------|
| <p><u>Macedonia</u></p> <ul style="list-style-type: none"> • EU IPA funds – cross border, regional programs via specific calls • Green Climate Fund (GCF) - via state institutions not specific for our type of organisations, CAN Europe (to be further examined) • Green for Growth Fund - GGF | <p><u>Serbia</u></p> <ul style="list-style-type: none"> • Budgets of the Autonomous province of Vojvodina, City of Belgrade and local self-government units • Regional Development Agencies • EU IPA – cross border, regional programs | <p><u>Albania</u></p> |
|--|--|------------------------------|

Figure 4: Overview of funding sources available for projects addressing the GAWB

5. RELEVANT STAKEHOLDER

5. RELEVANT STAKEHOLDERS

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Albania												
Institutional actors												
Ministry of Environment and Tourism	✓		✓			✓	✓	✓				
Ministry of Infrastructure and Energy	✓	✓	✓	✓	✓	✓						
Ministry of Health and Social Protection								✓				
Ministry of Agriculture and Rural Development	✓						✓		✓			
National Agency of Environment	✓					✓		✓				
National Civil Protection Agency	✓											
Rural Agricultural Development Agency	✓	✓	✓	✓	✓	✓		✓	✓			
Ministry of Economy and Innovation									✓			
Transmission System Operator		✓										
Albanian Road Authority			✓									

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Electricity Distribution Operator				✓								
Distribution System Operator			✓									
Albanian Electro energetic Corporation			✓									
Agency for Energy Efficiency (AEE)				✓								
Energy Regulatory Board			✓	✓								
National Entity of Building				✓								
National Territorial Planning Agency					✓							
National Directory of Road Transportation Services					✓							
National Water Supply, Sewerage and Solid Waste Agency						✓						
Albanian Investment Development Agency (AIDA)						✓						
National Agency of Water Resources Management							✓					
Directorate General for Environmental Protection - Municipality of Tirana						✓						
State Inspectorate of Environment, Forestry, Water and Tourism							✓	✓				
National Agency of Natural Resources			✓	✓								

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Non-institutional actors												
Academic Institutions	✓											
Environmental CSO-s	✓											
Donors (SIDA, GIZ, WB, UNDP)	✓											
Polis University			✓	✓	✓							
Albanian Electro Energetic Corporation			✓									
EuroElektra				✓								
GIZ Albania				✓								
Polytechnic University of Tirana					✓							
GO2					✓							
Urban Research Institute					✓							
IDRA consulting					✓							
Albania Recycling Organization						✓						
Albanian Manufacture Union						✓						
CSOs (URI, REC, EDEN, ECODES, Milieukontakt etc)						✓						

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Donors (GIZ, EUD, Helvetas etc)						✓						
Media						✓						
Albanian Network for Rural Development									✓			
University of Agriculture									✓			
Sustainable Rural Development Programme (GIZ programme)									✓			
National Agency for Employment and Skills									✓			
Municipality of Korca / University of Korca				✓								
Serbia												
Institutional actors												
Ministry of Mining and Energy		✓	✓	✓	✓							
Ministry of Economy			✓									
Ministry of Environmental Protection,		✓		✓	✓		✓	✓	✓			
Ministry of Construction, Transport and Infrastructure		✓	✓		✓	✓				✓		
Ministry of Education							✓					
Ministry of Agriculture, Forestry and Water Management								✓		✓		

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Public Administration and Local Self-Government										✓		
Directorate Administration for Financing and Promotion Encouraging of Energy Efficiency					✓							
Environmental Protection Agency							✓	✓	✓			
Energy Agency of the Republic of Serbia					✓							
Local self-government units (Cities and Municipalities)		✓		✓		✓		✓	✓	✓		
Energy Agency				✓								
AP Vojvodina - Provincial Secretariat for Urbanism and Environmental Protection							✓					
City of Belgrade - Secretariat for Environmental Protection							✓					
Non-institutional actors												
Academic Institutes and University of Belgrade		✓	✓	✓	✓			✓	✓	✓		
RERI - Renewables and Environmental Regulatory Institute		✓		✓			✓	✓	✓			
Belgrade open school		✓		✓	✓		✓	✓				
Chambers of Commerce			✓		✓					✓		
Cleaner Production Centre of Serbia			✓		✓							
GIZ Serbia					✓							

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Standing Conference of Towns and Municipalities - National Association of Local Authorities in Serbia						✓	✓			✓		
Young Researchers of Serbia (YRS)							✓					
Environment Improvement Center							✓					
Association of Industry Waste of Serbia "Bravy Cleaner"							✓					
Network for Rural Development of Serbia										✓		
Green Loop							✓					
Republic of North Macedonia												
Institutional actors												
Cabinet of Vice-prime Minister in charge for economic matters		✓										
Cabinet of the Deputy Prime Minister responsible for Economic Affairs and Coordination with the Economic Sectors						✓						
Ministry of environment and physical planning		✓		✓		✓	✓	✓	✓			
Ministry of Energy, Mining and Minerals		✓	✓	✓	✓							
Ministry of Economy and Labour		✓		✓	✓		✓			✓		
Ministry of transportation and communications		✓				✓	✓					
Ministry for Agriculture		✓						✓		✓		

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Finance		✓			✓							
Ministry of Health									✓			
Ministry of local self-ggovernment										✓		
Ministry of Social Policy, Demographics and Youth		✓										
Bureau for Regional Development										✓		
ESM Macedonia					✓							
Regulatory Energy Commission												
Energy Agency				✓	✓							
Center for energy efficiency of North Macedonia (MACEF)					✓							
Hydro meteorological services								✓				
LSGUs								✓				
State inspectorate for environment								✓				
Inspectorate of Transport						✓						
Regional waste management							✓					
Municipalities		✓		✓	✓	✓						

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Non-institutional actors												
Chambers of commerce			✓				✓					
Macedonian academy of sciences and arts				✓								
ESM (electricity generation company)				✓								
EVN (electricity distribution company)				✓	✓							
MEPSO (electricity generation company)				✓								
Chambers of commerce				✓								
Centre Center for economic analyses				✓								
Eko-svest				✓								
REC office				✓								
Private operators of licensed electricity generation				✓								
Research Centre for Energy and Sustainable Development (RCESD) - Macedonian Academy of Sciences and Arts						✓						
Public enterprises of waste manangement							✓					
CSOs							✓		✓			
Donors							✓					

Actors	Research areas											
	1	2	3	4	5	6	7	8	9	10	11	12
Media							✓					
Institute of biology								✓				
Institute of geography								✓				
Faculty of Economics									✓			
Faculty of Natural Sciences and Mathematics								✓				
Faculty of Agriculture Science and Food										✓		
Faculty of Forestry										✓		
Eko-svest								✓				
Institute for communication studies								✓		✓		
National Federation of Farmers												
Association of agriculture - Zelena Berza										✓		
Association of agriculture workers										✓		
Other associations of agriculture workers												



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