Integrating Nature-based Solutions into policies for climate change adaptation and disaster risk reduction

A regional comparative policy analysis in the Western Balkans

Alexander Bisaro and Kristin Meyer

ADAPT
NATURE-BASED SOLUTIONS FOR RESILIENT SOCIETIES IN THE WESTERN BALKANS

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SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

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Executive summary

ADAPT: Nature-based Solutions for resilient societies in the Western Balkans is a project funded by the Swedish International Development Cooperation Agency (Sida) and implemented by IUCN. It aims to increase ecosystem and community resilience to climate change and environmental degradation in the Western Balkans. This regional umbrella initiative works with the six Western Balkan economies, regional and local partners.

The comparative policy analysis was carried out between November 2020 and March 2021 and produces two types of results salient to current discussions on the role of NbS in climate change adaptation (CCA) and disaster risk reduction (DRR):

1. insights for policymakers in the Western Balkans on the status of Nature-based Solutions (NbS) in existing policy and opportunities for advancing NbS in these policies;
2. a first application of the IUCN Global Standard for Nature-based Solutions™ to policy analysis.

The framework for the policy analysis is based on the IUCN Global Standard for Nature-based Solutions™ and its 8 criteria, which were broken down and interpreted in a policy context to derive 21 dimensions of policy analysis relevant to CCA and DRR in the Western Balkans. The policy analysis accounts for differences in terminology in identifying NbS-related approaches in relevant policy domains, in order to respond to the content of policy documents rather than their form (e.g. reference to forest landscape restoration that acknowledges CCA benefits instead of specifically looking for a mention of the term 'Nature-based Solutions'). Besides consideration of policies specific to each of the Western Balkan economies, the analysis reflects on EU policies that are influential in the region due to pre-accession processes, i.e. the EU Adaptation Strategy, and Flood, Water Framework and Habitat Directives, as well as policies specific to the region, e.g. the Green Agenda for the Western Balkans. This includes further global agreements to which Western Balkan economies are signatories, i.e. United Nations Framework Convention on Climate Change (UNFCCC) and Paris Agreement, Sendai Framework, Convention on Biological Diversity (CBD), United Nations Convention to Combat Desertification (UNCCD), also focus the scope of the policy analysis on the related policy and sectoral processes.

It should be noted that the findings relate to an analysis of policies, and not measures "on the ground" (projects). Thus, even if a policy aligns well with the IUCN Global Standard, this does not ensure that it will lead to outcomes that are also in adherence with the Standard, as many factors can and do intervene between a policy and NbS implementation outcomes. Furthermore, the methodology developed could also be applied for policy analysis in other locations or regions by stakeholders interested in scaling up NbS for CCA and DRR, as well as for other societal challenges.

Key findings

At the EU level, the **Green Agenda for the Western Balkans**, associated to the EU Green Deal, is well-aligned with the IUCN Global Standard. Biodiversity features prominently in the Green Agenda and both its climate and biodiversity pillars explicitly mention NbS. NbS actions proposed in the Green Agenda are that: i) EU will assist in preparing a Western Balkans Forest Landscape Restoration Plan; and ii) EU will support analysis of biodiversity benefits of NbS. Further, the **EU Adaptation Strategy** (2021) also features NbS prominently with a section dedicated to "promoting Nature-based Solutions for adaptation". The Strategy proposes continued assistance to Member States to rollout NbS through assessments, guidance, capacity building and EU funding.

Regional findings in terms of comparing across Western Balkan economies are also presented. While Montenegro appears to be the most aligned with the IUCN Global Standard for Nature-based Solutions™, there is much variation between Western Balkan economies, with each economy demonstrating particular strengths and weaknesses regarding alignment with the IUCN Global Standard criteria.

- **Albania** shows good alignment regarding *Societal challenges*, *Design at scale* and *Net biodiversity benefits* criteria. However, while in Albania biodiversity is integrated across multiple sectors, its role in addressing CCA and DRR in particular is not well recognised. This lack of articulation of NbS for CCA and DRR is common to several Western Balkan economies.
- Both **Bosnia and Herzegovina**, including entity level policies, and **North Macedonia** are reasonably well-aligned with the *Design at scale* criterion. **North Macedonia**, however, shows a significant gap in identifying resources for NbS (*Economic feasibility*). Across levels of governance, **Bosnia and Herzegovina** lags behind in *Adaptive management* and lacks progress in its DRR policies, which is partly due to its decentralised structure.
- In a regional context, **Bosnia and Herzegovina,** including entity level policies, **North Macedonia** and **Kosovo** show the most gaps regarding alignment with the Global Standard. For example, these economies propose almost no explicit NbS measures in their policies.
- Despite the lack of proposed NbS, **Kosovo** shows good progress in terms of recognising the role of nature or ecosystems in broader development and CCA and DRR in particular (*Societal challenges*), while it lags behind in *Mainstreaming and sustainability*.
- **Montenegro** is the most advanced in terms of alignment with the Global Standard, and in particular its policies integrate NbS with respect to the *Societal challenges* and *Design at scale* criteria. Montenegro does less well for the *Balance trade-offs* criterion. However, nearly all Western Balkan economies show shortcomings in aligning to the Global Standard with respect to this particular criterion
- **Serbia** also shows good alignment in terms of *Societal challenges*, *Design at scale* and *Net biodiversity benefits* criteria. It however lags somewhat regarding *Adaptive management*.

This gap appears to emerge due to policies in Serbia not strongly recognising the role of nature in CCA, and thus monitoring frameworks are not oriented towards such NbS for CCA. Further, there appears to be little coordination between policies oriented towards global agreements in Serbia, and thus the *Mainstreaming and sustainability* criterion is also lagging somewhat.

- Finally, a first **general observation** is that across all policies, there is little discussion of unintended adverse consequences of NbS, nor of social or ecological limits and/or safeguards. This gap likely indicates that integration of NbS into policy and project design processes is at a relatively early stage, and these aspects should be considered and integrated in order to make progress on sustainable and effective NbS. A second general observation is that several economies show gaps in current policies regarding lack of data and particularly economic analysis of NbS by collecting and disseminating evidence on the societal and economic benefits of NbS, including disaggregated by gender.

Albania

In Albania, beyond an overall positive assessment, several gaps in cross-sectoral and sector policies for CCA and DRR can be identified. First, the National DRR Strategy does not explicitly acknowledge the role of nature/ecosystems in DRR, e.g. related to flooding and droughts. Second, while ecosystem vulnerability is prominently recognised, the role of nature or ecosystems in addressing CCA and DRR is hardly acknowledged. Third, NbS considered are often viewed from a 'sectoral' perspective. For example, NbS are a policy priority for coasts and for forestry, but the co-benefits of NbS for achieving water policy objectives, e.g. reducing riverine flood risk, are not considered.

Opportunities in Albania:

- Coastal protection and flood risk management: the inter-sectoral coastal adaptation plan is based on ICZM principles and provides an entry-point for NbS addressing CCA (i.e. reducing risks from sea-level rise).
- River Basin Management planning: processes for three river basins in Albania are ongoing, which provides opportunities for integrating NbS.
- Forestry: several policies at EU and national level align here to make reforestation and forestry management an attractive entry-point for NbS.
- There is an opportunity to address the gap in current policies regarding the co-benefits of nature and NbS by collecting and disseminating evidence on the societal and economic benefits of NbS, e.g. for the water sector.

Bosnia and Herzegovina

In Bosnia and Herzegovina, several gaps in cross-sectoral and sector policies for CCA and DRR can be identified. Entity-level analysis has been carried out to reflect the constitutional structure of Bosnia

and Herzegovina. First, at economy level all three National Communications to the UNFCCC emphasise that sufficient data and modelling approaches are lacking for comprehensive assessments of climate change impacts on key sectors. This gap is especially important for NbS because demonstrating their low-cost, no regret characteristics is a key enabler of NbS implementation. Second, a gap is that the economy level Climate Change Adaptation and Low Emission Development Strategy does not articulate NbS measures that specifically address CCA or DRR. Third, similar to Albania, DRR policies at the various levels do not explicitly acknowledge the role of nature/ecosystems in risk reduction. Fourth, across policies in both entities in Bosnia and Herzegovina, there is little consideration of global agreements in policy formulation. This may be a barrier to NbS in so far as it is an indicator that sectors/domains remain 'siloed' making it more difficult to take advantage of the multiple co-benefits provided by NbS.

Opportunities in Bosnia and Herzegovina:

- The National Adaptation Plan (NAP) process at economy level: CCA policies acknowledge the benefits of ecosystems for addressing societal challenges, and thus the NAP formulation presents an opportunity for NbS that also integrates DRR.
- Drought risk management plans at entity level initiated through the UNCCD process: key policy documents here acknowledge the multiple benefits of sustainable land management practices, e.g. soil and water conservation, to address drought risk and increase agricultural productivity, which make this attractive for proposing NbS.
- River basin management plans and flood risk management plans at entity level: harmonisation with EU Directives require meeting multiple objectives in flood risk and river basin management, which provides an entry point for NbS.
- Law on climate change at entity level: preparation is ongoing and represents an opportunity for NbS integration.

Kosovo

In Kosovo, the following gaps in policy can be identified. First, in the water sector, a gap exists in terms of linking water sector policy to adaptation planning. Adaptation planning explicitly acknowledges the role of NbS in, for example, reducing flood risk or other climate-related hazards. Second, the Forest Sector Strategy does not link improved forestry practices to CCA or DRR, and instead focuses on economic development opportunities presented by sustainable forestry (Design at scale). While biodiversity is well integrated within the Forest Sector Strategy, with protected area planning and management planning having a prominent role, these measures neither account for climate change nor are they seen as contributing to CCA.

Opportunities in Kosovo:

- The Water Management Strategy proposes that River Basin Management Plans, the key flood management policy instrument, mandated to be developed by municipalities, be required to include reforestation and land use change to address flood risk. This presents an opportunity for NbS development.
- Several strategies, including the Strategy on Forestry, the Strategy on Biodiversity and the Strategy on Environment and Sustainable Development are up for revision, which represents an opportunity for NbS integration.

Montenegro

In Montenegro, while overall alignment with the IUCN Global Standard for Nature-based Solutions™ is advanced, several gaps can be identified. First, a prioritised National Adaptation Plan that includes NbS, and an NbS financing plan, is lacking. Second, though the role of nature/biodiversity is clearly acknowledged and emphasised in policy addressing broader economic and social development goals, the role of nature/biodiversity in addressing CCA/DRR is less clearly articulated. Third, relatedly, there is a gap in terms of Adaptive management and Mainstreaming and sustainability criteria. Monitoring and evaluation frameworks and awareness raising activities regarding biodiversity in Montenegro do not directly address the role of nature in CCA/DRR outcomes of NbS, but rather focus on the role of other economic and social co-benefits of nature and ecosystems.

Opportunities in Montenegro:

- The NAP, currently under development, can build on the Third National Communication, which already incorporates NbS criteria and is well-aligned with the IUCN Global Standard.
- There is an opportunity to promote NbS in the coastal sector to address coastal adaptation. NbS measures here could be promoted, e.g. restoration of coastal ecosystems to ensure biodiversity net benefits, and possibly realise other co-benefits, e.g. greater flood risk reduction or carbon sequestration.
- The Drought Management Plan explicitly acknowledges gender and land use rights as influencing the uptake of measures that contribute to NbS, e.g. climate smart agriculture, land and water conservation practices. This provides an entry-point for NbS to address drought and flood risk reduction through inclusive governance arrangements

North Macedonia

In North Macedonia, the following gaps can be observed. First, regarding CCA policy, there is currently a gap in terms of developing a prioritised list of CCA measures that integrate NbS. Currently, most CCA options proposed address only knowledge generation and do not offer any concrete adaptation measures. Second, there is a gap in terms of a lack of recognition of the role of ecosystem in CCA or DRR in particular, though several key policies recognise the role of nature in

society and economy in general. Third, relatedly, the biodiversity policy process, though it is well advanced, is not well integrated with the CCA and DRR policy processes. For example, the current NBSAP hardly refers to other global agreements, besides CBD, in its objectives and target setting. Thus, biodiversity is largely seen as vulnerable to climate change, and not conceived of as supporting NbS for CCA or DRR.

Opportunities in North Macedonia:

- The Water Management Strategy provides an entry-point for NbS as it acknowledges the role of nature in flood risk reduction in its strategic objectives and proposes increasing forest cover and river ecosystem integrity to reduce flood risk.
- The current NAP process represents an opportunity for greater integration of the biodiversity policy process with CCA and DRR policy processes, and to raise awareness across these domains on the role of biodiversity in supporting NbS for CCA and DRR. This opportunity should also be addressed through the development of a National Climate Change Strategy and the preparation of the Fourth National Communication to the UNFCCC.
- Three policy documents relevant for climate change are currently being prepared – the Long-term Climate Action Strategy, the Climate Action Law and the Fourth National Plan on Climate Change. These offer opportunities for NbS integration.

Serbia

In Serbia, the following gaps can be identified. First, the DRR Plan does not yet include the detailed risk reduction measures included in the Second National Communication to the UNFCCC. This represents a gap as CCA is not fully integrated into DRR policy, nor are NbS considerations. There is an opportunity thus to increase integration of NbS in DRR in the next update of the National DRR Strategy and Action Plan. Second, there is a gap in terms of integrating biodiversity strategies with other policies relevant to CCA and DRR, as the Biodiversity Strategy document only briefly mentions other global agreements such as the UNFCCC or CBD. Third, in the water sector, the Water Strategy is not clearly integrated with other sectors, e.g. forestry or agriculture, nor does it clearly link to policy processes addressing global agreements, e.g. climate change adaptation planning or the biodiversity strategy. Fourth, in the agricultural sector, while the National Agricultural and Rural Development Strategy identifies the conservation of biodiversity and sustainable forest management as key needs, there is no clear funding instrument for addressing these, e.g. from the Instrument for Pre-Accession for Rural Development (IPARD). Finally, there is a gap regarding droughts, which is the most economically damaging natural hazard of the past 20 years in Serbia. CCA, DRR and water sector policies are much more strongly focused on flood risks. Only preliminary steps have been taken with the intention to prepare a policy framework and decision-making process for developing a National Drought Plan.

Opportunities in Serbia:

- There is an opportunity to promote NbS based on forestry restoration addressing flooding, soil erosion and contributing to drought risk reduction. This is because sustainable forestry management is a development priority for Serbia, but has not received IPARD funding from the EU. There may be an opportunity to advance this potential NbS through, e.g. the Green Agenda for the Western Balkans.
- Updating the National DRR Strategy and Plan represents an opportunity to integrate NbS for CCA/DRR, as climate change adaptation planning has not been fully integrated into DRR plans and policies to date.
- The water sector should integrate biodiversity targets and measures into its plans. This could lead to the development of NbS that address not only biodiversity benefits, but water policy outcomes, such as reduced flood risk.
- Both CCA and many sectoral policies explicitly mention gender dimensions. This presents an opportunity for developing NbS that address inclusive governance arrangements and equity in social, economic and ecological outcomes.

Comparative analysis

Enablers of NbS integration

In terms of enablers, it can be observed that the pre-accession process and harmonisation with EU Directives and Strategies enables integration of biodiversity considerations into the water sector, but also for CCA and DRR policies. In particular, these directives prioritise inclusive governance arrangements and monitoring and evaluation frameworks that align with the IUCN Global Standard for Nature-based Solutions™ criteria. Further, the EU Biodiversity Strategy enables the integration of biodiversity considerations across all sectors, including development strategies. However, it must be noted that biodiversity integration across policy domains does not guarantee that NbS will be integrated into policies for CCA and DRR. Indeed, it is common to many Western Balkan economies that the role of biodiversity conservation is considered in sectoral planning, but NbS are not explicitly considered as an option for CCA or DRR. This highlights the importance of an NbS concept embedded in policy that identifies the multiple benefits, including for CCA and DRR, that are the result of nature and ecosystem restoration and conservation. Such an NbS concept in policy is needed to overcome the ‘silos’ of sectoral planning observed in nearly all Western Balkan economies. Looking forward, new developments at the EU and regional level, i.e. the EU Adaptation Strategy and the Green Agenda for the Western Balkans, may further enable the embedding of NbS concepts in policies addressing CCA and DRR in the Western Balkans.

Barriers to NbS integration

In terms of barriers to NbS integration of NbS for CCA and DRR, several observations are applicable across multiple Western Balkan economies. First, NAP processes in several economies have been

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

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Acronyms

ATP	Agency for Territorial Planning (Albania)
CBD	Convention on Biodiversity
CC	Climate Change
CCA	Climate Change Adaptation
CoM	Council of Ministers
DRR	Disaster Risks Reduction
EbA	Ecosystem-based Approach
Eco-DRR	Eco system Disaster Risks Reduction
EMA	Emergency Management Agency
GDP	Gross Domestic Product
GHG	Greenhouse Gasses
GoK	Government of the Republic of Kosovo
ICZM	Integrated Coastal Zone Management
IPA	Instrument for Pre-Accession
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
L&D	Loss and Damage
LDN	Land Degradation Neutrality
LULUCF	Land Use, Land-Use Change and Forestry
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MAFW	Ministry of Agriculture, Forestry, and Water Economy
MARD	Ministry of Agriculture and Rural Development
MAEP	Ministry of Agriculture and Environmental Protection (Serbia)
ME	Ministry of Environment
MEP	Ministry of Environmental Protection (Serbia)
MEPP	Ministry of Environment and Physical Planning
MESP	Ministry of Environment and Spatial Planning (Serbia)
MESPI	Ministry of Environment, Spatial Planning and Infrastructure (Kosovo)
MoFTER	Ministry of Foreign Trade and Economic Relations (Bosnia and Herzegovina)
MI	Ministry of Interior
MSDT	Ministry of Sustainable Development and Tourism (Montenegro)
MUD	Ministry of Urban Development (Albania)
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NBSAP	National Biodiversity Strategy and Action Plan

NDC	Nationally Determined Contribution
PABH	Parliamentary Assembly of Bosnia and Herzegovina
PUC	Public Utility Company
PE	Public Enterprise
PES	Payment for Ecosystem Services
PWMC	Public Water Management Company
SDG	Sustainable Development Goals
SEM	Sector for Emergency Management (Ministry of Interior)
SEPA	Serbian Environmental Protection Agency
Sida	Swedish International Development Agency
TNC	Third National Communication to the UNFCCC
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
WFD	Water Framework Directive

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1 Introduction

ADAPT: Nature-based Solutions for resilient societies in the Western Balkans is a project funded by the Swedish International Development Cooperation Agency (Sida) and implemented by IUCN. It aims to increase ecosystem and community resilience to climate change and environmental degradation in the Western Balkans. This regional umbrella initiative works with the six Western Balkan economies, regional and local partners.

ADAPT is implemented through the following three strategies:

1. Increasing the knowledge and awareness of nature-based disaster risk reduction solutions among decision makers, natural resource managers and local communities with a specific focus on gender;
2. Integration of Nature-based Solutions and equitable climate-smart planning into adaptation and disaster reduction policy; and
3. Implementation of Nature-based Solutions for disaster risk reduction and their scale-up.

Figure 1. ADAPT Project impact cycle. *(Source: Figure developed by the authors of this analysis)*

This report contributes to strategic objectives 2 and 3 of ADAPT, by presenting a regional comparative analysis of policy relevant for climate change adaptation (CCA), disaster risk reduction (DRR) and biodiversity. The overall objectives of the regional comparative policy analysis are to:

- **analyse policies** of each of the Western Balkan economies relevant to climate change adaptation and disaster risk reduction, including sectoral policies, against Nature-based Solutions principles and approaches, as embodied in the IUCN Global Standard for Nature-based Solutions™ criteria.
- provide insights into current **policy gaps and opportunities** for the integration and mainstreaming of Nature-based Solutions into relevant policies – for each Western Balkan economy and regionally – building on the IUCN Global Standard for Nature-based Solutions™.

Through addressing these objectives, the comparative policy analysis will produce two types of results highly salient to current discussions on Nature-based Solutions, and their role in climate adaptation and disaster risk reduction. First, for policy and decision makers across various scales in Western Balkan economies, the report provides insights into the current status of NbS in existing policy frameworks and processes and identifies opportunities for advancing and scaling-up NbS in these policy frameworks. Second, the report represents one of the first applications of the IUCN Global Standard to analyse policies, and this application presents a methodology for policy analysis that can be applied in other locations or regions by stakeholders interested in scaling up NbS for CCA and DRR, as well as for other societal challenges.

Below, the methodology and scope of the regional comparative analysis based on the IUCN Global Standard for Nature-based Solutions™ is described. Then key CCA, DRR and sectoral policies relevant to NbS for each economy will be presented. The results then compare across the 6 Western Balkan economies identifying gaps and opportunities for integrating NbS according to the 8 criteria of the IUCN Global Standard for Nature-based Solutions™.

2 Methodology

2.1 Nature-based Solutions for climate change adaptation and disaster risk reduction

IUCN defines Nature-based Solutions (NbS) as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (Cohen-Shacham et al., 2016) (Figure 2. Nature-based Solutions to address societal challenges. *(Source: IUCN, 2020a)*). NbS is thus an umbrella concept that encompasses the role of nature in a broad range of societal challenges, including food security, water security, economic and social development, human health, disaster risk reduction, climate changed adaptation and mitigation, and ecosystem degradation and biodiversity loss. The IUCN Global Standard for Nature-based Solutions™ [1] (IUCN, 2020a) operationalises this definition allowing stakeholders worldwide to better utilise the potential for nature to address societal challenges. It also strengthens the general consensus on the definition (already endorsed by IUCN's 1,400 Members at the 2016 World Conservation Congress in Resolution 069) providing a common framework and language for sectors to work together on.

Figure 2. Nature-based Solutions to address societal challenges. *(Source: IUCN, 2020a)*

Nature-based Solutions are thus gaining importance around the world as potentially cost-effective measures that simultaneously provide environmental, social and economic benefits and help build resilience (EC, 2020). NbS are often described as no-regret options that bring benefits to people across a range of scenarios (Seddon et al., 2019). Indeed, such solutions offer potential to bring diverse natural features and processes into cities, landscapes and seascapes, and as such often depend on multi-stakeholder and cross-sectoral integration for their success (Seddon et al., 2019). This has direct relevance for policy processes and

[1] The IUCN Council endorsed, in February 2020, the adoption of an IUCN Nature-based Solution Standard noting that the application of the standard is an evolving process that will need to be monitored and revised accordingly. The Global Standard has been adopted as resolution (WCC-2020-Res-60-EN).

will be reflected in this comparative policy analysis.

In this report, the role of NbS in addressing the societal challenges of climate change adaptation and disaster risk reduction are of particular interest. Thus, the focus will be on NbS that reduce climate-related and disaster risks.

Key definitions

Climate change adaptation is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm, or to exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2014).

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk (exposure, hazard or vulnerability), and managing residual risk, all of which contributes to strengthening resilience and therefore to the achievement of sustainable development (IPCC, 2014; UNISDR, 2017).

It is important to note that, while CCA and DRR represent a range of complementary approaches, there are differences between them. CCA focuses on long-term and emerging risks, while DRR is focused on existing risks and encompasses all hazards (not just climate-related). Further, CCA also includes slow onset risks (e.g. rises in average temperatures, sea-level rise or loss of biodiversity). While there is a recognition in many high-level policy processes, e.g. the Sendai Framework, UNFCCC, as well as at the European level (e.g. EU action plan on the Sendai Framework, EU Adaptation Strategy) of the need to integrate CCA and DRR activities (EEA, 2017), each challenge involves different actors and policy processes in specific countries. For instance, the principal actors for CCA are typically environmental ministries and agencies, while the principal actors for DRR are typically in civil protection agencies (EEA, 2017). For the present policy analysis, this implies that a range of policies and actors relevant to CCA and DRR are analysed to capture the full set of policies relevant for integrating NbS.

2.2 Key NbS-related concepts

Nature-based Solutions (NbS) is a relatively new term, and there are several complementary approaches prominent in climate, environment and development policy discussions. These related terms are often used in different sectoral settings and describe policies or measures that are relevant to NbS without explicitly using the term.

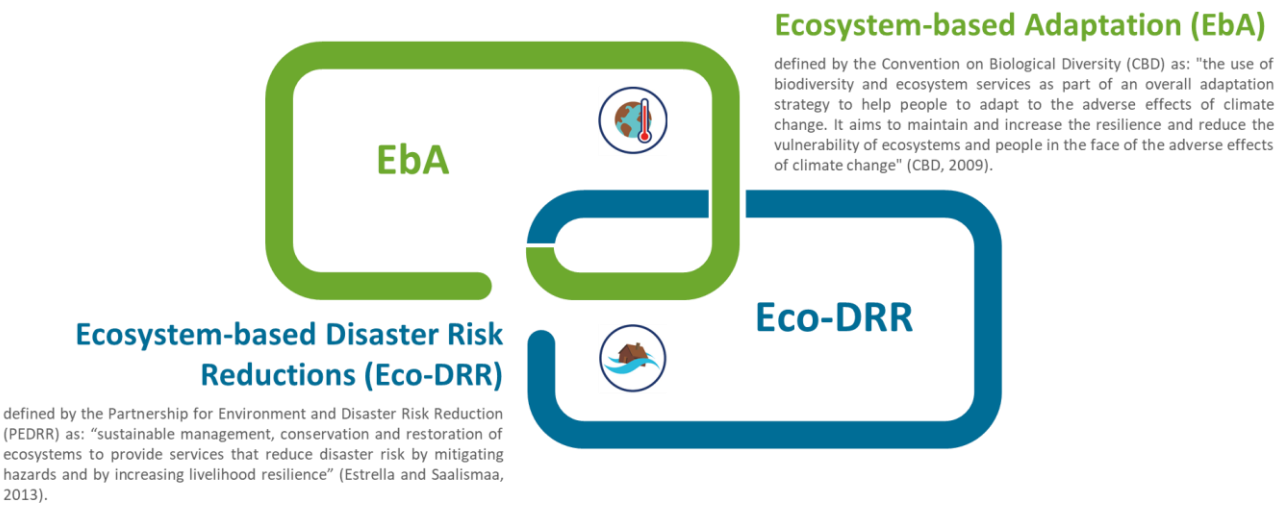


Figure 3. Key NbS approaches directly relevant for climate change adaptation and disaster risk reduction. *(Source: Figure developed by the authors of this analysis)*

Both EbA and Eco-DRR are related to specific (climate) hazards, whereas NbS can address a broader range of societal challenges (such as food security or economic and social development) (Figure 4). In other words, EbA measures can be considered NbS (when in adherence with the IUCN Global Standard for Nature-based Solutions™, which is complementary to the EbA Qualification Criteria and Quality Standards developed by the Friends of Ecosystem based Adaptation), but not all NbS are considered EbA. Similarly, appropriate Eco-DRR measures are NbS, but not all NbS are Eco-DRR (Terton and Greenwalt, 2020).

Figure 4. Societal challenges addressed by NbS as defined at the IUCN World Conservation Congress in 2016 (Resolution 069). *(© IUCN)*

This is relevant for this report because policy documents often refer to NbS-related concepts, without explicitly mentioning the term NbS. Indeed, this is evident from recent reviews of various policy documents produce by countries in fulfilment of their commitment under the UNFCCC. Analysis of Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) finds that countries make reference to the vulnerability of ecosystems to climate change and also acknowledge the effectiveness of ecosystems in reducing climate impacts. However, the potential of NbS for reducing specific climate risks is rarely explicitly recognised and few goals and targets for implementation of NbS for adaptation are evident in adaptation planning. In particular, a recent review of NAPs finds that while none explicitly refer to NbS, many incorporate related approaches such as EbA (Terton and Greenwalt, 2020). Regarding NDCs under the Paris Agreement, around 60% of countries include EbA or other biodiversity conservation actions in their adaptation activities (Seddon et al., 2019). Yet only NDCs submitted more recently in 2020 have begun to explicitly include NbS terminology, with Andorra, Chile, Moldova and Singapore having the first NDCs that explicitly including NbS in the context of adaptation (UNEP, 2020).

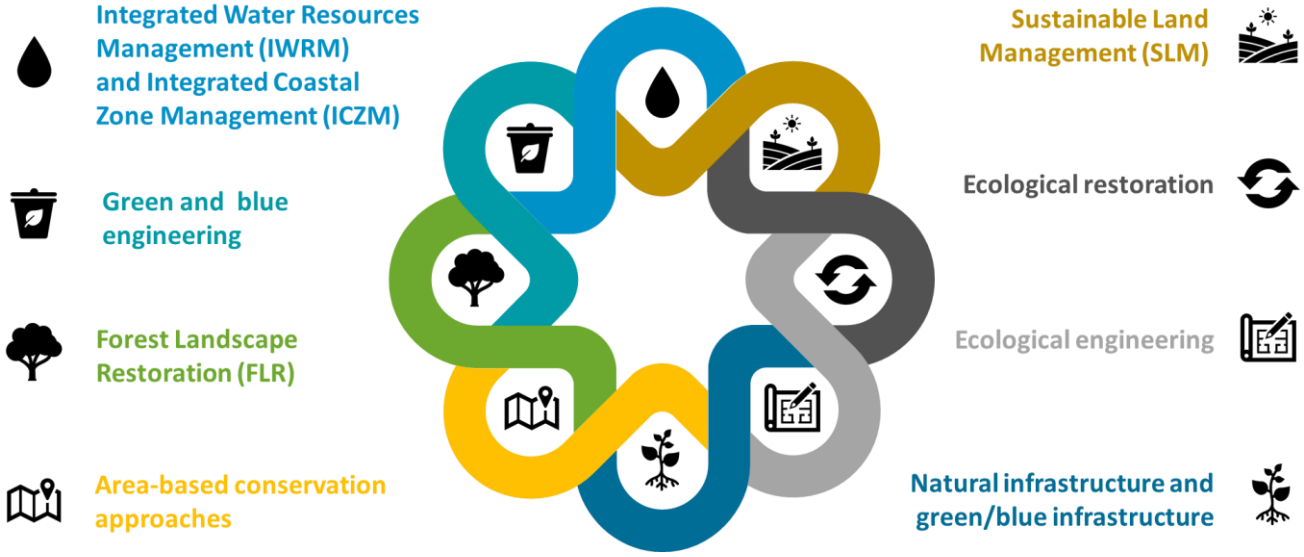


Figure 5. Other key NbS-related approaches that do not have an explicit climate-related focus (see also Cohen-Shacham et al., 2016). *(Source: Figure developed by the authors of this analysis)*

Thus, this analysis also accounts for these concepts and terms in policies in the Western Balkans in order to fully capture the extent to which NbS are already integrated (or not) in existing policies.

2.3 Applying the IUCN Global Standard for Nature-based Solutions™ for regional comparative policy analysis

The IUCN Global Standard for Nature-based Solutions™ (IUCN, 2020a) and its associated guidance (IUCN, 2020b) is the basis for developing an appropriate framework that can be applied across multiple policy settings in order to identify gaps and opportunities for integrating NbS into policy. The

Global Standard provides a flexible multi-level perspective on NbS projects and their enabling environments, based on 8 Criteria and related indicators (see Figure 6).

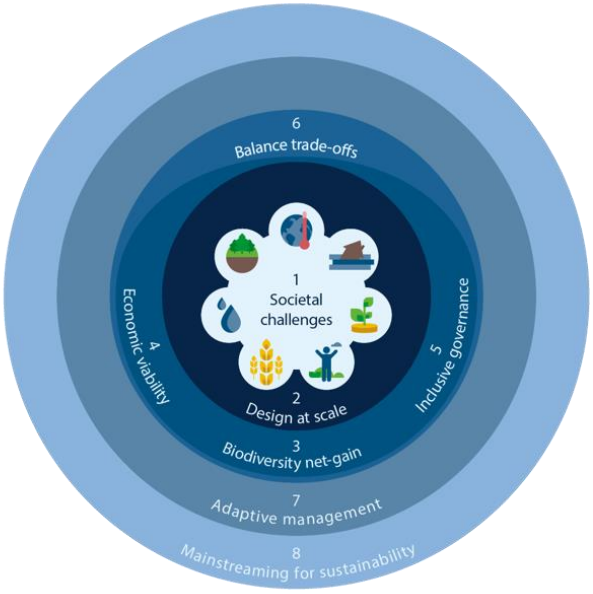


Figure 6. 8 Criteria of the IUCN Global Standard for Nature-based Solutions™. *(© IUCN)*

Given its flexible nature, it is necessary to use the Global Standard in a manner appropriate for the specific purposes of the regional comparative policy analysis. To do so, the IUCN Global Standard is applied to the following overarching research questions addressed by the comparative policy analysis:

- To what extent do regional and policies of each Western Balkan economy relevant for DRR and CCA **enable the mainstreaming, design and implementation of NbS** in line with the criteria proposed in the IUCN Global Standard for Nature-based Solutions™?
- What **opportunities** exist (e.g. in policy processes and institutional arrangements) to address limitations in policies regarding integration of NbS?

Table 1. Applying the IUCN Global Standard for Nature-based Solutions™ to regional comparative policy analysis.

Global Standard criteria in policy analysis	**Dimension of comparative policy analysis**
1. Do national and sectoral policies relevant to DRR and CCA enable NbS that address *societal challenges (Criterion 1)*?	• Refers to role of nature/ecosystems for people, livelihoods or other societal challenges; • Refers to role of nature/ecosystems for climate change adaptation and/or disaster risk reduction in particular • Specific NbS proposed for CCA or DRR
2. Do national and sectoral policies relevant to DRR and CCA enable NbS that account for *design at scale (Criterion 2)*?	• Refers to economic, social or cultural co-benefits of NbS • Refers to economic, social or cultural pressures on ecosystems • Refers to ecosystems as cross-sectoral
3. Do national and sectoral policies relevant to DRR and CCA enable NbS that produce *net biodiversity benefits (Criterion 3)*?	• Refers to evidence-base on ecosystem state and drivers of degradation

	• Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed • Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS • Refers to opportunities for enhancing connectivity and integrity
4. Do national and sectoral policies relevant to DRR and CCA enable NbS that are *economically feasible (Criterion 4)*?	• Identifies specific co-benefits and groups of beneficiaries for NbS • Identifies financial resources for NbS
5. Do national and sectoral policies relevant to DRR and CCA enable NbS that are *inclusive and equitable (Criterion 5)*?	• Acknowledges and includes diverse stakeholders, and particularly rightsholders, in governance arrangements in terms of decision-making and equity • Specific NbS measures include diverse stakeholders and/or dispute resolution mechanisms in governance arrangements
6. Do national and sectoral policies relevant to DRR and CCA enable NbS that allow for *balancing trade-offs (Criterion 6)*?	• Acknowledges use and access to land and resources of specific groups • Refers to social and ecological limits and/or safeguards
7. Do national and sectoral policies relevant to DRR and CCA enable NbS that are *adaptively managed (Criterion 7)*?	• Refers explicitly to monitoring and evaluation of NbS interventions • Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes • Refers to need for learning and adjustment of policies or measures on specific timeframes
8. Do national and sectoral policies relevant to DRR and CCA enable NbS *mainstreaming and sustainability (Criterion 8)*?	• Refers to the role of nature and/or ecosystems in meeting national targets and global commitments • Describes processes/mechanisms to disseminate knowledge on sustainability of NbS

(Source: Table developed by the authors of this analysis based on IUCN, 2020a)

Table 1 shows how the overarching questions can be adapted for each of the 8 Criteria of the IUCN Global Standard. Each criterion thus provides a dimension for the regional comparative policy analysis. Below the interpretation of each Criterion and dimensions of policy analysis they give rise to are expanded further.

The purpose of Criterion 1 “Societal challenges” in the Global Standard is to ensure that NbS are designed to respond to a societal challenge that has been identified as a priority by those who are or will be directly affected by the challenge (IUCN, 2020b). Societal challenges are numerous and include climate change adaptation (CCA) and disaster risk reduction (DRR) in addition to social and economic development, food security, water security, human health, environmental degradation and biodiversity loss. Criterion 1 of the Global Standard seeks to ensure that NbS address at least one of these societal challenges through managing or restoring ecosystems. Interpreting Criterion 1 for the comparative policy analysis, it is thus essential that policies relevant to CCA and DRR enable NbS that address societal challenges. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Refers to role of nature/ecosystems for people, livelihoods or other societal challenges.

- Refers to role of nature/ecosystems for climate change adaptation and/or disaster risk reduction in particular.
- Specific NbS proposed for CCA or DRR.

The purpose of Criterion 2 of the Global Standard, “Design at scale”, is to enable NbS that recognise the complexity and uncertainty that occur in living dynamic land/seascapes (IUCN, 2020b). In particular, this criterion emphasises that scale applies not only to biophysical or geographical scales, but also to interactions between society, economy and ecosystems. Interpreting Criterion 2 for the comparative policy analysis, it is essential that policies relevant to CCA and DRR enable NbS that account for the interactions between economy, society and ecosystems, as well as synergies of NbS across sectors. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Refers to economic, social or cultural co-benefits of NbS.
- Refers to economic, social or cultural pressures on ecosystems.
  Refers to ecosystems as cross-sectoral.

The purpose of Criterion 3 “Biodiversity net benefits” in the Global Standard is to ensure that NbS enhance and do not undermine ecosystem health and integrity. Interpreting Criterion 3 for policy analysis implies that policies relevant to CCA and DRR should enable NbS that are based on assessments of ecosystem states, pressures and drivers of degradation, and that proactively seek to enhance ecosystem functioning and integrity. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Refers to evidence-base on ecosystem state and drivers of degradation.
- Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed.
- Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS.
- Refers to opportunities for enhancing connectivity and integrity.

The purpose of Criterion 4 “Economic feasibility” in the Global Standard is to ensure that design, implementation and monitoring of NbS give sufficient consideration to the economic feasibility of these measures. For the comparative policy analysis, Criterion 4 highlights that policies relevant to CCA and DRR should enable both an explicit consideration of NbS economic outcomes (i.e. costs and benefits) as well as a consideration of the distribution of these costs and benefits among different stakeholders, as both aspects are key to long-term sustainability of NbS. Further, in addition to the consideration of economic dimensions of NbS, policies should provide specific financial resources (e.g. grants, Payment for Ecosystem Services schemes, blended finance instruments) to enhance

the economic feasibility of NbS. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Identifies specific co-benefits and groups of beneficiaries for NbS.
- Identifies financial resources for NbS.

The purpose of Criterion 5 “Inclusive governance” in the Global Standard is to ensure that NbS involve and respond to concerns of all stakeholders, and particularly rights holders. For the comparative policy analysis, the key focus is whether CCA and DRR-relevant policies enable NbS that have inclusive and equitable governance arrangements. Because inclusive governance is widely applicable beyond the realm of NbS, the analysis addresses ‘inclusive governance’ in general – do the relevant policies enable inclusive governance in general? – and specifically for NbS – do NbS measures put forward in policies acknowledge inclusive governance arrangements? This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Acknowledges and includes diverse stakeholders, and particularly rightsholders, in governance arrangements in terms of decision-making and equity.
- Specific NbS measures include diverse stakeholders and/or dispute resolution mechanisms in governance arrangements.

The purpose of Criterion 6 “Balance trade-offs” in the Global Standard is to ensure that NbS proponents acknowledge trade-offs and follow a fair, transparent and inclusive process to balance and manage them over both time and geographic space (IUCN, 2020b). Trade-offs occur because NbS often provide a diversity of different benefits and not all stakeholders value these benefits in the same way. Criterion 6 emphasises that such trade-offs must be approached transparently through credible assessments of trade-offs, with full disclosure and agreement among the most affected stakeholder about how these trade-offs should be addressed. For the comparative policy analysis, this implies that policies should enable acknowledgement of potential trade-offs, and enable fair and transparent negotiation regarding these trade-offs, while also safeguarding the integrity of ecosystems and their properties that ensure long-term stability of ecosystem services. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Acknowledges use and access to land and resources of specific groups.
- Refers to social and ecological limits and/or safeguards.

The purpose of Criterion 7 “Adaptive management” in the Global Standard is to ensure that NbS are designed and implemented in a manner that accounts for uncertainty inherent in ecosystems and harnesses ecosystem resilience. Adaptive management emphasises regular monitoring and evaluation through both scientific evidence and indigenous, traditional and local knowledge to enable flexibility and updating of measures in response to new information on ecosystems states and interactions with society and economies. For the comparative policy analysis, Criterion 7 implies that

policies relevant to CCA and DRR should enable NbS monitoring and evaluation throughout their lifetime based on an NbS strategy linking measures to social, economic and ecological conditions. Further, policies should include mechanisms that enable iterative learning and adjustment. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Refers explicitly to monitoring and evaluation of NbS interventions.
- Provides NbS strategy linking NbS measures to economic, social and ecological outcomes.
- Refers to need for learning and adjustment of policies or measures on specific timeframes.

The purpose of Criterion 8 “Mainstreaming and sustainability” in the Global Standard is to ensure that NbS are aligned with other relevant and sectoral policy frameworks, and account for long-term sustainability. Further, NbS should be mainstreamed so that they facilitate further uptake of NbS in enabling policy frameworks. For the comparative policy analysis, this implies that policies relevant to CCA and DRR should enable NbS that contribute to global agreements, goals and commitments. Further, policies should enable and enhance the dissemination of knowledge on NbS that have been successfully implemented. This gives rise to the following dimensions along which to analyse key CCA and DRR policies:

- Refers to the role of nature and/or ecosystems in meeting national targets and global commitments.
- Describes processes/mechanisms to disseminate knowledge on sustainability of NbS.

2.4 Scope of comparative policy analysis

2.4.1 Climate hazards and disaster risks in the Western Balkans

As discussed in Section 2.1, the focus of this analysis is NbS in climate change adaptation and disaster risk policies in the Western Balkans. In order to identify key policy processes relevant to CCA and DRR, it is therefore necessary to examine the key climate-related hazards and disaster risks in the 6 Western Balkan economies that are the focus of this report: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. While the specific hazard and risk contexts differ somewhat between economies[2] – for example, climate-related coastal risks such as sea-level rise are clearly relevant only in Albania and Montenegro – it is generally useful to review climate hazards and disaster risks for the entire region. Indeed, prevalent climate hazards and disaster risks in the Western Balkans motivate which particular policy processes and sectoral policies are the main focus of this analysis.

[2] see individual scoping studies

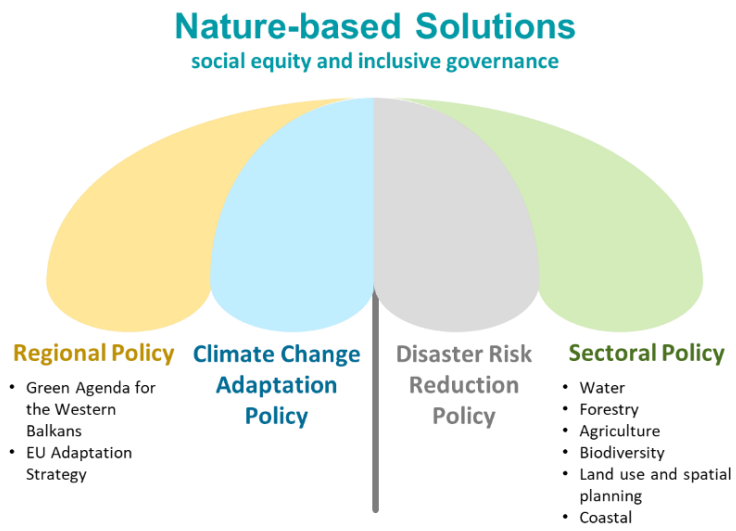


Figure 7. Policies relevant for comparative policy analysis. *(Source: Figure developed by the authors of this analysis)*

The Western Balkan economies are exposed to a number of climate-related hazards, including flooding (riverine, pluvial), drought, forest fires, land degradation, erosion and landslides, and coastal flooding and erosion (Montenegro and Albania). In addition, the region is exposed to seismic activity in the form of earthquakes.

Flooding is the most frequent and most damaging of climate-related hazards in the Western Balkans. Flooding has caused around 60% of recorded losses in Albania over the past century and is also most frequent in Bosnia and Herzegovina and Montenegro. In Serbia, which also experiences frequent river floods, major flooding in 2014 caused damages of an estimated EUR 1.5 billion in 24 municipalities (MEP, 2017). Droughts have significantly impacted the region, though data on, for example, economic impacts of droughts is scarce. In Serbia, it is estimated that around EUR 3.5 billion in damages have been experienced in droughts since 2000, accounting for nearly 70% of the damages from natural hazards.

Climate change in the Western Balkans is expected to exacerbate these risks. Climate change will alter the frequency and magnitude of precipitation patterns affecting flood risks and increase temperatures leading to greater risks of drought, soil erosion and forest fires. Further, for economies with extensive coastlines, such as Albania and Montenegro, sea-level rise will increase coastal flood and erosion risks, as well as negatively impact groundwater and agriculture through increasing salinity intrusion.

Each Western Balkan economy thus faces broadly similar climate-related hazards and disaster risks. The following chapters will further specify the most salient risks for each economy and orient the analysis of specific policies to these risks.

2.4.2 Global agreements and regional policies relevant to CCA and DRR in the Western Balkans

Given the climate and disaster risk context, a number of global agreements are relevant to CCA and DRR in the Western Balkans. Directly relevant are the United Nations Framework Convention on Climate Change (UNFCCC) and the Sendai Framework on Disaster Risk Reduction. Other relevant global agreements include the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD) and the Sustainable Development Goals (SDGs). Each of these agreements and the role of NbS within them will be reviewed in turn. Policies in each of the Western Balkan economies related to these global agreements are analysed in the Results section below (Section 3).

Key global agreements relevant to CCA and DRR in the Western Balkans

the *Paris Agreement* (2015) adopted a global adaptation goal (Article 7.1), elevating the status of adaptation within the United Nations Framework Convention on Climate Change (UNFCCC), and establishing procedural rules for implementing adaptation through the Nationally Determined Contributions (NDCs). Regarding NbS, several articles of the Paris Agreement refer to NbS, noting that adaptation is a component of protecting ecosystems (Article 7.1). Further, the Agreement notes in several instances the mitigation co-benefits of adaptation measures to conserve or restore ecosystems (Article 4.7). Further, Article 8 refers to Loss and Damage (L&D) and related support which could also be potentially relevant for NbS. However, none of the Western Balkan economies are members of the L&D executive committee or members of the Santiago Network on L&D. Further, only Serbia has explicitly included a statement on L&D in its INDC, providing information on disaster losses over the period 2000–2015. However, the INDC also notes that it is not possible to attribute these losses to climate change.

the *Sendai Framework* is the global agreement guiding DRR and resilience-building efforts for 2015-2030. Ecosystems and the environment are recognised in the Framework as a cross-cutting issue through all four of its priority action areas to prevent new and reduce existing disaster risks. Indeed, the Sendai Framework emphasises that ecological engineering, conservation, restoration and sustainable management of ecosystems contribute to increasing resilience of both the environment and people (UNDRR, 2020). Moreover, two of the seven Sendai Framework targets – those focusing on critical infrastructure losses – explicitly mention the potential of green (and blue) infrastructure (UNDRR, 2020).

the *Convention on Biological Diversity* is the global agreement, which guides action on biodiversity at the economy level, e.g. through the Aichi Targets. CBD-related policy processes are relevant to the present analysis, as the CBD has explicit targets to mainstream NbS, and enhance societal benefits of NbS including in relation to climate change adaptation and disaster risk reduction.

the *United Nations Convention to Combat Desertification (UNCCD)* adddresses land degradation and desertification. It is a relevant policy process because land degradation is a driver of key disaster risks in the region (e.g. landslides) and interaction with climate-related hazards, such as extreme precipitation. Further most Western Balkan economies have made progress towards implementing commitments under the UNCCD and thus policy processes are reasonably advanced in this area.

the *Sustainable Development Goals (SDGs)*, agreed by the UN General Assembly in Agenda 2030, set out 17 interconnected goals that guide environmental, social and economic development to 2030. NbS underpin all SDGs (CBD, 2016). Further, many countries have set out targets and action plans that explicitly address the role of ecosystems in development and CCA and DRR in particular. Therefore, SDG policy processes, i.e. development strategies, are also a relevant focus of the present analysis.

Regarding regional policies, a number of EU policies are highly relevant for climate change adaptation and disaster risk reduction in the Western Balkans. First, specific policies have been undertaken by the EU in the Western Balkans to promote alignment with the wider EU policy agenda, i.e. the Green Agenda for the Western Balkans, which aims to promote action in line with the EU

Green Deal. Second, a number of policies including both EU Strategies and Directives are relevant for Western Balkan economies both due to EU accession negotiations and harmonisation of their law with EU law, especially in the frame of Chapter 27. In particular, the EU Adaptation Strategy (released in 2021) and the EU Biodiversity Strategy to 2030 and Action Plan both of which are aligned with the EU Green Deal, are important policies which Western Balkan economies have been encouraged to align with under the Green Agenda for the Western Balkans. Further, relevant EU Directives include the Floods Directive, Water Framework Directive, Habitats Directive, and Birds Directive. The relevance of these policies for integrating NbS into CCA and DRR are analysed in Section 3 below.

2.5 Limitations of the study

This study represents the first application of the IUCN Global Standard for Nature-based Solutions™ to analyse policies, as to date, the Global Standard has largely been applied to the analysis of individual projects. As such, extending the scope of application of the Global Standard to policy analysis offers potential to understand and enhance the enabling environment provided by policies for NbS. At the same time, there are some caveats regarding the limitations of this study.

First, it is important to acknowledge a key difference between policies and projects. Policies are adopted to create an enabling environment for NbS, whereas interventions implemented “on the ground” (projects) can be influenced by a number of additional factors. Thus, even if a policy is in line with the IUCN Global Standard, this does not ensure that it will lead to outcomes that are also in adherence with the Standard, as many factors can and do intervene between a policy and biodiversity or other NbS-related outcomes. Whether NbS are actually implemented often depends on the decisions and actions of stakeholders within a given policy context. Thus, one caveat that should be noted here is that even where policies are in line with the IUCN Global Standard, this does not provide a guarantee of NbS outcomes. Consequently, it goes beyond the present analysis to assess implementation gaps. Rather this analysis shows the extent to which policies in place provide the framework to ensure that interventions are likely to be in adherence with the Global Standard.

Second, there are some pragmatic constraints to this analysis, given that and CCA, DRR and sectoral policies across 6 different economies as well as regional policies are being analysed. Additionally, policy processes are highly dynamic and new or revised documents are adopted regularly. The comparative policy analysis was carried out between November 2020 and March 2021 and was updated later in 2021 to include revised Nationally Determined Contributions (NDCs). At the time of finalisation of the analysis, Serbia had not yet submitted an updated NDC. Therefore, in general, only the most recent version of a policy document in the relevant policy process is analysed in depth. The exception is where multiple CCA policy documents have been adopted because they address different aspects, e.g. low-carbon development strategies or adaptation plans. Further,

where possible, the main focus is on the documents that provide strategic direction in a given policy domain for the respective Western Balkan economy as a whole. For example, the latest National Communication to the UNFCCC produced is analysed, but not earlier ones. This is a limitation in the sense that some key policy instruments guiding potential NbS interventions may be developed at lower scales, e.g. river basin management plans or spatial development plans at a municipal level. Given these constraints, it is not possible to zoom-in on these policy instruments in the present analysis, e.g. by assessing their alignment with the Global Standard. However, some cases have been identified in which such local level instruments are key for promoting NbS (e.g. flood protection planning instruments in Serbia or River Basin Management Plans in Bosnia and Herzegovina).

Third, this comparative policy analysis considers only the Western Balkan region and does not seek to make comparisons with other regions or global policy processes. The methodology applied and the results presented here, could, however, serve as an entry point for cross-regional or global analysis of the extent to which relevant policies provide an enabling environment for NbS. This is also true for potential replication of the methodology for other societal challenges beyond CCA and DRR.

Finally, it should be noted that this analysis seeks to focus on policy documents that describe goals, strategic objectives, and measures in particular policy domains. For some policy documents that express aspirational goals, and do not develop or propose measures to achieve these, it is difficult to apply all 8 criteria of the IUCN Global Standard. In such cases, the dimension of policy analysis in question is marked ‘not applicable (n/a)’.

3 Results

3.1 Overview

3.1.1 Regional policies relevant to CCA and DRR in the Western Balkans

First, the ***Green Agenda for the Western Balkans***[3] adopted by the Leaders from the Western Balkans is associated with the package of policy initiatives known as the EU Green Deal. The Green Agenda is structured around five pillars: 1) climate action, including decarbonisation, energy and mobility; 2) circular economy, addressing in particular waste, recycling, sustainable production and efficient use of resources; 3) fighting pollution of air, water and soil; 4) sustainable food systems and rural areas and; 5) biodiversity, aiming to protect and restore the natural wealth of the region (Sofia Declaration, 2020).

Regarding NbS, biodiversity features prominently in the Green Agenda and is one of several priorities, while NbS are referred important for addressing both mitigation and adaptation, and thus across all priorities. Importantly, the "Climate pillar" of the Green Agenda for the Western Balkans commits to "increase opportunities for the deployment of nature-based solutions to mitigate and adapt to climate change", while a commitment was made under the "Biodiversity pillar" to "analyse biodiversity benefits of Nature-based Solutions and opportunities for their integration into the development of climate and other plans." More specifically, forestry and ecosystem conservation and restoration are mentioned as key to addressing land degradation, while sustainable coastal management is also mentioned as a priority. Drivers of biodiversity loss, e.g., illegal logging and forest fires, are also described.

Whereas the Green Agenda for the Western Balkans identifies a number of financing instruments, the European Commission also presented an Economic and Investment Plan for the Western Balkans[4] prior to the adoption of the Green Agenda. It specifies that up to EUR 9 billion of funding in the frame of the Instrument for Pre-Accession (IPA) III should be mobilised covering the period 2021–2027. In the first instance, such investments will prioritise key productive investments and infrastructure, with a particular focus on digital, transport, energy transition and environment (circular economy and waste). Only in the future is it envisaged for funding to also support the green and digital transition, including biodiversity and the implementation of the Green Agenda. Additional investments could be mobilised through a new Western Balkan Guarantee facility[5] with an ambitious goal of raising up to EUR 20 billion.

[3] Also known as the Sofia Declaration on the Green Agenda for the Western Balkans was adopted in Sofia on 10 November 2020 at the Western Balkan Summit under the framework of the Berlin Process initiative: https://www.rcc.int/download/docs/Leaders%20Declaration%20on%20the%20Green%20Agenda%20for%20the%20WB.pdf/196c92cf0534f629d43c460079809b20.pdf

[4] COM(2020) 641 final: https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/communication_on_wb_economic_and_investment_plan_october_2020_en.pdf

[5] established under the post-2020 EU External Action Guarantee and the European Fund for Sustainable Development Plus.

It can be concluded that the ambition of the Economic and Investment Plan for the Western Balkans presented by the European Commission and the Green Agenda for the Western Balkans adopted by Leaders from the Western Balkans are not fully aligned. However, this may change, as the interest to identify opportunities for NbS in increasing in the region.

NbS actions proposed in the Green Agenda:

- EU will assist in preparing a Western Balkans Forest Landscape Restoration Plan
- EU will support analysis of biodiversity benefits of NbS

Potential financing instruments identified in the Green Agenda:

- Future potential 'Green Window" under the IPA III,
- promotion of market-based mechanisms, e.g., Natural Capital Investment Funds

Second, the ***EU Adaptation Strategy*** (2021) features NbS prominently with one section dedicated to "promoting Nature-based Solutions for adaptation". The Strategy discusses the role of NbS in increasing resilience and helping to meet multiple EU Green Deal objectives. Further, NbS are recognised as cost effective in adapting to climate change, and particular beneficial for addressing water-related impacts of climate change including in meeting the Water Framework Directive objective of good ecological status of water. Importantly, mitigation co-benefits of NbS are recognised, and the Strategy specifies a measure to develop a certification mechanism for carbon removals. More broadly, additional co-benefits of NbS are identified including carbon sequestration, tourism opportunities, and biodiversity conservation and restoration. The strategy also explicitly refers to economic, societal and ecosystem interconnections. For example, port infrastructure and supply chains can be disrupted by climate or ecosystem impacts. The Strategy recommends that trade-agreements of the EU should reflect these interconnections. Finally, it is worth noting that the adaptation strategy recommends at least 37% of COVID recovery plans be directed towards adaptation and mitigation. The EU, as part of Next Generation EU, agreed on a EUR 750 billion recovery package. If 37% were to be spent on climate change efforts, this would amount to approx. EUR 277.7 billion.

NbS actions proposed in the EU Adaptation Strategy:

- propose Nature-based Solutions for carbon removals, including accounting and certification in upcoming carbon farming initiatives;
- continue to incentivise and assist Member States to rollout nature-based solutions through assessments, guidance, capacity building, and EU funding.

Potential financing instruments identified in the EU Adaptation Strategy:

- INvestEU, Cohesion Funds;
- Common Agricultural Policy.

While these funds are not directly relevant to Western Balkan economies, it is worth noting that the Strategy emphasises the need for these existing instruments to provide incentives for or leverage further investment in NbS through, e.g., eco-schemes and PES.

Third, a new ***EU Forest Strategy*** is expected in 2021 as another instrument supporting the objectives of the EU Green Deal. The public consultation period for the Forest Strategy is currently open and will close at the end of April 2021. The Forest Strategy addresses the key objectives of effective afforestation, forest preservation and restoration in the EU so as to increase the potential of forests to absorb and store CO2, promote the bio-economy and reduce the impact and the extent of fires, while protecting biodiversity. The strategy thus accounts for both adaptation and mitigation co-benefits of forest ecosystem conservation and restoration. In terms of financing for NbS, within the EU, funding sources for forestry measures are mainly the Common Agricultural Policy and its European Agricultural Fund for Rural Development. For the Western Balkans, different instruments are relevant and centre on Instrument for Pre-Accession (IPA) funds.

Fourth, the ***EU Biodiversity strategy to 2030 and associated Action Plan*** is another instrument of support to the objectives of the EU Green Deal, and are relevant to the Western Balkans as the Biodiversity Strategy provides a benchmark for alignment of Biodiversity Strategies and Action Plans. The EU Biodiversity Strategy to 2030 aims to "build resilience to future threats, such as the impacts of climate change; forest fires; food insecurity; disease outbreaks - including by protecting wildlife and fighting illegal wildlife trade." Actions to be delivered by 2030:

- Establishing a larger EU-wide network of protected areas, enlarging existing Natura 2000 sites, with strict protection for areas of very high biodiversity and climate value.
- Launching an EU Nature Restoration Plan, including proposing binding nature restoration targets by the end of 2021.
- The strategy contributes towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity.

These actions are relevant to the Western Balkans, as they are directly linked to the EU Green Deal and the Green Agenda for the Western Balkans. As part of the accession process, parties are encouraged to align their strategies with EU biodiversity targets and ambitions regarding the post-2020 CBD framework.

NbS actions proposed in the EU Biodiversity Strategy:

- Nature-based Solutions seen as essential for emission reduction and climate adaptation;
- proposal for EU nature restoration targets that includes nature restoration as a key Nature-based Solution;
- measures to remove barriers and increase adoption of Nature-based Solutions with the potential of creating opportunities for business and employment.

Potential financing instruments identified in the EU Biodiversity Strategy:

- biodiversity proofing of the EU budget;
- significant amount of the EU budget dedicated to climate action to be spent on biodiversity and Nature-based Solutions;
- INvestEU natural capital initiative to be established;
- European Green Deal Investment Plan;
- Horizon Europe investments in research, innovation and knowledge exchange to support Nature-based Solutions.

Another set of regional policies relevant to CCA and DRR in the Western Balkans, are **EU Directives** that influence actions related to climate change and disaster risks identified as salient in the region. The following directives are relevant insofar as they influence laws and policy processes in the Western Balkans:

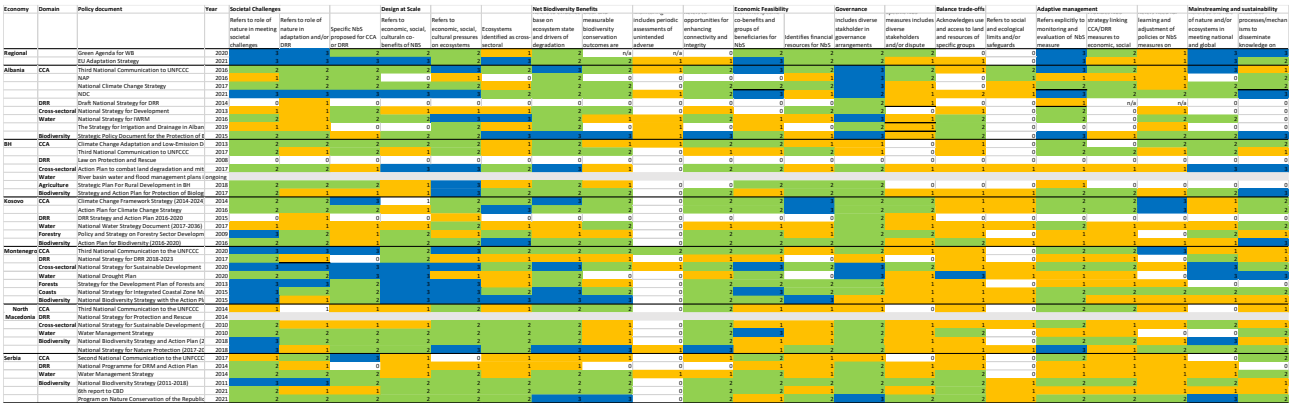
- Floods Directive, which includes the mandate that flood risk mapping be conducted for all flood plains.
- Water Framework Directive, which mandates good ecological status of water bodies.
- Habitats Directive, which requires specifying protected areas (Natura 2000) and reporting on the state of nature/ecosystems
- Birds Directive, which aims to protect specific bird species through protected area networks (Natura 2000)

Further, for DRR, the **EU Civil Protection Mechanism** currently includes Montenegro, North Macedonia and Serbia. This mechanism largely focuses on capacity building in emergency response and thus does not directly address NbS.

Beyond the EU Directives, several EU policy and financing instruments specific to the Western Balkan region are influential. Of note is the *Instrument for Pre-accession Assistance for Rural Development (IPARD)*, which provides financial and technical assistance with the aim of: i) enhancing sustainability in the agricultural sector and rural areas; and ii) enhancing alignment with the EU's Common Agricultural Policy (CAP). IPARD programmes are based around measures set at European level. Where applicable, Western Balkan economies are involved in determining their respective programmes, and several measures have relevance for NbS, as they may address sustainable farming and land management, as well as, support for local development strategies. The current EU candidates and beneficiaries in the Western Balkans are Albania, Montenegro, North Macedonia and Serbia. IPARD programmes are thus developed specifically for each of these EU candidates and are discussed below, where relevant.

Table 2 presents the overview of the comparative analysis of key policies addressing CCA and DRR in the Western Balkans and their adherence to the dimensions developed in line with the criteria of the IUCN Global Standard for Nature-based Solutions™ (see Table 1). It provides insights on the adherence of individual policies with the Global Standard, and provides an analysis of gaps, limitations and opportunities in particular economies (or at the EU level) and for particular sectors. Each of these are discussed in detail in the subsequent sections on the Western Balkan economies below. Further, each of the policies evaluated in Table 2 is described below. The aspects of the policy that correspond to a given Global Standard criteria are highlighted in *italicised text.*

Table 2. Overview of the opportunities and gaps in NbS integration into CCA and DRR policies at regional level and for each of the Western Balkan economies. For a detailed overview per economy, please see the Annex of this report.



(Source: Table developed by the authors of this analysis)

In terms of general observations comparing across Western Balkan economies in Table 2, it can be remarked that Montenegro appears to be the most advanced in terms of adherence to the Global Standard. In particular, policies integrate NbS with respect to the *Societal challenges* and *Design at scale* criteria. Montenegro is weaker with regards to the *Balance trade-offs* criterion. However, it is worth noting that nearly all Western Balkan economies demonstrate gaps in aligning to the Global Standard on this particular criterion. Besides Montenegro, no other Western Balkan economy has arrived at a similar level in terms of NbS integration compared to the others. Nevertheless, the analysis shows that each economy has particular relative strengths and weaknesses.

According to the analysis, Albania appears to be the next most advanced, as it is doing reasonably well in terms of *Societal challenges, Design at scale* and *Net biodiversity benefits* criteria. However, Albania faces similar limitations that are present to varying degrees in other economies, namely, that biodiversity is integrated across multiple sectors, but its role in addressing CCA and DRR in particular is not well recognised in policy (see discussion in Section 4). Serbia also does well in terms of *Societal challenges, Design at scale* and *Net biodiversity benefits* criteria, but exhibits shortcomings regarding *Adaptive management*. This is also related to the fact that policies in Serbia do not strongly recognise the role of nature in CCA, and thus monitoring frameworks are not oriented towards such NbS. Further, there appears to be little coordination between policies oriented towards global agreements in Serbia, and thus the *Mainstreaming and sustainability* criterion is also lagging somewhat.

In comparison, the other economies, Bosnia and Herzegovina, Kosovo and North Macedonia are the least in adherence with the Global Standard which is evident in that they propose almost no explicit NbS measures in their policies *(Societal challenges).* Despite this, Kosovo shows good progress in terms of recognising the role of nature or ecosystems in broader development and CCA

and DRR in particular *(Societal challenges)*, while it lags behind in *Mainstreaming and sustainability*. Both Bosnia and Herzegovina and North Macedonia are reasonably well-aligned with the *Design at scale* criterion. North Macedonia, however, shows particular shortcomings in identifying resources for NbS *(Economic feasibility).* Bosnia and Herzegovina lags behind in *Adaptive management* and, thus, greater effort is required to overcome gaps in progress in its DRR policies, which is partly due to its decentralised structure, and challenges for coordination this poses. Finally, it is not surprising to find that the EU Adaptation Strategy and Green Agenda for the Western Balkans are both well aligned to the Global Standard and propose NbS for climate change mitigation, adaptation and disaster risk reduction.

3.2 Albania

3.2.1 Climate hazard and disaster risk context

Albania is exposed to a number of climate-related hazards and disaster risk, which include both coastal and riverine flooding, droughts, landslides, forest fires and earthquakes. While there are data collection gaps on disasters, the past record of disaster events shows that the most frequently occurring disaster events are forest fires (15%), followed by floods and flash floods (14%), landslides (9%), earthquakes (7%) and rain, wind and heat waves (6%) (see Urban Research Institute, in press).[6] Importantly, Albania has a 316 km coastline on the Adriatic and Ionian Seas, and is thus exposed to coastal flooding, erosion and sea-level rise.

In terms of impacts, historical records show earthquakes and floods to be the deadliest events. With regard to economic impacts, flooding has had the most significant negative direct economic impacts over the past century, responsible for approximately 60% of recorded losses (UNDRR, 2019). For instance, floods in Shkodra in 2002 and 2010 led to around USD 20 million and USD 40 million in losses respectively. Landslides have also led to significant economic damages through the accumulation of many small events, accounting for around 11% of recorded disaster losses in Albania (UNDRR, 2019). In contrast, earthquakes, while potentially higher in impact, occur less frequently.

3.2.2 Policies relevant to CCA and DRR

Table 3. Key policies for CCA and DRR in Albania. Green highlight indicates policy currently being developed.

Policy documents	Inst.	Date (revision)	Relevance for NbS
CCA			

[6] For a detailed account of the situation in Albania, please refer to the Scoping Study: Urban Research Institute (in press). *Enhancing Nature-based Solutions in Albania: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

Intended Nationally Determined Contribution (INDC)	ME	2015	• Addresses energy and industrial for mitigation (no adaptation). Reserves right to 'revise' to include LULUCF mitigation.
3rd National Communication to the UNFCCC	GoA	2016	• Assesses vulnerability of ecosystems to CC • Recommends 18 'green' adaptation measures, including coastal adaptation plan
National Adaptation Plan (NAP) (2nd Draft)	GoA	2016	• Coastal plan priority action includes EbA and ICZM principles
National Climate Change Strategy and Plan (NCCSP)	GoA	2017	• Coastal EbA pilot project + coastal plan • Need for better forestry management to address land degradation • M&E of coastal and forest ecosystems • Preparation and implementation of river basin management plans
Law on Climate Change	ME	2021	• Establishes mitigation framework, including carbon sequestration
Revised Nationally Determined Contribution (NDC)	ME	2021	• Elaborated set of adaptation measures for different sectors that are prioritised and included NbS, e.g. for the coastal sector
4th National Communication to the UNFCCC		(2022)	
DRR			
National Strategy for Disaster Risk Reduction and Civil Protection 2014-2018	MI	2014 (draft)	• Refers to ecosystems vulnerable to CC; but no explicit discussion of role of nature in DRR
National Civil Emergency Plan			• Promotes reforestation • Involve community to restore, develop and maintain safer environment • Misuse of forests, natural resources seen to increase social and economic vulnerability
Law on Civil Protection (n.45/2019)		2019	• Includes some aspects of DRR management – requires the adoption of bylaws
Other cross-sectoral policies			
National Strategy on Development Integration (NSDI-II)	GoA	2015	• Objective to "recover, conserve and enhance ecosystems" that depend on agriculture and forestry; • NbS for forestry + protected areas
National Territorial Plan (NTP)	ATP	2016	• Aligned with the Biodiversity Strategy and NDSI • Strategic land use planning, including protected areas
Water			
National Strategy for Integrated Water Resource Management 2018-2027	MARD (Albania)	2017	• IWRM principles link social and economic development with protection of natural ecosystems. • Harmonisation with EU Directives

The Strategy for Irrigation, Drought and Drainage in Albania	MARD (Albania)	2019	• Harmonised with IWRM principles • However, no mention of role of nature in CCA or DRR (e.g. flood risk reduction)
Agriculture			
Inter-sectoral strategy for Agriculture and rural development in Albania (ISARD)	MARD (Albania)	2014	• Includes specific objectives regarding restoring and conserving ecosystems related to agriculture and forestry.
Forests			
Law on Forests	GoA	2020	• Refers to role of forests in "protection of climate, land …hydric regime"
Coasts			
Integrated Cross-sectorial Plan for the Coastal Belt	MUD	2016	(not available)
Biodiversity			
5th report to CBD	ME	2014	• Ecosystems mainly vulnerable to CC
Strategic Policy Document for the Protection of Biodiversity (i.e. NBSAP under CBD)	ME	2016	• Ecosystems mainly vulnerable to CC • Limited discussion of biodiversity co-benefits (e.g. tourism); and NbS for CCA (e.g. forest biodiversity reduces forest vulnerability);

(Source: Table developed by the authors of this analysis)

Table 3 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains, and their relevance for NbS. Below, each of these policies is reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed in more detail. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2.

Climate change adaptation policies

Climate change adaptation (CCA) policies have been initiated in Albania with a focus on the commitments to the UNFCCC. The first key policy documents addressing climate change adaptation were the First National Communication to the UNFCCC and National Adaptation Programme of Action (NAPA) both developed in 2002. More recently, in 2014, the inter-Ministerial Working Group on Climate Change, chaired by the Ministry of Environment and Tourism, was formed. In adherence with the 2015 Paris Agreement, Albania produced an Intended Nationally Determined Contribution (INDC) in 2016, which focuses on mitigation only (and thus is not included in Table 2), committing to a reduction of CO2 emissions by 11.5% compared to baseline by 2030. Of relevance for NbS for CCA/DRR are the mitigation targets addressing Land-use, land-use change and forestry (LULUCF) which recognise mitigation co-benefits of ecosystem restoration and conservation approaches, particularly for forests.

Subsequent developments have expanded CCA policy through the most recent Third National Communication and the National Adaptation Plan in 2016. Albania's Third National Communication to the UNFCCC (2016) enables the integration of NbS into CCA policy in several respects. First, the report discusses both climate and societal pressures on ecosystems (*Design at scale)*. On one hand, it presents evidence that changing precipitation patterns, increased flooding and droughts, sea level rise and ocean acidification, are resulting in biodiversity loss. On the other, it reports that biodiversity is projected to decrease due to increased land use intensity and the associated destruction or conversion of natural and semi-natural habitats. Coastal ecosystems are regarded as particularly vulnerable Second, the report proposes 67 adaptation measures, of which 18 are 'green' measures. Particularly noteworthy is a priority action for developing an integrated plan for coastal adaptation *(Net biodiversity benefits)*.

Albania's NAP is conceived as an "umbrella" document, which assembles various initiatives underway in different sectors, and seeks to complement these. It proposes a list of priority actions many are aimed at mainstreaming climate change adaptation into sectoral plans, as well as existing national policy processes, such as the National Development Strategy. For nearly all these activities, the NAP does not explicitly refer to NbS or propose NbS measures. The exception to this is the coastal sector, for which a NAP priority action develops a Coastal Adaptation Plan that is based on coastal ecosystem restoration and maintenance (EbA) and ICZM principles.

Beyond its commitments to the UNFCCC, Albania has developed laws and strategies addressing climate change. In 2017, the National Climate Change Strategy and Plan (NCCSP) presents prioritised adaptation measures based on the NAP, while also advancing mitigation actions based on the INDC. Of greatest relevance for NbS is the NCCSP's priority action of developing an Integrated Cross-sectorial Plan for the Coastal Belt. This Coastal Plan explicitly recognises the role of coastal ecosystems in a number of sectors, including tourism and coastal protection, and is based on an Integrated Coastal Zone Management (ICZM) concept that includes participatory planning processes *(Inclusive governance)* and consideration of the role of ecosystems across multiple uses and stakeholders in the coastal zone *(Design at scale)*. Furthermore, the NCCSP seeks to enhance sectoral coordination, streamline climate change across sectoral planning and prepare and implement river basing management plans. Further, the Law on Climate Change was passed by parliament in 2021, which brings into law the countries commitments and strategic objectives focusing on mitigation (and thus is not included in Table 2).

Most recently, in 2021 Albania updated its Nationally Determined Contribution (NDC). The document elaborates an extensive set of adaptation measures that include NbS for addressing climate-related risks (*Societal challenges).* Moreover, the document assigns priorities to the different measures based on considered of the co-benefits they produce both for development and for mitigation

(*Economic feasibly).* The NDC also outlines measures aimed at monitoring climate change and NbS measures' impact on coastal ecosystems (*Adaptive management).*

Disaster risk reduction policies

Albania is a signatory to the voluntary Sendai Framework for Disaster Risk Reduction (and the Hyogo Framework, which preceded it), which as noted in Section 2, provides several entry points for integrating NbS across all of its strategic objectives. Key policies for DRR in Albania include those oriented towards the global agreements, i.e. the 2014 Albanian Hyogo Framework Agreement Monitoring Report 2011–2013.

More recently, the National Strategy for Disaster Risk Reduction and Civil Protection 2014–2018 (2014) describes strategic objectives and measures for DRR. Of note is that the document makes little mention of the role of ecosystems/nature in addressing disaster risk, which appears to represent a gap regarding integration of NbS. In terms of institutional arrangements, the Strategy establishes a national platform for DRR, "engage line Ministries at higher level around disaster risk reduction", which represents an opportunity for cross-sectoral integration of NbS into DRR. Further, the Strategy emphasises the need to strengthen monitoring for forest fires in particular, and DRR more generally through the development of multi-hazard risk maps (*Adaptive Management)*.

Other cross-sectoral policies

A key policy is the 2013 National Strategy for Development and Integration (NSDI-II), which articulates Albania's strategy development objectives across key sectors, and seeks to integrate these in a coherent manner. The NDSI aims to ensure that sectoral priorities, e.g. regarding biodiversity, are coherent with and support objectives in other sectors, such as agriculture or water. While it does not specifically address CCA, as a cross-sectoral strategic plan aiming to achieve sustainable development it is relevant to integrating NbS into CCA and DRR.

Relevant to NbS, the NDSI acknowledges co-benefits of nature for "both recreation purposes and to promote ecotourism" (*Economic feasibility).* Further, it includes for the agriculture and rural development sector, a strategic objective of ensuring "climate adaptation through the smooth management of forests, water and environmentally-friendly agricultural production" (*Societal challenges)* including to "recover, conserve and enhance ecosystems that depend on agriculture and forestry" (*Net biodiversity benefits).* The latter includes forestation and reforestation measures with targets delineated (15% of forest and pasture area). Further, the NDSI aims to ensure an increase of biodiversity protection and management through inclusive, participatory governance (*Inclusive governance)*.

Spatial planning is also relevant for the integration of NbS into CCA and DRR because it provides strategic cross-sectoral guidance to land use that is key to NbS. The National Territorial Plan (NTP) (2015–2030) is the key territorial planning instrument covering the entire Albanian territory (it is not shown in Table 2, as it is aligned with the NDSI). The NTP provides a basis for harmonising sectoral policies and provides the strategic framework for sustainable development, aiming to ensure "balanced economic and social development through a rational use of land, responsible management of its natural resources and environmental protection" *(Societal challenges)*. Relevant to NbS addressing CCA and DRR, the NTP includes measures on land use change and forestry. The NTP is aligned with the Biodiversity Strategy and NDSI. Thus, it includes priorities to increase natural areas and create priority corridors linking natural river valleys *(Net biodiversity benefits)*; to recognise three National Parks (Park Alps, Buna Park, Park Vjosë) as strategic areas for conservation and protection of natural landscape values; and to promote reforestation and regeneration projects in areas degraded by erosion and flood occurrence *(Societal challenges)*.

Sectoral polices

The *water sector* is a key sector for climate change adaptation and disaster risk reduction in Albania as flooding is the most frequent and most economically damaging natural hazard. Water sector policies address water-specific risks, such as flood and drought risks in addition to other key water sector objectives, i.e. water quality.

A key water policy document is the 2017 National Strategy on Integrated Water Resource Management (IWRM), which is based on the 2012 Law on Integrated Water Resource Management. The National IWRM Strategy articulates strategic objectives in the water sector regarding achieving water quality and water access, as well as, reducing flood risk, and is harmonised with EU Flood and Water Framework Directives. In terms of relevance for NbS, most fundamentally, the Strategy is based on IWRM principles that stipulate that "effective management of water resources demands a holistic approach, linking social and economic development with protection of natural ecosystems" (Cohen-Shacham et al., 2016) (*Societal challenges).* Further, the Strategy recognises the tourism co-benefits of achieving WFD water quality objectives, and the role of water for multiple societal uses *(Design at scale)*. The Strategy discusses WFD indicators and societal and economic drivers of water quality degradation. However, regarding flood risks, there is little discussion of the role of ecosystems, and there are no concrete NbS measures discussed regarding flood risk management *(Economic feasibility)*. Importantly, the IWRM Strategy establishes River Basin Management Plans as key instruments for achieving its objectives.

The *forestry sector* is highly relevant to CCA and DRR in Albania, as forests and forestry management practices influence climate-related risks, such as forest fires, landslides and flooding. The recently passed Law on Forestry No 57/2020 (not analysed in-depth in Table 2) sets out

objectives to protect forests and refers explicitly to the role of forests in “protection of climate, land, preservation and improvement of productive potentials, balances of natural environment, biodiversity, genetic resources and hydric regime” (*Societal challenges; Net biodiversity benefits)*.

While the *agricultural sector* is a key sector in Albania, for CCA and DRR it is largely relevant to the extent that agricultural policy affects forestry restoration, conservation and management. A key agricultural sector policy is the Inter-Sectoral Agricultural and Rural Development Strategy (ISARD), which is harmonised with the EU Common Agriculture Policy (CAP) 2014–2020, as well as the “Europe 2020” strategic framework for a rapid, sustainable and inclusive growth, while focusing on the specific needs for the development of agriculture, agro-processing and rural areas in Albania. The core objectives of ISARD are to improve agricultural competitiveness and farm productivity in line with the objective of EU Membership. At the same time, ISARD is harmonised with EU standards and directives, which provide a relevant entry-point for NbS integration. Further, ISARD includes specific objectives regarding restoring and conserving ecosystems related to agriculture and forestry.

Coastal sector policy is key to CCA and DRR in Albania due to sea-level rise exacerbating flood and erosion risks in low-lying areas. As mentioned above, the NAP and NCCSP have identified integrated coastal adaptation planning as a priority action, while a pilot project “Building Resilience through Ecosystem-based Adaptation at the Kune-Vaini Lagoon” has been initiated. In 2017, the Ministry of Urban Development developed the Integrated Cross-sectorial Plan for the Coast Belt covering the entire Albanian coast, which explicitly proposes NbS based on an ICZM concept.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in Albania. As a CBD signatory, Albania’s biodiversity policies are aligned both with the global CBD agreement and the EU Biodiversity Strategy to 2030. Albania has submitted a number of reports to the CBD. Most recently, the 2014 Fifth National Report of Albania to the United Nations Convention on Biological Diversity (CBD) provides an assessment of ecosystem state, pressures, and policies. In 2015, Albania fulfilled its commitment to the CBD to produce a National Biodiversity Strategy and Action Plan (NBSAP), which is formally known as the Document of Strategic Policies for the Protection of Biodiversity in Albania. Several aspects of this policy are highly relevant to integrating NbS into CCA and DRR. First, the document acknowledges the role of nature in creating economic and cultural value (*Design at scale).* Second, the document acknowledges the vulnerability of ecosystems to climate change, but only discusses the role of ecosystems/biodiversity in CCA for forests (i.e. species diversity in forests reduces forest fire risk). Third, societal and economic pressures on ecosystems in multiple sectors are discussed. However, there is little discussion on the ecosystem services provided to different sectors relevant to CCA/DRR, e.g. water retention or combatting soil erosion (*Design at scale)*. Third, the strategy acknowledges the need for participatory approaches

at all levels and is based on the Nagoya Framework for equitable sharing of biodiversity benefits *(Inclusive governance).*

3.2.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

The preceding section and Tables 2 and 3 show that policies in Albania relevant for CCA and DRR are broadly in adherence with the IUCN Global Standard for Nature-based Solutions™. The CCA policy domain in particular shows good adherence to the Global Standard. For CCA policies, the initial NAP formulation showed some gaps regarding identifying net biodiversity benefits, specific NbS co-benefits, and monitoring of NbS outcomes. However, these gaps have been addressed by the subsequent NCCSP which further elaborates specific adaptation priorities relevant to NbS, namely, the Integrated Cross-sectorial Plan for the Coastal Belt.

Figure 8 below compares the results for Albania with the average results achieved for the Western Balkan region as a whole.

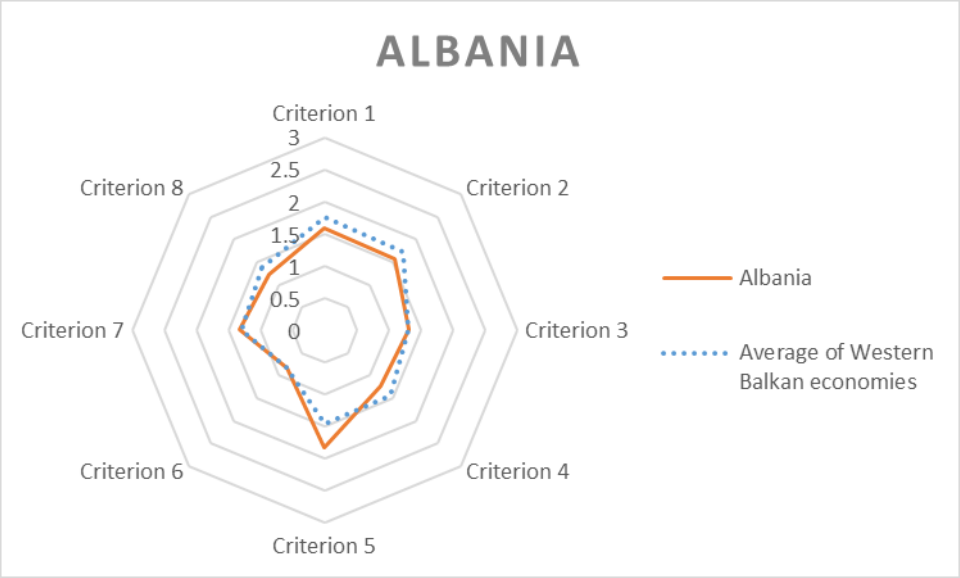


Figure 8. Results for Albania as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

Beyond this overall positive assessment, several **gaps** in cross-sectoral and sector policies for CCA and DRR can be identified.

- First, the National DRR Strategy does not explicitly acknowledge the role of nature/ecosystems in DRR. It does mention the vulnerability of ecosystems to climate change, and the need to fulfil UNFCCC commitments to protect ecosystems. However, there is a gap regarding identifying the potential contributions of ecosystems in reducing major disaster risks in Albania, such as floods and droughts.

- Second, relatedly, across several sectors, although ecosystem vulnerability is prominently recognised, the role of nature or ecosystems in addressing CCA and DRR is hardly acknowledged.
    - In the water sector, the National IWRM strategy mentions the need to protect ecosystems, but does not explicitly refer to the potential for ecosystems to reduce flood risk. The Strategy's section on flood risk reduction discusses only hard infrastructure measures to reduce flood risk explicitly. Similarly, the National Strategy for Irrigation and Drainage is aligned with the WFD and IWRM principles and thus accounts for the need to protect ecosystems. However, it does not explicitly refer to the role of nature or ecosystems in CCA or DRR.
    - Another example is the Strategic Policy Document for the Protection of Biodiversity, which describes ecosystems vulnerability to CC in detail, but provides little discussion of how ecosystems/biodiversity can reduce risks. Nature or ecosystem co-benefits for economy or society are discussed only to a limited degree in terms of the biodiversity co-benefits for ecotourism.
- Third, NbS considered are often viewed from a 'sectoral' perspective. For example, key CCA and biodiversity policy documents (e.g. NBSAP) articulate NbS as priority for coasts and for forestry. However, they do not refer to the related co-benefits of NbS for achieving water policy objectives, e.g. reducing riverine flood risk.
- Fourth, CCA policies identify hydropower generation as a major risk due to changes in the hydrological regime. Solutions to address this risk focus on engineering measures. This represents a gap and missed opportunity insofar as the role of ecosystem water provisioning services are not discussed.
- Finally, a general observation is that across all policies, there is little discussion of unintended adverse consequences of NbS, nor of social or ecological limits and/or safeguards. This gap likely indicates that integration of NbS into policy and project design processes is at a relatively early stage, and these aspects should be considered and integrated in order to make progress on sustainable and effective NbS.

Three types of opportunities for integrating NbS into CCA and DRR

1. Opportunities arise from policies that already include NbS measures as entry-points to support the design and implementation of concrete NbS on the ground that are in adherence with the IUCN Global Standard for Nature-based Solutions™:
    a. Coastal protection and flood risk management: the Inter-sectoral Coastal Adaptation Plan explicitly emphasises the need for maintaining ecosystems and is based on ICZM principles that account for multiple uses in the coastal zone, and inclusive and equitable governance arrangements. This provides an entry-point for NbS addressing CCA (i.e. reducing risks from sea-level rise).

b. Forestry: several policies align here to make this an attractive entry-point for NbS. First, the ISARD includes specific objectives regarding restoring and conserving ecosystems related to agriculture and forestry. Second, existing forestry law refers explicitly to the role of forests in climate adaptation and water services provisioning. Third, at a regional level the Green Agenda for the Western Balkans under the EU Green Deal commits to assist in preparing a Western Balkans Forest Landscape Restoration Plan.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps.
    a. There is an opportunity to address the gap in current policies regarding the co-benefits of nature and NbS by collecting and disseminating evidence on the societal and economic benefits of NbS. This is particularly the case in the water sector, where there is currently little discussion of the potential of NbS, for example, regarding ecosystem services related to flood risk reduction or addressing drought risk.
    b. Further, as many CCA measures in Albania tend to be focussed on grey infrastructure measures, there may be an opportunity to expand the integration of NbS through greater discussion of hybrid solutions. For example, hybrid solutions may be relevant for both coastal protection (e.g. beach nourishment or set-back zones) and riverine flooding.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:
    a. River Basin Management planning: processes for three river basins in Albania are ongoing, which provides opportunities for integrating NbS.
    b. The Fourth National Communication on Climate Change is being prepared

3.3 Bosnia and Herzegovina

3.3.1 Climate hazard and disaster risk context

The main climate-related hazards affecting Bosnia and Herzegovina (BiH) are floods, droughts, forest fires, landslides and heatwaves. Moreover, climate change is projected to increase the frequency and magnitude of these hazards (Kapović Solomun, 2022; Kapović Solomun et al., 2020).[7]

[7] For a detailed account of the situation in Bosnia and Herzegovina, please refer to the Scoping Study: Marijana Kapović Solomun (2022). *Enhancing Nature-based Solutions in Bosnia and Herzegovina: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

Floods are the most frequently occurring hazard and the most damaging. In 2014, extreme precipitation led to flooding that affected 30% of the territory, causing 2000 landslides, killing 23 people and dislocating several minefields that increased exposure to risk from unexploded mines. More recently in May 2020, floods caused damage to infrastructure and agricultural production estimated at USD 1.67 billion (see Kapović Solomun, 2022). Bosnia and Herzegovina has also experienced significant drought impacts in 2012.

Climate-related risks in Bosnia and Herzegovina are also driven by socio-economic factors. For instance, deforestation (especially during and after the war in the 1990s) and illegal construction of houses by refugees in flood prone areas have increased flood risk (EC, 2014). These factors have also increased landslide risk to housing, which is partly driven by lack of spatial planning.

3.3.2 Policies relevant to CCA and DRR

Table 4. Key policies for CCA and DRR in Bosnia and Herzegovina. Green highlight indicates policy currently being developed.

Policies/measures	Inst.	Date (revision)	relevance for NbS
CCA			
Climate Change Adaptation and Low Emission Development Strategy	*	2013	• Acknowledges role of ecosystems in CCA and economic growth • Lack of data is major constraint • Forest restoration proposed as NbS
Third National Communication to the UNFCCC	*	2017	• Vulnerability of ecosystems to CC mentioned • Recommendation for forest restoration; expansion of protected areas
Nationally Determined Contribution (NDC)	MoFTER	2017	• No adaptation • Mentions forests as a potential carbon sink
Nationally Determined Contribution (NDC)	MoFTER	2021	• Dedicated section adaptation • Ecosystems and biodiversity seen as vulnerability to CC, but not as contributing to adaptation
National Adaptation Plan		(2022)	
DRR			
Law on protection and rescue BiH	PABH	2008	• No mention of NbS or CCA
Other cross-sectoral policies			
Action Program to Combat Land Degradation and Mitigate Drought Effects	*	2017	• Reference to forest ecosystem role in flood and drought risk reduction (water provisioning services) • Forest restoration measure proposed

Water			
Law on Water (79/06)	FBiH	2006	
Law on Water (01-557/06)	RS	2009	
Water Management Strategy of FBiH		2010	• Harmonised with EU Floods and WFD
Water Management Strategy of RS		2016	• Harmonised with EU Floods and WFD
Flood risk management plan of FBiH			• Harmonised with EU Floods Directive
Flood risk management plan of RS			• Harmonised with EU Floods Directive
Drought Management Plans in RS and FBiH			• In line with UNCCD
Agriculture			
Strategic Plan For Rural Development of BiH (2018-2021)	*		• Objective 4 "sustainable management of nature resources and CCA" • Refers to role of ecosystems in livelihoods and CCA • Support instruments for ecosystem appropriate farming measures
Strategic plan for Agriculture for FBiH 2015-2020	FBiH		• Drought risk addressed by land management practices, such as, crop rotation, soil and water conservation
Agricultural and Rural Development Strategy of Republic of Srpska 2015–2020	RS		• Drought prevention addressed
Forests			
Law on Forests of FBiH	FBiH	2016 (not yet adopted)	
Law on Forests of RS	RS	2008	• Sets out public responsibilities for protection, management and regeneration of forests
Law on Forests in BD	BD	2010	• Sets out strategic plans for sustainable forest management
Biodiversity			
Strategy and Action Plan for Protection of Biological Diversity of B&H (NBSAP B&H)	*	2017	• Objective: integrate conservation into development • Forest restoration; urban greening measures
			•

(Source: Table developed by the authors of this analysis)

**Note that due to the constitutional structure of Bosnia and Herzegovina for some policy documents multiple entities are responsible – for these no overall responsible institution has been specified.*

Table 4 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains, and their relevance for NbS. Below, each of these policies will be reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2. It is important to note that Bosnia and Herzegovina has a decentralised structure comprised of two entities (the Republic of Srpska (RS) and the Federation of Bosnia and Herzegovina (FBiH)) and Brčko District. Thus, the constitutional structure of Bosnia and Herzegovina is reflected by conducting the analysis of policies at the respective entity-level.

Climate adaptation policies

Climate change adaptation (CCA) policies have been initiated in Bosnia and Herzegovina with a focus on the commitments to the UNFCCC. Similar to other policy processes focused on international agreements, such as, the CBD, Bosnia and Herzegovina has developed economy-level policies to address CCA that have been adopted by the Council of Ministers of Bosnia and Herzegovina with the consent of entities. This contrasts to sectoral policies, where key policy documents are generally developed at entity level (see below). The first key policy documents addressing CCA were the First National Communication to the UNFCCC in 2010 and the Second National Communication in 2013. Based on these, a primary strategic document for CCA was produced in 2013, the Climate Change Adaptation and Low Emission Development Strategy. The document provides an early-stage formulation of an adaptation strategy, thus it takes the form of a framework rather than a detailed action plan. The Strategy centrally addresses biodiversity and ecosystems with an emphasis on the synergies between economic growth and preventing environmental degradation particularly in sectors linked to climate-sensitive ecosystems, such as energy, forestry, health, tourism and water management. The document also highlights that lack of information on ecosystems and climate change impacts is a key constraint to adaptation planning and makes addressing this a priority. Of relevance to NbS integration is that conservation and improved management of protected areas is a priority action, as well as improved monitoring of protected areas. However, the document does not articulate NbS measures that specifically address CCA or DRR *(Societal challenges)*. Subsequently, the 2016 Third National Communication, prepared by UNDP and adopted by the Council of Ministers of Bosnia and Herzegovina in 2017, updates the climate vulnerability assessment for Bosnia and Herzegovina and assesses the state and exposure of ecosystems to climate change in key sectors, e.g. water, forestry, agriculture, tourism and protected areas. The Third National Communication also discusses adaptation options for each of these sectors, but does not formulate an adaptation plan or list of priority adaptation actions. Further, the Third National Communication discusses institutional barriers to adaptation, including lack of coordination and data sharing between organisations (*Adaptive management).* Consideration of ecosystem vulnerability to climate change is discussed with respect to each sector *(Design at scale).* While for concrete NbS proposals, forest restoration and an increase of the

protected area network are discussed in general terms and do not focus on solving a specific societal challenge.

In 2017, in adherence with the Paris Agreement, Bosnia and Herzegovina produced an Intended Nationally Determined Contribution (INDC), which focused only on mitigation without addressing adaptation or NbS. A dedicated section on adaptation was added to the recently updated NDC of 2021. Subsequent developments have expanded CCA policy through initiation of a NAP process in 2016 supported by UNDP and based in part on the NAP-Technical Guidance. The NAP process is currently ongoing and expected to produce the first NAP including a list of priority adaptation options in early 2022. The respective laws on climate change to be adopted at entity level are also under preparation, which may provide additional entry points for the mainstreaming of NbS.

Disaster risk reduction policies

While BiH has adopted the Sendai Framework, there is presently no DRR strategy or policy that covers the entire territory of BiH, nor is there one public authority legally mandated. The most recent relevant law at the entire economy level for DRR is the “Law on protection and rescue of people and material goods from natural or other disasters in Bosnia and Herzegovina” (Official Gazette of B&H No. 50/08). However, the law does not mention climate change adaptation or biodiversity/ecosystems, and thus represents a gap in regard to integrating NbS into DRR and CCA policies.

More detailed policies, such as protection and rescue plans have been developed at the entity level. The Ministry of Security of BiH, however, considers mainstreaming DRR into development strategies a priority (FAO, 2020). Further, within the respective mandate of the entities, there are a number of river basin management plans either regional or transboundary being developed in adherence with the EU Flood Directive. For example, flood management plans are being prepared within river basins, as one has been done for the Sava River basin. These are discussed below.

Other cross-sectoral policies

The policy process centred on the UNCCD global agreement on land degradation has relevance for CCA and DRR in Bosnia and Herzegovina. At the economy level, the most recent strategic policy document is the Action Programme to Combat Land Degradation and Mitigate Drought Effects in BiH, adopted by the Council of Ministers in 2017. Separate from the Action Programme, Land Degradation Neutrality (LDN) Targets were developed by the entities till 2030. In terms of relevance for NbS, the Action Programme explicitly acknowledges the role of forest ecosystems both in drought risk reduction (through water provisioning services) and flood risk reduction (through water retention) (*Societal challenges)*. Further, it proposes potential NbS measures addressing CCA and DRR for forestry, including improved forest management practices and increasing the coverage of protected

areas (*Net biodiversity benefits)*. At the entity level, in the Republic of Srpska, a Drought Management Plan is being developed in cooperation with the UNCCD secretariat. Finally, the Action Plan is well aligned with both the CBD and UNFCCC (*Mainstreaming and sustainability).*

Sectoral polices

The development of sectoral policies falls within the mandate of each entity, with relevant entity-level policy documents highlighted below.

The *water sector* is a key sector for CCA and DRR in Bosnia and Herzegovina, as both flooding and drought are prevalent natural hazards. Each entity has developed its own Water Management Strategy, which contributes to a certain level of fragmentation. However, even within the entities these Strategies have encountered barriers. In the Federation of BiH, the adoption of the first Water Management Strategy was delayed three years. In the Republic of Srpska, the Integrated Water Management Strategy (2015–2024) was adopted in 2016. Other important water sector policy instruments to address CCA and DRR are catchment level water management strategies and river basin management plans developed within the respective entities. These policies are aligned with EU Flood and Water Framework Directives both due to the rationale of EU *acquis* alignment under Chapter 27 and because of the transboundary institutions with which these plans are developed, e.g. the International Commission for the Protection of the Danube River. Thus, they provide entry-points for integrating NbS through acknowledging the role of ecosystems and inclusive governance arrangements.

The *agricultural sector* is relevant for CCA and DRR in Bosnia and Herzegovina to the extent that agricultural policy affects land use, including land uses related to forestry restoration, conservation and management. As with the water sector, fragmentation is also prevalent in agriculture policy. At economy level, the Strategic Plan for Rural Development of Bosnia and Herzegovina (2018–2021) that covers all jurisdictions of BiH was adopted by the Council of Ministers of Bosnia and Herzegovina with the consent of entities. Within the entities, more detailed agricultural development and rural development plans have been developed by the Federation of Bosnia and Herzegovina and the Republic of Srpska respectively.

Looking first at the economy level, in terms of relevance for NbS addressing CCA or DRR, the Strategic Plan for Rural Development of BiH (2018–2021) includes as one of 5 core objectives, Objective 4 “sustainable management of nature resources and adaptation to climate change”, and the document outlines the importance of maintaining ecosystem health to support livelihoods and adaptation to climate change (*Societal challenges).* Further, it outlines instruments, such as support for farmers to adopt measures that are appropriate for ecosystem health (*Economic feasibility)*. The Strategic Plan assesses risks from natural hazards to agriculture as mainly arising from displacing

land mines for which it is less clear that NbS would be effective in addressing this particular hazard. One gap of note is that neither the Strategic Plan of BiH nor other decentralised agricultural sector plans mention global agreements, e.g. UNFCCC, CBD or Sendai Framework (*Mainstreaming and sustainability)*.

Turning to the entity level, in the Federation of BiH, the Strategic Plan for Agriculture FBiH 2015-2020 includes a focus on drought risk reduction through land management practices, e.g. crop rotation, soil and water conservation (*Design at scale)*. However, the greater focus is on agricultural modernisation measures, including irrigation infrastructure. Similarly, the Rural Development Strategy for BiH 2015–2020 has little scope for NbS addressing CCA or DRR, as DRR is hardly considered in the documents. Most measures focus on new crop types and other farm innovations. In the Agricultural and Rural Development Strategy of Republic of Srpska 2015–2020, there is little discussion of DRR, e.g. regarding flooding, or forest fires, though drought prevention is included (FAO, 2020).

The *forestry sector* is highly relevant to CCA and DRR in Bosnia and Herzegovina, as forests and forestry management practices influence climate-related risks, e.g. forest fires, landslides and flooding. Again, due to the political structure in BiH, an overarching forest strategy and legal framework is not in place. Relevant policies are designed at the entity and Brčko District levels.

Focusing on the entity level, in the Federation of BiH, a Law on Forests of FBiH was adopted in 2016 by the Parliament of FBiH, but not yet passed into law. In the Republic of Srpska, the Law on Forests of the Republic of Srpska is in place. Further, a Strategy of Forestry Development of the Republic of Srpska 2022–2032 is currently under preparation. In Brčko District, the Law on Forests in Brčko District is also already in place. Additionally, both entities implemented LDN Target setting processes that prescribe measures for the forestry sector to achieve LDN by 2030.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in Bosnia and Herzegovina. As a CBD signatory, Bosnia and Herzegovina's biodiversity policies are aligned both with the global CBD agreement and the EU Biodiversity Strategy to 2030. At the economy level, Bosnia and Herzegovina has submitted a number of reports to the CBD. The most recent is the 2014 Fifth National Report to the CBD, which provides an assessment of ecosystem state, pressures and policies. In 2017, the Strategy and Action Plan for Protection of Biological Diversity (2015–2020) was approved by the Council of Ministers. Several aspects of this policy are highly relevant to integrating NbS into CCA and DRR. First, the document sets forth as an overarching objective the integration of biodiversity conservation into all development strategies and acknowledges the vulnerability of ecosystems to climate change (*Design at scale).* Second, the document hardly discusses DRR and discusses the role of ecosystems/biodiversity in enabling CCA mainly in regard to forests, though it

does recommend measures both of forest restoration and increasing urban green area measures (*Societal challenges)*. Third, similar to Albania, while societal and economic pressures on ecosystems are discussed, the role of nature or ecosystems in CCA and DRR, e.g. through water retention, combatting soil erosion, etc., is hardly mentioned (*Design at scale)*. In terms of governance arrangements, the strategy acknowledges the need for participatory approaches at all levels and is based on the Nagoya framework for equitable sharing of biodiversity benefits *(Inclusive governance)*. Fourth, the strategy is primarily oriented towards the Aichi targets of the CBD, and makes little reference to other global agreements, e.g. UNFCCC, UNCCD, Sendai Framework (*Mainstreaming and sustainability)*. The current process of developing the Bosnia and Herzegovina and its Entities Environmental Strategy and Action Plans (ESAP 2030+) provides an opportunity to address some of these gaps.

3.3.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

The preceding section and Table 2 show that the adherence of policies in Bosnia and Herzegovina to the IUCN Global Standard for Nature-based Solutions™ is lagging for DRR policies, while for key sectors, e.g. water and forestry, the status varies depending on the entity. It is encouraging that the policy domain centred on the UNCCD appears to already significantly integrate NbS considerations for CCA and DRR. Regarding CCA policies, NbS integration is less advanced than for instance in Albania. However, data availability is a key constraint in this regard, and the ongoing NAP process represents an opportunity to advance NbS integration into CCA policy.

Figure 9 below compares the results for Bosnia and Herzegovina with the average results achieved for the Western Balkan region as a whole. While this figure does not provide a detailed account for each of the entities, for which specific recommendations are derived from the analysis above, it allows for a general understanding of key gaps and opportunities vis a vis the regional perspective.

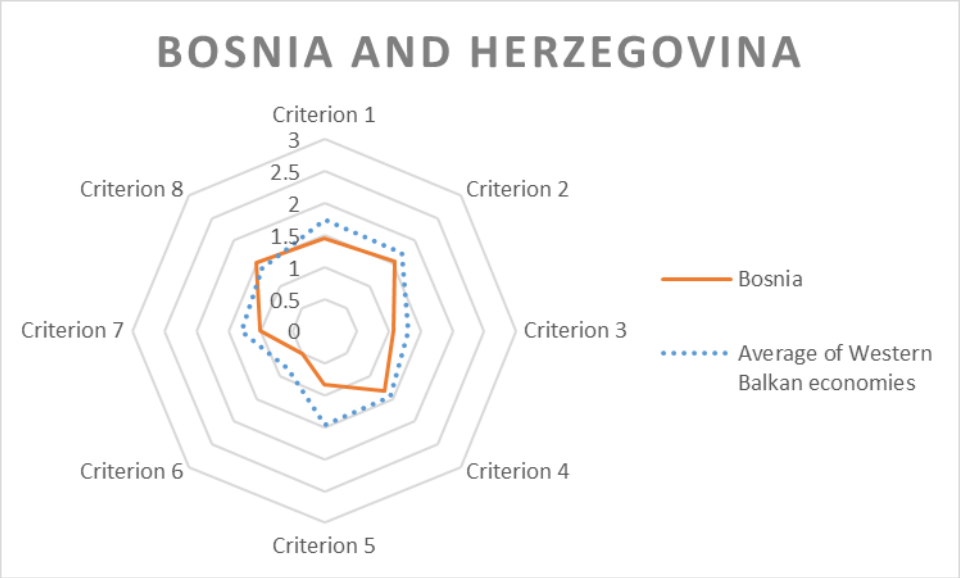


Figure 9. Results for Bosnia and Herzegovina as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

Beyond this overall rather mixed assessment, several **gaps** in cross-sectoral and sector policies for CCA and DRR can be identified.

- First, at the economy level, all three National Communications to the UNFCCC (2010), (2013) and (2017) emphasise that sufficient data and modelling approaches are largely lacking for comprehensive assessments of climate change impacts on key sectors. Addressing this gap, while important for any type of adaptation action, is especially important for NbS because demonstrating their low-cost, no regret characteristics is a key enabler of NbS implementation. It should be noted that this lack of data availability is also related to institutional barriers, as a system for information exchange, for example, on natural hazard impacts, between entities is absent (see Kapović Solomun, 2022).
- Second, and the most relevant gap in the CCA policy domain at the economy level, is that the Climate Change Adaptation and Low Emission Development Strategy does not articulate NbS measures that specifically address CCA or DRR. This may be in part due to the fact that the Strategy is somewhat outdated and due to be renewed, e.g. through the NAP process.
- Third, similar to Albania, DRR policies do not explicitly acknowledge the role of nature/ecosystems in risk reduction. This is considered a gap that should be addressed through both integrating the current DRR process with the CCA domain and integrating NbS considerations into both processes.
- Finally, two general observations cut across all policies at economy and entity level. First, as in Albania, there is little discussion of unintended adverse consequences of NbS, nor of social or ecological limits and/or safeguards. This gap likely indicates that integration of NbS into policy and project design processes is at a relatively early stage, and these aspects should be considered and integrated in order to make progress on sustainable and effective NbS. Second, across policies of both entities in BiH, there is little consideration of global agreements in policy formulation. This may be a barrier to NbS in so far as it is an indicator that sectors/domains remain ‘siloed’ making it more difficult to take advantage of the multiple co-benefits provided by NbS.

Three types of opportunities for integrating NbS into CCA and DRR

1. Opportunities arise from policies that already include NbS measures as entry-points for designing and implementing NbS:
    a. At the economy level, the NAP process represents a major opportunity to further integrate NbS, as the policy framework already acknowledges the benefits of ecosystems for addressing societal challenges. This presents an opportunity for NbS that also integrate DRR considerations.

b. Drought Risk Management Plans at the entity level and the Brčko District respectively, initiated through the UNCCD process, are key policy documents that acknowledge the multiple benefits of sustainable land management practices, e.g. soil and water conservation, to address drought risk and increase agricultural productivity, which make this attractive for proposing NbS. This may also be harmonised with the Green Agenda for the Western Balkans under the EU Green Deal, which commits to assist in preparing a Western Balkans Forest Landscape Restoration Plan.
c. At entity level, river basin management plans and flood risk management plans offer opportunities for harmonisation with EU Directives that require meeting multiple objectives in flood risk and river basin management, which provides an entry point for NbS.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps:
    a. There is an opportunity to address the gap in current policies regarding lack of data and particularly economic analysis of NbS by collecting and disseminating evidence on the societal and economic benefits of NbS tailored to the needs of the respective entity.
    b. There is an opportunity to enhance the DRR framework, which is in need of updating, to consider climate change and NbS addressing climate change adaptation.
    c. Further, there is an opportunity to address institutional gaps, i.e. lack of data sharing and cooperation across different entities, through developing NbS that are implemented in multiple entity jurisdictions, e.g. protected areas or transboundary river basin management commissions.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:
    a. Law on climate change at entity level: preparation is ongoing and represents an opportunity for NbS integration.
    b. Bosnia and Herzegovina Environmental Strategy and Action Plan (ESAP 2030+), including contributions tailored to the needs of each entity.
    c. Forestry sector in the Republic of Srpska: the preparation of the Strategy of Forestry Development of the Republic of Srpska 2022–2032 represents an opportunity for NbS integration.

3.4 Kosovo

3.4.1 Climate hazard and disaster risk context

The main climate-related hazards and disaster risks affecting Kosovo are floods, droughts, forest fires, landslides and heatwaves. Moreover, climate change is projected to increase the frequency and magnitude of these hazards. Indeed, increases in climate variability have already been observed in Kosovo (MEPP, 2014). The frequency and intensity of precipitation extremes has grown since the 1980s exacerbating flood and drought risks. Indeed, droughts have impacted Kosovo in 2000, 2007 and 2008. Further, rising temperatures also increase the likelihood of forest fires, which have also grown in frequency since 2000 (MEPP, 2014).[8]

In addition to climate changes, socio-economic aspects also drive disaster risk in Kosovo. High poverty incidence, lack of water and drainage infrastructure, deforestation and lack of land use planning and implementation, including building in hazard zones, have all been identified as contributing to disaster risk and climate change vulnerability in Kosovo (MEPP, 2014).

3.4.2 Policies relevant to CCA and DRR

Table 5. Key policies for CCA and DRR in Kosovo. Green highlight indicates policy currently being developed.

Policies/measures	Inst.	Date (revision)	relevance for NbS
CCA			
Climate Change Framework Strategy (CCFS)	MESPI (Kosovo)	2014	• Proposes NbS for flood risk reduction: reforestation and land use change • NbS drought risk reduction measures proposed • Objective to integrate biodiversity into sectoral planning
Action Plan for the Climate Change Strategy	MESPI (Kosovo)	2016	• Drought Initiative: only drought resistant crops • Priority integrating CCA and biodiversity policies • River basin plans mandated to be developed by municipalities including reforestation and land use change
DRR			
Disaster Risk Reduction Strategy and Plan of Action (2016-2020)	EMA	2015	• Addresses knowledge generation, exchange and capacity building • Refers to integrating CCA and DRR but no measures proposed • Role of biodiversity in DRR not mentioned
Water			

[8] For a detailed account of the situation in Kosovo, please refer to the Scoping Study: IUCN (in press). *Enhancing Nature-based Solutions in Kosovo: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

National Water Strategy Document (2017-2036)	GoK		• River basin management plans are key measures, but do not explicitly include NbS for CCA • Relative lack of integration with CCA policies
River basin management plans			
Forests			
Policy and Strategy on Forestry Sector Development (2010-2020)	MAFRD	2009	• Refers to multiple co-benefits of sustainable forestry • Limited links to CCA/DRR
Strategy on Forestry 2021-2030			
Biodiversity			
Action Plan for Biodiversity (2016-2020)	MESPI (Kosovo)	2016	• Prioritises integrating biodiversity in sectoral plans and spatial planning • Lack of integration of CCA or climate adaptation policies
Strategy on Biodiversity 2021-2030			
Strategy on Environment and Sustainable Development 2021-2030			

(Source: Table developed by the authors of this analysis)

Table 5 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains in Kosovo, and their relevance for NbS. Below, each of these policies will be reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2.

Climate adaptation policies

Although Kosovo is not a signatory to the UNFCCC, it has nonetheless developed a number of policies broadly in line with the commitments to the UNFCCC. This is in part because CCA policy is relevant for Kosovo in meeting the requirements of EU *acquis* with regards to, for example, the Water Framework Directive and Flood Directive. A key policy document for CCA is the 2014 Climate Change Framework Strategy (CCFS), which comprises both a Low Emission Development Strategy, addressing GHG emission reductions, and a National Adaptation Strategy (NAS). The NAS provides broad strategic objectives for CCA as well as a prioritised list of adaptation measures for addressing these objectives. There are several aspects of note for integrating NbS into CCA. First, the NAS explicitly refers to water retention benefits of nature landscapes and forests, and their contribution to flood and drought risk reduction. Further, it proposes NbS of reforestation and land use change to reduce flood risk and drought risk *(Societal challenges).* Second, the NAS measures were identified and subsequently ranked by stakeholders and experts using a multicriteria analysis, which included the ecological/biodiversity impacts of the measure *(Net biodiversity benefits)* and the costs of implementation. Further, resources were identified for implementing prioritised measures in the plan

(Economic feasibility). The NAS also proposes a measure of education and awareness raising on the benefits of forests and biodiversity (*Mainstreaming and sustainability).* The document thus provides a number of opportunities for enhancing NbS for CCA/DRR in development and sectoral policies.

In 2016, the Action Plan for Climate Change Strategy provided a more detailed elaboration of measures in addition to the NAS. The Action Plan describes a Drought Initiative, which focuses only on drought resistant crops and thus offers relatively little scope for NbS. However, it also proposes that River Basin Management Plans, the key flood management policy instrument, mandated to be developed by municipalities, be required to include reforestation and land use change to address flood risk. This presents an opportunity for NbS development.

Disaster risk reduction

The 2015 Disaster Risk Reduction Strategy and Plan of Action (2016–2020) represents the first document in Kosovo addressing DRR. While the goals of the Strategy are in line with the Sendai Framework and the European Strategy for Supporting Disaster Risk Reduction in Developing Countries, as the first DRR document in Kosovo, it does not go beyond proposing knowledge generation, institutional support and capacity building measures. Concrete DRR measures are not yet put forward in the Strategy *(Societal challenges)*. Further, there is a gap in terms of integrating NbS into DRR/CCA, as the Strategy does not refer to any measures in the NAS, nor does it refer to the role of biodiversity in DRR *(Design at scale; Mainstreaming and sustainability)*.

Sectoral policies

The *water sector* is a key sector for CCA and DRR in Kosovo, as flooding, drought and soil erosion associated with heavy precipitation events are prevalent natural hazards. A key policy document here is the National Water Strategy (2017–2020), which set out strategic objectives and measures regarding water use, water quality and water-related risks (e.g. flooding, droughts, etc.). The document is aligned with the EU Water Framework and Flood Directives, and thus aims to advance flood risk mapping activities for the entire territory. There are several aspects of the Strategy of relevance to integrating NbS for CCA and DRR. First, the Strategy is based on the principles of IWRM and thus integrates biodiversity indicators, e.g. to maintain water quality status. However, it does not relate biodiversity or nature to CCA or DRR explicitly. Further, a key measure for achieving objectives is developing River Basin Management Plans, and these also integrate biodiversity, but the Strategy does not explicitly refer to the need to also include CCA in these plans *(Societal challenges).* Furthermore, the Strategy does not explicitly discuss the co-benefits of biodiversity or ecosystems beyond their contributions to water quality and thus WFD objectives *(Economic feasibility).* Neither does the Strategy make detailed reference to other policy domains, e.g. CCA or biodiversity (*Mainstreaming and sustainability).* Generally, the Strategy focuses on physical

infrastructure measures in more detail. Thus, there appears to be a gap in terms of linking water sector policy to adaptation planning, which more explicitly acknowledges the role of NbS in, for example, reducing flood risk or other climate-related hazards.

The *forestry sector* is highly relevant to CCA and DRR in Kosovo, as forests and forestry management practices influence climate-related risks, e.g. forest fires, landslides and flooding. The most recent key policy document here is the somewhat dated 2010 Policy and Strategy Paper on Forestry Sector Development (2010–2020). Several aspects of this document are relevant to integrating NbS into CCA and DRR. First, the Strategy Paper explicitly acknowledges the multiple co-benefits of forestry ecosystems in terms of economic and social benefits ("non-wood values"). It also refers to the role of forests in reducing impacts of "natural catastrophes". However, it does not discuss this in detail, and neither refers to CCA at all *(Societal challenges).* The Strategy articulates well the role of sustainable forestry in development, and the importance of integrating biodiversity conservation within this. However, it does not link improved forestry practices to CCA or DRR, and rather focuses on economic development opportunities presented by sustainable forestry *(Design at scale).* While biodiversity is well integrated within the forest sector strategy, with protected area planning and management planning having a prominent role, these measures neither account for climate change, nor are they seen as contributing to CCA *(Mainstreaming and sustainability).* The preparation of an updated Strategy on Forestry 2021–2030 represents an opportunity to address these gaps and to integrate NbS more strongly.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in Kosovo. Kosovo's biodiversity policies are aligned with the global CBD agreement and Aichi targets and the EU Biodiversity Strategy to 2030, as part of its preparations for EU candidacy. A key policy document for biodiversity is the 2016 Strategy and Action Plan for Biodiversity, which reports on progress in implementing the 2010 National Strategy for Biodiversity. The Strategy acknowledges the key role that biodiversity plays in economy and society. However, with the exception of a brief discussion regarding forests role in flood risks reduction, it does not explicitly discuss the role of nature in CCA or DRR *(Societal challenges).* A key priority of the Strategy is the integration of biodiversity into sectoral planning. Further, the Strategy mandates that biodiversity be integrated into spatial planning conducted by municipalities and for protected areas. However, again, here CCA and DRR are not explicitly considered *(Design at scale).* Similarly, while the development of a monitoring and evaluation framework is proposed and linked to the measures in the Strategy, this only implicitly addresses CCA/DRR *(Adaptive management).* The Strategy demonstrates integration with sectoral planning, e.g. in the water sector, but does not make substantial links to CCA, e.g. though integration of the objectives of the Climate Change Strategy *(Mainstreaming and sustainability).* Thus, while the strong emphasis on the integration of biodiversity into sectoral planning represents an opportunity for enhancing NbS, the relative absence of links to CCA/DRR represent a gap to be addressed.

Similar to the forestry sector, there is an opportunity to integrate NbS into the ongoing policy processes in relation to the preparation of the Strategy on Biodiversity 2021–2030 and the Strategy on Environment and Sustainable Development 2021–2030.

3.4.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

The preceding section and Table 2 show that the adherence of policies in Kosovo to the IUCN Global Standard for Nature-based Solutions™ lags somewhat compared to other Western Balkan economies. In particular, there is a relative lack of NbS proposed in cross-sectoral or sectoral policies and a relative lack of mainstreaming across various global agreements relevant for CCA/DRR.

The lack of mainstreaming of NbS shows that there is a relative weakness of integration of CCA/DRR across different sectors. Looking at the CCA policies alone, it can be observed that biodiversity and NbS are addressed to some extent in the CCA policy processes. At the same time, looking at the Biodiversity Strategy, it is worth noting that it is explicitly integrated across different sectors. Further, biodiversity conservation and management is well integrated into sectoral planning. Therefore, it is surprising to find that biodiversity conservation across all sectors is not clearly linked to the role that nature or biodiversity can play in CCA/DRR. Thus, the CCA policy process appears to not be strongly integrated with other sectors.

This lack of integration of CCA across relevant sectors represents an opportunity in the next updating of the National Adaptation Strategy to strengthen the link between biodiversity conservation and its support for CCA and DRR. Adaptation planning in Kosovo already integrates NbS, and strengthening the integration of CCA into sectoral planning could therefore strengthen also NbS that address CCA/DRR in sectoral plans.

Figure 10 below compares the results for Kosovo with the average results achieved for the Western Balkan region as a whole.

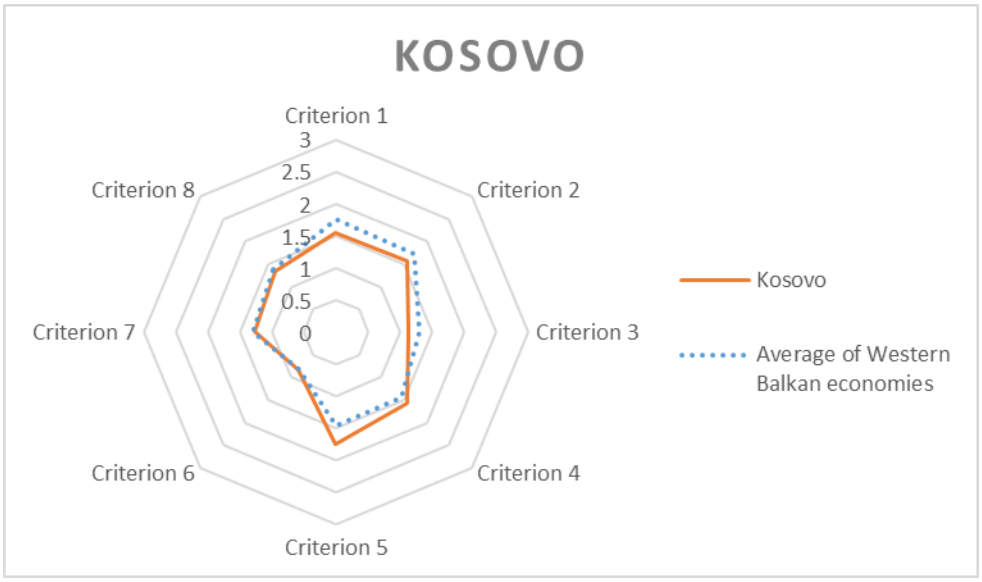


Figure 10. Results for Kosovo as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

Beyond this mixed assessment of adherence to the IUCN Global Standard for Nature-based Solutions™, the following **gaps** in policy can be identified:

- First, there appears to be a gap in terms of linking water sector policy to adaptation planning, which more explicitly acknowledges the role of NbS in, for example, reducing flood risk or other climate-related hazards.
- Second, the Forest Sector Strategy does not link improved forestry practices to CCA or DRR, and rather focuses on economic development opportunities presented by sustainable forestry *(Design at scale).* While biodiversity is well integrated within the forest sector strategy, with protected area planning and management planning having a prominent role, this measures neither account for climate change, nor are they seen as contributing to CCA.

Three types of opportunities for advancing NbS integration in CCA/DRR policies

1. Opportunities arise from policies that already include NbS measures as entry-points to support the design and implementation of concrete NbS on the ground that are in adherence with the IUCN Global Standard for Nature-based Solutions™:
    a. The Water Management Strategy proposes that River Basin Management Plans, the key flood management policy instrument, mandated to be developed by municipalities, be required to include reforestation and land use change to address flood risk. This presents an opportunity for NbS development.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps:
    a. There is an opportunity to enhance the integration of CCA into sectoral planning in particularly in the water and forestry sectors.
    b. There is a related opportunity to increase the recognition of NbS in CCA policy. Taken together, this should in turn increase the integration of NbS into sectoral planning.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:
    a. Several strategies, including the Strategy on Forestry, the Strategy on Biodiversity and the Strategy on Environment and Sustainable Development are up for revision, which represents an opportunity for NbS integration.

3.5 Montenegro

3.5.1 Climate hazard and disaster risk context

Montenegro is exposed to a number of climate-related hazards and disaster risks, which include both coastal and riverine flooding, droughts, landslides, forest fires and earthquakes. Climate change is projected to lead to increasing temperatures, less precipitation, increasing risk of floods, droughts, heat waves and forest fires (see Ruiz and Hessenberger, in press).[9]

Floods are the most frequent natural hazard, as Montenegro has experienced six significantly damaging flood events over the past decades. In 2007, an extreme heat wave and drought led to water supply problems, especially in coastal regions. Forests in the coastal and central parts of Montenegro are highly vulnerable to fire due to high air temperature in summers and periods of dry warm winters. Climate-related risks are also influenced by socioeconomic drivers in Montenegro. For instance, rapid development has increased investments and human settlements in high-risk coastal areas and increased exposure of people and assets to flooding. This points to the relevance of policies, including spatial planning, to manage and reduce these risks.

3.5.2 Policies relevant to CCA and DRR

Table 6. Key policies for CCA and DRR in Montenegro. Green highlight indicates policy currently being developed.

Policy documents	Inst.	Date (revision)	Relevance for NbS
CCA			
Intended Nationally Determined Contribution (INDC)	ME (Montenegro)	2015	• No adaptation • Reserves right to review until 2020 upon the availability of more accurate data for LULUCF
National Climate Change Strategy (NCCS) to 2030	GoM	2015	• No new CCA measures; lists ongoing projects, e.g. ICZM project • No explicit discussion of NbS
Third National Communication to the UNFCCC	MSDT	2020	• Mentions ecosystems vulnerability to CC • Co-benefits of ecosystems articulated • NbS for forestry and coasts proposed
Nationally Determined Contribution (NDC)		2021	• Includes section on adaptation • No explicit discussion of NbS, except for discussion of “green tourism” as an adaptation strategy
INAP		(2021-22)	
DRR			
National Strategy for Disaster Risk Reduction and Civil Protection 2018-2023	MI (Montenegro)	2018	• Strategic objectives aimed at implementing Sendai framework; climate adaptation plans integrated • No explicit discussion of NbS

[9] For a detailed account of the situation in Montenegro, please refer to the Scoping Study: Ruiz, V. and D. Hessenberger (in press). *Enhancing Nature-based Solutions in Montenegro: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

Other cross-sectoral policies			
National Strategy for Sustainable Development by 2030	MSDT	2016	• Strategic objective to promote green economy • Section on sustainable management of coastal zone resources and blue economy • Aims to strengthen resilience of natural and social systems
Water			
Water Management Strategy (2016-2035)		2015	• Explicitly acknowledges the various adverse impacts of climate change on this sector • Calls for effective and coordinated action flood protection
National Drought Plan	MSDT	2020	• Recommends IWRM and forest restoration to combat drought
Agriculture			
Strategy for Rural Development and Agricultural (2015-2020)	MARD (Montenegro)	2015	• Objective: sustainable management of natural resources • No mention of CCA or DRR
Forests			
Strategy for the Development Plan of Forests and Forestry (2014-2023)	MARD (Montenegro)	2013	• Forestry development plans should include CCA measures • Should be based on “ecosystem approach”
Coasts			
National Strategy on Integrated Coastal Zone Management	MSDT	2015	• Refers to economic and cultural co-benefits of NbS • CCA for coastal flooding focused on set-back zones and spatial planning
Biodiversity			
National Biodiversity Strategy with the Action Plan (2016-2020)	MSDT	2015	• Refers in detail to co-benefits of biodiversity for economy and society; but not explicitly for CCA/DRR • Action plan for biodiversity integrated into sectoral plans

(Source: table developed by the authors of this analysis)

Table 6 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains in Montenegro, and their relevance for NbS. Below, each of these policies will be reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2.

Climate adaptation policies

Similar to other Western Balkan economies, climate change adaptation (CCA) policies have been initiated in Montenegro with a focus on the commitments to the UNFCCC. This includes the Initial

and Second National Communication to the UNFCCC, which were the first policy documents to address CCA in Montenegro. In 2015, in fulfilment of its Paris Agreement obligation, Montenegro submitted its INDC. This however did not include adaptation, though Montenegro reserved the right to revise its NDC subject to better information regarding emissions from LULUCF. Further, in 2017, Montenegro passed the Law confirming the Paris Agreement.

Of greater relevance to CCA is the National Climate Change Strategy (NCCS) to 2030 that was adopted in 2015. The NCCS has a strong focus on harmonisation with the EU climate-change legislative framework and mitigation measures, and all targets in NCCS address mitigation in the energy or transport sectors. Regarding CAA, it contains a largely conceptual discussion on adaptation planning and decision-making, and lists the adaptation measures identified as priorities in the Second National Communication to the UNFCCC. Finally, the document lists ongoing projects in Montenegro relevant to CCA, e.g. local level flood risk mapping, and an ICZM coastal area management plan.

In 2020, the Third National Communication to the UNFCCC (TNC) significantly advanced climate change adaptation in Montenegro building upon the proposals for adaptation options in the Second National Communication and the NCCS to provide a comprehensive set of adaptation options for the water resources, forestry, coastal, marine and urban sectors. However, it does not prioritise these adaptation measures. The TNC further highlights the work done in relation to gender equality and climate change, in particular referencing the study “Women and Climate Change in Montenegro” that presents available disaggregated data. Regarding NbS integration into CCA, the TNC is well-aligned with the IUCN Global Standard in several respects. First, the document articulates the co-benefits of ecosystems and biodiversity for CCA with respect to flood risk reduction and forestry resilience, as well as economic development (*Societal challenges)*. Further, it proposes several detailed NbS including a forestry management and restoration measure that includes improved monitoring of ecosystem characteristics (*Net biodiversity benefits)* that are to be updated and adjusted over time (*Adaptive management).* Limitations of the document are that it does not include analysis of NbS financing (*Economic feasibility)*, focusing on mainstream adaptation and climate finance, and that it is not explicitly aligned with the CBD or its biodiversity targets (*Mainstreaming and sustainability).*

Finally, a significant recent development for CCA is that, as of January 2021, a project to develop the NAP in Montenegro is receiving funding from the Green Climate Fund.

Disaster risk reduction policies

Montenegro is a signatory to the voluntary Sendai Framework for Disaster Risk Reduction (and the Hyogo Framework, which preceded it), which as noted in Section 2, provides several entry points for integrating NbS across all of its strategic objectives. The National Strategy for Disaster Risk

Reduction (2018–2023), adopted in 2017, aims to transition the DRR approach from emergency response to preparedness. It articulates an approach to prevention integrated across all development sectors to increase the stability of society (see Ruiz and Hessenberger, in press). The Strategy further establishes a National Platform for DRR that brings together more than 12 government entities. Proposed measures in the strategy relevant to NbS include raising public awareness regarding droughts and drought mitigation. However, no explicit NbS measures are proposed, nor is the role of nature or biodiversity in reducing disaster risks explicitly articulated.

Other cross-sectoral policies

A key policy is the National Strategy of Sustainable Development to 2030 (NSSD) prepared in 2016, which articulates Montenegro's strategic development objectives across key sectors, and seeks to integrate these in a coherent manner. The NSSD is well-aligned with the IUCN Global Standard, and thus provides a number of entry points for integrating NbS into CCA and DRR. The NSSD refers explicitly and in detail to ecosystem services and their contribution to both economic growth and CCA through for example, water retention and flood risk reduction (*Societal challenges).* Further, it includes sections promoting a green economy, as well as a specific section on coastal zone management and the blue economy, discussing multiple uses and benefits of coastal ecosystems (*Design at scale).* Further, the NSSD provides an extended and detailed discussion of financial resources available for NbS-related measures, e.g. 'environmental finance' *(Economic feasibility).* As with key policies in other sectors in Montenegro, the NSSD is oriented towards alignment with EU *acquis* and thus involves diverse stakeholders in consultation and decision-making processes (*Inclusive governance).* Finally, the NSSD accounts for global agreements in its goal and targets setting and includes a detailed strategy for raising awareness on environmental outcomes (*Mainstreaming and sustainability).*

Sectoral policies

The *water sector* is a key sector for CCA and DRR in Montenegro, as both flooding and drought are prevalent natural hazards. In 2015, Montenegro adopted a Water Management Strategy to 2035 that is harmonised with the EU Flood and Water Framework Directives. More recently, the 2018 Law on Waters (2018) translates the principles of IWRM into the legislative framework. This provides a general framework for addressing CCA and DRR stipulating that water management contributes to mitigating the effects of floods and droughts. The law provides a basis for more concrete measures set out in the 2020 National Drought Management Plan (DMP). Thus, the 2020 DMP provides a narrow set of measures for addressing drought risk across water, forestry and agricultural sectors. The Plan proposes several measures relevant to NbS for CCA and DRR. First, it recommends advancing the application of IWRM principles in the water sector; second, it recommends increasing the implementation of agro-environmental measures; and third, it recommends the establishment and protection of forests in order to combat drought. These measures explicitly recognise the role of

ecosystems in reducing drought risk (*Societal challenges).* Further, of note, is that the DMP explicitly refers to the role of gender and land use rights in influencing the uptake of climate-smart agriculture and other drought mitigation measures (*Balancing trade-offs).* Finally, the DMP integrates global agreements, e.g. UNCCD targets, in its monitoring plans (*Mainstreaming and sustainability).*

The *forestry sector* is key to CCA and DRR because of the Montenegro's exposure to flood, drought and forest fire risk and the role that forests play in each of these. The 2010 Law on Forests provides the legislative framework for the sector, including provisions aiming to regulate the cultivation, protection, preservation and improvement of forests. Important for NbS, the law stipulates that the planning, design, construction and maintenance of forest infrastructure can only be done in accordance with the principles of nature (Ruiz and Hessenberger, in press). The most recent key strategic policy document is the 2013 Strategy for the Development Plan of Forests and Forestry for the period 2014–2023. In terms of NbS, the Strategy is relevant in a number of ways. First, the Strategy clearly acknowledges the co-benefits of nature and forest biodiversity both for society and the economy, as well as for specific CCA risks, such as flooding, drought and forest fires (*Societal challenges).* Further, the document stipulates that all forest development plans should include adaptation measures, and that forestry should be based on an "ecosystem approach" (*Net biodiversity benefits).* However, the strategy does not specify what these concepts mean in practice, and the targets for various measures are formulated in terms of outputs rather than outcomes (*Adaptive management).* Thus, the Strategy enables NbS addressing CCA, but does not provide detailed guidance on what concrete measures should be taken.

The *agricultural sector* is relevant for CCA and DRR in Montenegro as agricultural policy can affect forestry conservation and management, as well as biodiversity. A key policy document is the Strategy for Agriculture and Rural Development (2015–2020), which sets out strategic objectives for the sector and aims to harmonise with EU CAP and rural development objectives. While the document describes the potential impacts of climate change on the agricultural sector, CCA measures do not appear in the strategy. There is potential relevance for NbS, as one of the objectives of the Strategy is the "long-term management of agricultural resources in a sustainable way, along with the preservation of the environment, natural resources and biodiversity". However, no measures for achieving this objective are described, and the document largely focusses on competitiveness and productivity in the agricultural sector. Therefore, it has not been deemed relevant for analysis in Table 2.

Coastal sector policy is key to CCA and DRR in Montenegro due to sea-level rise exacerbating flood and erosion risks in low-lying areas. As mentioned above, the NSSD identifies coastal planning as a key development measure, and in 2015 Montenegro developed its National Strategy on Integrated Coastal Zone Management. This policy document is well-aligned with the NSSD and thus identifies

the ‘greening’ of coastal development as a priority action. Similar to the NSSD, the ICZM Strategy refers in detail to the co-benefits of biodiversity for the economy, society and culture (*Societal challenges)*. However, with the exception of forests, it does not discuss the role of ecosystems in CCA or DRR. The ICZM Strategy proposes a detailed protected area network to enhance the protection of biodiversity in the coastal zone *(Net biodiversity benefits)*. In regard to CCA, e.g. to reduce coastal flood risk and sea-level rise, the measures it prioritises are improved spatial planning and set-back zones to reduce exposure to coastal flood risk. Finally, while the Strategy also includes public awareness raising actions regarding biodiversity benefits, these are oriented towards the economic and cultural benefits rather than CCA/DRR benefits *(Mainstreaming and sustainability)*.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in Montenegro. As a CBD signatory, Montenegro’s biodiversity policies are aligned both with the global CBD agreement and the EU Biodiversity Strategy to 2030. Montenegro has submitted a number of reports to the CBD, the most recent of which is the 2014 Fifth National Report to the CBD, which provides an assessment of ecosystem state, pressures and policies. In 2015, Montenegro produced its National Biodiversity Strategy, including an Action Plan (2016–2020). Several aspects of this policy are highly relevant to integrating NbS into CCA and DRR. First, as with other key policies in Montenegro, the Strategy refers in detail to co-benefits of biodiversity for economy, society and culture, and indeed biodiversity is one of several priorities in Montenegro’s development. However, the Strategy hardly discusses the role of nature in CCA/DRR *(Societal challenges)*. Biodiversity is seen as a cross-sectoral issue, and a strategic objective of the Strategy is the integration of biodiversity into all sectoral plans and strategies (*Design at scale).* Further, the Strategy includes a detailed discussion of financial resources for biodiversity (*Economic feasibility).* Finally, while the Strategy includes detailed monitoring and evaluation measures *(Adaptive management)*, as well as public awareness raising on biodiversity (*Mainstreaming and sustainability)*, neither of these are oriented towards the role of biodiversity/ecosystems in CCA and DRR. This represents a gap regarding the integration of NbS.

3.5.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

Overall, Montenegro is quite advanced in terms of integrating NbS into key policies generally (i.e. in the National Development Strategy), and in addressing CCA and DRR in particular. It can be seen from Table 2 that for many the IUCN Global Standard for Nature-based Solutions™ criteria (e.g. *Societal Challenges, Design at scale, Net biodiversity benefits,* and *Mainstreaming and sustainability*) policies in Montenegro addressing CCA/DRR are well-aligned. This is the case for both cross-sectoral policies, such as the National Development Strategy, and in particular for the water and coastal sectors, while forestry is slightly less in adherence. The exception to this is the agricultural sector, which has neither sufficiently integrated NbS nor CCA/DRR considerations.

Across all criteria, only one significant gap emerges, which is for criterion 6 *Balance trade-offs*. Policies in Montenegro generally do not explicitly discuss social or ecological limits and safeguards. However, this may be due to the fact that strategic documents often operate at a higher level of abstraction, and such social/ecological limits would be more likely identified in project/local level interventions.

Figure 11 below compares the results for Montenegro with the average results achieved for the Western Balkan region as a whole.

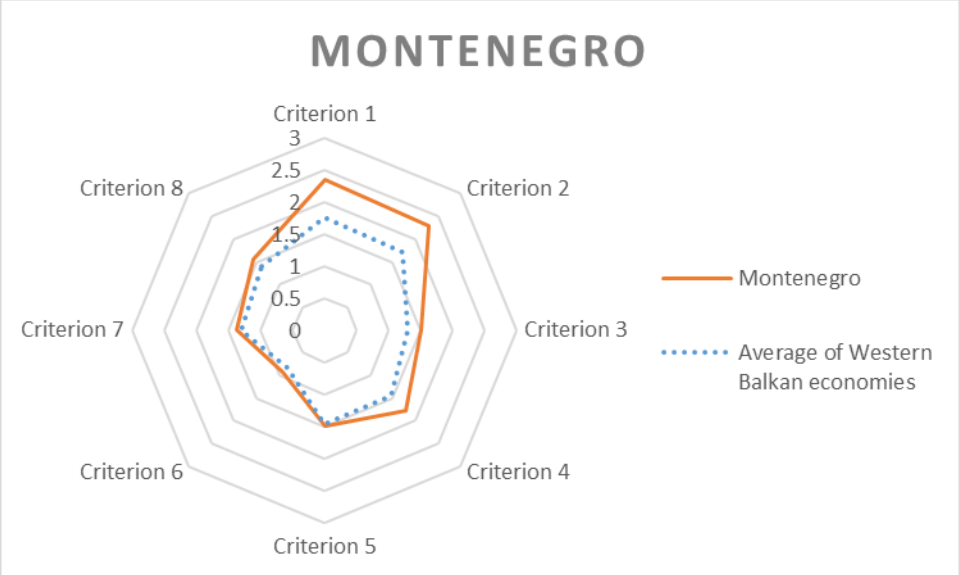


Figure 11. Results for Montenegro as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

Beyond this overall positive assessment, some further **gaps** can be identified:

- First, the CCA policy domain lacks a prioritised adaptation plan that includes NbS, and, importantly, that is also accompanied by an NbS financing plan.
- Second, though the role of nature and biodiversity is clearly acknowledged and emphasised in policy addressing broader economic and social development goals, the role of nature in addressing CCA/DRR is less clearly articulated. For example, the ICZM plan has nature conservation as a priority measure, but does not discuss in detail the role of nature in adaptation, e.g. to sea-level rise or flood risk. This gap is an opportunity to further integrate NbS in coastal development and adaptation because the policy framework is overall very favourable to NbS. This opportunity extends beyond the coastal zone, and may be relevant, e.g. for forest restoration to address flood or drought risk.
- Third, relatedly, there is a gap in terms of *Adaptive management* and *Mainstreaming and sustainability* criteria. Monitoring and evaluation frameworks, and awareness raising activities regarding biodiversity in Montenegro do not directly address the role of nature in CCA/DRR

outcomes of NbS, but rather focus on the role of other economic and social co-benefits of nature and ecosystems.

Two types of opportunities for advancing NbS integration in CCA/DRR policies

1. Opportunities arise from policies that already include NbS measures as entry-points to support the design and implementation of concrete NbS on the ground that are in adherence with the IUCN Global Standard for Nature-based Solutions™:
    a. The NAP that is currently under development represents an excellent opportunity to address the gap in CCA policy, because it can build on the Third National Communication, which already incorporates NbS criteria and is well-aligned with the IUCN Global Standard.
    b. There is an opportunity to promote NbS in the coastal sector to address coastal adaptation. The ICZM plan, as noted, focuses on set-back zones and spatial planning as adaptation measures, which do not explicitly include net biodiversity benefits. NbS measures here could be promoted, e.g. restoration of coastal ecosystems to ensure biodiversity net benefits, and possibly realise other co-benefits, e.g. greater flood risk reduction or carbon sequestration.
    c. The Drought Management Plan explicitly acknowledges gender and land use rights as influencing the uptake of measures that contribute to NbS, e.g. climate smart agriculture, land and water conservation practices. This provides an entry-point to scale up NbS to address drought and flood risk reduction through inclusive governance arrangements.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps:
    a. There is a cross-cutting opportunity to increase the recognition of the role of nature in addressing CCA/DRR. In particular, this would enable further integrating NbS in coastal development and adaptation because the policy framework is overall very favourable to NbS. This opportunity extends beyond the coastal zone and may be relevant for other related sectors, e.g. for forest restoration to address flood or drought risk.
    b. There is an opportunity to integrate further NbS in monitoring and evaluation frameworks of sectoral plans and policies to address existing gaps. This would ensure the accumulation of evidence and sustainability of NbS over the medium to long-term.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:

a. National Adaptation Plan

3.6 North Macedonia

3.6.1 Climate hazard and disaster risk context

North Macedonia is exposed to a number of climate-related hazards and disaster risks, which include flooding, droughts, forest fires and earthquakes. Climate change is projected to lead to increasing temperatures, less precipitation, increasing risk of floods, droughts, heat waves and forest fires (see Popovski, in press).[10]

3.6.2 Policies relevant to CCA and DRR

Table 7. Key policies for CCA and DRR in North Macedonia. Green highlight indicates policy currently being developed or revised.

Policy documents	Inst.	Date (revision)	Relevance for NbS
CCA			
Third National Communication to the UNFCCC	MEPP (North Macedonia)	2014	• Ecosystems seen as vulnerability to CC; no explicit discussion of nature in CCA • Knowledge on CC impacts and adaptation is a major constraint • Many CCA measures proposed address knowledge generation
Intended Nationally Determined Contribution (INDC)	GoNM	2015	• No adaptation
National Determined Contribution	GoNM	2021	• Discusses that adaptation will be included in subsequent NDCs
Fourth National Communication to the UNFCCC		(2022)	
DRR			
National Strategy for Protection and Rescue 2014-2018 (currently being revised)		(2022)	
Other cross-sectoral policies			
National Strategy for Sustainable Development (2010-2030)	MEPP (North Macedonia)	2010	• Refers to 'ecosystem services' but little detail on co-benefits or role in CCA/DRR • Biodiversity should be integrated across all sectors • Water and agriculture should include CCA, but role of nature not explicit
Agriculture			
National Strategy for Agriculture and Rural Development 2014-2020	Ministry of	2014	• Recognises the increased risk of extreme weather events

[10] For a detailed account of the situation in North Macedonia, please refer to the Scoping Study: Vasko Popovski (in press). *Enhancing Nature-based Solutions in North Macedonia: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

	Agriculture		• Views climate change as a threat to the sector
Water			
Water Management Strategy 2012-2042	MEPP (North Macedonia)	2012	• Identifies role of forests and river bank stability in reducing flood risk • Recommends including CCA in river basin management plans • Recommends increasing forest cover as part of river basin management plans
Forests			
Integrated System for Prevention and Early Warning for Forest Fires	MAFW	2014	• Recognises role of forest biodiversity in decreasing forest fire risk
Biodiversity			
National Biodiversity Strategy and Action Plan for the Period 2018 – 2023	MEPP (North Macedonia)	2018	• Objective to integrate biodiversity into all development strategies; based on ecosystem services concept • Adaptation is integrated into protected area plans • No reference to role of ecosystems in CCA
National Strategy for Nature Protection 2017 - 2027	MEPP (North Macedonia)	2018	• Establishing payment for ecosystem services is one strategic priority • Action Plan aims to integrate nature protection and ecosystem services across other sectors • Acknowledges the role of nature in reducing natural disaster risks

(Source: table developed by the authors of this analysis)

Table 7 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains in North Macedonia, and their relevance for NbS. Below, each of these policies will be reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2.

Climate adaptation policies

Similar to other Western Balkan economies, climate change adaptation (CCA) policies have been initiated in North Macedonia with a focus on the commitments to the UNFCCC. This includes the First (2003) and Second (2008) National Communication to the UNFCCC. The 2005 Law on Environment embedded these reports in a legislative framework prescribing institutional arrangements for climate change issues and mandating the development of a national plan to address climate change (see Popovski, in press). In 2015, in fulfilment of its Paris Agreement obligation, North Macedonia submitted its INDC, which did not include adaptation. The Fourth National Communication, which is currently being developed, will provide a strong basis for adaptation to be included in the next NDC iteration.

In 2014, North Macedonia submitted its Third National Communication to the UNFCCC (TNC), which is the most recent key policy document for CCA. The TNC provides a vulnerability assessment for the water, forest, agriculture and biodiversity sectors, and formulates a list of proposed adaptation options for each of them. Importantly, it also identifies the lack of data and capacity to assess climate change impacts and adaptation as a key constraint on CCA in North Macedonia. As a result, a large share of the CCA measures proposed across all sectors address increasing knowledge on the impacts of climate-related hazards, as well as increasing the capacity of various government institutions to design and implement adaptation measures. In terms of integrating NbS for CCA/ DRR, the TNC is not well-aligned will the IUCN Global Standard criteria. First, the report provides an assessment of the vulnerability of ecosystems and biodiversity to climate change, but it does not discuss the role of biodiversity in achieving social or economic development goals, nor in adapting to climate change (with the exception of adaptation in the biodiversity sector itself) *(Societal challenges).* The CCA measures proposed relate largely to knowledge generation, as discussed above. There are proposals for the development of flood management and river basin management plans, as well as to incorporate adaptation into forest development plans. However, ecosystem approaches are not explicitly mentioned in any of these approaches. Relatedly, the report does not explicitly identify co-benefits of NbS or ecosystem services (*Design at scale).* Finally, the report does not mention other global agreements such as the CBD or UNCCD *(Mainstreaming and sustainability).*

While the Third National Communication thus has several significant gaps in terms of integrating NbS, this policy is now somewhat dated and more recent developments may increase the integration of NbS, or at least provide opportunities to do so. North Macedonia's Fourth National Communication to the UNFCCC is currently in preparation and aims to address many of the gaps identified here. For instance, it will include an updated National Adaptation Plan. Further, the preparation of a climate law and a comprehensive strategy on climate action designed to be consistent with the EU 2030 framework is ongoing.

Disaster risk reduction policies

North Macedonia is a signatory to the voluntary Sendai Framework for Disaster Risk Reduction (and the Hyogo Framework, which preceded it), which as noted in Section 2, provides several entry points for integrating NbS across all of its strategic objectives. The National Strategy for Protection and Rescue (2014–2018) is currently being revised and updated. The Strategy established a National Platform for DRR bringing together key government entities and is supported by the European Forum for Disaster Risk Reduction (EFDRR).

Other cross-sectoral policies

A key policy is the National Strategy of Sustainable Development to 2030 (NSSD) prepared in 2010 which articulates North Macedonia's strategic development objectives across key sectors and seeks to integrate these in a coherent manner. The NSSD integrates biodiversity considerations and thus provides a number of entry points for integrating NbS into CCA and DRR. First, the NSSD refers to "recognising the value of ecosystem services" as a key objective but does not detail how to achieve this in the strategy. Moreover, while the agricultural and water sectors are seen as vulnerable to CC, the role of ecosystems in CCA is not explicitly discussed (*Societal challenges).* Further, despite mentioning the importance of ecosystem services, and the need to integrate the "environment" across all sectors of government, the NSSD provides no explicit discussion of NbS co-benefits for economy, society or culture, which represents a salient gap (*Design at scale).* As with key policies in other sectors in North Macedonia, the NSSD is oriented towards the alignment with EU *acquis* and thus involves diverse stakeholders in consultation and decision-making processes (*Inclusive governance).* Finally, the NSSD accounts for global agreements in its goal and targets setting and identifies climate change as a key challenge (*Mainstreaming and sustainability).* However, similar to many Western Balkan economies, there is a gap in regard to mainstreaming NbS as a measure to address CCA and DRR.

Sectoral policies

The *water sector* is a key sector for CCA and DRR in North Macedonia, as both flooding and drought are prevalent natural hazards. The 2008 Law on Water (2008) provides the legislative framework for the protection and sustainable management of water resources, transposing the EU WFD. In line with this directive, the law stipulates the "protection and improvement of environment and nature, aquatic ecosystems and biological diversity and protection of human health". A more recent key strategic policy document is the 2010 National Water Management Strategy. The Strategy is relevant to CCA and DRR, as it sets out strategic objectives and measures regarding flood risk reduction, though it does not address drought in detail. Of note is that the Strategy explicitly acknowledges the role of nature/ecosystems in flood risk reduction, pointing out that intact ecosystems can increase water storage and infiltration, decrease soil erosion, and thus reduce flood risk *(Societal challenges).* Further, it stipulates that river basin management plans should seek to support ecosystem stability on riverbanks and increase forest cover *(Design at scale).* The Strategy, however, does not propose measures for doing so, or indicators for monitoring progress on these aspects (*Adaptive management)*. Nor does it link these measures to global agreements, such as the UNFCCC or UNCCD, or public awareness raising regarding the role of nature in flood risk reduction *(Mainstreaming and sustainability).* While these latter two aspects are not surprising given the strategic as opposed to operational nature of the Strategy, they are gaps that represent opportunities for advancing NbS integration for CCA in North Macedonia.

The *forestry sector* is key to CCA and DRR, because of North Macedonia's exposure to flood, drought and forest fire risk and the role that forests play in each of these. Key policy documents are the 2006 Strategy for Sustainable Development of Forestry and the 2009 Forest Law. Regarding forest fire risk in particular, in 2014 an Integrated System for the Prevention and Early Warning of Forest Fires was developed. While the document largely reports on technical aspects of monitoring and early warning regarding forest fire risk, it does also have relevance regarding NbS to address CCA/DRR of forest fire risks. First, the rationale of the system is the role that forests play in both the economy and wider social and economic development (*Societal challenges).* Second, the Integrated System includes a proposed measure for the management of forests to avoid monocultures, increase biodiversity, and thereby reduce forest fire risk *(Net biodiversity benefits).* Forestry sector policies in North Macedonia are rather dated and require updating in order to align with new data, the land use, land use change and forestry targets, as well as to clarify and strengthen the role of forests for CCA and DRR. Initiating such a transformation process of the sector would provide ample opportunities for the integration of NbS.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in North Macedonia. The Law on Nature Protection, most recently amended in 2013, provides a legal basis for establishing National Parks, collecting park fees, and establishes ecological areas, including ecological corridors. As a CBD signatory, North Macedonia has met its commitments to the global agreement producing a number of reports, the most recent of which is the key policy document of 2018 the National Biodiversity Strategy and Action Plan (NBSAP) (2018–2023). Several aspects of this policy are highly relevant to integrating NbS into CCA and DRR. First, the NBSAP includes a section on ecosystem services outlining their importance to the economy and society in general though it provides little detail on how ecosystem services contribute to CCA or DRR in particular *(Societal challenges)*. Second, as with other Western Balkan economies, e.g. Montenegro, biodiversity is seen as a cross-sectoral issue, and a strategic objective of the Strategy is the integration of biodiversity into all sectoral plans and strategies (*Design at scale).* Further, although the concept of ecosystem services is prominent in the report, it general does not describe specific co-benefits, or specific groups, who would benefit from nature (or NbS). Instead the discussion of CCA is focused on adaptation of protected areas and bio-corridors to climate change impacts, as opposed to referring to the role of ecosystems in enabling CCA in other sectors or for specific groups (*Economic feasibility).* Finally, the Strategy is well aligned with other global agreements, e.g. UNFCCC and UNCCD, and outlines actions for public awareness raising on biodiversity (*Mainstreaming and sustainability)*. However, the latter address biodiversity in general and are not oriented towards the role of biodiversity/ecosystems in CCA and DRR. Similarly, for the 2018 National Strategy on Nature Protection, ecosystem services are explicitly mentioned and a detailed strategy and action plan is laid out, including financial planning (*Economic feasibility).* Again, there

is no explicit mention of the role of nature in CCA/DRR. This represents a gap regarding the integration of NbS.

3.6.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

Generally, North Macedonia appears to lag behind somewhat compared to other Western Balkan economies in terms of integrating NbS for CCA and DRR. In part, this is due to the fact that many of the key policies in CCA and DRR domains, and sectoral policies are outdated and due to be renewed. Indeed, as can be seen from Table 2, the policy most in adherence with the IUCN Global Standard is the National Biodiversity Strategy and Action Plan, which has been developed relatively recently in 2018. In contrast, the NSSD, which was developed much earlier in 2010, is not well-aligned with the Global Standard criteria. Although the NSSD includes ecosystem services as a core concept, it does not identify or articulate the role of these ecosystem services in CCA or DRR.

Figure 12 below compares the results for North Macedonia with the average results achieved for the Western Balkan region as a whole.

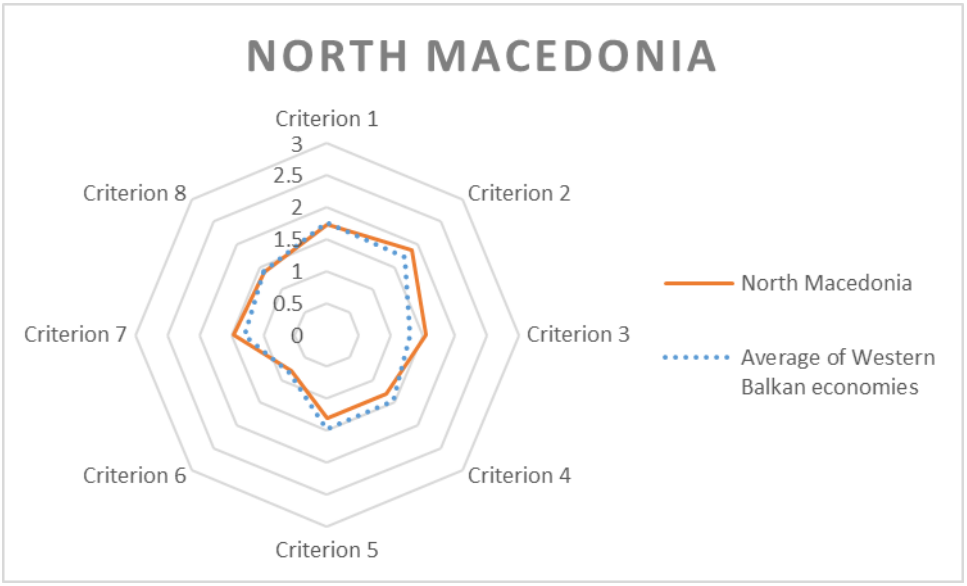


Figure 12. Results for North Macedonia as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

Based on this mixed analysis of policies in North Macedonia, the following **gaps** have been identified:

- First, regarding the CCA policy processes, there is a gap in terms of developing a prioritised list of CCA measures that integrate NbS. Currently, most CCA options proposed address knowledge generation, and so this gap applies to CCA in general and not only NbS. This gap should be addressed with the ongoing development of a National Adaptation Plan and represents an opportunity to integrate NbS.
- Second, while several key policies recognise the role of nature in society and economy, through the concept of ecosystem services, there is a gap in terms of recognising the role of

ecosystems in CCA or DRR in particular. For example, neither the NSSD nor the NBSAP articulate this. Rather, in both of these documents, ecosystems are seen as vulnerable to climate change and adaptation involves protecting ecosystems from climate change impacts. The exception to this is the Water Management Strategy which represents an opportunity for integrating NbS as described below.

- Finally, the biodiversity policy process is relatively well advanced compared to other domains in North Macedonia. However, it is not well integrated with the CCA and DRR policy processes, as for example, the current NBSAP hardly refers to other global agreements in its objectives and target setting. Thus, biodiversity is largely seen as being vulnerable to CC, and not conceived of as supporting NbS for CCA or DRR.

Three types of opportunities for advancing NbS integration in CCA/DRR policies

1. Opportunities arise from policies that already include NbS measures as entry-points to support the design and implementation of concrete NbS on the ground that are in adherence with the IUCN Global Standard for Nature-based Solutions™:
    a. The Water Management Strategy acknowledges the role of nature in flood risk reduction in its strategic objectives and proposes increasing forest cover and river ecosystem integrity to reduce flood risk. However, it is a somewhat outdated strategy and does not propose measures or a monitoring framework that could enable implementation of NbS.

       The National Adaptation Planning process and the current development of the Fourth National Communication to the UNFCCC represents an opportunity to integrate NbS into adaptation priorities.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps:
    a. There is an opportunity for greater integration between the biodiversity policy process and CCA and DRR policy processes, and to raise awareness across these domains on the role of biodiversity in support of NbS for CCA and DRR. This opportunity should also be addressed through the development of a National Climate Change Strategy and the preparation of the Fourth National Communication to the UNFCCC.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:
    a. Three policy documents relevant for climate change are currently being prepared – the Long-term Climate Action Strategy, the Climate Action Law and the Fourth National Plan on Climate Change. These offer opportunities for NbS integration.
    b. National Protection and Rescue Strategy

3.7 Serbia

3.7.1 Climate hazard and disaster risk context

Serbia is exposed to a number of climate-related hazards and disaster risks, which include flooding, droughts, forest fires and earthquakes. Climate change is projected to lead to increasing temperatures, less precipitation, increasing risk of floods, droughts, heat waves and forest fires (see Popovicki, 2022).[11]

As with other Western Balkan economies, Serbia is particularly exposed to flooding. A recent example is the major flooding in May 2014 in Western and Central Serbia that affected approximately 1.6 million inhabitants and caused an estimated EUR 1.5 billion in damages in 24 municipalities (MEP, 2017). Of Serbia's many rivers, flood exposure is greatest along the Danube, Tisa, Sava, Drina, Velika Morava, Južna Morava and Zapadna Morava rivers, with 73 major flood events recorded in these areas between 1965 and 2011 (MEP, 2017). Further, Serbia is also exposed to drought with estimates of EUR 3.5 billion in damages (more than 70% of losses from natural hazards) from droughts in 2000, 2003, 2007 and 2012.

3.7.2 Policies relevant to CCA and DRR

Table 8. Key policies for CCA and DRR in Serbia. Green highlight indicates policy currently being developed.

Policy documents	Inst.	Date (revision)	Relevance for NbS addressing CCA/DRR
CCA			
Intended Nationally Determined Contribution (INDC)	GoS	2015	• Agriculture, water, forests, health and biodiversity sectors identified as vulnerable to climate change • EUR 68 million of investments in adaptation (2000-2015) • Refers to the losses from natural disasters and indicates the need for adaptation. • No adaptation or NbS proposed
Second National Communication to UNFCCC	MEP	2017	• NbS proposed to address flooding: green/forest area conservation • 'close-to-nature' forestry measures • Awareness raising on forest multifunctionality and role in CCA
Law on Climate Change	GoS	2021	• Legal framework for carbon sinks • Mandate for Serbia adaptation programme
Low Carbon Development Strategy with an Action Plan			• Recognises the value of ecosystems for CCA and mitigation by acknowledging forests as carbon sinks • Close to nature forest management • Increase water storage capacity

[11] For a detailed account of the situation in Serbia, please refer to the Scoping Study: Tanja Popovicki (2022). *Enhancing Nature-based Solutions in Serbia: The role of ecosystems in disaster risk reduction and climate change adaptation*. Belgrade, Serbia: IUCN.

			• Awareness raising, education, capacity building and skills development training to promote transition to climate neutral/resilient economy/society
Climate Change Adaptation Program			
DRR			
National Programme for Disaster Risk Management and the Action Plan for implementation	GoS	2014	• Does not integrate CCA considerations
Water			
Water Management Strategy	MAEP	2014	• Based on IWRM principles • Refers to role of wetland and natural areas in reducing flood risk • Proposes strengthening institutional framework for wetlands/natural area conservation
Agriculture			
National Agriculture and Rural Development Strategy (2014-2024)	MAEP	2014	• Identifies need for sustainable forest management
Republic of Serbia IPARD Programme for 2014-2020	GoS/EC		• Low relevance – does not fund measure to address forest management needs
Forests			
National Forestry Program (not adopted)	GoS	2010	• Recognised role of forests in reducing soil erosion • Forests seen as vulnerable to CC
Biodiversity			
National Biodiversity Strategy	MESP (Serbia)	2011	• Refers to ecosystem services and biodiversity support for CCA • Aims to increase economic valuation of biodiversity • No explicit NbS for CCA measures elaborated
5th report to CBD	MESP (Serbia)	2014	• Measures to address CCA mainly focused on generating knowledge on impacts on biodiversity • Awareness raising for biodiversity proposed, but no explicit focus on role in CCA
Programme on Nature Conservation of the Republic of Serbia (2021-2023)	MESP (Serbia)	2021	• Describes the state of biodiversity and drivers of biodiversity degradation • Refers to ecosystem services, impact of climate changes on biodiversity loss and importance of nature conservation in CCA • Defines measures for restoration of degraded ecosystems

(Source: Table developed by the authors of this analysis)

Table 8 summarises policies relevant to CCA and DRR for different cross-sectoral or sectoral domains in Serbia, and their relevance for NbS. Below, each of these policies will be reviewed and their implications regarding the opportunities and gaps for integrating NbS discussed. An overview of the opportunities and gaps for integrating NbS in CCA and DRR in a regional comparative context is given in Table 2.

Climate adaptation policies

Climate change adaptation (CCA) policies in Serbia have largely been initiated with a focus on the commitments to the UNFCCC. In 2015, Serbia submitted its Intended Nationally Determined Contribution (INDC) under the Paris Agreement. Similar to other Western Balkan economies, this document mainly focused on Serbia's mitigation commitments, and provides limited information on adaptation. However, in a section titled "Loss and damages", the document does discuss investments already made in adaptation in the period 2000–2015 (EUR 64 million) and damages from flooding and drought experienced during the same period (EUR 5 billion), while acknowledging the difficulties of attributing these to climate change. No adaptation measures are proposed, nor is biodiversity explicitly addressed.

More recently, in 2017, the Second National Communication (SNC) to the UNFCCC provides a number of proposed adaptation measures that are relevant for NbS in the water and forestry sectors in particular. Notably, while both flooding and droughts are identified as hazards that will increase in frequency and intensity with climate change, the proposed CCA measures focus explicitly on flooding, with little attention to droughts.[12] In terms of suggested NbS for CCA, the Second National Communication proposes addressing river floods through restoration and maintenance of green areas along rivers, preservation of natural flood zones, and restoring forest areas along 'torrential streams'. Further, in the forest sector, 'close-to-nature' forest management approaches are mentioned to reduce climate change impacts *(Societal challenges)*. Notably, while NbS are recommended, the SNC provides little information on societal pressures or the existing state of ecosystems, focusing instead on climate change projections and potential impacts on ecosystems and risks *(Design at scale).* Further, the SNC proposes that biodiversity indicators should be selected for monitoring and evaluation NbS in the water sector *(Net biodiversity benefits)*. However, there is little information on the financial resources needed for implementing these measures *(Economic feasibility)*. Finally, while the SNC does not mention other global agreements, it does propose a public awareness raising measure focusing on the role of forests in CCA and their multiple co-benefits for society *(Mainstreaming and sustainability)*.

[12] Serbia has started considering the issue of drought through its "Drought Initiative". However, no concrete policy framework is in place yet.
(https://knowledge.unccd.int/sites/default/files/country_profile_documents/NDP_SERBIA_2020.pdf)

In March 2021, the Serbian Parliament passed the Law on Climate Change, which mandates the development of a Low Carbon Development Strategy and Action Plan, as well as a National Adaptation Programme. The law also establishes a National Council on Climate Change, consisting of ministries as well as academics and civil society representatives, as an advisory body to the government. The law has relevance for NbS for CCA/DRR as it establishes a legislative framework for recognising the carbon sequestration co-benefits of ecosystem restoration and maintenance. For adaptation in particular, it does not explicitly propose NbS. However, it establishes the framework for developing a National Adaptation Plan, which can integrate NbS considerations.

Finally, the Low Carbon Development Strategy (LCDS) and Action Plan is, as mentioned, mandated by the Law on Climate Change, and a draft has already been developed in 2020. The LCDS commits to a reduction of 9.8% of 1990 level GHG emissions. Importantly for NbS addressing CCA/DRR, the LCDS clearly recognises the importance of natural ecosystems for climate adaptation and mitigation. Specific objectives include targets for increasing carbon sinks for forest by 2030 (17%) and 2050 (22–132%) compared with 2010. Further, several NbS adaptation measures are proposed for the agricultural, forestry and water sectors that are based on those in the Second National Communication to the UNFCCC (see Popovicki, 2022).

Disaster risk reduction policies

DRR policies in Serbia are aligned with the Sendai Framework (and the Hyogo Framework, which preceded it) to which Serbia is a signatory. As noted in Section 2, this provides several entry points for integrating NbS across all of the strategic objectives regarding DRR.

In 2011, the National Strategy for Disaster Risk Reduction and Protection and Rescue in Emergency Situations was developed. Following the 2014 floods, this was updated with the 2014 National Programme for Disaster Risk Management and the Action Plan (2016–2020). The Action Plan explicitly acknowledges the Sendai Framework objectives, and thus seeks to mitigate loss of ecosystems through DRR. However, beyond this, the acknowledgement of NbS is mostly implicit. One of the strategic objectives of the Action Plan is to reduce risks through “structural and non-structural measures”. While non-structural measures are potentially relevant to NbS, the measures included in detail in the Plan are almost exclusively physical infrastructure measures, e.g. for flood risk reduction. Moreover, the Plan proposes developing an “adaptation plan” and does not yet include the more detailed risk reduction measures included in the Second National Communication. This represents a gap as CCA is not fully integrated into this policy document, nor are NbS considerations. There is an opportunity thus to increase integration of NbS in DRR in the next update of the National DRR Strategy and Action Plan.

In 2018, Serbia significantly advanced its legislative framework for DRR by introducing the Law on Disaster Risk Reduction and Emergency Management. As with previous policy documents, the Law is fully in line with the Sendai Framework, and thus puts an emphasis on promoting prevention and reduction of risks, including mitigation and preparedness and strengthening resilience. In terms of institutional arrangements relevant to NbS, it establishes a National Platform for Disaster Risk Reduction and places particular emphasis on involving women's organisations in the development of DRR plans, the assessment of needs and damages, the generation of disaggregated data (see Popovicki, 2022). It also states that the National Strategy for DRR should be updated, which as mentioned above, represents an opportunity for integrating NbS into CCA/DRR policies.

Sectoral policies

The *water sector* is a key sector for CCA and DRR in Serbia, as both flooding and drought are prevalent natural hazards. A key policy document here is the 2014 Serbian Water Management Strategy, which is aligned with EU WFD and Flood Directives and thus is based on the Integrated Water Resources Management concept that aims to achieve technically feasible, economic and environmental sustainability at the river basin level. The Strategy refers to ecosystem services, and discusses historical measures based on ecosystem considerations, e.g. wetland areas, that have reduced flood and erosion risk. Further, while the Strategy focuses primarily on built infrastructure measures to address flood and drought risks, several of its operational objectives are relevant to NbS for CCA/DRR including "regulating water flows in accordance with environmental conditions" and "promoting appropriate use of wetlands areas and flood prone areas" *(Societal challenges)*. A potential gap is that the Strategy is not clearly integrated with other sectors, e.g. forestry or agriculture, nor does it clearly link to policy processes addressing global agreements, e.g. adaptation planning or the biodiversity strategy *(Mainstreaming and sustainability).* The lack of investments is mentioned as a major barrier achieve erosion control and prevent torrential floods.

The *agricultural sector* is relevant for CCA and DRR in Serbia as agricultural policy can affect forestry conservation and management, as well as biodiversity. A key policy document for the sector is the National Agriculture and Rural Development Strategy (NARDS) of Serbia for the period 2014–2024, which was adopted in 2014. The National Strategy is based on a vision of development of agriculture and rural areas that is focused on developing an efficient and innovative agri-food sector as well as the sustainable development of the natural resources, environment and cultural heritage of rural areas (EC, 2014). Importantly for integration of NbS into CCA and DRR, NARDS identifies the conservation of biodiversity and sustainable forest management as key needs for rural development. In 2014, the Instrument for Pre-Accession for Rural Development (IPARD) programme for Serbia, however, did not fund measures on biodiversity conservation or sustainable forest management, and focused rather on modernisation of the agri-food sectors and 'agri-environment-climate' measures.

Funding for sustainable forest management needs therefore requires donor or government funding and represents a potential gap for integrating NbS.

The *forestry sector* is also key to CCA and DRR because of Serbia's exposure to flood, drought and soil erosion and the role that forests play in each of these. The 2006 Forestry Development Strategy is the only nationally adopted policy document in this sector, as the more recent Forest Development Programme and Action Plan (2010) has not been formally adopted. The programme recognises the influence of forest degradation on soil erosion, and in turn the negative impacts of climate change on forests. However, with the exception of a proposed afforestation measure with associated targets, it provides little detail on adaptation measures. However, due to the unclear legal status of the Programme, it is difficult to further assess the alignment of forest policy with the IUCN Global Standard.

Noteworthy, albeit not analysed in light of the criteria of the IUCN Global Standard, is the land degradation neutrality country report for Serbia. National targets by 2030 include the improvement, restoration and rehabilitation of degraded areas, measures that promote sustainable land management, the development of systematic land monitoring mechanisms and awareness raising to compact land degradation and drought. Albeit these targets, the response by Serbia to droughts remains rather ad-hoc. Similarly, the Spatial Plan of the Republic of Serbia to 2020 aims to increase forest cover in Serbia for erosion control and prevention of torrential processes.

Biodiversity policies are clearly relevant to integrating NbS into CCA and DRR in Serbia. In 2011, Serbia adopted its National Biodiversity Strategy and Action Plan (2011–2018), which establishes conservation principles aligned with EU law. In view of these aims, the Strategy assesses the state of biodiversity in Serbia, and develops measures for its protected area networks oriented towards protecting key species. The Strategy articulates the link between biodiversity and climate change adaptation, referring to the role that biodiversity can play in supporting CCA, and for economy and society more broadly (*Societal challenges).* The strategy identifies key pressures on biodiversity and defines key strategic areas and activities to realise these conservation goals, including demonstrating the economic value of biodiversity *(Economic feasibility).* While the strategy acknowledges the link between biodiversity and CCA, and proposes awareness raising on biodiversity as a priority action, it only addresses biodiversity in general and not its role in CCA/DRR *(Mainstreaming and sustainability)*.

In May 2021, Serbia adopted a new strategic biodiversity policy, the Programme on Nature Conservation of the Republic of Serbia, which defines national nature conservation targets aligned with EU legislation, Aichi Biodiversity Targets and SDGs. The Programme broadly describes the state of ecosystems and drivers of degradation, sets clear and measurable biodiversity conservation

outcomes, measures and indicators and defines periodic assessments of their implementation (*Net biodiversity benefits*). The Programme underlines the importance of meeting national and global commitments for nature conservation (*Mainstreaming and sustainability*) and the inclusion of diverse stakeholders in governance arrangements (*Inclusive* g*overnance*). Even though the Programme recognises to some extent the role of nature in CCA and DRR, the role of nature in meeting societal challenges is not properly addressed (*Societal challenges*).

The subsequent 5th Report to the CBD reports on the state of biodiversity in Serbia, as well as on progress towards implementing the National Biodiversity Strategy and its contribution towards achieving the Aichi targets and Millennium Development Goals. The 5th Report to the CBD refers to the importance of biodiversity to society, however, it generally views ecosystems as vulnerable to climate change and does not articulate NbS supporting CCA or DRR *(Societal challenges).* While it refers to the need to support economic analyses of biodiversity benefits, measures proposed regarding climate change focus on improving knowledge on climate change impacts on ecosystems, rather than on ecosystem service provision either for CCA or other co-benefits *(Design at scale)*. There is a gap in terms of integrating biodiversity strategies with other policies relevant to CCA and DRR, as the document only briefly mentions other global agreements such as the UNFCCC or CBD. Moreover, awareness raising on biodiversity is a priority action, however it addresses only biodiversity in general and not its role in CCA/DRR *(Mainstreaming and sustainability)*.

Most recently the 6th Report to the CBD published in March, 2021 reports on progress towards biodiversity targets and Aichi targets along a set of indicators also determined in previous reports. The 6th Report is thus broadly in line with the prior 5th Report to the CBD in terms of its integration of NbS considerations. The report provides a comprehensive and explicit assessment of biodiversity in Serbia, including monitoring of threats and drivers of biodiversity degradation, including from climate change impacts. However, it does not explicitly address the role of nature or biodiversity in DRR or CCA, similar to the previous report.

3.7.3 Gaps and opportunities for integrating Nature-based Solutions into CCA/DRR

The preceding discussion and Table 2 show that adherence of policies in Serbia to the IUCN Global Standard for Nature-based Solutions™ are moderately advanced for some domains, e.g. CCA, biodiversity, while for other sectors, e.g. forestry, policy is not fully in place to conduct a full assessment. Regarding the CCA policy process in particular, NbS integration is less advanced than, for example Albania. However, data availability has been a constraint on this, and the recently passed Law on Climate should provide opportunities to update adaptation planning and address this gap.

There are several gaps across all policy domains in Serbia. First, there is a relative lack of integration across different sectors or policy domains, as ecosystems are often not seen as cross-sectoral in CCA, DRR or water sector policy processes. For example, in the CCA policy process, an assessment of the current state of biodiversity or ecosystems is hardly referred to in key policy documents. Second, there is a gap with respect to the identification of financial resources for NbS across all policy domains. Third, while the co-benefits of biodiversity are often articulated in policies, there is a lack of adaptive management approaches which specify biodiversity outcomes to be monitored and link them to economic, cultural or social co-benefits. Fourth, similar to other Western Balkan economies, there is a lack of acknowledgement of safeguards or limits either social or ecological in policies, and a lack of explicit consideration and monitoring of unintended consequences of NbS.

Figure 13 below compares the results for Serbia with the average results achieved for the Western Balkan region as a whole.

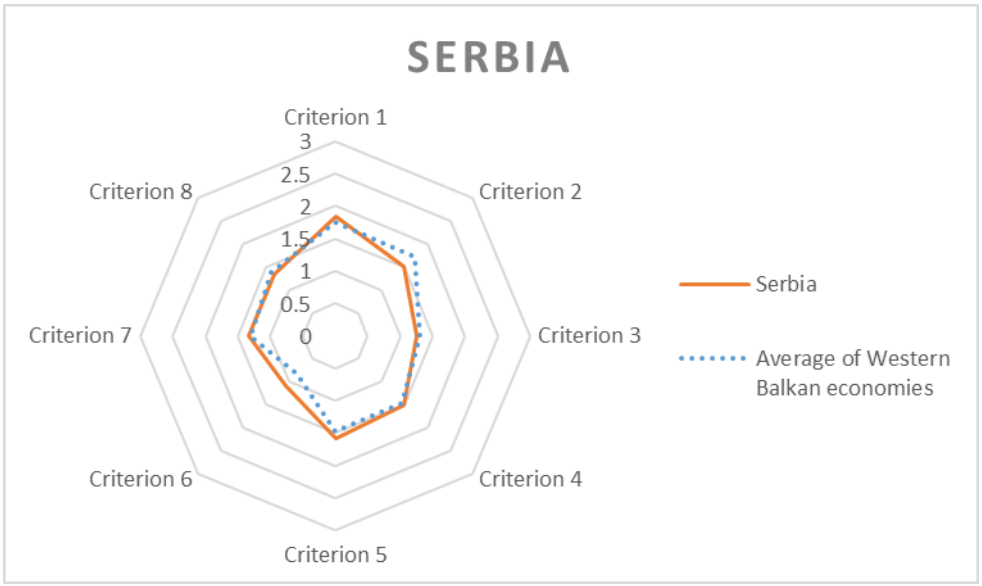


Figure 13. Results for Serbia as compared to the average of all Western Balkan economies. *(Source: Figure developed by the authors of this analysis)*

In addition to these general gaps in addressing IUCN Global Standard for Nature-based Solutions™ criteria, more specific **gaps** can be identified:

- First, the DRR Plan proposes developing an "adaptation plan" and does not yet include the more detailed risk reduction measures included in the Second National Communication. This represents a gap as CCA is not fully integrated into this policy document, nor are NbS considerations. There is an opportunity thus to increase integration of NbS in DRR in the next update of the National DRR Strategy and Action Plan.
- Second, there is a gap in terms of integrating biodiversity strategies with other policies relevant to CCA and DRR, as the Biodiversity Strategy document only briefly mentions other global agreements such as the UNFCCC or CBD.

- Third, in the water sector a potential gap is that the Water Strategy is not clearly integrated with other sectors, e.g. forestry or agriculture, nor does it clearly link to policy processes addressing global agreements, e.g. adaptation planning or the biodiversity strategy
- Fourth, in the agricultural sector, while the National Agricultural and Rural Development Strategy identifies the conservation of biodiversity and sustainable forest management as key needs, the Instrument for Pre-Accession for Rural Development (IPARD) programme for Serbia, however, did not fund these. Funding for sustainable forest management needs therefore requires donor or government funding and represents a potential gap for integrating NbS.
- There is a gap regarding droughts, which is the most economically damaging natural hazard of the past 20 years in Serbia. CCA, DRR and water sector policies are much more strongly focused on flood risks. Only preliminary steps have been taken with the intention to prepare a policy framework and decision-making process for developing a National Drought Plan.

Two types of opportunities for advancing NbS integration in CCA and DRR policies

1. Opportunities arise from policies that already include NbS measures as entry-points to support the design and implementation of concrete NbS on the ground that are in adherence with the IUCN Global Standard for Nature-based Solutions™:
    a. There is an opportunity to promote NbS based on forestry restoration addressing flooding, soil erosion and contribute to drought risk reduction. This is because sustainable forestry management is a priority in the NARDS, but has not received IPARD funding from the EU. There may be an opportunity to advance this NbS through, e.g. the Green Agenda for the Western Balkans (see Section 3.1).
    b. Updating the National DRR Strategy and Plan represents an opportunity to integrate NbS for CCA/DRR, as climate change adaptation planning has not been fully integrated into DRR plans and policies to date.
    c. Both CCA and many sectoral policies explicitly mention gender dimensions. This presents an opportunity for developing NbS that clearly address inclusive governance arrangements and equity in social, economic and ecological outcomes. The Law on Gender Equality adopted in 2021 represents another opportunity for alignment. However, more needs to be done to make clear links between gender, climate change and disaster risk reduction.

2. Opportunities arise from gaps identified above, where actions can be taken to enhance existing policies by further integrating NbS considerations to address these gaps:
    a. Water sector planning should integrate biodiversity targets and measures into its plans (e.g. through monitoring and evaluation frameworks), which also include NbS

measures. This could lead to the development of NbS that address not only biodiversity benefits, but water policy outcomes, such as reduced flood risk.

3. Opportunities arise from ongoing policy development and revisions, where NbS considerations can be integrated to close gaps:
    a. National Programme for Disaster Risk Reduction
    b. National Adaptation Planning provides an opportunity for NbS integration
    c. The Sustainable Urban Development Strategy aligns with the European Union's urban agenda and already recognised NbS as one option for adapting to climate change. The associated Action Plan to be drafted in 2022, is one entry point for NbS mainstreaming.

4 Comparative analysis

4.1 Enablers to integrating NbS into CCA and DRR policies in the Western Balkans

Having reviewed the state of NbS integration into policies relevant to CCA and DRR in the six Western Balkan economies and identified gaps and opportunities for further enhancing NbS integration, in this section, we draw on a comparison across the Western Balkan policy contexts to identify enablers and barriers to NbS integration into CCA and DRR and enable cross-fertilisation of learnings and approaches within the region.

In terms of enablers, a number of observations are relevant. First, the pre-accession process and harmonisation with EU directives, e.g. WFD, Floods Directive, and Nature2000, and strategies are drivers of integrating biodiversity considerations into the water sector, but also for CCA and DRR policy processes. In particular, these directives enable policies that prioritise inclusive governance arrangements, and monitoring and evaluation frameworks that align with the IUCN Global Standard for Nature-based Solutions™ criteria. Further, harmonisation with the EU Biodiversity Strategy appears to have enabled the integration of biodiversity considerations across all sectors, as well as key cross-sectoral domains, such as development strategies.

Figure 14. Enablers of NbS policy integration in the Western Balkans. *(Source: Figure developed by the authors of this analysis)*

Second, it should be noted that while, in principle, having biodiversity integrated into sectoral planning is beneficial, it does not always ensure that NbS are integrated into policies for CCA and DRR. Indeed, the comparative analysis of policies in the Western Balkans shows two different types of outcomes in this regard. On the one hand, having NbS-related concepts integrated in development strategies of Western Balkan economies can drive integration of NbS in other sectors, including for CCA and DRR. For example, Montenegro, whose 2016 National Sustainable Development Strategy recognises ecosystem services as a core concept, subsequently produced several key strategic documents, e.g. ICZM plan, Drought Management Plan, which developed NbS for addressing CCA and DRR. On the other hand, North Macedonia also integrates biodiversity considerations into its 2010 National Strategy for Sustainable Development. However, while biodiversity conservation is

integrated into subsequent sectoral planning in North Macedonia, it is largely only to ensure biodiversity conservation, and not to enhance its role in CCA or DRR. The latter situation, namely, that biodiversity conservation is considered in sectoral planning, but NbS are not explicitly included as an option for CCA or DRR is the more common one across all Western Balkan economies. These contrasting situations show that creating an enabling policy environment for NbS measures depends in turn on having an NbS concept embedded in that policy context, in order to identify and highlight the multiple benefits, including for CCA and DRR, that nature and ecosystem restoration and conservation produce. It is precisely such embedding of the NbS concept in policy that is needed to overcome the 'silos' of sectoral planning observed in nearly all Western Balkan economics, and that act as a barrier to developing NbS to address CCA and DRR (see below).

Looking forward, new developments at the EU level may further enable the integration of NbS concepts in policies addressing CCA and DRR in the Western Balkans. Particularly important here are the newly updated 2021 EU Adaptation Strategy and the Green Agenda for the Western Balkans. The EU Adaptation Strategy, which advances the previous version of 2012, with a stronger focus on NbS and explicitly dedicates a section towards promoting NbS to address CCA. Indeed, as the Strategy proposes support for monitoring biodiversity benefits, it should increase integration of NbS in adaptation planning, which is also inconsistent across the Western Balkans to date. Moreover, by embedding the NbS concept firmly into adaptation planning processes, the multiple co-benefits of NbS, including for CCA and DRR, are more likely to be considered not only in CCA and DRR processes, but also in sectoral planning. Similarly, the Green Agenda for the Western Balkans reinforces these dynamics with its explicit recognition of NbS in its climate and biodiversity pillars. Moreover, it also provides more concrete support for enabling NbS through support for a Forest Landscape Restoration Plan, and discussion of possible financing instruments for NbS in the region.

4.2 Barriers to integrating NbS into CCA and DRR policies in the Western Balkans

In terms of barriers to integration of NbS for CCA and DRR across the Western Balkans, several observations can be made which are applicable across multiple economies. First, adaptation planning processes for several economies have been informed by the NAP-Technical Guidelines (issued in 2012), which have only a limited focus on NbS-related approaches. This appears to be a barrier to NbS integration, as NAPs developed using the NAP-TG tend to focus on built infrastructure or technical measures, as well as institutional or capacity building actions, and do not address NbS measures. This points to the need for current and future NAP development to make use of updated guidance which integrates NbS approaches to a greater extent, e.g. (IISD, 2021).

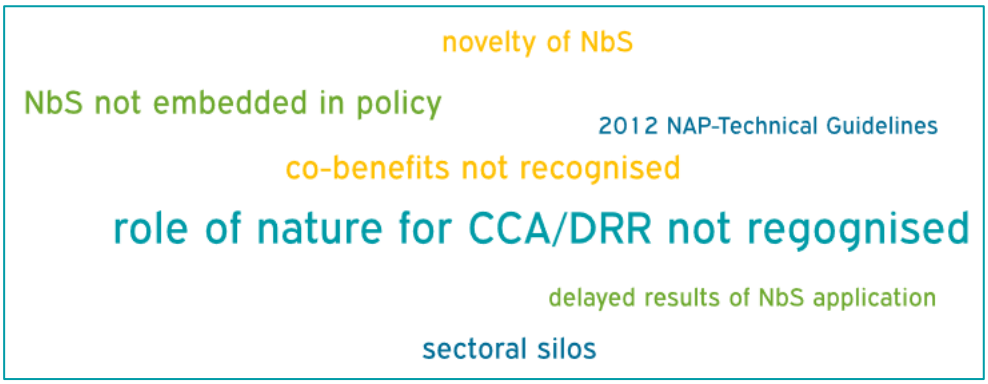


Figure 15. Barriers to NbS policy integration in the Western Balkans. *(Source: Figure developed by the authors of this analysis)*

Second, and more fundamentally, across nearly all Western Balkan economies, there is a recognition in policy of the importance of nature or biodiversity for broad social and economic development goals, but there is much less recognition of the role of nature or biodiversity for CCA and DRR in particular. A reason for this, as mentioned above, may be the lack of appropriate NbS concept embedded in the policy contexts of Western Balkan economies, i.e. concepts that do not fully emphasise the multiple co-benefits of NbS particularly for CCA and DRR. Further, NbS and related EbA concepts are relatively new, and it takes time for an accumulation of case studies and analysis demonstrating the effectiveness and benefits of NbS for CCA and DRR. For instance, in the Netherlands, a prominent example of an NbS for coastal adaptation, the Sand Engine has an expected lifetime of 30 years, but is only in its first decade of use (Stive et al., 2013). Moreover, as a CCA measure, it is expected to protect against extreme storm events that occur relatively infrequently. Overcoming this barrier of a lack of acknowledgement of the potential role of nature in CCA and DRR in particular, thus requires an embedding of NbS concepts in policy, which can be supported through accumulation and dissemination of evidence on NbS in various CCA and DRR contexts.

Third, relatedly, in several economies, sectoral planning operates in ‘silos’ and considers only its primary policy objectives without significant consideration of the effects of measures to achieve these outcomes on other sectors or development objectives. This is a barrier because NbS are often attractive precisely because they produce multiple co-benefits and thus can address policy objectives of multiple different sectors in an integrated manner. Similar to the barrier of a lack of acknowledgement of the role of nature in CCA and DRR, overcoming the barrier of sectoral silos requires the integration of the NbS concept across both CCA/DRR specific and sectoral policies. By embedding NbS concepts in CCA and DRR policies, it is more likely that concrete NbS measures will be developed, for example, in adaptation plans. These in turn may influence sectoral policies by proposing CCA measures that meet multiple objectives including those of sectoral policy.

5 Conclusion and outlook

This report has presented a comparative analysis of NbS integration into policies for CCA and DRR in the Western Balkans. It has thus identified key gaps and opportunities for enhancing integration of NbS into CCA and DRR policies. The analysis found that Western Balkan economies show different levels of adherence with the IUCN Global Standard for Nature-based Solutions™.

Particular opportunities for developing NbS can be identified depending on policy context. Some key examples are:

- Albania: coastal adaptation plan and river basin management planning
- Bosnia and Herzegovina: entity level river basin management plans and laws on climate change
- Kosovo: river basin plans mandated to be developed by municipalities including reforestation and land use change, revision of Strategy on Forestry, Strategy on Biodiversity and Strategy on Environment and Sustainable Development
- Montenegro: coastal adaptation plan, including NbS for coastal protection
- North Macedonia: water management strategy, climate policies
- Serbia: sustainable forestry identified as priority, National Strategy for DRR, spatial planning

Table 9. Summary of gaps and opportunities for Western Balkan economies.

	Policy domain	Gaps & opportunities	Actions – approach key stakeholders on
Albania	General	NbS only seen in sectoral perspective Key sectors do not propose NbS	
	DRR	National DRR Strategy does not explicitly acknowledge the role of nature/ecosystems in DRR, e.g. to reduce flood and drought risk	Integrating NbS in DRR planning
	Water	IWRM Strategy and Strategy for Irrigation and Drainage do not explicitly refer to NbS for reducing flood risk. Emphasis is on hard infrastructure measures for flood risk reduction	Integrating NbS in National IWRM Strategy
	Coastal protection	Inter-sectoral Coastal Adaptation Plan emphasises maintaining ecosystems, and is based on ICZM principles Provides an entry-point for NbS measures	Proposing NbS for coastal protection; e.g. ICZM Plan for coastal protection and flood risk management
	Forestry	ISARD objectives include restoring and conserving ecosystems related to agriculture and forestry Forestry law refers explicitly to the role of forests in climate adaptation and water services provisioning	Proposing NbS for forestry Utilising ISARD priority and EU Green Agenda links

Bosnia and Herzegovina	General	Lack of data and modelling climate change impact assessment	
	CCA	CCA policies acknowledge the benefits of ecosystems for addressing societal challenges NAP process presents an opportunity for NbS that also integrate DRR considerations	Integrating NbS in CCA planning; e.g. as part of the NAP
	Water	Key entity policies acknowledge multiple benefits of sustainable land management practices, e.g. soil and water conservation, which provides an entry point for proposing NbS Entity Water Strategies are harmonised with EU Directives and provide an entry point for NbS for flood risk management	Integrating NbS in Entity Drought Management Plans Integrating NbS in Entity Water Management Strategies
Kosovo	CCA	Lack of integration of CCA into sectoral planning, which represents an opportunity in the next updating of the National Adaptation Strategy to strengthen the link between biodiversity conservation and CCA/DRR	Integrating NbS in CCA planning
	Water	Water Management Strategy proposes that River Basin Management Plans be required to include reforestation and land use change to address flood risk. This presents an opportunity for NbS development	Integrating NbS in River Basin Management Plans
	Forestry	Focussed on economic development with no link to NbS	Integrating reforestation to management of flood risk in River Basin Management Plans
Montenegro	CCA	CCA lacks a prioritised national adaptation plan that includes NbS, and an NbS financing plan	Integrating NbS in CCA planning; e.g. as part of the NAP
	Water	Drought Management Plan explicitly acknowledges gender and land use rights as influencing implementation of measures, e.g. climate smart agriculture, land and water conservation practices. This provides an entry-point for NbS to address drought and flood risk reduction	Integrating NbS in Drought Management Strategy
	Coastal protection	Nature conservation is integrated, but lacks consideration of nature's role in CCA and DRR	Integrating NbS in coastal plan; e.g. to reduce coastal flood risk
North Macedonia	General	Lack of data and modelling climate change impact assessment	Integrating NbS in the next National Communication to the UNFCCC

	CCA	Lack of NbS measures proposed in climate change adaptation policies, which mostly address knowledge generation	Integrating NbS in CCA planning
	Water	Water Management Strategy acknowledges the role of nature in flood risk reduction increasing forest cover and river ecosystem integrity to reduce flood risk. However, no NbS measure proposed or a monitoring framework that could enable implementation of NbS	Integrating NbS in National Water Strategy
Serbia	DRR	National Programme for Disaster Risk Management does not integrate CCA measures	Integrating NbS in DDR and CCA planning
	Forestry and Agriculture	Sustainable forestry identified as national priority No dedicated funding for this in IPARD	Proposing NbS for sustainable forestry management Linking with the Green Agenda for the Western Balkans, incl. to address drought planning gap
	Water	Gap regarding cross-sectoral approaches in key sectors (e.g. water) NbS measures included in water sector planning Biodiversity targets not yet integrated	Integrating biodiversity targets in water strategies M&E
Cross-cutting		Guidance documents (e.g. NAP-Technical Guidelines) do not explicitly discuss the role of NbS in CCA	Improved integration of NbS by global stakeholders (e.g. NAP Global Network) in NAP guidance[13]

(Source: table developed by the authors of this analysis)

Further, the comparative policy analysis of NbS integration in Western Balkan economies provided some general insights regarding progress on NbS that are useful both within the region and more broadly. Key findings from comparing the economies are that:

- Links between climate change adaptation and biodiversity in policy are underdeveloped. Policy focuses mostly on climate change impacts on ecosystems rather than how ecosystems can support tackling some of the CCA and DRR challenges.
- There is a need for more cross-sectoral approaches. NbS are mostly reflected in a sectoral manner, and an enhanced cross-sectoral approach would increase opportunities for NbS. This requires creating a common understanding of and building institutional capacity on NbS in the particular context. In the frame of ADAPT a number of trainings will be organised,

[13] Here the UNEP (2021) Guidelines for integrating Ecosystem-based Adaptation into National Adaptation Plans: Supplement to the UNFCCC NAP Technical Guidelines may be useful.

including on policy and governance dimensions of NbS implementation. These, together with the targeted action plan resulting from this analysis, will provide a framework for concrete actions on mainstreaming NbS into policy and legislation, which will in turn support NbS implementation.

- Policy tends to focus on grey infrastructure, and there is an opportunity to enhance hybrid solutions.
- Engagement with NAP development processes, where they are currently under way, present one of the main opportunities for integrating NbS for CCA and DRR into policy.
- More broadly, mainstreaming of global agreements into laws and policies of Western Balkan economies needs to be increased.
- Recognition of ecological limits and safeguards is generally missing in current policy approaches.
- Dedicated funding for NbS remains a significant gap.
- The systematic inclusion of gender-perspectives requires strengthening in order to create links between gender, CCA and DRR as well as enhance inclusive governance through the representation of diverse groups of society. This links to gaps in data and fragmentation of processes. The ongoing work on gender mainstreaming in climate change can serve as an entry point for consideration of gender-responsive NbS in policy.
- The Green Agenda for the Western Balkans is an opportunity to influence policy in the Western Balkans and to increase investments in NbS to address policy gaps.

Finally, the analysis represents the first application of the IUCN Global Standard for Nature-based Solutions™ to policy analysis. The present comparative policy analysis has demonstrated the applicability of the IUCN Global Standard to policy analysis. It provides a framework for comparing adherence of policies in both cross-sectoral and sectoral domains with a set of NbS criteria. Moreover, the 8 criteria of the Global Standard enable analysis of particular aspects of policy to identify gaps that may be common across different settings. For instance, the Global Standard presents separate criteria for (ex-ante) assessment of *Net biodiversity benefits* and (ex-post) *Adaptive management,* which enables insights on different aspects of the policy process. Such analytical separation is key to identifying opportunities to enhance integration of NbS and to formulating action plans to make use of such opportunities. More broadly, the Global Standard, and the further dimensions of policy analysis that have been developed here, provide an analytical language which can be applied in other settings and regions to further advance analysis of NbS integration in policy.

Based on this comparative policy analysis, concrete recommendations with an accompanying action plan were developed to guide priorities at regional level as well as for each Western Balkan economy.

These will be used to develop an NbS narrative for policy mainstreaming that is tailored to the particular context.

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Annex

Table 2: Overview of the opportunities and gaps in NbS integration into CCA and DRR policies for each of the Western Balkan economies and at regional level.

Legend:

Explicit comprehensive discussion	
Explicit but limited discussion	
Implicit discussion	
No mention	

Economy		*Albania*								
Domain		**CCA**				**DRR**	**Cross-sectoral**	**Water**		**Biodiversity**
Policy document		Third National Communication to UNFCCC	National Adaptation Plan	National Climate Change Strategy	NDC	Draft National Strategy for DRR	National Strategy for Development	National Strategy for IWRM	The Strategy for Irrigation and Drainage in Albania	Strategic Policy Document for the Protection of Biodiversity (NBSAP)
Year		2016	2016	2017	2021	2014	2013	2016	2019	2015
Societal Challenges	Refers to role of nature in meeting societal challenges									
	Refers to role of nature in adaptation and/or DRR									
	Specific NbS proposed for CCA or DRR									
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS									
	Refers to economic, social, cultural pressures on ecosystems									
	Ecosystems identified as cross-sectoral									
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation									
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed									
	Monitoring includes periodic assessments of unintended adverse consequences on									

	nature arising from the NbS									
	Refers to opportunities for enhancing connectivity and integrity									
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS									
	Identifies financial resources for NbS									
Governance	Includes diverse stakholder in governance arrangements									
	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements									
Balance trade-offs	Acknowledges use and access to land and resources of specific groups									
	Refers to social and ecological limits and/or safeguards									
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure									
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes					n/a				
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes					n/a				
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments									
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS									

(Source: Table developed by the authors of this analysis)

Economy		*Bosnia and Herzegovina*						
Domain		**CCA**		**DRR**	**Cross-sectoral**	**Water**	**Agriculture**	**Biodiversity**
Policy document		Climate Change Adaptation and Low-Emission Development Strategy	3rd National Communication to the UNFCCC	Law on Protection and Rescue	Action Plan to combat land degradation and mitigate drought	River basin water and flood management plans in FBH and RS	Strategic Plan For Rural Development in BH	Strategy and Action Plan for Protection of Biological Diversity in BH
Year		2013	2017	2008	2017	Ongoing	2018	2017
Societal Challenges	Refers to role of nature in meeting societal challenges							
	Refers to role of nature in adaptation and/or DRR							
	Specific NbS proposed for CCA or DRR							
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS							
	Refers to economic, social, cultural pressures on ecosystems							
	Ecosystems identified as cross-sectoral							
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation							
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed							
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS							
	Refers to opportunities for enhancing connectivity and integrity							
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS							
	Identifies financial resources for NbS							
Governance	Includes diverse stakholder in governance arrangements							

	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements							
Balance trade-offs	Acknowledges use and access to land and resources of specific groups							
	Refers to social and ecological limits and/or safeguards							
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure							
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes							
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes							
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments							
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS							

(Source: Table developed by the authors of this analysis)

Economy		Kosovo					
Domain		CCA		DRR	Water	Forestry	Agriculture
Policy document		Climate Change Framework Strategy (2014-2024)	Action Plan for Climate Change Strategy	DRR Strategy and Action Plan 2016-2020	National Water Strategy Document (2017-2036)	Policy and Strategy on Forestry Sector Development (2010-2020)	Action Plan for Biodiversity (2016-2020)
Year		2014	2016	2015	2017	2009	2016
Societal Challenges	Refers to role of nature in meeting societal challenges						
	Refers to role of nature in adaptation and/or DRR						
	Specific NbS proposed for CCA or DRR						
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS						
	Refers to economic, social, cultural pressures on ecosystems						
	Ecosystems identified as cross-sectoral						
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation						
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed						
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS						
	Refers to opportunities for enhancing connectivity and integrity						
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS						
	Identifies financial resources for NbS						
Governance	Includes diverse stakholder in governance arrangements						

	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements						
Balance trade-offs	Acknowledges use and access to land and resources of specific groups						
	Refers to social and ecological limits and/or safeguards						
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure						
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes						
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes						
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments						
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS						

(Source: Table developed by the authors of this analysis)

Economy		Montenegro						
Domain		CCA	DRR	Cross-sectoral	Water	Forestry	Coasts	Biodiversity
Policy document		Third National Communication to the UNFCCC	National Strategy for DRR 2018-2023	National Strategy for Sustainable Development	National Drought Plan	Strategy for the Development Plan of Forests and Forestry for the period 2014-2023	National Strategy for Integrated Coastal Zone Management	National Biodiversity Strategy with the Action Plan (2016-2020)
Year		2020	2017	2020	2020	2013	2015	2015
Societal Challenges	Refers to role of nature in meeting societal challenges							
	Refers to role of nature in adaptation and/or DRR							
	Specific NbS proposed for CCA or DRR							
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS							
	Refers to economic, social, cultural pressures on ecosystems							
	Ecosystems identified as cross-sectoral							
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation							
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed							
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS							
	Refers to opportunities for enhancing connectivity and integrity							
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS							
	Identifies financial resources for NbS							
Governance	Includes diverse stakholder in governance arrangements							

	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements							
Balance trade-offs	Acknowledges use and access to land and resources of specific groups							
	Refers to social and ecological limits and/or safeguards							
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure							
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes							
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes							
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments							
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS							

(Source: Table developed by the authors of this analysis)

Economy		North Macedonia					
Domain		CCA	DRR	Cross-sectoral	Water	Biodiversity	
Policy document		Third National Communication to the UNFCCC	National Strategy for Protection and Rescue	National Strategy for Sustainable Development (2010-2030)	Water Management Strategy	National Biodiversity Strategy and Action Plan (2018-2023)	National Strategy for Nature Protection (2017-2017)
Year		2014	2014	2010	2010	2018	2018
Societal Challenges	Refers to role of nature in meeting societal challenges						
	Refers to role of nature in adaptation and/or DRR						
	Specific NbS proposed for CCA or DRR						
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS						
	Refers to economic, social, cultural pressures on ecosystems						
	Ecosystems identified as cross-sectoral						
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation						
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed						
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS						
	Refers to opportunities for enhancing connectivity and integrity						
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS						
	Identifies financial resources for NbS						
Governance	Includes diverse stakholder in governance arrangements						

	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements						
Balance trade-offs	Acknowledges use and access to land and resources of specific groups						
	Refers to social and ecological limits and/or safeguards						
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure						
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes						
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes						
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments						
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS						

(Source: Table developed by the authors of this analysis)

Economy		*Serbia*					
Domain		**CCA**	**DRR**	**Water**	**Biodiversity**		
Policy document		Second National Communication to the UNFCCC	National Programme for DRM and Action Plan	Water Management Strategy	National Biodiversity Strategy (2011-2018)	6th report to CBD	Program on Nature Conservation of the Republic of Serbia (2021-2023)
Year		2017	2014	2014	2011	2021	2021
Societal Challenges	Refers to role of nature in meeting societal challenges						
	Refers to role of nature in adaptation and/or DRR						
	Specific NbS proposed for CCA or DRR						
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS						
	Refers to economic, social, cultural pressures on ecosystems						
	Ecosystems identified as cross-sectoral						
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation						
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed						
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS						
	Refers to opportunities for enhancing connectivity and integrity						
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS						
	Identifies financial resources for NbS						
Governance	Includes diverse stakholder in governance arrangements						

	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements						
Balance trade-offs	Acknowledges use and access to land and resources of specific groups						
	Refers to social and ecological limits and/or safeguards						
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure						
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes						
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes						
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments						
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS						

(Source: Table developed by the authors of this analysis)

Economy		*Regional*	
Policy document		Green Agenda for the Western Balkans	EU Adaptation Strategy
Year		2020	2021
Societal Challenges	Refers to role of nature in meeting societal challenges		
	Refers to role of nature in adaptation and/or DRR		
	Specific NbS proposed for CCA or DRR		
Design at Scale	Refers to economic, social, culturaln co-benefits of NBS		
	Refers to economic, social, cultural pressures on ecosystems		
	Ecosystems identified as cross-sectoral		
Net Biodiversity Benefits	Refers to evidence-base on ecosystem state and drivers of degradation		
	Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed	n/a	
	Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS	n/a	
	Refers to opportunities for enhancing connectivity and integrity		
Economic Feasibility	Identifies specific co-benefits and groups of beneficiaries for NbS		
	Identifies financial resources for NbS		
Governance	Includes diverse stakholder in governance arrangements		
	Specific NbS measures includes diverse stakeholders and/or dispute resolution mechanisms in governance arrangements		

Balance trade-offs	Acknowledges use and access to land and resources of specific groups		
	Refers to social and ecological limits and/or safeguards		
Adaptive management	Refers explicitly to monitoring and evaluation of NbS measure		
	Provides NbS strategy linking CCA/DRR measures to economic, social and ecological outcomes		
	Refers need for learning and adjustment of policies or NbS measures on specific timeframes		
Mainstreaming and sustainability	Refers to the role of nature and/or ecosystems in meeting national and global commitments		
	Describes processes/mechanisms to disseminate knowledge on sustainability of NbS		

(Source: Table developed by the authors of this analysis)

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