Policy Coherence to Support Lake Restoration

Deliverable D3.2

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Summary

To assess the extent to which national, European and international policy instruments (PIs) mapped in D3.1 contribute to addressing key lake restoration challenges, we carried out a policy coherence analysis for two case studies of FutureLakes: Lake Vesijärvi (in Finland) and Lake Karla (in Greece). The analysis used a participatory process with key stakeholders from both sites, applying the policy coherence matrix method developed by Mortelmans (2020), coupled with the Likert scoring system, a structured interview method and a desk-based coherence analysis. Core lake restoration priorities, defined as Assessment Areas, were first identified, covering water quality and pollution control; uptake of innovative solutions (Nature-based Solutions, Circular Blue-Economy Solutions) for restoration; promoting integrated and participative basin management; economic circularity and green financing; fostering climate ambitions, as well as promoting biodiversity protection and restoration.

In total 62 national, European and international PIs have been selected for the policy coherence analysis including 22 European regulatory texts and 7 international agreements. At national scale, 20 regulatory instruments in Greece and 13 instruments in Finland directly associated with the Water Framework Directive, the Common Agricultural Policy, biodiversity objectives, climate change and the restoration of natural environment were prioritised by local stakeholders.

A tailored policy matrix was designed and then completed by national policy experts to evaluate the conflicts and synergies between and within different policy instruments influencing the restoration of lakes and the implementation of NbS and CBS. This rapid and scientifically robust tool allows respondents to report both the most positive and the most negative effects within each interaction, capturing thus the variability resulted from mixed or nuanced coherence.

Based on the 14 responses provided by the national experts and stakeholders, we calculated the Variability Index and Net Impact Index of the assigned coherence scores to provide a structured representation of the interactions between policy objectives and instruments, as well as the synergies and conflicts among instruments. The results supported interpretations of both vertical coherence (alignment across governance levels) and horizontal coherence (consistency across policy sectors), particularly in relation to lake restoration priorities (Assessment Areas). Our results show that:

Horizontal coherence:

Finnish policies have a positive, though slight, impact on recognising the role of NbS, supporting circular economy, and ensuring continuous financing for restoration. The national policies have also a moderate positive impact on promoting integrated, participatory and inclusive basin management as well as on fostering climate adaptation actions and resilience. However, they significantly support water quality and pollution control objectives.

In parallel, the Ilmastolaki Climate act [423/2022] and water-related Finnish regulations show clearly positive horizontal coherence. A similar synergistic relationship is observed for biodiversity-related Finnish regulations. In contrast, agricultural regulations, namely the Act on European Union Direct Payments to Farmers [1332/2022] and the Act on the management of the strategic plan for the common agricultural policy [1324/2022] display a negative net impact, indicating a clear conflict with the rest of Finnish PIs.

Our findings show that the variability in the coherence of **Greek policies** across the Assessment Areas remains lower than the variability observed for the Finnish regulations. Moreover, Greek laws are aligned with the uptake of innovative solutions, fostering an integrated basin management, and the achievement of national biodiversity objectives. However, Greek policies show neutral impact on improving water quality and pollution control, aligning restoration efforts with climate adaptation and resilience, and in supporting circular economy approaches to long-term restoration financing.

Similar to the Finnish case study, biodiversity-focused PIs in Greece (namely the Directive 92/43/EEC and Law 3937/2011 “Conservation of biodiversity and other provisions”) demonstrate clearly positive

horizontal coherence with the rest of the national regulations. The same synergetic relation (though at a lower level) is observed for climate change-focused policy instruments.

On the other hand, and in contrast to the Finnish case study, agricultural regulations, display strong horizontal coherence with the rest of the Greek PIs. In addition, the water-focused Greek regulations exhibit positive, although relatively limited, interactions with the other national PIs.

Vertical coherence:

Assessing the coherence of these national laws **with EU and international policies** captures the perceived strength of alignment and levels of uncertainty regarding their implementation.

In **Lake Vesijärvi**, perceptions of the alignment between agricultural-focused national regulations and EU policies are marked by a notably high proportion of "unknown" responses. Compared to the other policy areas, agricultural Finnish regulations show the greatest degree of uncertainty in alignment, suggesting either limited awareness or ambiguity regarding their practical implementation and coherence with broader EU objectives. In contrast, the water-focused national regulations are generally perceived as more clearly aligned, showing a comparatively strong and recognizable policy framework.

In **Lake Karla**, the assigned vertical coherence scores indicate a predominantly positive assessment of alignment with EU regulations demonstrating broad certainty in policy coherence assessment and a limited knowledge gap compared to the Finnish case study.

Biodiversity and water-focused policies in Greece are widely perceived as closely aligned with overarching EU policy objectives. In contrast, Greek PIs under the scope of climate change, as well as the protection and restoration of the natural environment, display comparatively weaker perceived alignment, although still largely positive and certain.

Contribution of D3.2 to the Blueprint and National Restoration Plans:

Strong disparities in coherence scores between the two demonstration sites indicate that policy implementation and interactions are highly context-dependent, and the findings cannot be readily generalised to other lake basins. Nevertheless, this deliverable can serve as a replicable tool for lake practitioners who wish to conduct a comprehensive coherence assessment of their own local policy landscape before launching a restoration programmes. The approach can also be used by national policy specialists drafting Member State National Restoration Plans (NRPs) under the Nature Restoration Regulation, as NRPs require commentary on the interplay between nature restoration plans and other policy requirements, including national climate and energy plans and national CAP strategic plans.

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Abbreviations

AAs: Assessment Areas

BfS: Biodiversity focused Solution

CAP: Common Agricultural Policy 2023-2027

CBD: Convention on Biological Diversity

CBS: Circular Blue-Economy Solutions

CEAP: EU Circular Economy Action Plan

CRCF: Carbon Removals and Carbon Farming Regulation

CS3D: Corporate Sustainability Due Diligence Directive

CSRD: Corporate Sustainability Reporting Directive

ECAP: European Climate Adaptation Plan

EIA: Environmental Impacts Assessments Directive

EQSD: Environmental Quality Standards Directive

EU: European Union

GHG: Greenhouse Gas

GWD: Groundwater Directive

HD: Habitats Directive

IED: Industrial Emissions Directive

MS: Member States

NbS: Nature-based Solutions

ND: Nitrates Directive

NRR: Nature Restoration Regulation

NRP: National Restoration Plans

PIs: Policy Instruments

UWWTD: Urban Wastewater Treatment Directive

WFD: Water Framework Directive

WRS: Water Resilience Strategy

Glossary

Assessment areas (AAs): The Assessment Areas are the lake-focused priority themes used to evaluate how far policies support lake restoration, with a particular emphasis on i) water quality and pollution control, ii) uptake of innovative solutions for management and restoration, iii) promoting integrated, participative and inclusive basin management approaches, iv) economic circularity and financing, v) foster climate ambitions, and vi) restoring biodiversity and natural ecosystems. They translate overarching objectives and priorities for lake restoration into concrete analytical categories, against which the contribution of different instruments can be systematically assessed.

Biodiversity-focused solutions (BfS): Solutions focused primarily on active biodiversity restoration, such as habitat creation.

Circular Blue-economy Solutions (CBS): Actions that include recovery of resources (nutrients, biomass) in the restoration process stimulating a blue economy around restoring freshwaters.

D3.1: Deliverable 3.1 "Policy Mapping for NbS & CBS Implementation" Is the first deliverable of WP3 "Policy and financing" of the FutureLakes project. The report presents the results of a policy mapping exercise carried out at European, national and demo-basin levels across the project's six demonstration sites.

Demonstration site/ Case study: Two contrasting demonstration sites, namely Lake Vesijärvi in Finland and Lake Karla in Greece were selected as case studies among the six Demonstration sites of FutureLakes. This selection was based on the direct involvement of the associated demonstration lead (SYKE and DUTH) in Task 3.2 "Policy coherence and integration", allowing thus the implementation of the structured interviews with local policy experts. Overall, the Demonstration sites of FutureLakes are composed of Lake Vesijärvi (Finland), Kartuzy Lakes (Poland), Lake IJssel complex (The Netherlands), Lake Karla (Greece), Loch Leven (Scotland) and Lake Vansjø (Norway).

Horizontal coherence: The horizontal coherence refers to how policy instruments, from a same governance level, interact with each other to assess the synergies, overlaps and conflicts across them. Horizontal coherence assessment can be conducted between instruments within the same policy area, or from different policy areas.

National Restoration Plans (NRP): National plans for restoring nature as required under the EU Nature Restoration Regulation.

Nature-based solutions (NbS): Actions to protect, conserve, restore, sustainably use and manage natural or modified ecosystems, which address social, economic, and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits. This UNEP definition builds on prior definitions from IUCN and the European Commission.

Net impact Index: an index measured to capture the nature of coherence between policy instruments, indicating whether their interactions are synergistic or conflictual

Policy coherence matrix: A tool designed to provide a rapid and scientifically robust overview of how the policy instruments interact. The matrix is tailored to the specific issues addressed by FutureLakes and is provided to the Finnish and Greek experts in Excel format to assess the level of alignment using a simplified scoring system.

Policy instruments (PIs): A set of regulations, directives, strategies, frameworks, action plans, agreements, conventions and initiatives implemented by National, European and international institutions and are likely to affect European lake restoration. Specific references to these PIs are marked in blue in this document.

Variability Index: The index reports the standardized variability of the assigned coherence scores

Vertical coherence: the vertical coherence refers to how policy instruments are aligned between different governance levels. This approach is particularly relevant for assessing the coherence of policy instruments that require multi-level implementation, such as EU Directives and their transposing acts into national legislation.

1. Introduction

1.1. About the project

At the heart of Europe's freshwater ecosystems lies a pressing challenge: restoring the ecological and chemical health of its lakes. The EU-funded FutureLakes project aims to revolutionize lake restoration and management by rejuvenating six major European lakes using nature-based, circular blue economy, and biodiversity-focused solutions. The Demonstration sites of FutureLakes are composed of Lake Vesijärvi (Finland), Kartuzy Lakes (Poland), Lake IJssel complex (The Netherlands), Lake Karla (Greece), Loch Leven (Scotland) and Lake Vansjø (Norway). FutureLakes seeks to contribute to the EU Mission's (Restore our Ocean and Waters) objectives of protecting and restoring freshwater biodiversity, reducing pollution, and building a sustainable, carbon-neutral, and circular blue economy. Additionally, it aims to develop the Mission's enablers: a European Lakes Digital Innovation Hub and innovative public engagement approaches.

FutureLakes pilots a range of technical solutions, including Nature-based Solutions (NbS), Circular Blue Economy Solutions (CBS), and Biodiversity-focused Solutions (BfS) at operational scales to improve the ecological and chemical status of European lakes, reduce pollution, restore biodiversity, recover valuable resources, and enhance lake ecosystem services. The project aims at demonstrating the integration of technical NbS, CBS and BfS measures together with innovations in inclusive collaboration, policy implementation and green financing in lake basin management at six large European lakes (Demonstration Sites).

1.2. About this deliverable

D3.2 "Policy Coherence to Support Lake Restoration" aims to evaluate the influence of policy and regulatory frameworks on the implementation of lake restoration measures, identifying both barriers and opportunities for scaling up FutureLakes restoration solutions, and providing recommendations to overcome potential obstacles. The protection and restoration of lakes through the implementation of NbS, CBS and BfS, as undertaken by FutureLakes, involves a wide range of policies (Albrecht et al., 2025) that come from different levels (international, European, national) and different sectors (agriculture, water, economy, etc.). Accordingly, our analysis focuses on policy coherence and integration, considering key EU instruments and policies, such as the CAP, Biodiversity Strategy, Zero Pollution Action Plan, Water Framework Directive (WFD), EU Taxonomy, as well as international initiatives, including the RAMSAR Convention, Sustainable Development Goals, and the Paris Agreement.

Within D3.2, policy coherence matrices were used in combination with semi-structured interviews with policy experts and key stakeholders at only two contrasting demonstration sites: **Lake Vesijärvi in Finland** and **Lake Karla in Greece**. This selection was based on the direct involvement of the associated Demonstration lead, namely SYKE and DUTH, in Task 3.2 "Policy coherence and integration", allowing the implementation of the structured interviews with policy experts using the local language.

A central question guiding the analysis is: How coherent are the policy instruments (PIs) shaping the regulatory landscape for restoring and managing lake ecosystems in the EU? Strategic planning for lake restoration and the implementation of NbS and CBS require coordinated action across multiple governance levels, engaging stakeholders from diverse sectors often pursuing contrasting objectives. Building on the existing policy mapping (D3.1), this deliverable develops a methodological framework to specifically assess the coherence of national instruments and their alignment with European directives and international agreements. The framework aims to examine how, and to what extent,

the current policy landscape supports lake restoration while simultaneously promoting biodiversity conservation, pollution reduction, and climate objectives. The approach considers both horizontal coherence (alignment across sectors) and vertical coherence (alignment across governance levels). The FutureLakes methodology combines a quantitative and participatory approach, integrating the Policy Coherence Matrix tool with interviews of policymakers and stakeholders. The coherence matrix is a tool designed to provide a rapid and scientifically robust overview of how the policy instruments interact. The matrix is tailored to the specific issues addressed by FutureLakes and is provided to the Finnish and Greek experts in Excel format to assess the level of alignment using a simplified scoring system. Our methodology is structured around three key components:

1. Define the Assessment Areas (AAs) representing the attributes for measuring the coherence and contribution of policies to lake restoration and NbS/CBS implementation.

2. Guide the assessment through the Coherence Matrix and a scoring system to quantify the degree of coherence and conflicts between policies. This scoring system is applied across policy AAs (horizontally and/or vertically) and between PIs

3. In addition to the scoring system, a set of scoring indicators (namely the average variability and overall net impact) is also estimated to capture the structural variability across PIs and to illustrate more concretely the interactions between policy objectives and instruments, as well as the synergies and conflicts between instruments.

The present report is structured to move from conceptual framing to methodological explanation, followed by empirical analysis.

- Section 2 outlines the concept of policy coherence and integration, presenting key findings from the policy mapping exercise and highlighting the existence of a strong yet complex policy architecture. This section also defines policy coherence and integration and reviews existing assessment methods, establishing the analytical framework for the study.
- The methodology is developed in section 3, and explains how the analysis was conducted, including the prioritisation of PIs at the demonstration sites, the definition of AAs and the criteria for expert selection in Lake Vesijärvi (Finland) and Lake Karla (Greece). This section provides a detailed explanation about the structure of the policy coherence matrix, distinguishing between horizontal and vertical coherence.
- The results and discussion in section 4 presents the findings of the horizontal and vertical coherence analyses, conducted in Lake Vesijärvi (Finland) and Lake Karla (Greece), and evaluates the alignment of EU and international policies with lake restoration priorities. It further provides key recommendations for the Nature Restoration Regulation (NRR) and the Common Agricultural Policy (CAP) to strengthen policy integration.
- The report concludes in section 5 with a summary of the main findings and a reflection on the study's limitations.

2. Policy coherence and integration: concept and overview of the policy mapping

2.1. Key findings from the policy mapping: a strong but complex policy architecture

The **policy mapping** reported in the Deliverable D.3.1[1] (Albrecht et al., 2025) particularly reviewed European and international policy instruments (PIs), and how these policies support the implementation of innovative Nature-based Solutions (NbS), Biodiversity focused Solution (BfS) and Circular Blue-Economy Solutions (CBS) for lake restoration. Among the most relevant PIs, a total of 32 instruments from European and international sources have been identified, analysed and classified in the annexes. Table A. 4 provides the relevant information, namely their short and full title, the type of the instrument, the region of origin (EU or international), their status and the year of first publication. The table also outlines whether the policy instrument is currently in force, awaiting formal adoption, under implementation or if transposition delay has not yet been achieved.

The selected PIs include various type of policies, namely regulations, directives, strategies, frameworks, action plans, agreements, conventions and initiatives. Regarding **the international agreements**, 7 policies were selected and classified as well. These include the Kunming-Montreal Global Biodiversity Framework (Kunming-Montreal GBF), UN Decade on Ecosystem Restoration, Convention on Biological Diversity, Paris Agreement, Bonn Challenge, RAMSAR Convention and the UN Sustainable Development Goals as part of the UN 2030 Agenda.

At the **European level**, 25 regulatory texts, strategies and frameworks have been selected in accordance with D.3.1. These instruments include the Habitats Directive, Water Framework Directive, Nitrates Directive, Urban Wastewater Treatment Directive, Environmental Quality Standards Directive, Groundwater Directive, Floods Directive, EU Water Resilience Strategy, EU Biodiversity Strategy for 2030, Birds Directive, EU Zero pollution action plan, EU Circular Economy Action Plan, Industrial Emissions Directive, Carbon Removals and Carbon Farming Regulation, European Climate Law, Green Claims Directive, Corporate Sustainability Due Diligence Directive, Environmental Impacts Assessments Directive, Corporate Sustainability Reporting Directive, EU Taxonomy Regulation and the Common Agricultural Policy 2023-2027. Some of the assessed European policy instruments were subsequently included following the policy mapping conducted in 2025. This refers to the Nature Restoration Regulation of 2024, the European Climate Adaptation Plan and the Circular Economy Act, both announced for 2026. As illustrated in Figure 1, the EU policy instruments can be grouped into five distinct categories according to their primary objectives:

- Ensuring water quality
- Restoring nature and biodiversity
- Promoting circularity and climate change adaptation
- Shifting towards business sustainability
- Agriculture-focused policies

In sum, the European Union and international institutions have developed an extensive and increasingly ambitious policy framework relevant to the protection and restoration of natural ecosystems. This landscape spans water quality, biodiversity, climate action, circular economy,

[1] https://futurelakes.eu/fileadmin/projects/futurelakes/Forms/Deliverables/D3.1_Policy_mapping.pdf

agriculture, and corporate sustainability, that appears to be - at first glance - closely aligned with global commitments.

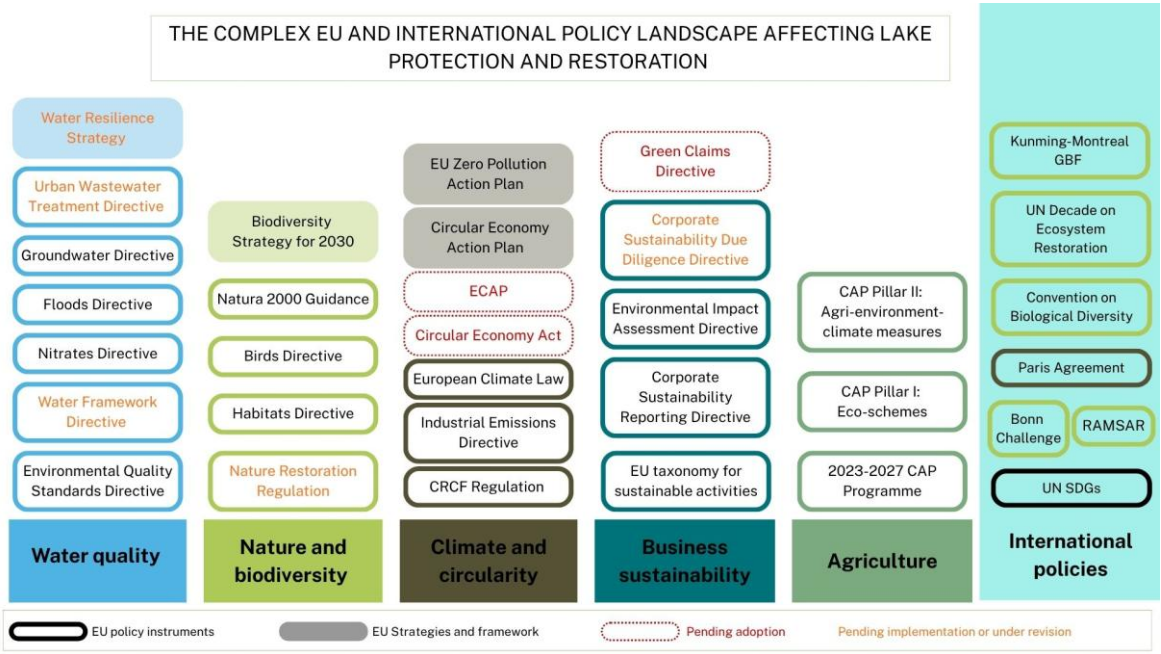


Figure 1. Summary of the European and international policies' landscape

Additionally, the **national policy instruments** that underpin lake restoration efforts were identified and analysed for each demonstration site in D3.1. Albrecht et al. (2025) showed that each lake basin has implemented EU water and biodiversity policies differently, due to diverse approaches to national implementation of the key EU directives and regulations. This is explained through differences in legal architecture in each Member State (MS) and through differences in geographical context and cultural and political values.

The comparison between the contrasting demonstration sites of Lake Vesijärvi (in Finland) and Lake Karla (in Greece) shows how differently policy frameworks can operate in practice. **Finland** has several lake restoration projects ongoing for large and small lakes, as well as wetland restoration, many of which are established through WFD programme of measures. Many of the suggested measures listed in the River Basin Management Plans and Programme of Measures, are related to the environmental payment system of CAP, targeting reducing nutrient loads from agriculture. Although Finland is not largely covered with agricultural areas, CAP subsidies are a major source of funding for water protection measures. The Climate Change Adaptation Plan also aims to establish NbS to increase preparedness to climate risks and to improve water quality.

In **Greece**, the focus is more on sustainable water management to prevent water shortages caused by drought, including infrastructure projects and interventions to manage supply and demand through water conservation and reuse measures (i.e. potentially NbS and CBS). Greece experiences a high degree of legal fragmentation, which increases the quantity of regulation and can result in inconsistencies and enforcement difficulties.

FutureLakes policy mapping, as presented in Deliverable D.3.1, shows that the policy framework is **legally robust**. Binding EU water directives provide a solid regulatory backbone for improving ecological and chemical status, while biodiversity and nature restoration policies introduce quantified restoration targets and ecosystem-based approaches. Climate and zero-pollution strategies further reinforce objectives by addressing emissions, nutrient runoff, and industrial pollution.

Despite its reliability, the mapping exercise shows that the **policy landscape** for lake protection and restoration is highly **complex**. This landscape comprises a wide range of instruments operating at different governance levels and pursuing objectives that are sometimes distinct and sometimes closely interrelated. Such complex framework involves many stakeholders, institutions, objectives, perceptions and expectations that are brought to interact with each other (Mortelmans and Carmen, 2021). A complex interplay often leads to a lack of clear overview, anticipation and outcome regarding decision-making. In parallel, this architecture is highly **fragmented** across sectors since multiple instruments operate simultaneously, often with overlapping mandates and different implementation timelines (Table A. 4). This complexity becomes even more pronounced regarding multi-policy interactions that were not adopted at the same time or under the same circumstances (Rizos and Zambianchi, 2025). The effectiveness of this policy framework depends likely less on the creation of new policies and more on coherent implementation, enforcement, and cross-sector coordination.

For these reasons, assessing the level of alignment and coherence within such a multifaceted policy landscape is necessary for understanding the implementation of policies that experience the unfolding of a policy mix (Huttunen, 2015; Lindberg et al., 2019). Accordingly, a **policy coherence assessment** helps structure and support informed dialogue by offering a shared analytical framework to examine policy interactions and while identifying potential conflicts or synergies between these multi-sectoral and multi-level regulatory instruments.

Based on this mapping, the aim of this **deliverable (D3.2)** is to assess the coherence among the relevant policies identified in D.3.1, in order to examine how far they generate synergies with, and are potentially integrated into, broader multi-sectoral policies. To this end, we apply a policy coherence assessment based on established methods from the literature. The coherence assessment is carried out in **two contrasting demonstration** sites, namely **Lake Vesijärvi** in **Finland** and **Lake Karla** in **Greece**. The selection of these case studies among the six demonstration sites[2] of FutureLakes was based on the direct involvement of the associated demonstration lead, namely SYKE and DUTH, in Task 3.2 “Policy coherence and integration”, allowing thus the implementation of the structured interviews with **local policy experts**. Local stakeholders were asked to carry out a prioritisation process to select the most relevant PIs for the coherence assessment in this deliverable. This participatory approach resulted in a total of 34 national regulatory instruments reported in Table 2 and Table 1, that are directly associated with the Water Framework Directive, the Common Agricultural Policy, biodiversity objectives, climate change as well as the protection and restoration of the natural environment.

[2] Lake Vesijärvi (Finland), Kartuzy Lakes (Poland), Lake IJssel complex (The Netherlands), Lake Karla (Greece), Loch Leven (Scotland) and Lake Vansjø (Norway)

2.2. Policy coherence and integration: Definition of the concept and existing methods

The concept of **policy coherence** has been conceptualised in multiple ways across the academic and policy literature. According to Mortelmans et al. (2021), policy coherence refers to the degree of alignment and coordination among diverse policies and instruments in tackling multiple challenges or objectives, especially when these fall under the jurisdiction of separate institutions. Nilsson et al. (2012) define policy coherence as an attribute that promotes synergies between and within different policy areas while reducing systematically conflicts across regulatory instruments to deliver on jointly agreed objectives. Expanding this perspective, OECD (2025) provides an additional definition of the concept as "an approach to integrate the dimensions of sustainable development throughout domestic and international policy-making". In a report published by CrossGov (2024), policy coherence is defined as the extent to which policies reinforce each other by promoting synergies or reducing conflicts between their objectives and instruments both in design and implementation.

While policy coherence refers to the extent to which different policies work together in a consistent and mutually reinforcing manner, the concept of **policy integration** corresponds to the processes through which such coherence can be achieved and aims to ensure that environmental, social and economic objectives are embedded throughout policy design and implementation, rather than addressed in isolation. As such, policy integration can be understood as a key mechanism for fostering policy coherence, particularly in complex, multi-level and cross-sectoral policy environments (Cairney, 2025; Pezdevšek Malovr et al., 2019, Nilsson and Nilsson, 2005).

According to Carbone (2008), a policy coherence analysis can be structured around several form of coherence logics, including horizontal coherence and vertical coherence. The **horizontal coherence** refers to how policy instruments, from a same governance level, interact with each other (Platjouw et al., 2025). As such, the synergies, overlaps and conflicts between each policy instrument can be assessed. Horizontal coherence assessment can be conducted between instruments within the same policy area, or from different policy areas.

On the other hand, **vertical coherence** refers to how PIs are aligned between different governance levels (Platjouw et al., 2025). This approach is particularly relevant for assessing the coherence of policy instruments that require multi-level implementation, such as EU Directives and their transposing acts into national legislation. Vertical coherence requires that the assessed policy instruments derive from the same policy area, address common sectors, or pursue similar objectives. As such, the vertical assessment can highlight which elements are, or are not, in line with another instrument's requirements. The vertical and horizontal coherence are particularly relevant regarding European Union laws. Due to numerous acts and their varied legal nature, the EU and Member State's policy landscape can be highly complex, which can compromise the coherence of all these instruments. Considering that FutureLakes' case studies involve the implementation of instruments from different policy areas, which originate from several levels of governance (international, EU, national), an assessment of the coherence of these multiple instruments is necessary.

Other methodologies exist for assessing policy coherence, whether it concerns the vertical or horizontal approach. The modular Food policy diagnostic tool developed by Gain and Akademiya (2025) aims to identify areas of coherence and non-coherence between a country's food policies. The tool first uses a cross-cutting module, focusing on the processes and systems that support policy coherence. This module is then supported by a second one focusing on coherence among specific policies, composed of six sub-modules, with each one referring to a sectoral policy stream. In addition to the two modules, the diagnostic tool also provides a scoring guide to qualify the stakeholders' answers. In this diagnostic tool, the first module is composed of a numeric scoring system, going from 0 to 3, associated with a score value of "low", "moderately low", "moderately high", or "high". Module 2 scoring system reflects varying degrees reinforcement of, or conflict with, the target goal, by using

the following values: “Highly conflicting”, “Conflicting”, “Neutral”, “Reinforcing” and “Highly Reinforcing”, also associated with a scoring system.

Kivimaa et al. (2025) carried out an analysis of policy coherence and integration in the field of climate change adaptation, by examining how climate change adaptation policies enacted in different but interconnected geographical areas interact, particularly in the context of cross-border climate impacts originating in the Arctic. The authors developed a conceptual framework to assess policy coherence and integration. The analysis focused on EU policies, examining horizontal coherence (across policy domains such as security and trade) and vertical coherence (across governance levels) in relation to Arctic cross-border climate impacts.

CrossGov (2024) has developed a comprehensive policy coherence evaluation framework based on the definition of coherence attributes, developing guiding questions to support the assessment and a simplified coherence scoring. The authors also performed a qualitative analysis of data from case studies, interviews or expert panels.

According to Mortelmans (2020), there is no readily available tool to analyse policy coherence in an easy, efficient, and consistent manner. Nevertheless, to avoid lengthy qualitative reviews that fail to produce clear overviews, and are often too complex, the authors suggest using a **Policy Coherence Matrix** that can be co-created with end-users and adapted to their diverse needs and settings. This tool captures local knowledge and expertise about policy instrument implementation and compiles it in a suitable format to support discussions between decision makers from different sectors. The coherence matrix allows the rapid structuring of the available local knowledge on policy impacts and coherence, while closely reflecting on specific contexts. In parallel, the tool offers a concise alternative to lengthy reporting and produces quantitative, replicable results (yet cannot be generalised) that are comparable over time.

3. Methodology

The FutureLakes’ methodology for assessing policy coherence and integration builds on the approaches outlined above. First, the expert interview method - common to all the reviewed frameworks - was selected as the primary data collection tool for the FutureLakes analysis. As in the IMAGINE and INTERLACE projects (Mortelmans 2020; Mortelmans and Carmen, 2021), a coherence matrix was adopted as a supporting instrument to systematically review and structure experts’ answers. In parallel, a simplified scoring system was developed, drawing on elements from the CrossGov project, as well as the diagnostic tool of Gain and Akademiya (2025), in order to facilitate and streamline respondents’ assessments.

In total 62 national, European and international PIs have been selected for the policy coherence analysis conducted in this Deliverable. This selection corresponds to:

- EU level: 22 European regulatory texts, strategies and action plans (listed in Table A. 4).
- 7 international policies identified through the policy mapping (Table A. 4).
- Demonstration sites (two cases studies): 20 regulatory instruments in Greece, 13 instruments in Finland sourced from Albrecht et al. (2025) and based on a prioritisation process conducted by local policy experts and stakeholders.

3.1. Policy instruments prioritisation at the Demonstration Sites

The PIs selected for Lake Vesijärvi, Finland, were those identified in the FutureLakes' policy mapping exercise to have the most pronounced impact on guiding land use and being relevant for the implementation of lake restoration nationally (Albrecht et al. 2025) (Table 1). Finland implements the WFD through a set of national regulations, such as Act on organizing the water and marine management (1299/2004), Regulation of the Council of State on organizing the water management (1040/2006), and Regulation of the Council of State on river basin management districts (1303/2004). A majority of Finland is covered by forests, and the Forest Act (1093/1996) is the main regulatory instrument for forestry. While promoting sustainable forestry, this act also contributes to safeguarding biodiversity together with national nature conservation regulation. In addition to forest policies, CAP influences lake management at catchment scales and is implemented through several national regulations. Finally, the Finnish Climate Act (423/2022) is a framework legislation setting the climate policy targets and promoting climate change resilience and the management of climate risks.

Table 1. National Policy Instruments (PIs) selected in Lake Vesijärvi

PIs	Code	Scope
Laki vesienhoidon ja merenhoidon järjestämisestä (1299/2004) [Act on organizing the water and marine management]	PI1	Water Framework Directive
Valtioneuvoston asetus vesienhoidon järjestämisestä (1040/2006) [Regulation of the Council of State on organizing the water management]	PI2	Water Framework Directive
Valtioneuvoston asetus vesienhoitoalueista (1303/2004) [Regulation of the Council of State on river basin management districts]	PI3	Water Framework Directive
Luonnonsuojelulaki (9/2023) [Nature conservation act]	PI4	Biodiversity
Luonnonsuojelulakia tarkentava asetus (12/2023) [Degree on amending nature conservation act]	PI5	Biodiversity
Metsälaki 1093/2023 [Forest act]	PI6	Biodiversity
Laki Nagoyan pöytäkirjan täytäntöönpanosta (394/2016) [Act on the Implementation of the Nagoya Protocol to the Convention on Biological Diversity]	PI7	Biodiversity
Laki yhteisen maatalouspolitiikan strategiasuunnitelman hallinnoinnista (1324/2022) [Act on the management of the strategic plan for the common agricultural policy]	PI8	Agriculture
Laki Euroopan unionin suorista viljelijätuista (1332/2022) [Act on European Union Direct Payments to Farmers]	PI9	Agriculture
Laki eräistä maaseudun kehittämisen korvauksista (1333/2022) [Act on Certain Rural Development Compensations]	PI10	Agriculture
Laki maaseudun kehittämisen tukemisesta rahoituskaudella 2023-2027 (1325/2022)	PI11	Agriculture
Laki maatalouden rakennetuista (1476/2007)	PI12	Agriculture
Ilmastolaki (423/2022) [Climate act]	PI13	Climate change

The PIs selected for Lake Karla (listed in Table 2) were extracted from Albrecht et al. (2025) and span four main thematic areas relevant to lake restoration: the Water Framework Directive, environmental protection, agricultural policy, and climate change adaptation.

Greece implements the WFD through a combination of national legislation and ministerial decisions that establish the administrative and planning framework for water resources management, including the designation of river basin districts and water pricing policy. Environmental protection instruments cover both habitat and species conservation, transposing key EU directives on habitats and wild birds (Habitat Directive, 2009/147/EC), and are reinforced by national legislation governing the management bodies responsible for protected areas. Given that Lake Karla's catchment is predominantly agricultural, CAP instruments and nitrate-related regulations are particularly relevant, as they directly influence land use practices and water quality in the basin, which has been designated as a Nitrate Vulnerable Zone. Finally, climate change legislation is included given the increasing pressures of drought and water scarcity in Thessaly region, where climate adaptation planning is increasingly central to the long-term viability of the lake's restoration. All above PIs establish objectives, that if achieved, can create conditions for sustainable water resources, lakes sustainability included. Even though some of them have been modified, they represent pillars for environmental restoration and Karla in particular.

Table 2. National Policy Instruments (PIs) selected in Lake Karla

PIs	Code	Scope
Joint Ministerial Decision 33318/3028/11-12-1998 (adoption of Directive 92/43/EEC)	PI1	Biodiversity
Law 3937/2011 “Conservation of biodiversity and other provisions”,	PI2	Biodiversity
Directive 79/409/EEC (as codified by Directive 2009/147/EC)	PI3	Biodiversity
Ministerial Decision 414985/29-11-85 (Gov. Gaz. B΄757) «management measures for wild bird-fauna» (adoption of Directive 2009/147/EC)	PI4	Biodiversity
Ministerial Dec. 16190/1335/1997 (Gov. Gaz. B΄ 519) Nitrates pollution (adoption of the Directive 91/676/EEC	PI5	Agriculture
Ministerial Dec. 1848/278812/2021 “Code of Good Agricultural Practice for the Protection of Waters from Nitrate Pollution of Agricultural Origin	PI6	Agriculture
Designation of Nitrate sensitive/Vulnerable zones FOR KARLA Particularly 19652/1906/22.07.1999	PI7	Agriculture
Joint Ministerial Decision 9269/246316 (Gov. Gaz. B΄4032/21.09.20) – CAP Agricultural pesticides, plant protection and other drugs	PI8	Agriculture
Greece’s CAP strategic plan 1384/190515/2023 (Gov. Gaz. B’ 3946/19.06.2023)	PI9	Agriculture
National strategy for climate change adaptation Law 4414/2016	PI10	Climate Change
Ministerial Dec. Regional Plans for Adaptation to Climate Change 11258/2017 (Gov. Gaz. B΄873)	PI11	Climate Change
Presidential decree 77 (A 130/2023) General Secretary in the Ministry of Climate Crisis & Civil Protection	PI12	Climate Change
Law 5106/2024 (A΄63) setup of the organization for integrated water resources management in Thessaly region	PI13	Climate Change

PIs	Code	Scope
Law 1650/86 (Gov. Gaz160/A/18-10-86) first law for environmental protection in Greece	PI14	Protection & restoration of natural environment
Law 4519/2018 (Gov. Gaz. 25/A/20-2-2018) Management bodies creation	PI15	protection & restoration of natural environment
Law 4685/2020 (Gov. Gaz 92/A/7-5-2020) for the transformation of procedures for works in the environment	PI16	Protection & restoration of natural environment
Presidential Decree 51/2007 (adoption of Directive 2000/60/EC)	PI17	Water Framework Directive
Ministerial Dec. 13833/02.09.2010 Water Districts & designation of River Basins and RBMPs specifications	PI18	Water Framework Directive
Joint Ministerial Decision "National list of water abstraction points" 145026/10.01.2014	PI19	Water Framework Directive
Decision National Committee of Water 135275/2017 (Gov. Gaz. B 1751/22-5-2017) water pricing policy	PI20	Water Framework Directive

3.2. Assessment Areas

The Assessment Areas (AAs) were identified according to the objectives and priorities regarding lake restoration, specifically for the implementation of innovative Circular, Biodiversity-focused and Nature-based Solutions. The AAs, reported in Table 3, were identified jointly with lake practitioners and researchers from the FutureLakes team and cover the following key focus areas: water quality and pollution control, uptake of nature-based solutions, integrated, participative & inclusive management approaches, economic circularity and innovative financing, climate objectives as well as biodiversity and natural ecosystems restoration. While a PI may be initially designed to meet the key focus of one specific AA, the cross-cutting analysis helps determine whether that same instrument explicitly supports other AAs, allows/does not contravene them, or hinders them. Investigating the alignment between the selected PIs and the identified AAs is essential to provide a holistic overview of the horizontal and vertical coherence.

Table 3. Identified Assessment Areas

Assessment Areas	Code	Key Focus
Water quality and pollution control	AA1	Enhance and restore degraded waters (ecological and chemical status), controlling point-source pollution (e.g., industrial discharges), addressing diffuse pollution (e.g., agriculture, urban runoff)
Uptake of innovative solutions for management and restoration	AA2	Recognise the role of NbS, CBS, and BfS to foster their implementation
Promoting integrated, participative and inclusive basin management	AA3	Fostering water management by basin district (not political or administrative borders) and promotes fair, active, and transparent involvement of diverse stakeholders

Assessment Areas	Code	Key Focus
Economic circularity and innovative financing	AA4	Supporting circular economy, establishing market-based instruments to ensure continuous financing (water tariffication, taxes, payments for ecosystem services…)
Foster climate ambition	AA5	Encourage climate adaptation actions and resilience to droughts and floods, help preventing or reducing the emission of greenhouse gases (climate mitigation)
Restoring biodiversity and natural ecosystems	AA6	Promotes biodiversity protection and restoration

3.3. Policy coherence matrix

In order to evaluate the conflicts and synergies between and within different policy instruments influencing the restoration of lakes and the implementation of NbS and CBS, the method selected for conducting the policy assessment is the **coherence matrix**. The tool is designed to provide a rapid and scientifically robust overview of how the PIs interact. The matrix is provided to the respondents in Excel format with a 'Read me first' guiding sheet to explain the process of the coherence assessment. With the coherence matrix method, respondents are asked to assess the level of alignment for each step using a simplified scoring system tailored to the specific issues addressed by FutureLakes. Before using the matrix, respondents are asked to fill in a general information sheet. Then, the respondents are asked to fill in the 3-steps dedicated matrix, according to their matching case study site and associated national PIs.

- **The first step:** experts are asked to systematically assess how far the local policy instruments support lake restoration, with a particular emphasis on 6 overarching objectives and priorities, categorized as Assessment Areas (AA) and covering i) water quality and pollution control, ii) uptake of innovative solutions for management and restoration, iii) promoting integrated, participative and inclusive basin management approaches, iv) economic circularity and financing, v) foster climate ambitions, and vi) restoring biodiversity and natural ecosystems.
- **The second step** corresponds to the respondent's assessment of PIs' horizontal coherence: this refers to the assessment of the interaction between PIs of different sectors at the same level of governance.
- **The third step** corresponds to the respondent's assessment of the PIs' vertical coherence: this refers to the assessment of the interaction between a PI at the national scale and a PI at a broader scale (European or international).

With a specific scoring system for each step, the respondents evaluate the level of policy coherence regarding the PIs affecting the implementation of lake restoration in each demonstration sites. Subsequently, the variability in the scores assigned by respondents is then analysed to provide a clearer and more robust measure of policy coherence and integration.

3.3.1. Horizontal coherence

The horizontal policy coherence corresponds to the previously mentioned Step 1 and step 2. Assessing the coherence of national policies with the identified AAs (Table 3) allows to evaluate the extent to which lake restoration is embedded across the different policy streams. The purpose of this analysis is

to calculate a consistency score highlighting the level of alignment of the PI with the various AAs. To that end, the assessment is carried out by national experts, as they have the best expertise on most relevant applicable texts from their own legislation, usually drafted in the national language. Each respondent is asked to fill in the spreadsheet mapping horizontal coherence (Table 4) between the selected national PIs and the six AAs.

Table 4. Horizontal policy coherence assessment (step 1)

STEP 1								
SCORE	Negative impact	-2		-1		0		1
	? = Don't know							
Policy instruments (PI) that have an impact on the assessment areas (AA)	Impact on							
	Capacity to be in line with AA1		Capacity to be in line with AA2		Capacity to be in line with AA3		Capacity to be in line with AA4	
PI1								
PI2								
PI3								
PI4								
PI5								
PI6								
PI7								
PI8								
PI9								
PI10								
PI11								
PI12								

? (Don't know)
0 (neutral impact)
1 (positive impact)
2 (strong positive impact)
_1 (negative impact)
_2 (strong negative impact)

The answers of each respondent follow the Likert scale that varies from -2 'strong negative impact', -1 'negative impact', 0 'neutral impact', 1 'positive impact' and 2 'strong positive impact'. The answer '? (I don't know)' is also available.

When **coherence is mixed or nuanced**, respondents are provided with a second checkbox - offering the same response options - for a single interaction between a PI and AA. Accordingly, the matrix includes two cells (Figure 2) for each assessed impact, allowing respondents to report both the most positive and the most negative effects within that interaction. This design enables experts to reflect situations where certain provisions generate positive impacts while others produce negative ones within the same PI–AA interaction. As a result, the **variability of the impact can be captured rather than the average**. However, if the experts consider that the impact is self-employed, they can assign the same value in both cells.

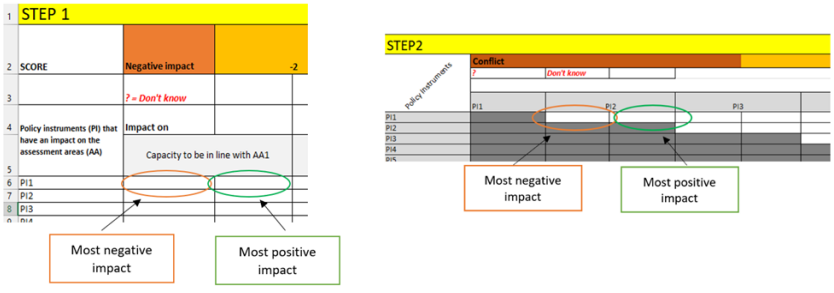
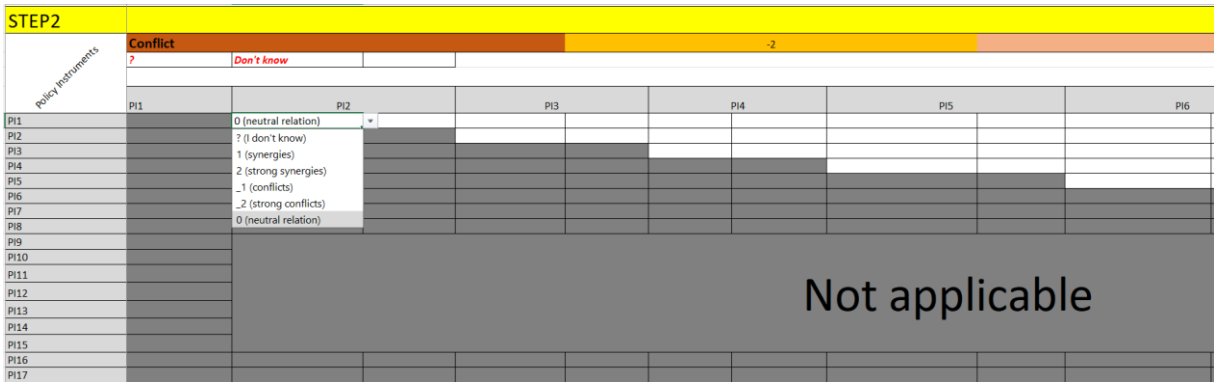


Figure 2. Scoring system for the coherence assessment

In the second step of horizontal coherence assessment, the respondents are asked to complete a second matrix (Table 5) to evaluate how the selected PIs interact with one another in the context of lake management and restoration at the local and national level. This horizontal coherence assessment only applies to the national/local PIs and does not involve the European and international PIs.

The answers follow the same Likert scale as step 1 ranging between -2 (strong conflicts) and 2 (strong synergies). The respondents must also indicate if and when there are provisions demonstrating synergies and other provisions demonstrating conflicts within a single interaction.

Table 5. Horizontal policy coherence assessment (step 2)



Based on the provided scores, we then calculated two different indices. First, the **Normalized Variability Index** that provides a standardized variability score ranging between 0% and 100% for each PI. The index is defined as:

$$\textbf{Variability Index of PI}_{i,k} = \frac{\frac{\sum_{j=1}^{m}(\text{Max}_{ij} - \text{Min}_{ij})}{m}}{\upsilon} \times 100 \qquad \text{(Eq. 1)}$$

Where:

j: Policy instruments (1..m)

m: total number of PIs

k: the associated demonstration site or country

υ is the full width of the Likert scale

Results ranging between $[0\% - 20\%]$ indicate low variability whereas moderate variability are between $[20\% - 40\%]$. If the index is greater than 50%, than the variability is considered as high.

The second index measures the **Net Impact** (Eq.2) and captures the nature of coherence between policy instruments, indicating whether their interactions are synergistic or conflictual.

$$\textbf{Net Impact of PI}_{i,k} = \frac{\frac{\sum_{j=1}^{m}(\text{Max}_{ij} + \text{Min}_{ij})}{2}}{m} \qquad \text{(Eq. 2)}$$

Where:

$$\begin{cases} If\ Net\ impact < 0, then\ clearly\ negative\ impact\ of\ the\ PI \\ If\ Net\ impact > 1, then\ clearly\ positive\ impact\ of\ the\ PI \\ If\ Net\ impact\ [0-1], then\ slightly\ positive\ impact\ of\ PI \end{cases}$$

3.3.2. Vertical coherence

3.3.2.1. Expert-based assessment

In Step 3, respondents are invited to complete Table 6 to assess the alignment of local and national PIs with European and international policy frameworks. To avoid an excessively detailed and time-

consuming exercise - where each national PI would be systematically compared with every European and international PIs - the vertical coherence assessment in FutureLakes is structured around guiding questions rather than direct one-to-one comparisons. In the coherence matrix, national PIs are presented in the rows, while the columns contain guiding questions related to European and international policies. This approach streamlines the evaluation process while still enabling a structured and meaningful assessment of vertical policy coherence. The guiding questions refer to the alignment of each national PI with EU policies and international agreements, legal coherence (including transposition of EU policies and absence of regulatory conflicts), institutional coordination with EU and international bodies, financial support adequacy from EU and international institutions as well as learning and knowledge transfer from EU and international best practices. To answer these questions, the respondent provides a score from 0 to 4 with an associated 'comments' section. The answer '0' corresponds to 'not at all', '1' corresponds to 'very low', '2' corresponds to 'moderate', '3' corresponds to 'good' and '4' corresponds to 'strong'. To answer 'I don't know', experts are asked to leave the box empty.

Table 6. Vertical policy coherence assessment

STEP3

Policy Instruments	To which extent is the PI aligned with the goals of **EU policies?**		To which extent is the PI aligned with the goals of the **international** agreements?		Is the PI a transposition of an **EU policy**?		How would you rate the absence of conflicts **with EU regulations**?	
	score	comments	score	comments	score	comments	score	comments
PI1								
PI2								
PI3								
PI4								
PI5								
PI6								
PI7								
PI8								
PI9								
PI10								
PI11								
PI12								
PI13								
PI14								
PI15								
PI16								

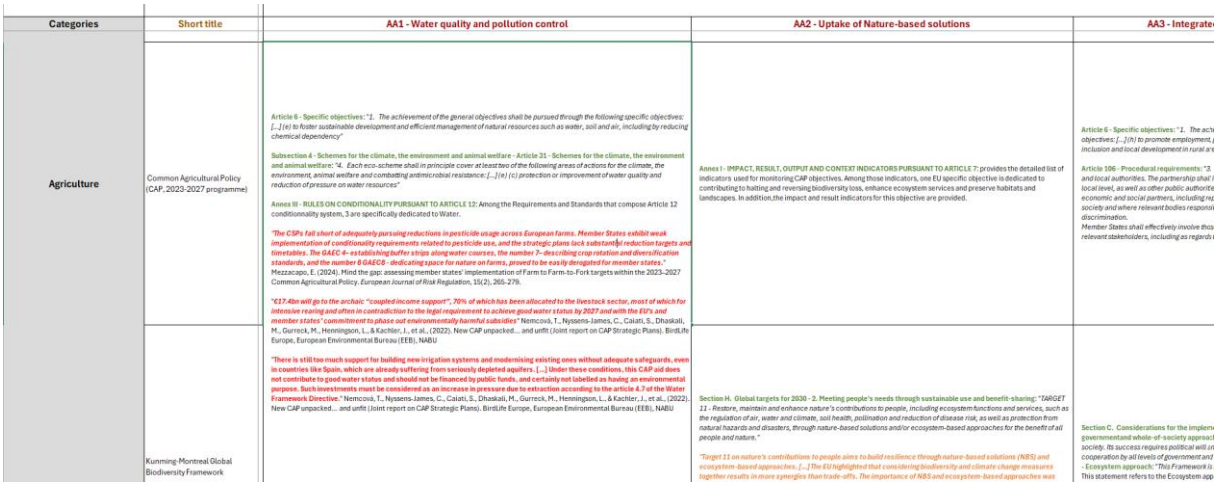
0 not at all
1 very low
2 moderate
3 good
4 strong

3.3.2.2. Desk-based analysis

This vertical coherence assessment is completed by desk-based analysis to capture the cross-cutting synergies (or conflicts) between the selected EU and international legislative frameworks relevant to the priorities of lake restoration (AAs). This review enables the identification of complementarity and regulatory conditionality that may influence or shape the implementation of innovative NbS, CBS and BfS in lake ecosystems.

This assessment is carried out internally by SEMIDE using desk-based review and analysis of legal texts. The relevant PIs from D.3.1 at both European and international levels, are listed in an Excel table available in the annexes (Table A. 5). The content of these instruments has been read and analysed, by consulting official texts, institutional reports on their implementation, doctrinal analyses and legal literature. This analysis identified the positive, negative or neutral impacts of these instruments on each AA.

The identified impacts were then transcribed into the Excel Table A. 5, either as quotations from the literature or relevant provisions from the PI, or as explanatory rewordings. As the arguments illustrating the impacts are not intended to be exhaustive, only the most relevant elements have been transcribed. For example, and in order to illustrate the positive impact of the EU Common Agricultural Policy regarding AA1, only certain provisions or explicit quotations have been included in the table (see example in Figure 3).



Categories	Short title	AA1 - Water quality and pollution control	AA2 - Uptake of Nature-based solutions	AA3 - Integrate
Agriculture	Common Agricultural Policy (CAP, 2023-2027 programme)	Article 6 - Specific objectives: "1. The achievement of the general objectives shall be pursued through the following specific objectives: [...] (e) to foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency" Subsection 4 - Schemes for the climate, the environment and animal welfare - Article 31 - Schemes for the climate, the environment and animal welfare: "4. Each eco-scheme shall in principle cover at least two of the following areas of actions for the climate, the environment, animal welfare and combatting antimicrobial resistance: [...] (e) (c) protection or improvement of water quality and reduction of pressure on water resources" Annex III - RULES ON CONDITIONALITY PURSUANT TO ARTICLE 12: Among the Requirements and Standards that compose Article 12 conditionnality system, 3 are specifically dedicated to Water. "The CSPs fail short of adequately pursuing reductions in pesticide usage across European farms. Member States exhibit weak implementation of conditionality requirements related to pesticide use, and the strategic plans lack substantial reduction targets and timetables. The GAEC 4- establishing buffer strips along water courses, the number 7- describing crop rotation and diversification standards, and the number 8 GAEC8 - dedicating space for nature on farms, proved to be easily derogated for member states." Mezzacapo, E. (2024). Mind the gap: assessing member states' implementation of Farm to Farm-to-Fork targets within the 2023-2027 Common Agricultural Policy. *European Journal of Risk Regulation*, 15(2), 265-279. "€17.4bn will go to the archaic "coupled income support", 70% of which has been allocated to the livestock sector, most of which for intensive rearing and often in contradiction to the legal requirement to achieve good water status by 2027 and with the EU's and member states' commitment to phase out environmentally harmful subsidies" Nemcová, T., Nyssens-James, C., Caiati, S., Dhaskali, M., Gurreck, M., Henningson, L., & Kachler, J., et al., (2022). New CAP unpacked... and unfit (Joint report on CAP Strategic Plans). BirdLife Europe, European Environmental Bureau (EEB), NABU "There is still too much support for building new irrigation systems and modernising existing ones without adequate safeguards, even in countries like Spain, which are already suffering from seriously depleted aquifers. [...] Under these conditions, this CAP aid does not contribute to good water status and should not be financed by public funds, and certainly not labelled as having an environmental purpose. Such investments must be considered as an increase in pressure due to extraction according to the article 4.7 of the Water Framework Directive." Nemcová, T., Nyssens-James, C., Caiati, S., Dhaskali, M., Gurreck, M., Henningson, L., & Kachler, J., et al., (2022). New CAP unpacked... and unfit (Joint report on CAP Strategic Plans). BirdLife Europe, European Environmental Bureau (EEB), NABU	Annex I - IMPACT, RESULT, OUTPUT AND CONTEXT INDICATORS PURSUANT TO ARTICLE 7: provides the detailed list of indicators used for monitoring CAP objectives. Among those indicators, one EU specific objective is dedicated to contributing to halting and reversing biodiversity loss, enhance ecosystem services and preserve habitats and landscapes. In addition,the impact and result indicators for this objective are provided.	Article 6 - Specific objectives: "1. The ach objectives: [...] (h) to promote employment, inclusion and local development in rural ar Article 106 - Procedural requirements: "3. and local authorities. The partnership shall local level, as well as other public authorit economic and social partners, including re society and where relevant bodies responsi discrimination. Member States shall effectively involve thos relevant stakeholders, including as regards
	Kunming-Montreal Global Biodiversity Framework		Section H. Global targets for 2030 - 2. Meeting people's needs through sustainable use and benefit-sharing: "*TARGET 11 - Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services, such as the regulation of air, water and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and/or ecosystem-based approaches for the benefit of all people and nature.*" "Target 11 on nature's contributions to people aims to build resilience through nature-based solutions (NBS) and ecosystem-based approaches. [...] The EU highlighted that considering biodiversity and climate change measures together results in more synergies than trade-offs. The importance of NBS and ecosystem-based approaches was	Section C. Considerations for the implem governmentand whole-of-society approac society. Its success requires political will a cooperation by all levels of government and - Ecosystem approach: "This Framework is This statement refers to the Ecosystem app

Figure 3. Assessment of the EU and international PIs vertical coherence

For clarification purposes, a colour code has also been used when transcribing the elements illustrating the impacts into the table:

- For elements demonstrating a positive impact or indirectly supporting the AA, colour green has been used.
- For elements that do not explicitly demonstrate an impact, colour grey has been used.
- For elements demonstrating a negative impact or an impact that cannot be considered positive, colour orange has been used.
- For elements demonstrating a strongly negative impact, colour red has been used.

Overall, an internal assessment of their alignment with lake restoration priorities (AAs) was conducted. The evaluation applied the same methodological framework used by national experts. For each PI in relation to each AA, two scores were assigned. As illustrated in Figure 4 and detailed in the annexes (Table A. 6), the scoring scale ranged from –2 (strong conflict), –1 (conflict), 0 (neutral relationship), 1 (synergy), to 2 (strong synergy). Where a policy was considered to generate multiple impacts on a single AA, two different scores were assigned, namely the normalized average variability and net impact.

POLICY COHERENCE _ EUROPEAN AND INTERNATIONAL PIs						
SCORE	Negative impact		-2		-1	
	? = Don't know					
	Impact on					
Policy instruments (PI) that have an impact on the assessment areas (AA)	Capacity to be in line with AA1		Capacity to be in line with AA2		Capacity to be in line with AA3	
PI1 - EQSD	2	2	0	0	2	2
PI2 - WFD	2	-1	0	0	2	2
PI3 - GWD	2	2	0	0	2	2
PI4 - Nitrates Directive	2	2	0	0	1	-1
PI5 - Floods Directive	0	0	0	0	2	-1
PI6 - UWWTD	2	2	1	1	2	2
PI7 - EU Water Resilience Strategy	1	1	2	2	1	1
PI8 - EU Biodiversity Strategy for 2030	1	1	1	1	1	1
PI9 - Birds Directive	1	1	0	0	-1	-1
PI10 - Habitats Directive	1	1	0	0	1	-2
PI11 - NRR	2	2	2	0	1	2
PI12 - EU Zero Pollution Action Plan	2	2	2	2	2	1
PI13 - CEAP	1	1	1	1	0	2
PI14 - EU Climate Change Adaptation Strategy	1	1	2	2	0	2
PI15 - IED	2	-2	0	0	1	-1
PI16 - CRCF	1	1	0	0	0	0
PI17 - European Climate Law	0	0	2	2	2	0
PI18 - Green Claims Directive	0	0	0	0	0	0
PI19 - CS3D	1	1	0	0	0	1
PI20 - EIA Directive	2	2	0	-1	1	2

Figure 4. Scoring results of the EU and international PIs vertical coherence assessment

3.4. Selection of experts

The contacted **Finnish** organisations and experts were selected based on the results of FutureLakes' stakeholder mapping exercise (Szulecka, 2025). Some expert interviewees specialised in policymaking while others in practical water protection and restoration work but were evaluated to have some direct involvement in European and National environmental legislation. Most policy experts focused more on water conservation policies whereas only few evaluated worked regarding also the agriculture policies falling under CAP. The interviews with confirmed participants (Table 7) lasted approximately 45-60 minutes, and the matrix was filled out during the interview with a FutureLakes project group member acting as the interviewer in a facilitating role to ensure correct responses to the matrix.

The selection of **Greek** experts (including practitioners) has been based on the suggestions made by the Greek FutureLakes team members via their networks and further discussion within the group to ensure expertise as far as possible. A key goal was to ensure that all the experts (Table 7) have had some direct involvement using the European and the National environmental legislation. Preliminary individual discussions have been conducted with the experts to explain the purpose and the activities of the FL and further of the questionnaire in detail engage them in the process and capture their initial standpoints. Then the questionnaires have been sent individually while an open dialogue (by e-mail or orally) was established for any further clarifications.

Table 7. Contacted stakeholders and policy experts

Demonstration Site	Organisation	Role
Lake Karla (Greece)	Ministry of Environment /National Environment & Climate Agency (NECCA)	Head of the Management Unit of Protected area of Epirus-Greece
Lake Karla (Greece)	Ministry of Environment /National Environment & Climate Agency (NECCA)	Expert of the Management Unit of Protected area of Thessaly-Greece
Lake Karla (Greece)	Ministry of Environment	Expert, Direction of Water Resources
Lake Karla (Greece)	National Technical University of Athens	Researcher on Water resources management
Lake Karla (Greece)	National Museum of Natural History Goulandris - Greek Biotope Wetland Centre (EKBY)	Researcher / Scientific expert
Lake Karla (Greece)	National Museum of Natural History Goulandris - Greek Biotope Wetland Centre (EKBY)	Researcher / Scientific expert
Lake Karla (Greece)	Ministry of Environment	Environmental inspector
Lake Vesijärvi (Finland)	Ministry of the Environment	Specialist
Lake Vesijärvi (Finland)	Finnish Environment Institute	Project expert researcher
Lake Vesijärvi (Finland)	University of Eastern Finland	Project expert researcher

Demonstration Site	Organisation	Role
Lake Vesijärvi (Finland)	Finnish Freshwater Foundation	Expert
Lake Vesijärvi (Finland)	Vesijärvi Foundation	Expert
Lake Vesijärvi (Finland)	The Central Union of Agricultural Producers and Forest Owners	Senior expert
Lake Vesijärvi (Finland)	Municipality of Hollola	Environmental protection expert
Lake Vesijärvi (Finland)	Municipality of Asikkala	Environmental protection expert

4. Results and discussion

4.1. Horizontal policy coherence analysis

As shown in Figure 5, the average variability of the scores given by the **eight national experts** from **Lake Vesijärvi (Finland)** regarding the coherence between the Finnish PI and the lakes priorities AA1, AA2, AA3 and AA6 range between 0 and 50%. This would suggest that national policy instruments are having contrasting impact on biodiversity objectives, water pollution and pollution control, the uptake of innovative restoration solutions, as well as integrated basin management. This is particularly the case of the following regulations that have simultaneously very positive and neutral effects on these AAs:

- Laki vesienhoidon ja merenhoidon järjestämisestä (1299/2004) [Act on organizing the water and marine management]
- Valtioneuvoston asetus vesienhoidon järjestämisestä (1040/2006) [Regulation of the Council of State on organizing the water management]
- Valtioneuvoston asetus vesienhoitoalueista (1303/2004) [Regulation of the Council of State on river basin management districts]
- Metsälaki 1093/2023 [Forest act]
- Laki Nagoyan pöytäkirjan täytäntöönpanosta (394/2016) [Act on the Implementation of the Nagoya Protocol to the Convention on Biological Diversity]

On the other hand, the variability of scores is much lower for AA4 (Economic circularity and financing) and AA5 (climate ambitions), suggesting that Finnish policies display stable synergies with both priorities in this area.

As illustrated in Figure 6, all national policies influencing lake protection and restoration in Finland have positive impact on the AAs. The net impact index measured with respect to AA2 and AA4 is lower than AA1 and AA6, suggesting that the Finnish PIs have a positive, though slight, impact on recognising the role of NbS, supporting circular economy, and ensuring continuous financing for restoration. The national policies have also a moderate positive impact on promoting integrated, participatory and inclusive basin management (AA3) as well as on fostering climate adaptation actions and resilience (AA5)

Figure 5. Distribution of Normalized average variability index of Finnish policies' coherence across the AAs

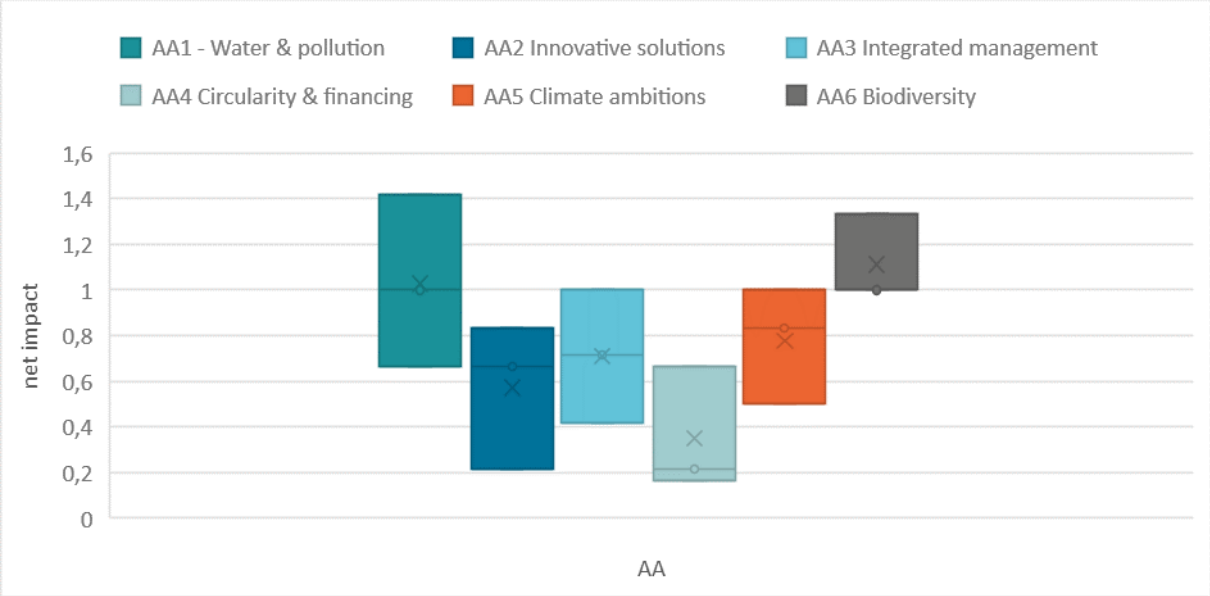


Figure 6. Distribution of Net impact index of Finnish policies' coherence across the AAs

To further examine the horizontal policy coherence in Finland, Figure 7 and Figure 8 present the distribution of the two indices calculated from the coherence scores between the Finnish policy instruments. For analytical clarity, the PIs were grouped according to their policy scope, as indicated in Table 1.

As shown in Figure 7, Finnish regulations related to biodiversity goals (e.g. Forest act [2023], Act on the Implementation of the Nagoya Protocol to the Convention on Biological Diversity [394/2016]), climate change (Ilmastolaki Climate act [423/2022]) and agricultural policies (i.e. Laki maaseudun kehittämisen tukemisesta rahoituskaudella 2023-2027 (1325/2022), Laki maatalouden rakennetuista 1476/2007) exhibit low variability indices, indicating stable and consistent scoring among experts. One explanation is that, for each PI–PI impact, most experts assigned identical scores to both cells. The second explanation is that the majority of selected stakeholders are particularly familiar with the

water-related policies which may influence how consistently they assess interactions with other policy areas.

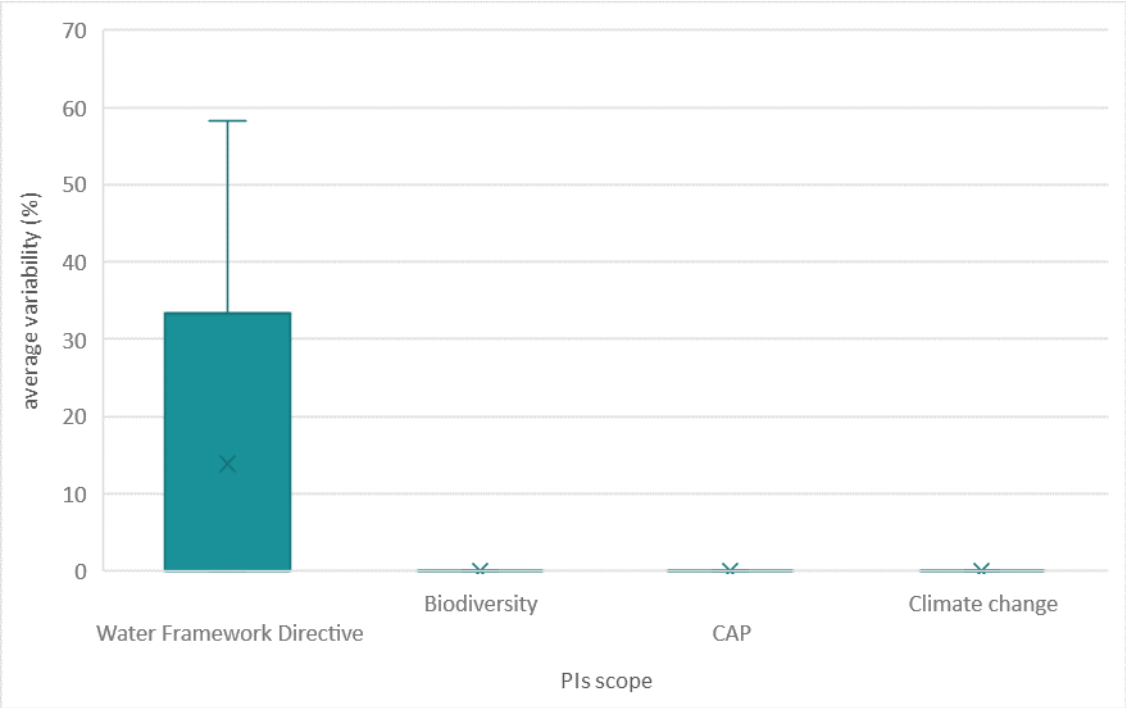


Figure 7. Distribution of Normalized average variability index of the horizontal coherence between the Finnish policies

Regulations directly associated with the WFD (i.e. the Act on organizing the water and marine management [1299/2004], Regulation of the Council of State on organizing the water management] [1040/2006], and Regulation of the Council of State on river basin management districts [1303/2004]) have recorded higher variability. Accordingly, the scores associated with these regulations demonstrate contrasting interactions with the rest of Finnish PIs and indicate greater divergence in expert assessments.

The nature of these interactions - whether synergetic or conflicting- is illustrated in Figure 8. We note that the Ilmastolaki Climate act [423/2022] and water-related Finnish regulations show clearly positive horizontal coherence. A similar synergistic relationship is observed for biodiversity-related Finnish regulations. In contrast, agricultural regulations, namely the Act on European Union Direct Payments to Farmers [1332/2022] and the Act on the management of the strategic plan for the common agricultural policy [1324/2022] display a negative net impact, indicating a clear conflict with the rest of Finnish PIs.

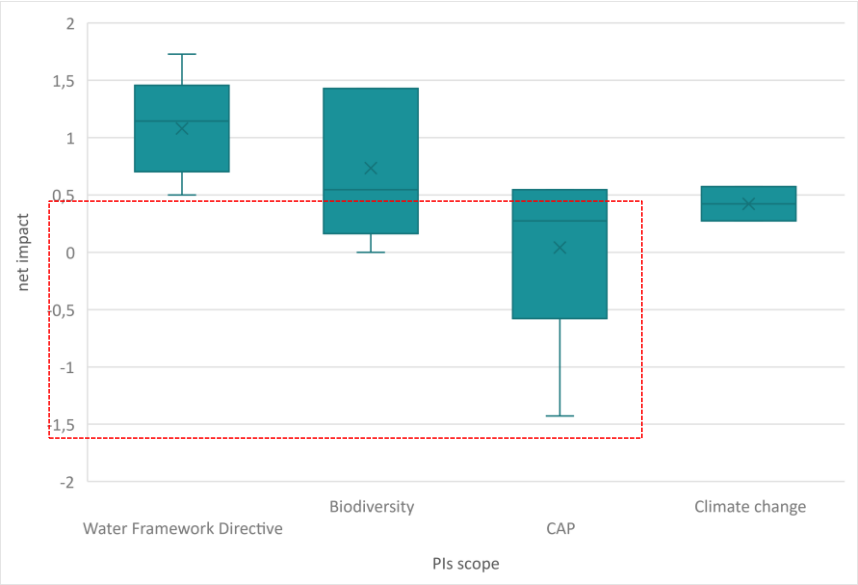


Figure 8. Distribution of Net Impact index of the horizontal coherence between the Finnish policies

Based on the six responses collected for **Lake Karla (Greece)**, we first analysed the horizontal coherence between the national PIs and the AAs which show relatively low variability across responses as illustrated in Figure 9. Most interviewed experts have reported neutral-to-positive or neutral-to-very-positive synergies between the Greek PIs and the assessment areas. In contrast, several biodiversity-related regulations (e.g., the Directive 92/43/EEC and the Law [3937/2011] "Conservation of biodiversity and other provisions") as well as the Ministerial decree on Nitrates pollution (transposed from the CAP) displayed greater variability in their scores, generally ranging from -1 to 0.

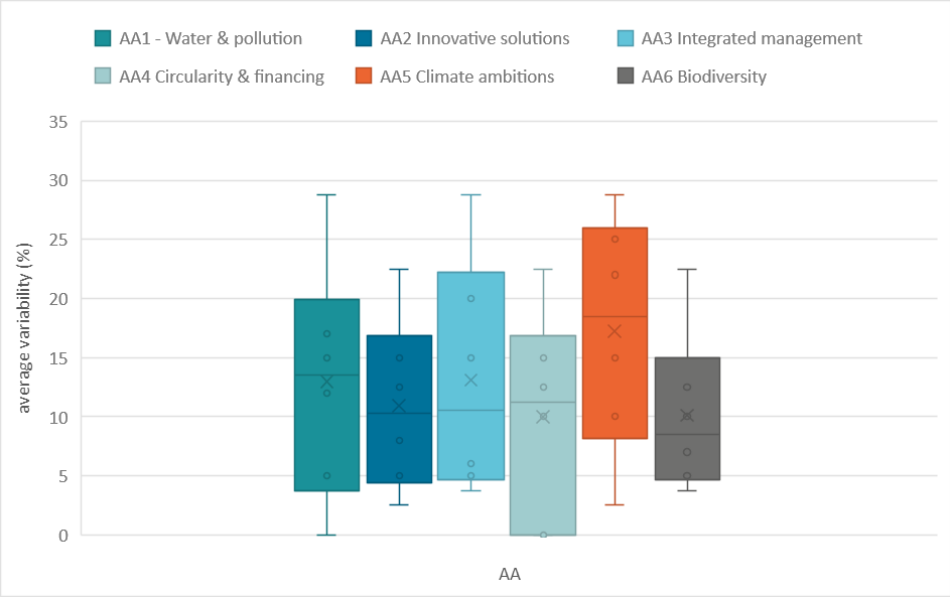


Figure 9. Distribution of Normalized average variability index of Greek policies' coherence across the AAs

This variability likely reflects their mixed impacts on the restoration of Lake Karla, particularly with regard to promoting integrated basin management, supporting the uptake of innovative restoration

solutions (NbS, BfS, CBS) and fostering climate adaptation actions and resilience. Nevertheless, **the variability in the coherence of Greek policies across the AAs remains lower than the variability observed for the Finnish regulations**.

The assigned scores overall indicate a **slightly positive coherence** (Figure 10) between the national policy instruments and the main priorities identified for the restoration of Lake Karla. The net impact calculation suggests that national PIs are aligned with the uptake of innovative solutions (AA2), fostering an integrated basin management (AA3), and the achievement of national biodiversity objectives (AA6).

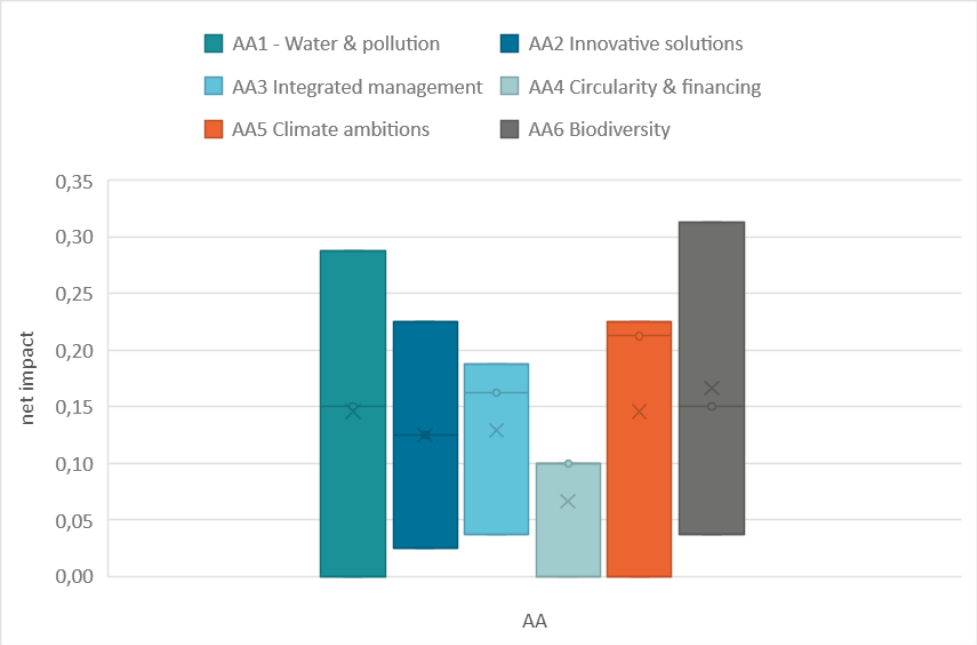


Figure 10. Distribution of Net impact index of Greek policies' coherence across the AAs

However, several experts assessed this synergy as neutral regarding improving water quality and pollution control (AA1), aligning restoration efforts with climate adaptation and resilience (AA4), and supporting circular economy approaches and the establishment of market-based instruments to ensure long-term restoration financing (AA5).

Figure 11 and Figure 12 present the distribution of the average variability and the net impact of the scores assigned by experts, respectively. These indicators are used to examine how the Greek policy instruments interact with one another and to further analyse horizontal policy coherence in Lake Karla. To facilitate this analysis, the PIs were clustered according to their policy scope, as indicated in Table 2.

In contrast to the Finnish case study, the assessment of horizontal policy coherence in Lake Karla reveals significant variability in the scores assigned by experts. Greek experts attributed scores across all policy scopes, whereas Finnish experts mostly assigned identical scores and focused on specific scopes, primarily policies derived from the WFD.

In most cases, Greek experts have reported both the most positive and the most negative effects (Figure 2) that may arise from different provisions within the same policy instrument. Consequently, the average variability is relatively important for national water-focused regulations associated with the WFD (e.g. Joint Ministerial Decision "National list of water abstraction points" 145026/10.01.2014, Decision National Committee of Water 135275/2017 [Gov. Gaz B 1751/22-5-2017]) as well as the protection and restoration of natural environment (e.g. Law 1650/86 [Gov. Gaz. 160/A/18-10-86], Law 4519/2018 [Gov. Gaz. 25/A/20-2-2018], Law 4685/2020 [Gov. Gaz. 92/A/7-5-2020]). Biodiversity and

climate change-focused regulations as well as agricultural policy instruments, show important, yet lower variability.

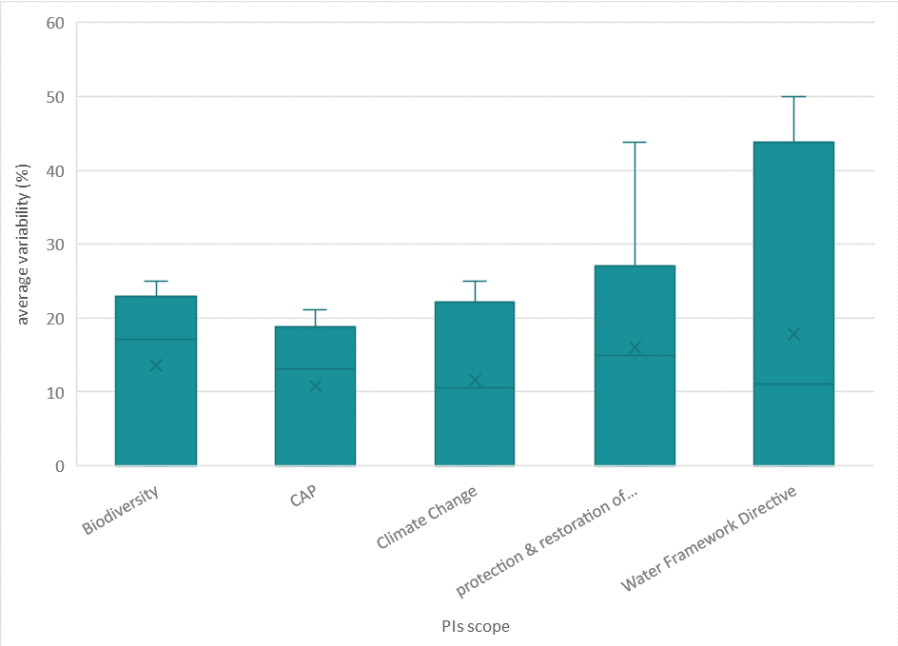


Figure 11. Distribution of Normalized average variability index of the horizontal coherence between the Greek policies

Despite the clear **contrasting interactions** between the Greek PIs, the horizontal coherence turns out to be predominantly synergetic according to Figure 12.

Similar to the Finnish case study, biodiversity-focused PIs in Greece (namely the Directive 92/43/EEC; Law 3937/2011 "Conservation of biodiversity and other provisions"; Directive 79/409/EEC [as codified by Directive 2009/147/EC], and the Ministerial Decision 414985/29-11-85 [Gov gazB΄757] «management measures for wild bird-fauna») demonstrate clearly positive horizontal coherence with the rest of the national regulations. The same synergetic relation (though at a lower level) is observed for climate change-focused policy instruments (i.e. the 2016 National strategy for climate change adaptation, Ministerial Dec. Regional Plans for Adaptation to Climate Change 11258/2017 [Gov gaz B΄873], the Presidential decree 77 [A 130/2023], and the Law5106/2024 -A΄63).

On the other hand, and in contrast to the Finnish case study, **agricultural regulations**, namely the Greece's CAP strategic plan, the Ministerial Decree on Nitrates pollution, as well as the Ministerial Decree 1848/278812/2021 setting the Code of Good Agricultural Practice for the Protection of Waters from Nitrate Pollution of Agricultural Origin display strong horizontal coherence with the rest of the Greek PIs. In addition, the **water-focused Greek regulations exhibit positive, although relatively limited, interactions** with the other national PIs.

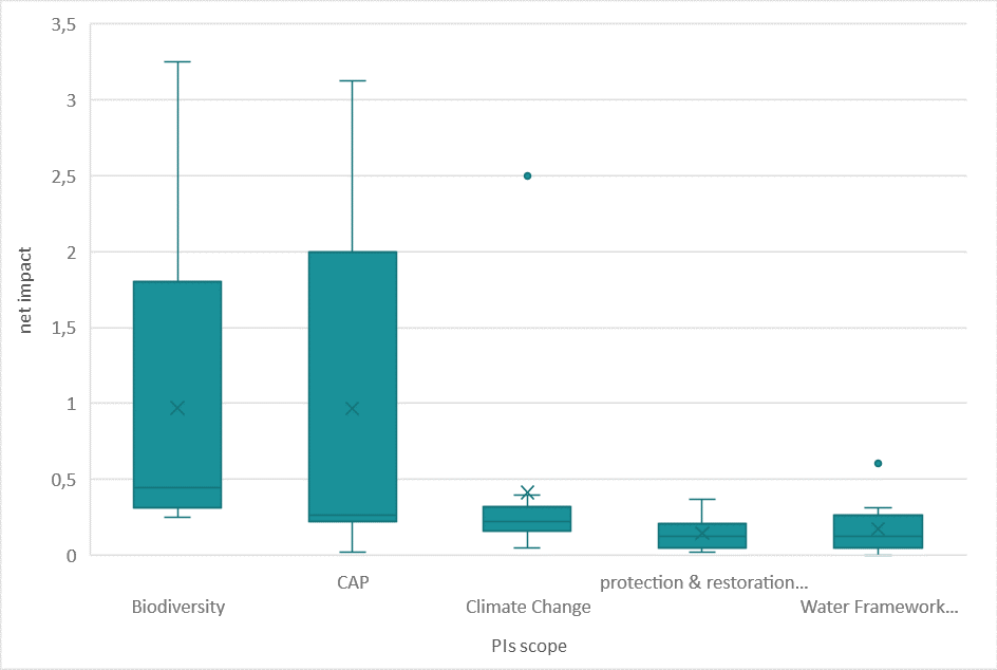


Figure 12. Distribution of Net Impact index of the horizontal coherence between the Greek policies

4.2. Vertical policy coherence analysis

4.2.1. Assessment of vertical coherence at Lake Vesijärvi (Finland) and Lake Karla (Greece)

Figure 13 presents the respondents perceptions of alignment of the Finnish PIs (classified according to their policy scope) with the **EU policies**. Responses are categorised into five levels of alignment: none, moderate, good, strong, and unknown. Overall, the results indicate substantial variation across policy areas in **both perceived strength of alignment** and **levels of uncertainty regarding their implementation**.

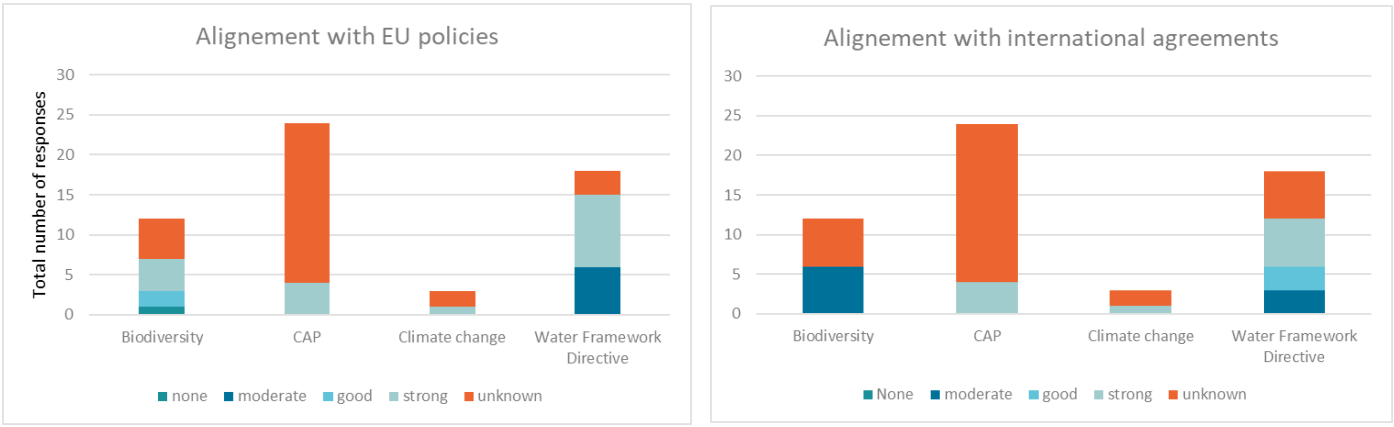


Figure 13. Assessment of the vertical coherence of Finnish policies with EU (left) and International (right) policies

In Lake Vesijärvi, perceptions of the alignment between **agricultural-focused** national regulations and EU policies are marked by a notably high proportion of "unknown" responses. Compared to the other

policy areas, agricultural Finnish regulations show the greatest degree of uncertainty, with relatively few respondents identifying strong alignment. This suggests either limited awareness or ambiguity regarding their practical implementation and coherence with broader EU objectives.

In contrast, the **water-focused national regulations** are generally perceived as more clearly aligned. Most responses fall within the moderate and strong categories, with only a small share indicating uncertainty. This pattern suggests a comparatively strong and recognisable policy framework, where respondents appear more confident in assessing its alignment with EU-level goals. Responses concerning Finnish **biodiversity-focused policies** are more evenly distributed across moderate, good, and strong perceptions, with some degree of uncertainty still present. Finally, the Finnish **climate change regulation** (i.e the Climate act Ilmastolaki [423/2022]) received relatively few responses overall, yet those provided show strong, yet uncertain, assessment of alignment with EU regulations and frameworks.

Figure 13 also illustrates respondents' perceptions of alignment with the international agreements across the same policy domains. Agricultural-focused policies again show the highest level of uncertainty among all policy areas, reflecting potentially the complexity of the national agricultural regulations or weaker perceived linkages with international frameworks. On the other hand, responses associated with water-focused policies are more evenly distributed with a smaller share of "unknown" response, suggesting a generally positive evaluation. In the case of biodiversity-focused regulations, responses are primarily concentrated in the moderate category, with a remaining portion of uncertainty.

In **Lake Karla,** the assigned vertical coherence scores indicate a predominantly positive assessment of alignment with EU regulations. Across all policy domains, the category "strong" constitutes the largest share of responses, while "low" and "none" are minimally represented and "unknown" are inexistant. This would suggesting broad certainty in policy coherence assessment and a limited knowledge gap compared to the Finnish case study.

Figure 14 presents the perceived alignment of the national Greek PIs - classified according to their policy scope - with the European Union regulations.

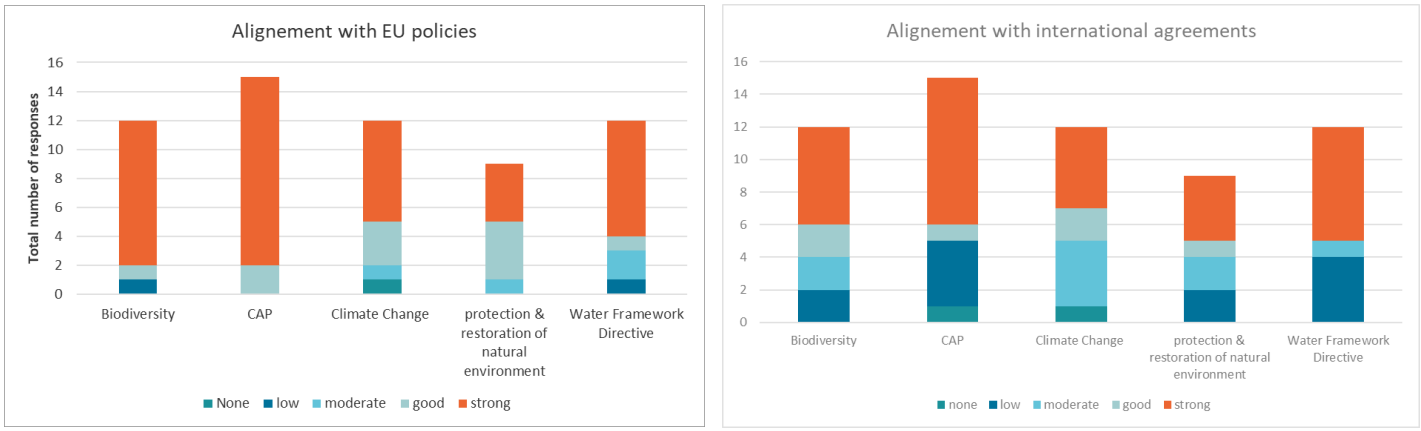


Figure 14. Assessment of the vertical coherence of Greek policies with EU (left) and International (right) policies

Greek agricultural regulations demonstrate the highest proportion of "strong" alignment ratings. Similarly, biodiversity and water-focused PIs exhibit high levels of strong alignment, with low representation in the "moderate" or "good" categories. These findings suggest that these policy scopes are widely perceived as closely aligned with overarching EU policy objectives. In contrast, Greek PIs under the scope of climate change, as well as the protection and restoration of the natural environment, display comparatively more varied distributions. Although "strong" remains the

dominant category, these areas show a higher proportion of "good" and "moderate" responses, indicating comparatively weaker - though still largely positive and certain - perceived alignment.

The same figure (right side) illustrates the alignment between Greek PIs and international agreements. We note that agricultural regulations exhibit the highest overall alignment, with a particularly large share classified as low and neutral coherence, indicating substantial inconsistency with international commitments. This suggests that agricultural PIs are not fully integrated into the broader multilateral environmental agreements and frameworks. Both biodiversity and the water-focused PIs display similarly high levels of strong alignment, complemented by moderate and low assessments, thus indicating some implementation inconsistencies. National policies associated with climate change objectives show a more balanced distribution, with a significant share of moderate alignment. This may reflect partial integration or ongoing adjustment processes, where PIs are broadly consistent with international agreements but not yet fully harmonized. In contrast, national PIs focusing on the protection and restoration of the natural environment record lower strong ratings and a lower assessment, suggesting weaker vertical coherence.

4.2.2. Policy integration: alignment of policies with the priorities of lake restoration

The following analysis had a focus on the alignment of international and EU policies with the priorities of lake restoration, with a specific focus on the WFD, Water Resilience Strategy, the Common Agricultural Policy and the Nature Restoration Regulation. Following the desk-based coherence analysis of the EU and international PIs (explained in section 3.3.2.2), and the coherence scores reported in Table A. 6 in the annexes, both Normalized average variability index and Net impact index scores were calculated to assess their level of alignment with the AAs.

Figure 15 shows that international policies exhibit higher variability in several areas, particularly AA3, AA5 and AA6. This may indicate that EU policies provide clearer policy instruments, stronger governance mechanisms, or better-defined objectives, whereas international frameworks may be broader, more heterogeneous, or open to interpretation. In addition, both governance levels show low variability regarding the uptake of innovative solutions for lake restoration (AA2) and in supporting the circular economy and restoration financing (AA4).

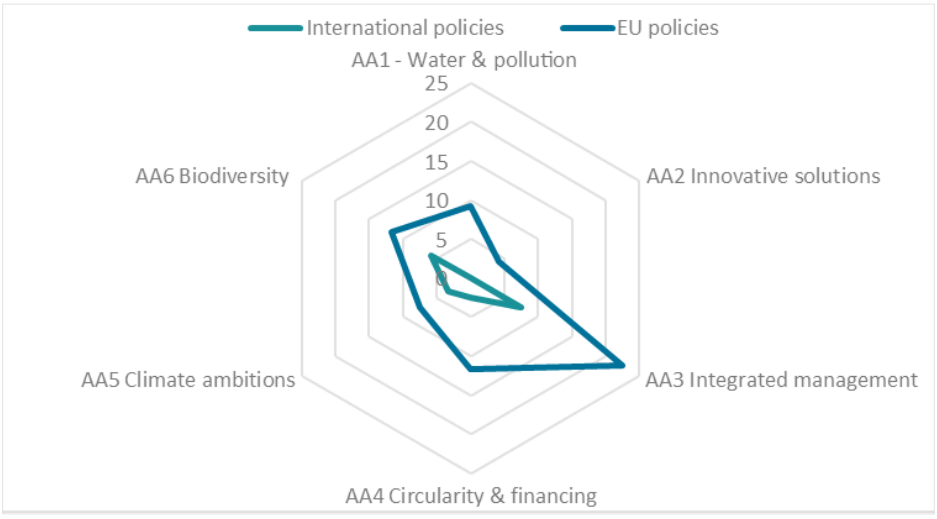


Figure 15. Normalized average variability index of EU and International policies' coherence across the AAs based on Finnish and Greek policy coherence analyses.

Figure 16 reveals a systematic pattern in which international policies consistently show only slight positive impacts, particularly weak in circularity and financing (AA4). This would suggest that

international frameworks are likely more general, less targeted toward lake restoration, or less operational in supporting implementation of measures. On the other hand, EU policies demonstrate stronger positive impacts than international policies across all AAs. EU policies show relatively strong positive impact on water quality and pollution control (AA1) as well as fostering economic circularity and green financing (AA4), highlighting these as areas where EU governance provides more substantial support for lake restoration priorities. EU policies, however, show lower synergetic impact on integrated basin management (AA3), climate adaptation and resilience objectives (AA5), and biodiversity goals (AA6). In contrast, EU governance provides lower substantial support for mainstreaming innovative restoration solutions (AA2).

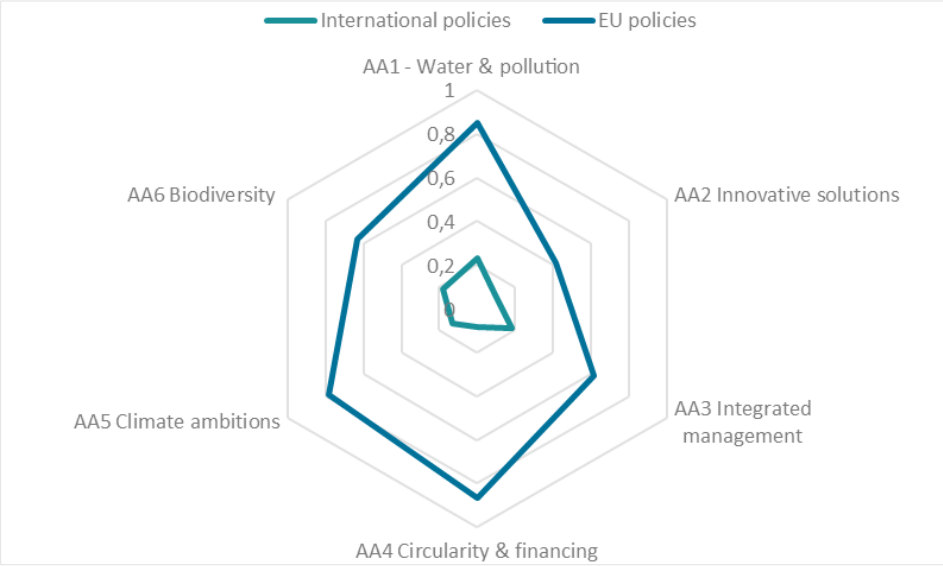


Figure 16. Net impact index of EU and International policies' coherence across the AAs

The analysis of **international policy instruments** shows that these agreements influence the Assessment Areas (AAs) in different ways. For example, The **Ramsar Convention** establishes, through Article 2, a list of wetlands of international importance, where the registered wetlands are subject to enhanced conservation and wise-use obligations. By signing the convention, contracting Parties commit to maintain the ecological character of listed sites, promote their conservation and sustainable use, and implement planning and management measures to prevent degradation, including through monitoring, reporting and restoration actions. Such preserving measures represents a direct positive impact **for lake quality and ecological status**. In addition, the Ramsar Convention's resolution have also widened the scope of this PI, allowing water quality in general to be addressed by some provisions (Bridgewater & Kim, 2021)

Kunming-Montreal Global Biodiversity Framework (Decision 15/4) introduces target 8, which aims to 'Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience, namely by the **implementation of NbS** and **ecosystem-based approaches**. NbS are also cited in target 11, which aims to restore, maintain and enhance natural ecosystem functions and services, by implementation of NbS and ecosystem-based approaches. Although this explicit mention represents a positive impact, no detailed action related to Nature-based Solutions implementation is provided. In addition, the absence of clear indicators for ecosystem services significantly reduces the effective implementation of NbS (Aubert & Dudley, 2024).

Article 7 of the **Paris Agreement** recognises the importance of involving all levels of **government and actors** in addressing climate change by requiring the Parties to adopt a participatory and fully transparent approach. However, despite this emphasis on participatory approaches, non-state actors and sub-national governments receive limited attention in the Agreement's implementation (Ahmad,

2022) which may constrain the effective engagement of diverse stakeholders in practice. Similarly, the **Bonn Challenge** is particularly focused on a state-centred governance framework, and thus, the implementation of restoration at smaller scales is by far less addressed, which significantly hinder social inclusion (Sigman & Elias, 2021). Moreover, the Bonn Challenge does not prioritise freshwater ecosystems and rather focuses on forest landscape restoration as a whole (IUCN, 2020).

Article 6 of the **Paris Agreement** provides a framework for voluntary international cooperation on climate mitigation outcomes, including **financing mechanisms** using trading of carbon credits, which can function as market-based instruments for climate action. Such financing mechanisms could be used for greenhouse gas (GHG) mitigating activities and, therefore, be implemented for ecosystems restoration programmes, including water quality improvement. However, these mechanisms have been pointed out as potentially creating perverse incentives for project developers to pursue more GHG intensive actions and to level up the baseline of emission reduction credits (Schneider & La Hoz Theuer, 2019). Although the Paris Agreement is fundamentally committed to strengthening the global response to the threat of climate change, it does not set detailed, binding requirements on the content of Nationally Determined Contributions. As a result, they can take highly diverse forms and may overlook key elements (Rajamani, 2024), which can enable relatively low levels of commitment to implement ecosystem restoration.

In parallel, and according to Runhaar et al. (2024), the implementation of the UN SDGs specifically related to **biodiversity** is the least prioritised of all SDGs. Despite a solid and developed normative framework on biodiversity targets, the effectiveness of 2030 Agenda provisions remain highly dependent on the implementation of national priorities.

At **EU level**, the overall assessment indicates that European policies broadly align with lake restoration priorities. However,

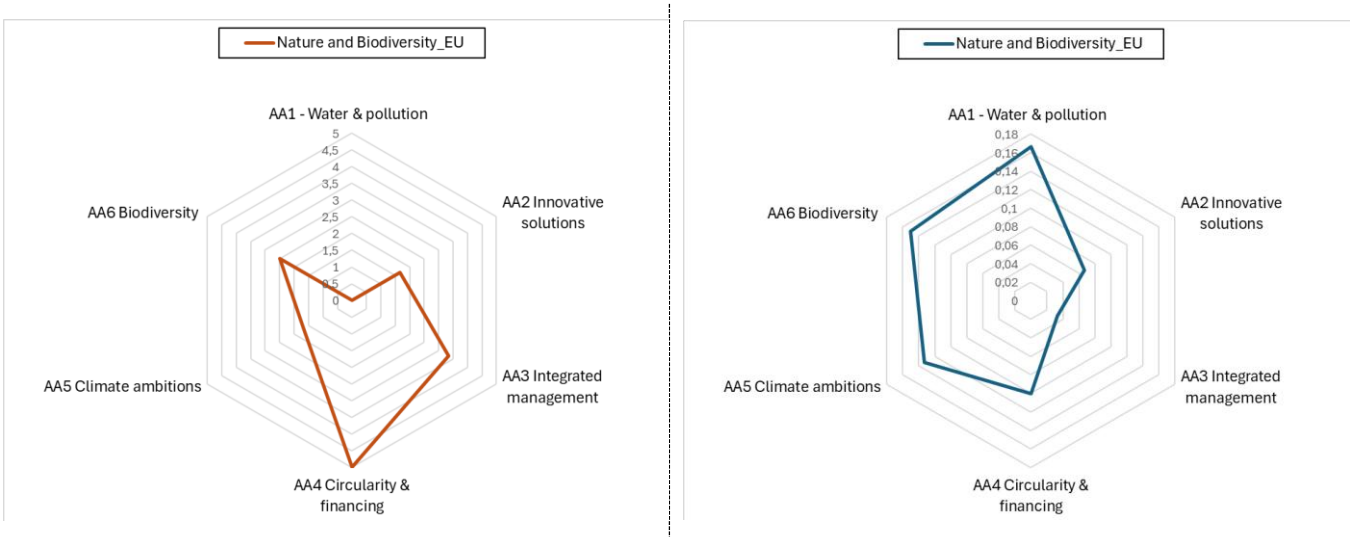


Figure 17 illustrates a strong sectoral variability and a heterogeneous level of alignment with the AAs. The normalized variability index reflects how consistently each EU policy scope aligns with the different lake-restoration priority areas. Based on

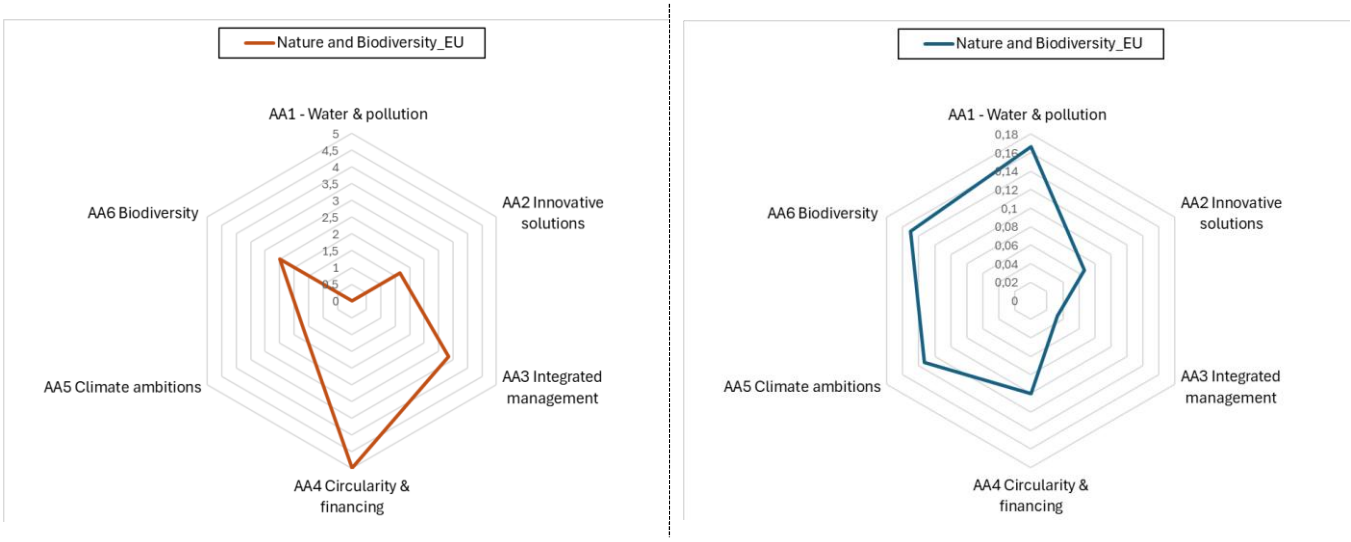


Figure 17, all policies fall within the limited variability range (<20%), suggesting relatively consistent coherence patterns across the assigned scores. In addition, EU policy scopes show positive coherence with lake restoration priorities, yet with varying strength. EU policies related to water quality demonstrate the strongest alignment, particularly supporting priorities related to water and pollution reduction (AA1), integrated management (AA3) as well as circularity and financing (AA4). Climate and circularity policies show relatively positive alignment with the uptake of innovative solutions for lake management and restoration (AA2), economic circularity and green financing (AA4) as well as climate ambitions (A5). Nature and biodiversity policies also contribute positively to all AAs, although generally with more moderate effects. In contrast, the agricultural policy scope shows the weakest coherence and includes negative interactions, particularly for water and pollution reduction (AA1) and biodiversity (AA6) as well as neutral interactions with the uptake of innovative restoration solutions (AA2) and integrated basin management (AA3). This suggests potential trade-offs between agricultural practices and lake restoration objectives and highlights the need for stronger policy integration across these sectors.

A detailed analysis across EU policies is provided in the annexes (Table A. 5). In this section, we focus on specific regulations associated with the following policy scopes that are currently under implementation or revision:

- EU water quality policies: Water Framework Directive (WFD) and European Water Resilience Strategy (WRS)
- Biodiversity: Nature Restoration Regulation (NRR)
- Agriculture: Common Agricultural Policy (CAP)

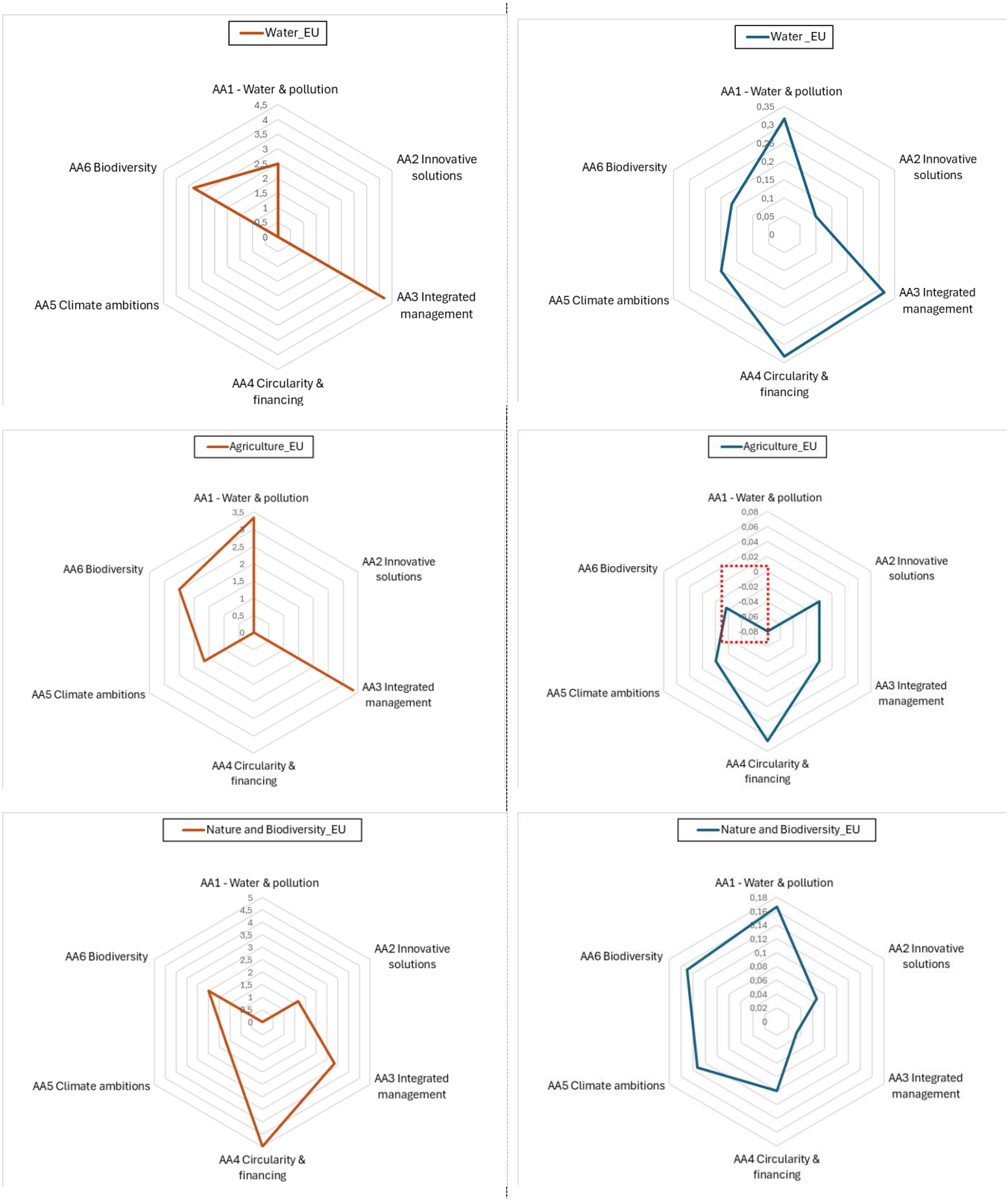


Figure 17. Average Variability and Net Impact Index of EU Policy coherence across Assessment Areas and policy scopes (*)

(*): Policy scopes are listed vertically. The average variability index is illustrated on the left. The net impact index is illustrated on the right

4.2.2.1. EU water-focused policies

EU water quality policy shows an overall positive coherence with lake restoration priorities. The strongest contribution is observed for AA1 (Water and pollution reduction) with a net impact index of 0.32, indicating a strong positive effect consistent with the policy's primary focus on reducing pollution and improving water conditions. Being the main legislation law for water protection in the EU, the Water Framework Directive (WFD) directly and primarily aims at halting deterioration in the status of EU water bodies and achieve good status for Europe's rivers, lakes and groundwater. However, its implementation by Member Sates is still unsatisfactory, as the ultimate objective of achieving 'good status' for all water bodies in 2027 is too ambitious and unrealistic (Soininen et al., 2023). In addition, the European Water Resilience Strategy [3] (WRS) seeks to strengthen water resilience across the EU and improving water quality and tackling pollution in water bodies. However, lake ecosystems are never explicitly referenced, and no measures are designed or tailored specifically to their characteristics.

Strong positive impacts are also found for AA3 (Integrated management) and AA4 (Circularity and financing) (both 0.32 and 0.33 respectively), suggesting that water quality policies support coordinated management approaches and resource-efficient practices relevant to lake restoration. In fact, the WFD requires Member States to apply an integrated approach to water management at the river basin district level. The WRS reiterates and reinforces the importance of this integrated river basin approach across the EU. Stakeholder participation is identified as a key challenge for the Commission in improving implementation of EU water policy, yet no specific and quantified targets have been fixed. Nonetheless, the flexibility provided for in the wording of the Directive regarding the river-basin approach can prevent the effective implementation of such an integrated approach in a transboundary context, as differing measures and standards continue to exist for a single water source that spans countries (Priest et al., 2016). Regarding financing considerations, the WFD's provisions require Member States (MS) to implement a cost-recovery systems for water services grounded in the "polluter pays" principle. Therefore, MS must ensure an adequate financial contribution from the main users from industry, households, and agriculture sectors. In addition, this Directive is included in the conditionality mechanism issued by the CAP through Statutory Management Requirements that all farmers must respect. Accordingly, these financial mechanisms can support the achievement of good ecological status for surface water. Under the WRS, the principle of economic circularity is well promoted, with water re-use positioned as a central objective for building a water-smart EU economy. In terms of financing, it foresees several funding tools, including a Green and Blue Corridors initiative to restore ecological conditions and infrastructure such as rivers, wetlands, and coastal areas. Although these mechanisms are likely to benefit ecosystem restoration, lakes are not explicitly identified as target ecosystems, unlike rivers, wetlands, and coastal systems.

AA5 (Climate ambitions) (0.20) and AA6 (Biodiversity) (0.17) also show lower positive synergies, indicating that water quality measures can indirectly enhance climate and biodiversity objectives. The WFD does not set any explicit climate objectives, either for mitigation or adaptation. By contrast, strengthening resilience to climate change impacts such as droughts and floods is a central goal of the WRS, which plans to use nature-based solutions via the Nature Restoration Regulation to support adaptation. In addition, it envisages mitigation measures, including the decarbonisation of the energy sector. From a biodiversity perspective, several WFD provisions are designed to protect aquatic and terrestrial ecosystems and prevent further deterioration, and they explicitly cover lake ecosystems.

[3] The European Water Resilience Strategy builds on the EU's 2050 vision, presented at the 2023 UN Water Conference, of a water-resilient Union that guarantees water security for all. It charts a pathway towards making Europe water resilient by protecting and restoring aquatic ecosystems, achieving a fair balance between water supply and demand, and ensuring access to safe, affordable drinking water and sanitation. https://environment.ec.europa.eu/topics/water/water-resilience-strategy-actions-tracker_en

However, the framing of these obligations in the text has led some MS to focus solely on preserving and protecting certain elements of ecosystems rather than addressing them in an integrated manner (Voulvoulis et al., 2017). A number of reasons have been given for the failure to deliver tangible improvements in the status of aquatic ecosystems, including lakes. Most notably, the slow and limited implementation of measures (Carvalho et al., 2019), especially to manage diffuse pollution. This is made difficult by the fact that agencies responsible for River Basin plans have little control on what goes on in catchments and also very limited financing to implement measures or compensate farmers. Increased integration of WFD objectives into the Common Agriculture Policy (CAP) has been recognised as one policy solution to enhance financing of measures (Carvalho et al., 2019). In addition, some biodiversity-focused policies such as the Habitats Directive are considered as conflicting with the water-focused directives (including the WFD) by some European experts due to the lack of alignment with other EU sectoral policies (Dworak and Kampa, 2019; Pröbstl et al., 2025; Stefanidis, 2021). By contrast, the WRS sets clear and quantified targets to enhance, protect and restore biodiversity and aquatic ecosystems, and explicitly covering lakes and rivers. Most restoration measures are framed as intermediate targets to be achieved by 2027-2033.

In contrast, AA2 (Innovative solutions) shows only a slight positive impact (0.10), suggesting that innovation is less explicitly promoted within this policy scope. The WFD does not refer to Nature-based Solutions as an instrument for achieving “good status” in lakes or other water bodies as this term was not used at the time of its adoption. While it does not explictly promote NbS, the WFD does not hinder their implementation either and are adopted in Programmes of Measures. In contrast, the WRS strongly supports the uptake of NbS and water reuse (CBS) through several actions, including restoring the water cycle, shaping financing and investments mechanisms for stable water supply, and setting intermediate targets for 2027-2033. Accordingly, these provisions can directly promote lake restoration through NbS and CBS implementation.

4.2.2.2. EU agricultural policy

The EU Common Agricultural Policy (CAP) displays limited alignment with lake restoration priorities and includes several negative or neutral interactions. A strong negative impact is observed for AA1 (Water and pollution reduction) and AA6 (Biodiversity), suggesting that agricultural frameworks fail to incorporate ecosystem protection while indicating potential conflicts between measures addressing nutrient pollution control and agricultural practices.

The CAP includes eco-schemes (Art. 31) requiring actions such as protecting **water quality**, and CAP subsidies are conditional on alignment with EU rules like the WFD and Nitrates Directive (Article 12 and Annex III). However, significant shortcomings in the implementation of the CAP Strategic Plans have been highlighted, notably the weak enforcement of pesticide-related conditionality and the ease with which standards relevant to water protection can be derogated by MS (Mezzacapo, 2024). In addition, a substantial share of CAP funding continues to support coupled income support for intensive livestock production, which often runs counter to the objective of achieving good water status, in accordance with the WFD (Nemcová et al., 2022). Finally, continued support for irrigation infrastructure, even in water-stressed regions, can increase pressure on already depleted water bodies, which also conflicts with Article 4 of the WFD (Nemcová et al., 2022).

The CAP explicitly aims to ‘contribute to halting and reversing **biodiversity** loss, enhance ecosystem services and preserve habitats and landscapes’, and therefore implements several mechanisms to help achieve this objective. In this context, CAP subsidies are conditioned to 2 biodiversity and landscape-related Statutory Management Requirements SMH[LH28.1], which refer to the Birds and Habitats Directives, and 2 GAEC[4] standards. Article 31 also introduces ‘protection of biodiversity, conservation or restoration of habitats and species, including maintenance and creation of landscape features or

[4] Good agricultural and environmental conditions (GAEC)

non-productive areas' as an objective farmers can voluntarily contribute to, as regards to the eco-scheme mechanism. However, among the different indicators described as demonstrating contribution to this objective, none of them are explicitly likely to promote lake restoration activities. Despite the CAP budget dedicated to environmental sustainability, local implementation challenges its effectiveness for biodiversity protection. Some restoration or habitat protection measures can encounter resistance from farmers who perceive them as constraints on productivity (Manzoni et al., 2025). In addition, transitional derogations granted by the European Commission, such as the Ecological Focus Areas in 2022, have led to increasing agricultural production, which leads to conflict between the CAP and biodiversity and ecosystems conservation (Alabrese & Saba, 2023), explaining the negative impact towards AA6.

The policy shows neutral or negligible contributions to AA2 (Innovative solutions), AA3 (Integrated management) and AA5 (Climate ambitions). In fact, the CAP does not explicitly reference Nature-based Solutions. Some measures indirectly support BfS and NbS activities through biodiversity and ecosystem service objectives, but the policy neither explicitly promotes nor obstructs them.

On the other hand, CAP Strategic Plans are organised at national and administrative levels (according to Article 104) rather than river basins, which conflicts with integrated water-basin management principles. However, Article 106 requires Member States to involved relevant authorities at regional and local level, economic and social partners as well as relevant bodies of civil society representants in the preparation of CAP Strategic Plans. Accordingly, this provision formally requires an effective participation of various stakeholders in the decision-making process.

Only AA4 (Circularity and financing) demonstrates a slight positive effect, suggesting some limited alignment with resource efficiency or financial mechanisms supporting restoration. In fact, and through eco-schemes under pillar I, Member States must provide annual direct payments for farmers that voluntarily commit to further contribute to climatic, environmental and animal welfare-related objectives, as set out in Article 31. Article 70 under pillar II also requires Member States to compensate farmers for additional costs and income loss resulting from the adoption of environmentally beneficial practices through the agri-environment-climate measures. These financing mechanisms are dedicated to fostering sustainable agricultural practices and align farmers' economic interests with environmental objectives, including ensuring water quality and transitioning towards circular practices. However, a substantial share of CAP funding continues to support coupled income support for intensive livestock production, widely considered as an environmentally harmful incentive. Overall, the results highlight agriculture as the policy domain with the weakest coherence and the greatest potential trade-offs with lake restoration priorities.

4.2.2.3. EU nature and biodiversity policies

The Nature and Biodiversity EU policies demonstrate moderate alignment with lake restoration priorities, with strong positive contributions for AA1 (Water and pollution reduction) (0.17), AA5 (Climate ambitions) (0.13), and AA6 (Biodiversity) (0.15). These results indicate that biodiversity-focused policies contribute broadly to several restoration dimensions, particularly biodiversity protection and climate-related actions. For example the Habitats Directive provides explicit protection of 9 lake habitat types, with many sites across Europe designated as Special Areas of Conservation (SAC) for their lake habitat types or lake-dependent priority species, potentially supporting BfS and NbS implementation at these SAC sites. However, the contribution to AA2 (Innovative solutions) (0.07), and AA3 (Integrated management) (0.03) is only slightly positive, suggesting that the integration of innovative restoration solutions across sectors or governance levels may be less emphasized in this policy area. Several EU directives such as the Birds Directive do not explicitly cover aquatic ecosystems and therefore does not specifically address the issue of surface water quality. Nevertheless, designation of many lakes across Europe as Special Protection Areas for wetland birds, does support protection and potentially BfS restoration measures in lake ecosystems (Stefanidis et al., 2021).

Low synergy is also observed for AA4 (Circularity and financing) (0.10), suggesting that European nature and biodiversity policies provide limited support for circular economy approaches and for establishing market-based instruments that would ensure continuous financing and biodiversity offsetting for lake restoration.

Adopted in 2024, the Nature Restoration Regulation (NRR) provides direct support for lake restoration and for improving lake water quality. Article 4 requires Member States to implement restoration measures for a range of ecosystems, including freshwater ecosystems. Nine lake habitat types are explicitly listed in Annex I (following the Habitats Directive) as among the "land" areas that must be restored where they are not in "good condition". In addition, certain restoration measures must contribute to achieving **good quantitative, ecological and chemical status of water bodies**, thereby directly linking implementation of the NRR with the objectives of the WFD.

One of the NRR's main purposes is to contribute to the EU's **climate mitigation and adaptation** objectives. It requires Member States, under Article 14, to prioritise restoration measures that generate synergies with climate change mitigation, climate change adaptation, land degradation neutrality and disaster risk prevention. This provision should directly support lake restoration through the implementation of NbS, CBS and BfS as effective climate adaptation measures, and "renaturalising" lakes is explicitly mentioned in Annex VII as a potential restoration measure to support climate mitigation.

The NRR is fundamentally designed to restore **ecosystems and biodiversity,** with lakes and other surface waters at the very heart of its objectives. Article 6 establishes a presumption that renewable energy installations are of overriding public interest, allowing Member States to dispense with assessing less harmful alternatives when a strategic environmental assessment or environmental impact assessment has already been carried out (Kørnøv et al., 2025; Hands and Hudson, 2016). Although it facilitates the transition to greener energy, this provision narrows the practical scope of biodiversity protection requirements, as less damaging options for ecosystems may exist but not be examined. **In practice, the NRR allows the objective of accelerating the energy transition to be prioritised over ecosystem protection.**

The Preamble of the NRR strongly supports the uptake **of innovative solutions** and formally recognises and incentivises the implementation of NbS. The NRR supports particularly the solutions that protect and restore wetlands and peatlands as well as coastal and marine ecosystems. The NRR's Preamble also specifies which NbS should be promoted in order restore and increase ecosystem services of green spaces and to adapt to climate change. To elevate innovative restoration solutions from a recommendatory principle to a binding requirement in the operative articles, the NRR should formally requires Member States to identify, assess and prioritise NbS, or innovative BfS, in their national restoration plans, especially for lake restoration.

The regulation requires MS to adopt area-based restoration measures for ecosystems across the EU and to develop national restoration plans with specific territorial targets, including prioritisation of Natura 2000 sites and ecological connectivity. This refers to the same management approach set out in the Habitats Directive, which does not formally oppose an integrated management at the river-basin district level and generally reinforces its objectives. However, this different approach can sometimes introduce conflicting measures and methods with the WFD management approach, making the implementation more difficult for practitioners. The NRR foster a participative management model as the preamble reiterates that the primary obligations rest with Member States, which are expected to work in partnership with farmers and other stakeholders. It also calls for a "fair and cross-society" approach, explicitly identifying stakeholder groups that must be involved in the preparation of National Restoration Plans.

The NRR explicitly embeds market-based instruments, CAP conditionality and **funding incentives** to support restoration obligations. The regulation explicitly refers to financially attractive schemes for farmers and land managers by linking restoration obligations to Common Agricultural Policy eco-

schemes and GAEC [5] standards and commits to phasing out environmentally harmful subsidies in line with green budgeting principles. The principle of economic circularity is also promoted, only regarding agricultural practices and land-management. However, these market-based instruments should be legitimately mobilised for implementing lake restoration obligations under the NRR.

5. Conclusions and limitations

D3.2 sheds light on how national, European and international policy instruments align with key lake restoration challenges and priorities. The coherence analysis, using the coherence matrix tool, is applied to two FutureLakes demonstration case studies: Lake Vesijärvi (Finland) and Lake Karla (Greece).

The **horizontal coherence analysis** shows that **Finnish policies** have a positive, though slight, impact on recognising the role of NbS, supporting circular economy, and ensuring continuous financing for restoration. The national policies have also a moderate positive impact on promoting integrated, participatory and inclusive basin management as well as on fostering climate adaptation actions and resilience. However, they significantly support water quality and pollution control objectives.

In parallel, the Ilmastolaki Climate act [423/2022] and water-related Finnish regulations show clearly positive horizontal coherence. A similar synergistic relationship is observed for biodiversity-related Finnish regulations. In contrast, agricultural regulations, namely the Act on European Union Direct Payments to Farmers [1332/2022] and the Act on the management of the strategic plan for the common agricultural policy [1324/2022] display a negative net impact, indicating a clear conflict with the rest of Finnish PIs.

Our findings show that the variability in the coherence of **Greek policies** across the Assessment Areas remains lower than the variability observed for the Finnish regulations. Moreover, Greek laws are aligned with the uptake of innovative solutions, fostering an integrated basin management, and the achievement of national biodiversity objectives. However, Greek policies show neutral impact on improving water quality and pollution control, aligning restoration efforts with climate adaptation and resilience, and in supporting circular economy approaches long-term restoration financing.

Similar to the Finnish case study, biodiversity-focused PIs in Greece (namely the Directive 92/43/EEC; Law 3937/2011 "Conservation of biodiversity and other provisions"; Directive 79/409/EEC [as codified by Directive 2009/147/EC], and the Ministerial Decision 414985/29-11-85 [Gov gazB΄757] «management measures for wild bird-fauna») demonstrate clearly positive horizontal coherence with the rest of the national regulations. The same synergetic relation (though at a lower level) is observed for climate change-focused policy instruments (i.e. the 2016 National strategy for climate change adaptation, Ministerial Dec. Regional Plans for Adaptation to Climate Change 11258/2017 [Gov gaz B΄873], the Presidential decree 77 [A 130/2023], and the Law5106/2024 -A΄63).

On the other hand, and in contrast to the Finnish case study, **agricultural regulations**, namely the Greece's CAP strategic plan, the Ministerial Decree on Nitrates pollution, as well as the Ministerial Decree 1848/278812/2021 setting the Code of Good Agricultural Practice for the Protection of Waters from Nitrate Pollution of Agricultural Origin display strong horizontal coherence with the rest of the Greek PIs. In addition, the **water-focused Greek regulations exhibit positive, although relatively limited, interactions** with the other national PIs.

[5] Good Agricultural and Environmental Conditions

In addition, assessing the **vertical coherence** of these national laws with EU and international policies captures the perceived strength of alignment and levels of uncertainty regarding their implementation. In **Lake Vesijärvi**, perceptions of the alignment between agricultural-focused national regulations and EU policies are marked by a notably high proportion of "unknown" responses. Compared to the other policy areas, agricultural Finnish regulations show the greatest degree of uncertainty, suggesting either limited awareness or ambiguity regarding their practical implementation and coherence with broader EU objectives. In contrast, the water-focused national regulations are generally perceived as more clearly aligned, showing a comparatively strong and recognisable policy framework.

In **Lake Karla**, the assigned vertical coherence scores indicate a predominantly positive assessment of alignment with EU regulations demonstrating broad certainty in policy coherence assessment and a limited knowledge gap compared to the Finnish case study.

biodiversity and water-focused policies in Greece are widely perceived as closely aligned with overarching EU policy objectives. In contrast, Greek PIs under the scope of climate change, as well as the protection and restoration of the natural environment, display comparatively weaker - though still largely positive and certain - perceived alignment.

International policies are generally broader in scope, or less operational in supporting implementation of measures. At EU level, the overall assessment indicates that European policies broadly align with lake restoration priorities, but this alignment is characterised by strong sectoral variability and uneven coherence with lake restoration objectives. The coherence analysis identifies the following policy integration limits regarding relevant policy instruments, namely the European Water Resilience Strategy, WFD, Common Agricultural Policy and Nature Restoration Regulation (NRR):

- The European Water Resilience Strategy (WRS) should explicitly recognise lakes as a distinct water body type and include lake-specific measures tailored to their ecological and socio-economic functions.
- Although the WRS foresees several funding tools (including a green and blue corridors initiative to restore ecological conditions) to finance ecosystem restoration, lakes are not explicitly identified as target ecosystems, unlike rivers, wetlands, and coastal systems.
- The WFD does not set any explicit climate objectives, either for mitigation or adaptation. By contrast, strengthening resilience to climate change impacts such as droughts and floods is a central goal of the WRS, which plans to use nature-based solutions via the Nature Restoration Regulation to support adaptation. Accordingly, the current revision of WFD should integrate these provisions.
- Several WFD provisions are designed to protect aquatic and terrestrial ecosystems and prevent further deterioration. The policy is ambitious, but implementation of measures has been limited by financing for measures and the fact that agencies responsible for River Basin plans have little control on activities in catchments, consequently, little control over diffuse or point source pollution. This has, therefore, failed to deliver tangible improvements in the status of many aquatic ecosystems, including lakes.
- The revision of the WFD should include directly promoting lake restoration through NbS and CBS implementation.
- The EU Common Agricultural Policy (CAP) shows significant shortcomings in the implementation of the CAP Strategic Plans, notably the weak enforcement of pesticide-related conditionality and the ease with which standards relevant to water protection can be derogated by MS

- A substantial share of CAP funding continues to support coupled income support for intensive livestock production, which often runs counter to the objective of achieving good water status, in accordance with the WFD
- The CAP continues its support for irrigation infrastructure, even in water-stressed regions, and increases pressure on already depleted water bodies, which also conflicts with Article 4 of the WFD
- Despite the CAP budget dedicated to environmental sustainability, local implementation challenges its effectiveness for biodiversity protection. Some restoration or habitat protection measures can encounter resistance from farmers who perceive them as constraints on productivity
- Transitional derogations granted by the European Commission, such as the Ecological Focus Areas in 2022, have led to increasing agricultural production, which limited the CAP's impact on biodiversity and ecosystems conservation
- The CAP indirectly supports NbS-like activities through biodiversity and ecosystem service objectives. The policy should explicitly recognise the Nature-based Solutions, especially under the financing eco-schemes (under pillar I) and agri-environment-climate measures (pillar II) that provide direct payments for farmers that voluntarily commit to further contribute to climatic and environmental objectives
- A substantial share of CAP funding continues to support coupled income support for intensive livestock production, considered as of environmentally harmful incentives
- NRR's main purposes is to restore the Habitats Directive's priority habitats and species and contribute to the EU's climate mitigation and adaptation objectives. Article 4 explicitly address 9 lake habitat types and lake-dependent priority species and Article 14 supports lake restoration through the implementation of NbS, CBS and BfS as effective climate adaptation measures.
- Although Article 6 of NRR facilitates the transition to greener energy, it narrows the practical scope of biodiversity protection requirements, as less damaging options for ecosystems may exist but not be examined. In practice, the objective of accelerating the energy transition can be prioritised over ecosystem protection.
- To elevate innovative restoration solutions from a recommendatory principle to a binding requirement in the operative articles, the NRR should formally require Member States to identify, assess and prioritise NbS in their national restoration plans, including for supporting restoration of lake habitat types.

Finally, it is worth noting that, when completed by local stakeholders and experts, the policy coherence matrix offers valuable context-specific and participatory insights but also presents several methodological limitations. First, coherence assessments are inherently subjective, reflecting participants' perceptions rather than objectively verifiable relationships between policies. Stakeholders may consciously or unconsciously defend sectoral interests, and experts may apply different interpretive frameworks or disciplinary lenses, which can lead to inconsistent evaluations. In addition, we noted strong disparities in coherence scores between the two demonstration sites. This would suggest that policy implementation and interactions are highly context-dependent, and the findings cannot be readily generalised to other lake basins. Nevertheless, this deliverable can serve as a replicable tool for lake practitioners who wish to conduct a comprehensive coherence assessment of their own local policy landscape before launching a restoration programme.

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Annexes

A. 1. Classification of the policy instruments of D3.1 by type and status

A. 2. Desk-based coherence assessment of EU and international PIs across lakes priorities

A. 3. Scoreboard of the EU and International policies' coherence with lakes priorities (AAs)

Table A. 4. Classification of the policy instruments of D3.1 by type and status (adapted from Albrecht et al. 2025)

Short title	Scope	Full title	Region	Policy type	Status	Year
EQSD	Water quality	Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the council	EU	Directive	Under amendment	2008
Water Framework Directive	Water quality	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy	EU	Directive	Under amendment	2000
Ground Water Directive	Water quality	Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration	EU	Directive	Under amendment	2006
ND	Water quality	Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources	EU	Directive	In force	1991
Floods Directive	Water quality	Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks	EU	Directive	In force	2007
UWWTD	Water quality	Directive (EU) 2024/3019 of the European Parliament and of the Council of 27 November 2024 concerning urban wastewater treatment (recast)	EU	Directive	In force	2024

Funded by the European Union

EU Water Resilience Strategy	Water quality	COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS European Water Resilience Strategy — COM/2025/280 final	EU	Strategies & Frameworks	Adopted	2025
EU Biodiversity Strategy for 2030	Nature and Biodiversity	COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS EU Biodiversity Strategy for 2030 — COM/2020/380 final	EU	Strategies & Frameworks	Adopted	2020
Birds Directive	Nature and Biodiversity	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds	EU	Directive	In force	2010
Habitats Directive (HD)	Nature and Biodiversity	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora	EU	Directive	In force	1992
NRR	Nature and Biodiversity	Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869	EU	Regulation	In force	2024
EU Zero Pollution Action Plan	Climate and Circularity	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil' — COM/2021/400 final	EU	Strategies & Frameworks	Adopted	2021

CEAP	Climate and Circularity	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A new Circular Economy Action Plan For a cleaner and more competitive Europe — COM/2020/98 final	EU	Strategies & Frameworks	Adopted	2020
ECAP	Climate and Circularity	European Climate Adaptation Plan	EU	Strategies & Frameworks	Pending	Due 2026
Circular Economy Act	Climate and Circularity	Circular Economy Act	EU	Laws & Regulation	Pending	Due 2026
IED	Climate and Circularity	Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (recast)	EU	Directive	In force	2010
CRCF	Climate and Circularity	Regulation (EU) 2024/3012 of the European Parliament and of the Council of 27 November 2024 establishing a Union certification framework for permanent carbon removals, carbon farming and carbon storage in products	EU	Regulation	In force	2024
European Climate Law	Climate and Circularity	Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')	EU	Regulation	Under amendment	2021
Green Claims Directive	Business sustainability	Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on substantiation and communication of explicit environmental claims (Green Claims Directive — COM/2023/166 final	EU	Directive	Pending	2023

CS3D	Business sustainability	Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024 on corporate sustainability due diligence and amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859	EU	Directive	Under amendment	2024
EIA Directive	Business sustainability	Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment	EU	Directive	In force	2012
CSRD	Business sustainability	Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting	EU	Directive	Under amendment	2022
EU Taxonomy	Business sustainability	Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088	EU	Regulation	Under amendment	2020
2023-2027 CAP	Agriculture	Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013	EU	Regulation	In force	2021

Kunming-Montreal Global Biodiversity Framework	International policies	Decision 15/4 of the Conference of the Parties to the Convention on Biological Diversity (CBD/COP/DEC/15/4) on the Kunming-Montreal Global Biodiversity Framework, adopted 19 December 2022	International	Strategies & Frameworks	Adopted	2022
UN Decade on Ecosystem Restoration	International policies	United Nations General Assembly Resolution A/RES/73/284 of 2 August 2019 on the United Nations Decade on Ecosystem Restoration 2021–2030	International	Strategies & Frameworks	Adopted	2019
CBD	International policies	Convention on Biological Diversity	International	Laws & Regulation	In force	1992
Paris Agreement	International policies	Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC)	International	Laws & Regulation	In force	2015
Ramsar Convention	International policies	Convention on Wetlands of International Importance especially as Waterfowl Habitat	International	Laws & Regulation	In force	1971
Bonn Challenge	International policies	Bonn Challenge: A Global Pledge to Restore Degraded and Deforested Landscapes	International	Voluntary initiative		2011
UN 2030 Agenda	International policies	United Nations General Assembly Resolution A/RES/70/1 of 25 September 2015 on Transforming our world: the 2030 Agenda for Sustainable Development	International	Strategies & Frameworks	In force	2015

Table A. 5. Desk-based coherence assessment of EU and international PIs across lakes priorities

See the attached Excel table

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Table A. 6. Scoreboard of the EU and International policies' coherence with lakes priorities (AAs)

SCORE	Negative impact		-2		-1		0		1		2		Positive impact	
Policy instruments (PI)	? = Don't know													
	Impact on													
	Capacity to be in line with AA1		Capacity to be in line with AA2		Capacity to be in line with AA3		Capacity to be in line with AA4		Capacity to be in line with AA5		Capacity to be in line with AA6		Capacity to be in line with AA7	
PI1 - EQSD														
PI2 - WFD														
PI3 - GWD														
PI4 - Nitrates Directive														
PI5 - Floods Directive														
PI6 - UWWTD														
PI7 - EU Water Resilience Strategy														
PI8 - EU Biodiversity Strategy for 2030														
PI9 - Birds Directive														
PI10 - Habitats Directive														
PI11 - NRR														
PI12 - EU Zero Pollution Action Plan														
PI13 - CEAP														
PI14 - EU Climate Change Adaptation Strategy														
PI15 - IED														
PI16 - CRCF														
PI17 - European Climate Law														
PI18 - Green Claims Directive														
PI19 - CS3D														
PI20 - EIA Directive														
PI21 - CSRD														
PI22 - EU Taxonomy														
PI23 - 2023-2027 CAP														
PI24 - Kunming-Montreal Global Biodiversity Framework														
PI25 - UN Decade on Ecosystem Restoration														
PI26 - CBD														
PI27 - Paris Agreement														
PI28 - Ramsar Convention														
PI29 - Bonn Challenge														
PI30 - UN 2030 Agenda														

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