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From sectoral policy change to cross-sectoral (dis)integration? A longitudinal analysis of the EU's forest and rural development policy

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ABSTRACT

Policy integration (PI) is critical to address cross-cutting challenges like climate change and biodiversity loss holistically. In the European Union, forests are confronting increasingly adverse climatic conditions and numerous stressors that impact their biodiversity. Political efforts to counteract these trends are mainly channeled through funding from the rural development policy as a pivotal part of the Common Agricultural Policy (CAP). In contrast, forest policy is hardly institutionalized at EU level. This study employs process tracing using 65 EU forest and rural development policy documents, including legal acts, preparatory documents, communications, related working documents and evaluation reports, predominantly produced over the last 25 years. By doing this, it examines the development of sectoral policy changes over time and their implications for the cross-sectoral integration of EU forest policy into rural development policy as part of agricultural policy at EU level. Results suggest that the adoption of the EU Forest Strategy for 2030 represented a provisional paradigm shift in EU forest policy. This shift is characterized by a substantial reprioritization of policy objectives, transitioning from an emphasis on economic aspects to a more climate- and biodiversity-centric approach, alterations in supported policy instruments and the introduction of various new regulatory instruments. On the other hand, the CAP and its rural development policy remain characterized by a path dependent incremental change and the latest reforms hardly reflect ambitious forest policy objectives both from budgetary and content perspectives. The findings suggest that the latest seemingly decoupled developments within both policy areas have led to an emergence of forest policy fragmentation at the EU level.

1. Introduction

In times of rapid climatic changes and progressive biodiversity decline, the critical role of forests in mitigating the adverse effects of climate change and supporting and protecting a significant share of global biodiversity are evermore acknowledged (Sohngen, 2020; FAO and UNEP, 2020). However, forests are increasingly pressured by global warming and intensive management practices (Keenan, 2016; Bonan, 2008; Seidl and Senf, 2024). This is reflected, for example, in the significant increase in natural disturbances in European forests during the last few decades (Senf and Seidl, 2021; Patacca et al., 2023). The adaptive capacity of forests to a changing climate is strongly linked to their (genetic) diversity (Thompson et al., 2009), which is influenced both by natural forest disturbances (Thom and Seidl, 2016; Viljur et al., 2022) and management practices (Chaudhary et al., 2016). Consequently, ambitions to enhance forest adaptation – understood as adjustments to the ecological, social, and economic components of forest management to a changing climate (Spittlehouse and Robert, 2003) – and to restore damaged forests and their biodiversity rank high on political agendas. Both approaches to forests and their management are critical to meeting global climate and biodiversity targets (Bolte et al., 2023; Mo et al., 2023) such as formulated under the Convention on Biological Diversity (CBD) and the Paris Agreement from 2015.

At the EU level, forest policy is weakly institutionalized (Pülzl et al., 2018), as the Treaties establishing the European Union make no forest provisions (Edwards and Kleinschmit, 2013). Therefore, forest policy remains a Member State competence. At the same time, multiple forest-related policy areas link parts of their sectoral goals to forests and their management (Winkel et al., 2013), for some of which the European Union holds shared legislative competence. The results are often conflicting interests among forest-related policy areas, most prominently between those that link their goals to a more extensive or even non-

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management of forests (e.g., nature conservation) and those who link their goals to a maintained or even intensified management (e.g., bio economy) (Winkel and Sotirov, 2016; Pecurul-Botines et al., 2023). Despite partly overlapping interests in forests, different policy areas typically aim to maintain their sectoral boundaries intact (Sotirov and Arts, 2018). As a result, forest-related policy goals are often formulated outside of the forest policy community at the EU level (Wydra, 2013; Winkel and Sotirov, 2016; Sotirov and Arts, 2018). This has led to a weak integration of sectoral forest-related policies, posing a significant barrier to a more coherent European forest policy framework (Sotirov and Arts, 2018; Wolfslehner et al., 2020).

Policy integration (PI) - defined as a political process that entails actors and agencies including consistent implementation and evaluation arrangements for coherent cross-sectoral instruments (Cejudo and Trein, 2022) - aims at shifting sectoral policy-making towards inter-sectoral policy-making. This is expected to enhance coordination and synergies among diverse objectives and actors across different policy domains and governmental levels (Jordan and Lenschow, 2010; Sotirov and Storch, 2018). For the EU forest policy arena, PI analyses between policy domains and political levels are documented in a wealth of scholarly literature (see e.g., Sarvašová et al., 2013; Winkel and Sotirov, 2016; Hogl et al., 2016; Aggestam and Pülzl, 2018; Sotirov et al., 2021; Baulenas and Sotirov, 2020). Winkel and Sotirov (2016), for example, evaluate both the effects and underlying causes of what they call the "disintegration paradox" (p. 496) of EU forest policy. They identify several factors contributing to the disintegration challenge in forest policy, both at the EU and Member State levels. They include i) competing economic interests and institutional rivalry, ii) diverging ecological, social, and economic patterns across different forest regions and iii) a general lack of interest in the forest sector. Cejudo and Trein (2022) further highlight variations in sectoral policy styles and in the relative autonomy and competences within individual policy domains as critical barrier for integration across related policy sectors.

The present study assesses the cross-sectoral integration of forest policy, focusing on forest adaptation and biodiversity restoration objectives and instruments, into the agricultural policy at the EU level by analyzing sectoral policy changes over time. Specifically, it examines the integration of forest-related objectives and measures, including the allocation of financial resources, into the European Agricultural Fund for Rural Development (EAFRD) as part of the rural development policy framework. The RDP constitutes a pivotal component of the Common Agricultural Policy (CAP) and is often emphasized as the most important funding instrument for forestry measures at the EU level (EC, 2013; Winkel et al., 2013; Sarvašová et al., 2019; Haeler et al., 2023). Therefore, despite acknowledging the range of further policy areas that indirectly or directly affect the way forests in the European Union are governed and managed (Pülzl and Hogl, 2013; Winkel and Sotirov, 2016; Aggestam and Pülzl, 2018), it can be argued that the integration, and ultimately the implementation, of forest policy and its´(biodiversity) restoration and climate adaptation objectives strongly depends on their integration into rural development policy as part of the CAP.

By applying a long-term historical perspective on sectoral policy change and its implications for cross-sectoral policy integration (PI), this study aims to answer the following two cumulative research questions: **Q_1**: In light of climate change and biodiversity loss, (how) have EU forest policy and the role of forests in the rural development policy of the Common Agricultural Policy (CAP) changed over time? **Q2**: How has sectoral policy change affected the cross-sectoral integration of EU forest policy into agricultural policy, and what are the potential reasons?

By addressing these questions, this study aims to contribute to the scarce literature body on longitudinal cross-sectoral policy integration analyses. It builds on the premise that policies evolve due to the rapidly changing environments in which they are developed and implemented, as does the integration between different yet related policy areas. Empirically, the study addresses a crucial challenge for forest policy: the cross-sectoral integration and financing of (biodiversity) restoration and climate adaptation of European forests.

2. Theoretical and analytical framework

2.1. Historical institutionalism

This study draws on explanatory approaches provided by the Historical institutionalism (HI) school of thought. It highlights the role of historical evolution and the general stability of institutions and their policies (Arts, 2012) and equips researchers and analysts with theoretical perspectives and conceptual approaches that emphasize the role of temporal phenomena in influencing the origin, stability, and change of institutions and their policies. Institutions, defined as the rules, norms, and structures governing societies and political coalitions (Hall, 2010), shape political and economic relations (Fioretos et al., 2016) and are characterized by path dependency (Mahoney, 2000). One supported claim is that particular courses of past action create positive feedback effects that are difficult to reverse. Political and institutional change is only expected to occur when "ceteris is no longer paribus", resulting from exogenous shocks (Hall, 2010, p. 205). These rare interruptions of equilibrium are known as critical junctures. They can be triggered by changes in government or climate disasters that influence institutional composition and competence, thereby affecting policy-making and social life (Pierson, 2000; Pierson, 2004).

Power imbalances between policy areas are considered a significant barrier to cross-sectoral PI (Winkel and Sotirov, 2016; Cejudo and Trein, 2022). This paper understands power as the formal decision-making authority held by actors, including legislative, executive, and judicial powers, or their capacity to shape decision-making by using various political resources like funding and information (Sabatier and Weible, 2007). While many contemporary theoretical and methodological approaches in political science hardly provide explanatory and analytical approaches for power inequalities, Pierson (2016) highlights some key features of HI for analyzing power imbalances and the implications on the development of institutions and their policies. They include a focus on substantive policy outcomes and historical processes to examine deeply-rooted and highly consequential power compositions. In this context, two core claims are highlighted. First, dominant or winning coalitions typically seek to institutionalize their advantages, i.e., they are inclined to use their power to manifest their position through formal and informal institutions and public policies. Second, the fact that power develops over time makes the examination of unfolding historical processes crucial when looking at power inequalities and shifts between policy areas. A key facilitator for transformative policy and institutional change is the diminishing power of formerly dominant actor coalitions, ultimately supplanted by a competing coalition promoting alternative policy ideas. This dynamic is likely to amplify the fragmentation of political authority (Hall, 1993).

2.2. Examining policy integration through the lens of policy change

Analytically, PI can be approached from various perspectives (see e.g., Candel and Biesbroek, 2016; Sotirov and Arts, 2018). Candel and Biesbroek (2016) distinguish between a general comparative perspective of political systems and a policy analytical focus that differentiates between the different stages of the policy-making process. Sotirov and Arts (2018) differentiate between a horizontal and vertical focus of analysis. The vertical perspective refers to integrating forest policies and management practices across political levels (e.g., EU and national) and the management level. The horizontal focus is divided into intra-sectoral integration within policy areas and cross-sectoral integration, the latter referring to the integration of forest policy issues into other more salient policy domains. The present study combines the analytical perspectives outlined by Candel and Biesbroek (2016) and Sotirov and Arts (2018) and applies a horizontal policy analytical perspective to PI. In this context, the study goes beyond analyzing the formal integration of

general issues, goals and instruments (Sotirov and Arts, 2018). Integration is also assessed by analyzing the distribution and allocation of (financial) resources provided for rural development and direct forestry measures over time.

Despite common consensus on the limited explanatory power of snapshot analyses of PI between policy areas and their representing institutions and policies (Feindt, 2010; Nilsson et al., 2012; Persson et al., 2016; Hogl et al., 2016; Cejudo and Trein, 2022), few studies assess the development over time. One example is Persson et al. (2016), who reviewed the evolution of Environmental Policy Integration (EPI) in the Swedish energy and agriculture sectors. Feindt (2010) combines the Advocacy Coalition Framework (ACF) with Peter Hall's (1993) social learning approach to assess and explain change in the CAP with a particular focus on EPI. While the scientific literature often describes forest and environmental PI as a fluctuating process depending on governance modes and political stakes (Hogl et al., 2016) and available resources (Reber et al., 2022), insights from other policy areas, including European agricultural policy (Kay, 2003; Feindt, 2010; Daugbjerg, 2009; Erjavec and Erjavec, 2015), imply that policy change and policy integration follow more incremental and path-dependent processes (Wolfslehner et al., 2020).

This study builds on the premise that short-term studies of cross-sectoral PI bear the risk of incomplete conclusions. For instance, integrating environmental concerns into bioenergy policies may be a high priority for a governing party that imposes strict requirements, such as allowing only woody harvesting and industry residues for energy production during its legislative period. However, subsequent governments may give less consideration to these matters and relax environmental criteria. Consequently, an overly narrow analytical focus may lead to the incomplete conclusion that environmental considerations are generally well-integrated into bioenergy policies.

Against this backdrop, the present study assesses cross-sectoral PI by analyzing sectoral policy change. This is done by disaggregating policies into policy elements, including policy goals, objectives, instruments and instrument calibrations (Hall, 1993). Policy goals are the overarching and more abstract objectives that guide a specific policy or policy framework, while policy objectives constitute more concrete goals (Howlett et al., 2022). For example, mitigating climate change constitutes a paradigmatic or overarching goal. Attempts to achieve this through the rewetting of drained peatlands or the planting of trees on agricultural land are understood as operationalized goals or policy objectives.

Policy instruments are the means and techniques governments support to reach policy objectives (Grohmann and Feindt, 2023). They can be classified into four major instrument types (Vedung, 1998; Bengtsson et al., 2010), namely, 1) regulatory instruments such as environmental quality and emission standards and restrictions, 2) economic instruments that aim at encouraging or discouraging certain behaviors through economic (dis)incentives (e.g., subsidies and tariffs), 3) informational instruments (e.g., advise and training) and 4) organizational instruments. The present study builds on this policy instrument categorization scheme since it is deemed suitable to capture diversified sectoral policy styles applied by different policy sectors (Bengtsson et al., 2010; Cejudo and Trein, 2022).

Policy calibrations refer to concrete adjustments of instrument settings (Grohmann and Feindt, 2023) within existing institutional and instrument boundaries (Howlett et al., 2022). They outline what is needed to implement objectives and include adjustments to the stringency of regulations and to subsidy budgets (Cashore and Howlett, 2007).

To assess the extent of policy change and its implications on cross-sectoral integration, this study draws on Peter Hall's typology for policy (change) analysis (Table 1). It classifies changes to policy instrument settings or calibrations into so-called first-order changes. Examples in the field of forest policy constitute adjustments to reforestation subsidies (Cashore and Howlett, 2007). Changes in instrument settings are typically interpreted as minor adjustments or changes to existing policies (Hall, 1993). Second-order changes comprise changes to the type of policy instruments applied, such as introducing new ones or replacing existing ones.

Table 1
Analytical framework for policy change (adapted from Hall, 1993 and Cashore and Howlett, 2007)).

Types of policy change	Definitions
First order change	Changes in the policy settings or calibrations but overall policy goals and instruments remain constant, and changes occur within existing institutional and instrument confines.
Second order change	Changes of policy instruments and settings/calibrations while policy goals remain the same.
Third order change	Simultaneous paradigmatic changes of all three policy elements.

The most significant type of sectoral policy change constitutes what is known as third-order change. Those phenomena prompt reappraisals and rejections of dominant paradigms, for example, as a response to the assumption of office by a new government or external events (e.g., natural disasters, economic crises) (Sabatier, 1999). Third-order changes are expected to affect the overarching goals of a policy in a particular field, the general problem perception of the given issues (Hall, 1993), and the distribution of power among policy domains and their actors (Sotirov and Storch, 2018).

3. Material and methods

Consistent with the historical analytical approach to policy change and integration, the present study builds on an analysis of past and recent key sectoral policy outputs. Policy outputs are understood as actions arising from governmental policy decisions that are shaped through interactive processes of political actors within a framework of formal and informal procedures, rules, and institutions (Howlett and Cashore, 2009). The document selection was built on a mix of policy document database searches using EU-LEX and the European Parliament's Legislative Observatory and a snowballing approach. It started with the first EU Forest Strategy adopted in 1998 (EC, 1998) and the Council Regulation on support for rural development (Regulation 1257, 1999). Relevant instruments referred to in these documents were included for further analysis. For example, the first EU Forest Strategy made strong reference to a Council Regulation on the protection of the Community's forests against fire (Regulation 2158, 1992), which was already adopted in 1992. Despite it's adoption prior to the analysis period, it was referred to as an important implementation tool of the Strategy, particularly regarding the role of forest adaptation and was therefore included in the assessment.

In total, 65 policy documents were included in the analysis, of which 5 were adopted prior to the pre-defined analysis period (1989–1997), which spanned from 1998 to 2023. The year 1998 was chosen as the starting point for the analysis because it was marked by the solidification of forest policy at the European level with the publication of the first Forest Strategy (Pülzl et al., 2018) and the initiation of the Agenda 2000 reform of the European Union (EC, 1997). This reform paved the way for the division of funding under the CAP into two pillars: the European Agricultural Guarantee Fund (EAGF) (often referred to as "Pillar 1") and the European Agricultural Fund for Rural Development (EAFRD) (often referred to as "Pillar 2") thereby making rural development, including forestry, an integral part of the CAP (Swinnen, 2008).

The included document types comprised preparatory documents, legal acts, communications, related working documents and evaluation reports. Forty of the documents included were assigned to the field of agriculture and rural development policy, whereas the remaining twenty-five documents stemmed from the field of forest and environmental policy. For agricultural policy, the focus mainly lay on rural development policies and regulations, including amending and

repealing regulations. Regarding the temporal distribution of included policy documents, it is noticeable but not surprising that reform periods (e.g. 1998/1999, 2013, 2021) are characterized by a higher number of policy outputs, whereas no documents from the years 2000, 2001, 2011, 2012 and 2016 were included in the analysis (Fig. 1).

The legal force of policy instruments originating from the analyzed policy sectors differs substantially due to variations in legal competencies. The EU holds shared legal competence for agriculture, and the CAP, with its long history, primarily serves as economic income support scheme for European farmers. Therefore, the EU has the authority to enact directly applicable regulations with potential implications on forests and forestry as part of agriculture and rural development policy. As for forest policy, the Member States formally hold legal competence which is why the EU can technically only implement soft law instruments. Those differences in legal competencies have significant implications for the present study. It can be assumed that promoting the EU forest policy goals and targets requires thorough and consistent integration into more prominent policy domains - particularly agriculture and rural development policy. This is considered a crucial precondition for coherent forest policy-making at the EU level.

Methodologically, this study employs process tracing which enables descriptive and causal inferences of temporal sequences of events or phenomena over time (Collier, 2011). Due to the longitudinal research design of this study and its focus on analyzing the causal chain between sectoral policy change and its implications on cross-sectoral integration, process tracing was considered a suitable approach. Additionally, it has proven useful in explaining complex political and institutional processes (Bennett, 2008) and the strong linkage to historical institutional theory and related concepts, such as path dependence (Checkel, 2006; Bengtsson and Ruonavaara, 2017), further supports its appropriateness for this research.

The 65 policy outputs were analyzed and partially coded deductively using the computer-assisted qualitative data and text analysis software MAXQDA (Version 2022). The document analysis built on a multi-step approach. First, key policy goals, objectives and instruments in general and related to forest restoration and adaptation measures in particular were identified from key EU forest policy outputs and sectoral policy changes were analyzed over time. Policy instruments were categorized according to the four major instrument types introduced in the previous section. Second, the evolution of rural development objectives and forestry measures supported under the RDP of the CAP were analyzed. Third, the integration of EU forest policy into the RDP of the CAP was assessed based on the integration of forest policy goals, objectives, and instruments in general, especially those related to climate adaptation and biodiversity restoration. In this context, institutional power dynamics were assessed by examining CAP appropriations and calibrations over time.

The development of CAP expenses was analyzed using an updated longitudinal dataset on the provision and distribution of CAP funding. The dataset lists CAP appropriations and was provided by the Directorate General of Agriculture and Rural Development (DG AGRI). It disaggregates total annual appropriations into individual CAP measures supported under the first and second pillar. The dataset was further validated and extrapolated until the end of the current Multiannual Financial Framework (MFF) 2023–2027 using the respective official regulations laying down the financing frameworks for 2014–2020 (Regulation 1311, 2013) and 2021–2027 (Regulation 2093, 2020) and other related policy outputs. The first pillar measures are summarized under key CAP components and comprise direct payments and market measures. Second pillar measures are summarized under rural development and direct forestry measures, the latter excluding indirect forest-related interventions such as related to cooperation or the European Innovation Partnership (EIP). By analyzing the development of CAP expenditures over time and their distribution among key CAP instruments and funding pillars, conclusions were drawn on the importance attached to respective financial instruments and measures. This, in turn, is expected to allow further conclusions on the development of cross-sectoral integration.

4. Results

4.1. Development of EU forest policy

The historical development of forest policy at the EU level can be disaggregated into three different phases (Pülzl et al., 2018). The first so-called “emergence phase” started in the late 1960s and comprised the founding phase of the European Community. At that time, the European Commission showed interest in formulating a legal instrument on forests. The second “expansion period” spans from the 1970s until the late 1990s and is characterized by the emergence of many forest-related policies. The third so-called “establishment phase” started in the late 1990s with the adoption of the first Forest Strategy (EC, 1998), which

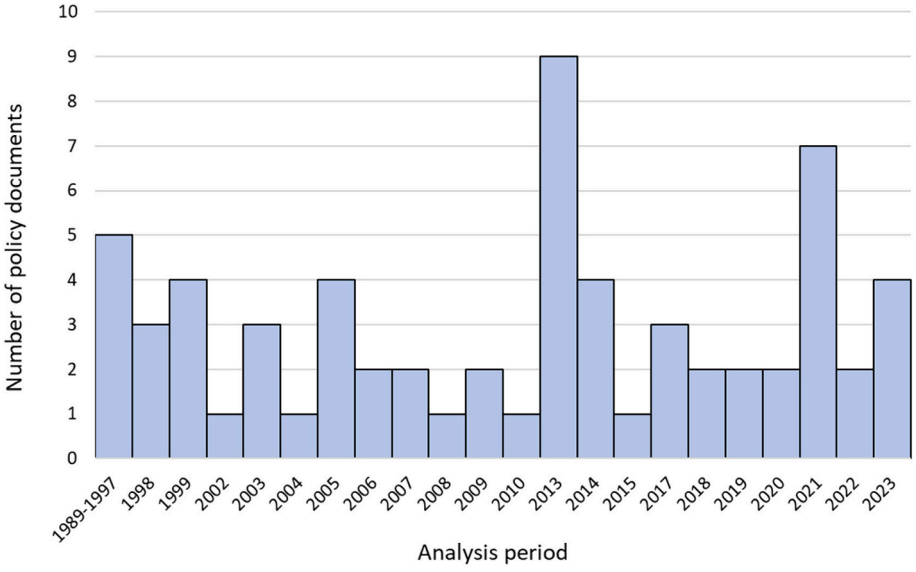

Fig. 1. Number and temporal distribution of analyzed policy documents. Five policy outputs adopted prior to the analysis period (1989–1997) were included in the analysis.

marks the starting point of the analysis.

4.1.1. The 1998 Forest Strategy

In 1998, the European Commission – under the leadership of the Directorate-General for Agriculture and Rural Development (*DG AGRI*) – adopted the first EU Forest Strategy in response to repeated calls from the European Parliament to enhance coordination and coherence among EU forest-related policy areas and instruments (EC, 1998). It built on the overarching goal of strengthening Sustainable Forest Management (SFM), aligning with the "Forest Principles" established at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. It acknowledged the absence of a comprehensive forest policy provision in the EU Treaties and emphasized the significance of Sustainable Forest Management (SFM) and forest conservation within common policies like the CAP, its rural development policy and environmental policy.

The main EU forest policy goals, objectives and instruments, in general, and in particular, for forest adaptation and biodiversity restoration of the previous and current EU Forest Strategy are summarized in Table 2. Biodiversity protection, climate change mitigation through forests' "carbon trapping mechanisms" (EC, 1998 p.6), and the need to adapt forests to climate change were identified as crucial challenges. Forest fires were recognized as a significant threat, which resulted in the adoption of a regulation on protecting the Community's forests against fire as part of the rural development policy framework already in 1992 (Regulation 2158, 1992). This so-called "scheme" co-financed forest fire prevention measures and classified European regions in different areas of risk. Financial support for high and medium-risk areas was contingent upon developing forest fire protection plans, making adaptation to forest fires an integral part of rural development.

The necessity to improve coordination and collaboration across forest-related policy sectors and between the European Commission and the Member States was recognized early on and resulted in the establishment of the Standing Forestry Committee (SFC) already in 1989. As important instrument of the Strategy, it was expected to play an advisory, regulatory, and management role for forestry measures and provide a venue for information exchange on forestry-related issues (EC, 1989). In addition, the EU Forest Action Plan adopted in 2006 (EC, 2006) constituted a key implementation instrument. Among the 18 key actions addressed, Actions 6 and 9 promoted the enhancement of forest adaptation to climate change and the protection of EU forests, respectively. Funding for forestry measures was for the first time provided as part of the new Rural Development Regulations (Regulation 1257, 1999; Regulation 1783, 2003; Regulation 1698, 2005) flagged as the "strategy's resource backbone" (EC, 2013, p.16).

4.1.2. The 2013 Forest Strategy

In 2009, the European Commission released a White Paper (EC, 2009) advocating for an EU-level climate adaptation framework and improved integration of climate adaptation needs into EU policies. In this context, calls for revising the first EU Forest Strategy were raised. A year later, a Green Paper (EC, 2010a) initiated a debate on a unified EU approach to forest protection. It outlined key challenges European forests face under an intensifying climate change and proposed various tools for protecting forests and their biodiversity.

In response to the challenges faced by forests and forest-based industries, the second EU Forest Strategy was adopted in 2013 (EC, 2013). It reemphasized Sustainable Forest Management (SFM) and the multifunctional role of forests as guiding principles and formulated a range of priority areas and objectives that were assigned to three thematic sections. They included i) the contribution of SFM to major societal objectives, ii) the improvement of the knowledge base on forests and forest products, and iii) the role of forests from a global perspective. Forest adaptation and forest (biodiversity) restoration and protection objectives were particularly addressed under priority areas 1.3, aiming at maintaining and enhancing forest resilience and the adaptative capacity in a changing climate and 1.4, aiming at protecting forests and enhancing ecosystem services. Emphasis remained on the climate change mitigation potential of forests, particularly through increased timber removals and prolonged use of harvested wood products, rather than on climate adaptation.

Similar to the first EU Forest Strategy, the primary implementation tool of the second EU Forest Strategy was the voluntary Forest Multi-Annual Implementation Plan (Forest MAP) (EC, 2015), which listed concrete implementation actions for 2014–2020 and specified the actors involved, the timing of different activities and expected outcomes. Since the overarching goals and objectives remained constant, EU forest policy was found to undergo first- to second-order changes between the adoption of the first Strategy in 1998 and the adoption of the second Strategy in 2013.

4.1.3. The new EU Forest Strategy for 2030

Framed as a flagship initiative of the EU Green Deal (EC, 2019a) adopted in 2019 by the newly appointed European Commission under President Ursula von der Leyen, the new Forest Strategy for 2030 (EC, 2021) was adopted in 2021 as key action of the EU Biodiversity Strategy for 2030 (EC, 2020) adopted the year before. It recognizes climate change mitigation and adaptation and biodiversity protection and restoration objectives as prerequisites to ensuring the socio-economic functions of forests in the years to come. This suggests a reappraisal of the previously established production-oriented forest policy paradigm. Notably, the prominence given to environmental and climate concerns in the new strategy seems to be accompanied by a more substantial involvement of the Directorate-General for the Environment (DG ENV) in policy development, compared to the role of the Directorate-General for Agriculture and Rural Development (DG AGRI) in cooperation with EU member states in previous strategies.

The new Forest Strategy for 2030 formulates and promotes a range of new policy objectives and instruments. While the socio-economic functions of forests and the significance of a forest-based bio economy continue to be important objectives, it becomes evident that environmental and climate considerations have become the guiding criteria. The supply of wood products, for example, is expected to be aligned with the EU's 2030 and 2050 climate targets, as well as biodiversity preservation and restoration objectives outlined in the Green Deal and related policies, including the EU Climate Law (Regulation 1119, 2021) and the EU Biodiversity Strategy for 2030. The shift towards environmental and climate objectives is further underlined by a reference to a study conducted by the Joint Research Center (JRC) of the European Commission, which advocates prioritizing standing forest carbon storage over wood product storage and material substitution to achieve climate and biodiversity objectives in the short to medium term (Grassi et al., 2021).

Apart from a general shift in the priorities of the goals and objectives, the new EU Forest Strategy for 2030 introduces a range of new instruments and puts a stronger emphasis on certain instrument types. For example, various regulatory actions and revisions of existing regulations aimed at supporting the attainment of the Strategy's objectives are announced. They include the announcement of legislative proposals for a (forest) ecosystem restoration law (EC, 2022a) – the so-called Nature Restoration Law (NRL) - and for an EU Forest Monitoring Framework (EC, 2023a). In addition, planned revisions of existing legislation concerning the Strategy address, among others, the Taxonomy Climate Delegate Act (Regulation 852, 2020), which are announced to be reviewed and complemented by forestry and bioenergy criteria that take better into account forest biodiversity-friendly practices.

In the new Forest Strategy for 2030, the CAP and the national implementation plans are designated to remain important financing and implementation instruments. For the 2023–2027 Multiannual Financial Framework (MFF), approximately one-quarter of the total CAP funding is dedicated to rural development, including forestry measures. However, apart from rural development funding, the new EU Forest Strategy promotes the development of a range of alternative financing

Table 2
Summary table of EU forest policy goals, objectives and instruments development. Sources: EC, 1998; EC, 2013; EC, 2021.

	COM(1998) 649 final (1st Forest Strategy)	COM(2013) 659 final (2nd Forest Strategy)	COM(2021) 572 final (3rd Forest Strategy)
Policy goal(s)	- Strengthen Sustainable Forest Management (SFM)	- Strengthen Sustainable Forest Management (SFM) - Improve resource efficiency and optimize contribution to rural development, growth and job creation - Global forest responsibility, promoting sustainable production and consumption of forest products	- Enhancement of forest quantity and quality to i) increase carbon storage and sequestration, ii) reduce air pollution, and iii) halt loss of habitat and species diversity
Policy objectives (selected)	- Promotion of the development of the forestry sector as a contribution to rural development - Protection of natural environment and forest heritage and restoration of damaged forests - Maintenance of social and recreational forest functions - Promotion of the role of forests and wood products as carbon sinks	- Balancing forest functions and meet social and market requirements by delivering vital ecosystem services - Provide a basis for competitive and viable forestry sector as a contributor to bio-based economy - Forest protection and ecosystem service enhancement	- Protecting, restoring, and enlarging EU forests for climate mitigation and adaptation and biodiversity restoration - Supporting socioeconomic functions of forests and boosting forest-based bio economy - Developing a strategic EU-wide forest monitoring, reporting. and data collection system
Policy instruments (selected)	1) **Regulatory instruments** - Establishment of specially managed protected zones (Special Protection and Special Conservation Areas) 2) **Economic (market) instruments** - Rural Development support for CAP structural and accompanying measures (Agenda 2000) - Fifth Framework Programme (FP5) - Environment and Climate Programme (LIFE) 3) **Informational instruments** - Standing Forestry Committee (SFC) - Fifth Framework Programme (FP5) - Environment and Climate Programme 4) **Organizational instruments** - Standing Forestry Committee (SFC) - Advisory Committee on Forestry and Cork and on Forest-based industries - Commission proposal on rural development policy in the context of Agenda 2000 reform - Forest Action Plan (FAP)	1) **Regulatory instruments** - Forest Management Plans (FMPs) or equivalent instruments based on SFM principles - Rural Development Regulation 2) **Economic (market) instruments** - Rural development support for CAP structural and accompanying measures - LIFE+ funding program to support environmental and nature conservation projects - European Innovation Partnership on Agricultural Productivity and Sustainability (EIP-AGRI) 3) **Informational instruments** - EU Strategy on Adaptation to Climate Change - Horizon 2020 research and innovation program - Restoration Prioritization Framework to help implement the Strategic Plan for Biodiversity 2011–2020 4) **Organizational instruments** - Standing Committee on Agricultural Research (SCAR) - Forest Multi-Annual Implementation Plan (Forest MAP)	1) **Regulatory instruments** - Development of FMPs better integrating biodiversity-related criteria - Proposal for a legally-binding instrument for ecosystem restoration - Review and update of Taxonomy Climate Delegate Act technical biodiversity criteria for forestry and bioenergy - Revision of the legislation on plant reproductive material with measures to promote the production of climate-adapted forest reproductive material - Proposal of a Forest Monitoring and Planning Law (FMPL) 2) **Economic (market) instruments** - Rural development support for CAP structural and accompanying measures - Roll out of carbon farming practices to cover biodiversity-friendly re- and afforestation and other "non-productive" investments - Development of a voluntary certification scheme for closer-to-nature forest management - European Social Fund Plus (ESF+) for skill development 3) **Informational instruments** - Horizon Europe to promote science-based contribution of forests to Green Deal ambitions - Promotion of citizens' science for forest biodiversity monitoring - Various advisory guidelines (e.g., on closer-to-nature forest management, biodiversity-friendly re- and afforestation and tree planting) 4) **Organizational instruments** - Development of a Pact for Skills, a shared engagement model for skills development in Europe - Revision of the Standing Forestry Committee rules of procedure - Development of Climate-ADAPT platform

instruments for forestry measures. They include a "closer-to-nature" voluntary certification scheme that rewards biodiversity-friendly management and carbon farming schemes to provide alternative financing options for biodiversity- and climate-focused forestry measures. Overall, it can be concluded that with the adoption of the new EU Forest Strategy in 2021, EU forest policy underwent a provisional paradigmatic change, accompanied by changes to all policy elements considered.

4.2. Development of EU rural development policy and the role of forests

In 1962, the CAP entered into force as the first common policy of the European Community. During that time, the European agricultural sector was characterized by low productivity and inconsistent national farming policies (Weingarten, 2021). The CAP, in its original form, was implemented as an economic system of price and market support to provide farmers with a guaranteed price on their products and to enable state interventions in the case of market distortion. While the main objectives to i) increase agricultural productivity, ii) ensure a fair standard of living for the agricultural community, iii) secure market stabilization and supply, and iv) assure reasonable price levels for consumers first set out in Article 39 of the Treaty of Rome (European Union, 1957) remained largely stable, the CAP received a completely new policy structure since its adoption (Nedergaard, 2008).

4.2.1. Agenda 2000 reform

The foundation for community support for rural development was laid in Regulation 1257, 1999, which officially recognized forestry as an integral part of rural development. It referred to existing regulations, such as for woodland use (Regulation 1610, 1989), for the establishment of a Community aid scheme for forestry in agriculture (Regulation 2080, 1992) and on Community forest fire protection (Regulation 2158, 1992). Relevant pre-Agenda 2000 regulations frequently addressed forests and forestry measures as supporting tools for the agricultural sector (e.g., through economic diversification or erosion prevention) and forest objectives promoted under Regulation 1257, 1999 strongly focused on the productive function of forests. This focus was reflected in the type of forestry measures supported, which were exclusively available to private forest owners (Table 3). They largely aligned with SFM goals promoted in the 1998 EU Forest Strategy.

4.2.2. The Fischler reform

In 2002, the European Commission conducted a mid-term review of the Agenda 2000 reform of the CAP (EC, 2002). It concluded that the financial contribution for rural development did not match the needs. In response, a system of dynamic modulation was introduced to progressively transfer funds from the first to the second pillar. In the subsequent year, the CAP underwent another reform known as the "Fischler reform." This reform introduced major changes to the general structure of the CAP, such as by introducing Single Farm Payments (SFP), decoupling a portion of CAP support from agricultural production, cross-compliance requirements related to the environment and modulation, which involved percentage reductions in direct payments redirected as additional support for rural development (Swinnen, 2008). As a result, the reform abandoned the established CAP instruments of common prices and uniform implementation (Nedergaard, 2008), thereby undergoing a second-order change.

The "Fischler reform" had notable implications for rural development and, particularly for forestry measures. Regulatory changes aimed to enhance and adapt support mechanisms for rural development within the EU, thereby addressing evolving needs and challenges faced by rural areas. This included amendments favoring the ecological and social dimensions of SFM. This was also reflected in the type of forestry measures promoted under Regulation 1698/2005 (Table 3), which officially repealed Regulation 1257/1999 and paved the way for the division of the European Agricultural Guidance and Guarantee Fund (EAGGF) into the EAGF and the EAFRD in 2007. During the 2007–2013 budget period, 5.4 billion € were provided for forestry measures, taking up approximately 6.7 % of the total EAFRD budget and 1.4 % of the total CAP budget (EC, 2013) (see Fig. 2).

4.2.3. The Cioloș reform

In 2007, in anticipation of the upcoming mid-term review of the CAP, the so-called CAP Health Check, the European Commission released a communication that highlighted the necessity of the CAP to further adapt to pressing environmental and climate challenges by reviewing the functionality and efficiency of its instruments as "any policy cast in stone in a rapidly changing environments is bound to be obsolete" (EC, 2007, p.3). Suggestions were made to strengthen the EAFRD, which was seen as more flexible in providing targeted solutions for climate adaptation through increased co-financing and compulsory modulation. Climate change and biodiversity loss were again highlighted as significant challenges and incentives for addressing both developments through climate change mitigation and adaptation and biodiversity protection were suggested to be provided by strengthening rural development and forestry measures.

In 2010, the European Commission outlined potential orientations of the CAP after 2013 (EC, 2010b). Calls for a greener and more equitable CAP that focuses more on climate change and environmental degradation were repeated. Various reform orientations for the CAP were outlined, ranging from a mandatory 'greening' component of direct payments to enhance the environmental performance, reflecting a continuation of the gradual reformation process (first- to second-order change), to a complete integration of environmental and climate considerations into rural development policy, signifying a fundamental paradigm shift or third-order change.

In 2013, (Regulation 1305, 2013) established new rules for support for rural development stipulating that at least 30 % of the total EAFRD contribution be dedicated to climate- and environment-related investments, reflecting a continuation of incremental policy change. Specific forestry measures supported under the new regulation were assigned to Measure 8: Investments in forest area development and improvement of the viability of forests, and Measure 15: Forest-environmental and -climate services and forest conservation. Each measure promoted a range of sub-measures, many of which addressed the adaptation of forests to climate change and the protection and restoration of forest biodiversity. For example, forest-environment payments introduced as part of the Fischler reform were complemented by climate commitments and financial support was provided for the conservation of forest genetic diversity (Table 3). Financial support for direct forestry measures was still predominantly provided under the rural development policy, allocating approximately 7.6 billion € between 2014 and 2020 for forestry measures, representing approximately 5 % of the total EAFRD budget (EC, 2021). Due to the Covid-19 pandemic and the prolongation of the 2014–2020 programing period (Regulation 2220, 2020) this amount increased to 8.2 billion € at the beginning of 2023.

4.2.4. 2021 CAP reform

In 2017, forestry measures supported under the 2007–2013 and 2014–2020 program periods were subject to an impact evaluation regarding their effectiveness in addressing environmental and climate challenges (EC, 2017). In this context, cross-sectoral policy coherence - understood as the coordination of various policy sectors and their policies to achieve complementarities and synergies (Briassoulis, 2004) - between other forest-related policies and laws was assessed. It found an overall strong coherence between forestry measures supported under rural development policy and the objectives outlined in environmental and climate legislation, such as in the 2013 EU Forest Strategy and the Biodiversity Strategy for 2020. At the same time, the study revealed a limited impact on forest biodiversity enhancement which was later confirmed in a special report conducted by the European Court of Auditors (2021).

Table 3
Summary table of the development of rural development objectives and supported forest-related measures. Sources: Regulation 1257, 1999; Regulation 1698, 2005; Regulation 1305, 2013; Regulation 2115, 2021.

	Regulation 1257/1999	Regulation 1698/2005	Regulation 1305/2013	Regulation 2021/2115
Policy objectives	- Sustainable Forest Management (SFM) and forestry development - Maintenance and improvement of forest resources - Extension of woodland areas	- Improving the competitiveness of forestry by supporting restructuring, development and innovation - Improving the environment and countryside by supporting land management - Improving the quality of life in rural areas and encouraging diversification of economic activity	- Fostering the competitiveness of agriculture - Ensuring the sustainable management of natural resources and climate action - Achieving a balanced territorial development of rural economies, including the creation and maintenance of employment	- Fostering a smart, competitive, resilient and diversified agricultural sector to ensure long-term food security - Strengthening the socio-economic fabric of rural areas - Supporting and strengthening environmental protection, to contribute to achievement of environmental and climate-related objectives of the European Union, including Paris Agreement commitments
Supported forest-related measures	- Afforestation of land provided that planting is adapted to local conditions and is compatible with the environment - Investment in forests aimed at significantly improving their economic, ecological, or social value - Investment to improve and rationalize the harvesting, processing, and marketing of forestry products - Promotion of new outlets for the use and marketing of forestry products - Establishment of forest holder associations to improve sustainable and efficient management of their forests - Restoring forestry production potential damaged by natural disasters and promoting prevention measures	- First afforestation of agricultural and non-agricultural land - First establishment of agroforestry systems - Natura 2000 (compensation) payments - Forest-environment payments based on voluntary environmental commitments - Restoration of forestry potential following natural disturbances and introduction of preventive actions - Support for non-productive forest investments	- Afforestation and woodland creation - Establishment and maintenance of agroforestry systems - Prevention and restoration of damage to forests from forest fires and natural disasters - Investments in improving the resilience and environmental value of forest ecosystems - Investments in forestry technologies and processing, mobilizing and marketing of forest products - Payment for forest-environmental and climate commitments - Conservation and promotion of forest genetic resources	- Payments or support for environmental, climate-related, and other management commitments - Payments or support for natural or other area-specific constraints - Payments or support for area-specific disadvantages resulting from certain mandatory requirements (e.g., related Birds and Habitats Directives implementation) - Payments or support for investments (afforestation, forest health, restoration of forestry potential after disturbances) - Payments or support for risk management tools - Payments or support for cooperative activities (e.g., LEADER) - Payments or support for knowledge exchange and dissemination of information (particularly on environmental protection and education and climate-related issues)

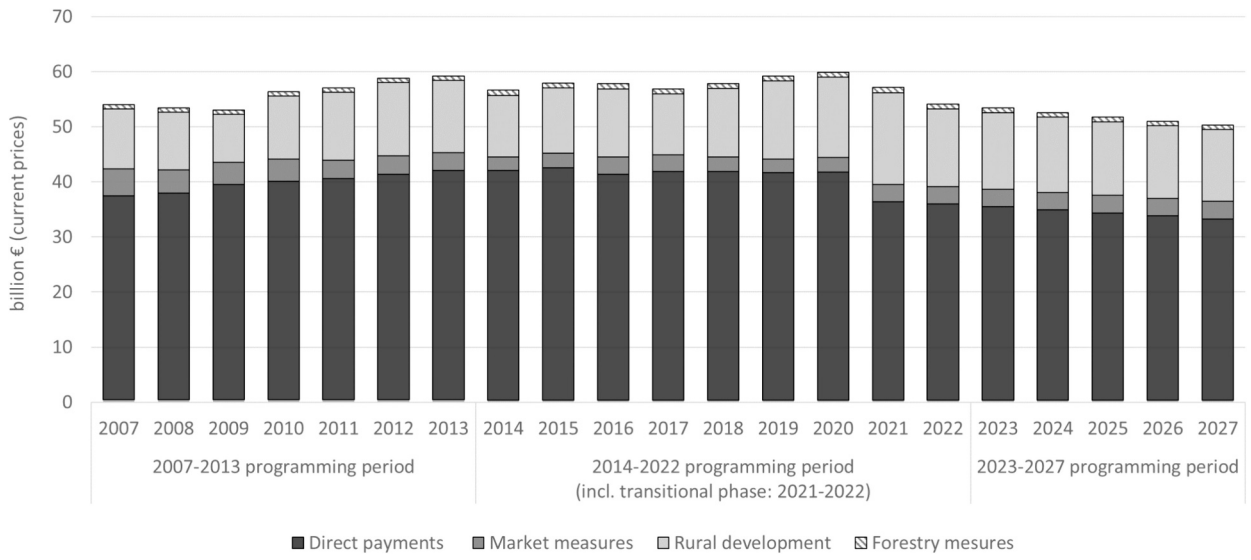

Fig. 2. Evolution of Common Agricultural Policy (CAP) payment appropriations. Data sources: European Commission, DG Agriculture & Rural Development; EC (2013); EC (2021); Regulation 1311/2013; Regulation 2020/2093. Please note that, for simplicity, planned program budgets for direct forestry measures for each program period have been equally broken down into annually planned funds. Additionally, the figure shows approximate values that should not be interpreted as fixed, particularly for the 2023–2027 programming period.

In 2023, the latest CAP reform entered into force (Regulation 2115, 2021). It consolidates national implementation plans (former Rural Development Programs) into CAP Strategic Plans, establishes targets and intervention conditions and specifies financial allocations. To improve consistency within the CAP, it introduced a unified legal framework remerging both key financing pillars (Regulation 2115, 2021). It further included voluntary climate and environmental programs, known as eco-schemes, into the first pillar payments and stipulates allocating 7.5 % of the annual spending under the 2023–2027 Multiannual Financial Framework (MFF) to biodiversity objectives in 2024, increasing to 10 % in subsequent years. For the 2023–2027 period, planned total public expenditure for forestry measures amounts to approximately 4.2 billion €.

Policy objectives and supported forest-related measures under the new Regulation are listed in Table 3. Supported measures are expected to contribute to the implementation of the new Forest Strategy and related interventions are required to align with FMPs that integrate forest adaptation and biodiversity protection and restoration targets. Contrary to previous rural development regulations, the new regulation refrains from specifying concrete forestry measures due to subsidiarity considerations and the CAP performance indicators introduced as part of the Performance Monitoring and Evaluation Framework (PMEF) hardly include any forest-specific indicators. Moreover, the new CAP formulates rather broad forest-related payments for different purposes, providing the Member States with ample leeway in choosing national implementation pathways. In the current MFF, funding for rural development underwent a more significant reduction, experiencing a 19 % decrease. This is in contrast to a 10 % reduction in first pillar funds observed during the previous budget period (2014–2020) (Feindt et al., 2022).

5. Discussion

5.1. Sectoral policy change and the role of forest adaptation and biodiversity restoration

5.1.1. EU forest policy

In the history of the European Union, forest policy has undergone relatively slow and incremental development and change processes (Pülzl et al., 2018). Despite repeated efforts to formulate a common policy, forest policy to date remains indirectly institutionalized through related policy areas for which the EU holds legal competence.

The resolution of the first Forest Strategy was perceived as a milestone by many forest policy actors, that reflected in the solidification of forest policy at the EU level. While the strategy was adopted as a response to enhance coordination and coherence among EU forest-related instruments, its development was criticized by environmental groups for a lack of transparency and participation in its elaboration and the European Council was criticized for promoting a one-sided production focus (Pülzl et al., 2018). While the effects of climate change on forests and the forestry sector and the importance of forests in preserving biodiversity were already acknowledged in the first Forest Strategy, the strong production focus was legitimized through the emphasized role of forests as "carbon trapping mechanisms" EC (1998, p.6) and the mitigation of climate change through the production of (long-lived) forest products.

Despite the European Commission's calls to develop an EU-level climate adaptation framework to tackle climate change-related challenges (EC, 2009) and to promote a unified EU approach to forest protection (EC, 2010a, 2010b), the adoption of the second Forest Strategy essentially represented an updated continuation of the first Forest Strategy (Aggestam and Giurca, 2021) with continued emphasis on the productive function of forests. This reflects in the continuing production-oriented guiding principles of the strategy advocating for increased timber removals and the enhancement of product storage on the one hand and in the continuing promotion of established policy instruments on the other hand. The comparatively strong focus on climate mitigation as opposed to climate adaptation was also noted by an evaluation study on the implementation progress of the second Forest Strategy (EC, 2019b) and an audit on the impact of EU funding on biodiversity and climate in EU forests (European Court of Auditors, 2021).

In contrast to previous developments in EU forest policy, the latest adoption of the new Forest Strategy for 2030 constitutes a provisional paradigmatic change that appeared to be facilitated by various external and internal causal mechanisms that opened a window of opportunity. First and foremost, increasing awareness of the potential for climate tipping points of the earth's system (Lenton et al., 2008; Dietz et al., 2021) became increasingly apparent through the significant rise in forest disturbances and damage in Europe (Senf and Seidl, 2021; Patacca

et al., 2023;). This led to approximately 500,000 ha of drought-related excess forest mortality in Europe between 1987 and 2016 (Senf et al., 2020) and an annual increase of timber losses in Europe by 845.000 m^3 per year (Patacca et al., 2023). At the same time, approximately 80 % of the EU's forests were reported to be in a poor or bad conservation status (European Environment Agency, 2020) and the evaluation of the EU Biodiversity Strategy for 2020 concluded that the strategy missed its headline target of halting and reversing biodiversity loss in the EU (EC, 2022b).

Taken together, latest developments outlined above triggered a critical juncture in EU forest and environmental policy, which gained momentum with the inauguration of the new Commission under Ursula von der Leyen in 2019. This event signaled the beginning of a reorientation of EU policy-making towards the overarching climate objectives outlined in the Green Deal. For example, in contrast to previous Forest Strategies, the new European Forest Strategy for 2030 was adopted as an important implementation tool of the EU Biodiversity Strategy for 2030 and a vital element of the Green Deal to achieve the EU's biodiversity and climate targets. This shift in political priorities appeared to give rise to a more substantial involvement of the Directorate-General for the Environment (DG ENV) in proposing the new EU Forest Strategy for 2030 and various other forest-related instruments (e.g., voluntary guidelines on forests), whereas previous policy and legislative initiatives related to forests predominantly fell under the responsibility of DG AGRI. Arguably, these external and internal developments described above triggered a shift of problem perception and the promotion of alternative policy ideas, shifting from a production-oriented to a more climate- and biodiversity-centric approach in EU forest policy.

Apart from changes to the overarching policy paradigm, third-order changes in EU forest policy in recent years are further reflected in a general shift of supported policy instrument types, particularly towards regulatory and informational instruments, the introduction of various new policy instruments and the calibration of existing instruments towards reprioritized policy objectives. Regarding legal initiatives, the European Commission appear to increasingly use its legal competence in environmental policy to implement forest-related climate and biodiversity goals and objectives such as outlined in the new Forest Strategy. This includes the legally-binding, directly applicable Nature Restoration Law (Regulation 2024, 1991) and the proposed Forest Monitoring Law (EC, 2023a). Moreover, while the CAP and forestry measures funded under through the EAFRD are described to remain an important financing instrument of the strategy, numerous alternative financing and informational instruments for climate- and biodiversity-friendly forest management practices are announced, including a voluntary certification scheme for closer-to-nature forest management and guidelines for climate- and biodiversity-friendly forest management practices (EC, 2023b; EC, 2023c).

It can be argued that, with the adoption of the latest EU Forest Strategy, EU forest policy underwent a provisional paradigm shift, which is reflected in simultaneous changes of all policy elements analyzed in this study. However, it remains to be seen to what extent this new paradigm will manifest and steer forest policy both at the EU and national level in the years and governments to come. This will depend, among other things, on successfully stabilizing and implementing first- and second-order policy changes, including newly introduced financial instruments and legislative action.

5.1.2. EU agriculture and rural development policy

The past decades have been characterized by a significant shift in instruments and discourses regarding EU agriculture, transitioning from state-assisted, developmental, and productivist approaches to a 'multifunctional' agriculture paradigm (Feindt, 2010). At the same time, past reforms of the CAP and budget negotiations only resulted in minor alterations to budget size and funding distribution across pillars (Kay, 2003; Feindt, 2010). While some of the reforms can be classified as rather far-reaching, such as the Agenda 2000 reform, which cleared the way for the integration of a fully-fledged rural development policy, or the 2003 "Fischler reform", which decoupled farm income support from production output (Nedergaard, 2006), the CAP largely maintained its ideational and policy structure over time (Greer, 2017). In contrast to other policy domains, it proved to be rather resistant to major external shocks, such as the adoption of the Green Deal and the Covid-19 pandemic (Feindt et al., 2022). In fact, the recent destabilization of international relations triggered by Brexit and Russia's war against Ukraine led to a reinforcement of the productivism discourse surrounding the CAP, with a demand for strengthening domestic production to secure food supply (Feindt et al., 2022). These developments appear to have diminished the momentum for stronger integration of climate and biodiversity considerations (Pe'er et al., 2019; Feindt et al., 2022). Findings from the scientific literature provide valuable explanations for the overall stability that characterizes the development of the CAP (Kay, 2003; Daugbjerg and Swinbank, 2007; Greer, 2013; Daugbjerg and Swinbank, 2016; Daugbjerg and Feindt, 2017).

Multiple institutional factors in the EU render the CAP a relatively closed and influential policy network that shows strong interest to keep sectoral boundaries intact (see e.g., Nedergaard, 2006; Feindt, 2010; Greer, 2013; Daugbjerg and Feindt, 2017; Feindt et al., 2022). Feindt et al. (2022) explain the overall resistance of the CAP to external shocks and influences by highlighting the institutional and political opportunity structures in the EU, which provide agricultural institutions and actors with far-reaching decision-making authority to act autonomously from societal pressures. Processes of CAP reforms and budget negotiations, as well as implementation and administration, are dominated by agricultural institutions that are strongly interested in maintaining the production-oriented status quo, particularly by securing direct income support. The institutional arrangements supporting the CAP financing system, despite undergoing major reforms over time, have created strong positive feedback effects that have reinforced the CAP's path-dependent development. Agricultural institutions and actors typically support an exceptionalist view towards agricultural production, arguing that a lack of (import) regulation and state support may ultimately affect food security and a stable food supply at reasonable prices (Daugbjerg and Feindt, 2017). The perceived distinct character of the sector is often used to justify and legitimize institutional compartmentalization and agricultural actors are strongly interested in manifesting their positions by retaining the basic structure of the CAP (Daugbjerg and Feindt, 2017).

In contrast to the latest developments in EU forest policy, the present analysis confirmed the relatively gradual or incremental change of agricultural and rural development policy over time. This change is predominantly reflected in first and second-order changes, such as in the form of budget reallocation through modulation or the adding (or "layering") of new policy instruments (Daugbjerg and Swinbank, 2016) such as in the form of voluntary climate and environmental commitments. This observation broadly aligns with insights from the scientific literature. For example, Swinbank and Daugbjerg (2006) classify the "Fischler reform" as an essential step in the evolution of the CAP. However, they express doubts whether reforms would suffice to justify the continuous existence of a heavily skewed system of farm income support. In his analysis of the Cioloș reform, Greer (2013) concluded that the outcomes largely underlined the CAPs general resistance to adjustments in budget and policy instruments. Similar to Feindt et al. (2022), he explains this observation by pointing out the decision rules and institutional structures surrounding the CAP, as well as the balance of institutional forces within the EU - particularly between dominant member states and the continuing power of the agricultural sector - which act as significant barrier to change. The latest CAP reform is perceived as a continuation of the ideational and policy path dependence of agricultural policy in the EU, retaining its overall structure and weaknesses, in particular regarding biodiversity- and climate-related challenges (Feindt et al., 2022; Pe'er et al., 2020).

Notably, gradual or incremental policy change do not necessarily equal policy stasis. Instead, it can initiate considerable policy change in the long run by shaping future policy trajectories (Cashore and Howlett, 2007; Greer, 2013; Daugbjerg and Swinbank, 2016). Therefore, policy analysts and researchers are encouraged to analyze the long-term implications of seemingly minor policy changes on the CAP's overall orientation and underlying paradigm.

5.2. Evolution of cross-sectoral policy integration

The findings suggest a disaggregation of the evolution of cross-sectoral policy (dis)integration into three phases. The first phase starts with the (pre-)Agenda 2000 reform and lasts until the official implementation of the European Agricultural Fund for Rural Development (EAFRD). During that time, and in line with the first EU Forest Strategy, forest objectives and measures predominantly pursued production-oriented goals. The second phase starts with the "Fischler reform" and lasts until the latest CAP reform that entered into force in 2023. This phase is characterized by an increasing integration of forest-environmental (Regulation 1698, 2005) and -climate (Regulation 1305, 2013) objectives and related measures into rural development policy along with a proceeding modulation of first pillar funding into the second pillar. Moreover, CAP reform processes during this phase proved to be more accessible for related policy areas (e.g., trade, finance, environment) (Feindt, 2010). The third and current phase starts with the adoption of the new EU Forest Strategy for 2030 and the latest CAP reform. It is characterized by seemingly divergent developments in EU forest policy, with a substantial shift towards a more climate- and biodiversity-centric paradigm on one hand and the Common Agricultural Policy (CAP) and its rural development policy on the other, which abstain from formulating concrete forestry measures based on the subsidiarity principle, combined with a substantial reduction of rural development funding for the 2023–2027 period (Feindt et al., 2022).

The increased flexibility in designing CAP Strategic Plans, allowing Member States to choose from a broad array of (forest-related) policy measures in the latest CAP reform, provides significant latitude in shaping national rural development implementation pathways (Feindt et al., 2022). While this flexibility is not inherently worthy of criticism, given the diverse socioeconomic and environmental challenges among countries and regions, it also opens the door for Member States to opt for low-ambition implementation pathways (Pe'er et al., 2020). Such pathways may not align with the ambitious climate and biodiversity objectives set forth in the new Forest Strategy for 2030.

This line of argument gains traction when looking into scientific literature. In an analysis of the uptake of Natura 2000 payments from the EAFRD during the program periods 2007–2013 and 2014–2020, Weis (2017) found a relatively low uptake of Natura 2000 payments in national and subnational implementation plans. He concluded that Member States often prioritize using environmental payments to bolster the economic competitiveness of the agricultural and forest sectors rather than focusing on biodiversity conservation and restoration-related targets. This observation largely aligns with observations made by Haeler et al. (2023), who conducted a country-comparative analysis to analyze the type of forestry measures funded during the 2014–2020 funding period. Their findings revealed a diverse range of supported measures, from environmental- and climate-oriented investments in forest adaptation and the ecological value of forests to production-oriented measures in forest machinery and harvesting equipment.

Hall (2016) points out several key mechanisms to explain the stability of coalitional politics and the compartmentalization of institutions and their policies. They include i) a situation in which benefits, such as in the form of social and economic programs, are provided to a particular class of recipients as paradigmatic case and ii) the power distribution of institutions dictating jurisdictions over a topic, agenda-setting and decision rules which can result in biased decision-making in directions that benefit actors that created the institutions. In this context, dominant institutions are likely to limit power resources to actors that are likely to challenge the status quo. Linking these historical institutionalist theoretical explanations to the empirical observations obtained through analyzing sectoral policy change and cross-sectoral policy integration can provide valuable insights. The CAP constitutes a model example of a policy that directly benefits certain stakeholder groups, namely large European farmers and the downstream sector. In the course of the latest negotiations surrounding the latest reform, Feindt et al. (2022) observed a refusal of agricultural ministers to allow interventions by the former Commission Vice President Timmermans, who led the Commission's work on the Green Deal and its key implementation instruments and who felt that related objectives and requirements would not be sufficiently addressed in CAP negotiations. This observation illustrates the noted increase in the compartmentalization of the CAP and the resurgence of forest policy fragmentation at EU level.

Despite continuous reductions over time, the CAP continues taking up a significant share of the EU budget. Approximately 70 % of the total CAP budget between 2007 and 2027 was dedicated to direct payments and market-related measures as part of the first pillar, while roughly 30 % was allocated to rural development measures. Of this, only about 5 to 6 % of the total budget was provided for direct forestry measures, which are typically not fully utilized by member states. Repeated attempts to increase the share of funding for the second pillar - which is often perceived to provide more targeted solutions for climate risk management and adaptation - at the expense of first pillar payments in the CAP, such as in anticipation of the Cioloș reform, have rarely led to significant changes in budget size and distribution in the past (Feindt, 2010; Greer, 2013). Powerful agricultural institutions and actors show little interest in this for obvious reasons. The latest CAP reform led to a proportionally high reduction of second pillar funds (Feindt et al., 2022) and consequently, of funding for forestry measures. This and other developments examined in this study challenge the proclaimed central role of the CAP and itś rural development policy as key financing instruments for fostering the adaptation of European forests to climate change and restoring forest biodiversity, as promoted under EU forest and environmental policy.

6. Conclusion

Using a process tracing approach to the longitudinal analysis of policy change and cross-sectoral PI and drawing on 65 policy documents, this study aimed to answer two cumulative research questions. First, it investigated sectoral policy change in EU forest and agriculture and rural development policy over more than 25 years. Second, findings from policy change analyses are used to explain the evolution of cross-sectoral PI between the two policy areas in light of rapid climatic change and an ongoing decline in (forest) biodiversity. Diverging sectoral developments were found, especially in recent years. While the CAP and its rural development policy appear to be characterized by strong path dependency, primarily undergoing incremental changes while maintaining the general orientation, forest policy recently underwent a provisional paradigm shift from a production-oriented to a more climate- and biodiversity-centric approach. This shift is particularly evident in response to the recent surge in forest disturbances and damages starting in 2018 and an ongoing decline of (forest) biodiversity combined with a deterioration of forest (habitat) conditions in many parts of Europe, leading to the adoption of the EU Forest Strategy for 2030 and the realignment of EU forest policy.

The present analysis revealed three (dis)integration phases over the analyzed period, confirming scientific observations regarding the frequently fluctuating nature of policy integration (Hogl et al., 2016; Reber et al., 2022). The first phase, starting with the Agenda 2000 reform and lasting until the official implementation of the EAFRD, is characterized by a strong integration of forest policy issues. During that time, forest objectives predominantly pursued production-oriented goals and supported forestry measures were mainly to serve

agricultural production. The second phase starts with the "Fischler reform" and lasts until the latest CAP reform entering into force in 2023. This phase was characterized by an increasing integration of forest-environmental and -climate objectives and related measures into the rural development policy of the CAP. The third and current phase started with the adoption of the new EU Forest Strategy for 2030 and the latest CAP reform which entered into force in 2023. This phase is characterized by a provisional paradigm change in forest policy, involving changes to all policy elements analyzed in this study. These ambitions, however, are hardly reflected in the latest reform of the CAP and its rural development policy, suggesting an emergence of disintegration between both policy areas in recent years.

The present study is not without its limitations. While it aimed to look beyond formal cross-sectoral PI by analyzing the evolution of CAP appropriations, particularly for rural development and forestry measures, integration is predominantly assessed based on sectoral policy outputs and descriptive policy elements and supported policy measures. Due to the lengthy time frame of the analysis, this data source seems obvious. However, two promising avenues for further research were identified that might further substantiate knowledge on the evolution and state of forest PI at EU level. First, while the present study strictly focused on the integration of forest policy into agriculture and, in particular, rural development policy at EU level for given reasons, a promising future research endeavor will be to assess integration by looking at all or at least more forest-related policy areas (e.g. bio economy, trade, climate etc.) simultaneously, thereby assessing how sectoral forest-related goals and instruments interact in reaching overarching forest policy goals and targets. Second, a more informed assessment of the role of rural development funding in fostering the adaptation of European forests to climate change and in protecting and restoring forest biodiversity could be obtained through in-depth analyses on the uptake and implementation of relevant objectives and measures in the national CAP Strategic Plans whose implementation has officially been in full swing since 2023.

CRediT authorship contribution statement

Simon Fleckenstein: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author used ChatGPT/OpenAI in order to improve language and readability of the manuscript. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Declaration of competing interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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