Chiara Cellerino
Morgan Eleanor Harris

a cura di

Implementing the Nature Restoration Regulation

Selected legal issues

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I

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Chiara Cellerino
Morgan Eleanor Harris

INTRODUCTION

This *quaderno* collects the contributions presented at the international conference held on 6 and 7 November 2025 at the University of Roma Tre,[1] organized within the PRIN 2022 PNRR "*Restoring nature for children in Italy - RINASCI*". The research project, which saw the participation of the University of Roma Tre, LUMSA University and the University of Genova, was aimed at understanding the legal framework governing biodiversity conservation and restoration in the Union with a particular focus on the Nature Restoration Regulation (EU) 2024/1991 ("NRR"). As the NRR affirms, restoring habitats and ecosystems is critical to securing the socio-economic benefits offered by a thriving, resilient nature, including the long-term productivity of European economies. However, the profound transformations it requires raise not only technical and political issues, but also legal challenges. This collection aims to explore a selection of these.

The NRR sets in place a system of specific objectives and targets to be achieved, accompanied by procedural and planning obligations. Certain legal issues have already arisen as Member States are preparing their National Restoration Plans (NRPs), required under Articles 14 and 15 of the Regulation and due by September 2027. Indeed, it is apparent that the implementation of the NRR requires coordination with several other fields of EU law and leaves open numerous legal questions, including interpretive problems and potential tensions between this new framework and other policy areas, such as the the Common Agricultural Policy.

[1] For a report on the conference, see A. Betti, *Implementing the Nature Restoration Regulation: Legal challenges and opportunities (University of Roma Tre, 6-7 November 2025)*, in *Roma Tre Law Review*, 2/2025, p. 109 ff.

The first group of essays examines such interpretive and practical issues, many of which must be addressed in the short-term, if Member States are to reach their 2030 objectives. In addition, the Regulation raises broader, more systemic questions about the integration of biodiversity protection and restoration objectives into other areas of law such as contractual law, environmental liability and national constitutional law. The second group of essays explores these matters.

As for the first group, the contribution by Morgan Eleanor Harris focuses in particular on the right of the public to participate in the preparation the NRP and specific measures and projects implementing it. She analyses the existing legal framework to identify the extent to which opportunities for public participation are required under EU law and the Aarhus Convention, a matter that is not expressly addressed in the NRR. She then assesses the gap between legally required minimums for participation and the type of public engagement that the social science literature suggests is needed to achieve effective, fair biodiversity conservation and restoration. She argues that efforts are needed to build long-term collaborations with key stakeholders and that the arrangements for public participation must be carefully designed to take into account the social, economic and political context. Critically, she shows that the EU legal framework may already contain rules that can support or even require such efforts.

Chiara Cellerino and Mario Barbano address the coordination of the NRR with state aid legal framwork, starting from the premise that achieving the NRR's objectives will depend on adequate public financing, including from the Member States. This raises questions about the extent to which national financing is compatible with the rules governing the internal market, especially the prohibition of state aid. As they show, the current legal framework on state aid offers numerous possibilities for Member States to provide funding for biodiversity restoration projects, including in agricultural areas. The contribution also explores the potential of qualifying nature restoration activities as Services of General Economic Interest (SGEI) within the EU legal order, stressing the need for applying State aid rules to nature restoration initiatives in line with the solidarity principle and that requiring the integration of environmental protection into other EU policies.

Andrea Betti explores the obligations of Member States as regards the duty to ensure the continuous improvement of areas where resto-

ration measures are underway, as well as the obligation to prevent the deterioration of areas that are in good condition or which must be restored at a future date. He compares these new continuous-improvement and non-deterioration obligations to similar duties elsewhere in EU law, arguing that they should be interpreted as duties of best efforts, not of results. Nonetheless, he shows that such an interpretation does not necessarily indicate a weakening of States' responsibilities with respect to nature restoration; indeed, by framing non-deterioration in this manner, the NRR requires Member States to act according to a standard of diligence, which can even anticipate the moment where such duties become enforceable through judicial action.

Focusing specifically on restoration of agricultural ecosystems, Enrico Mezzacapo examines in depth the relationship between the NRR's objectives and the Common Agricultural Policy (CAP). He shows that despite having a formally "green" structure, built on enhanced conditionality, eco-schemes, and rural development funding, in practice, the CAP remains poorly aligned with the Union's ecological objectives. A key challenge is thus ensuring the credibility of agricultural ecosystem restoration in the EU, which he argues is dependent on a fundamental reorientation of CAP spending. As negotiations are currently ongoing for the next Multiannual Financial Framework 2028-2034 and the next CAP, his call for greater alignment of the Union's financial framework with its commitments under the NRR is particularly timely.

Siemen Kalders draws upon the ecological sciences to show that the obligation of halting the decline in pollinators by 2030 and then improving pollinator abundance and diversity, as well as the mandate to show improvements in the Grassland Butterfly Index, until satisfactory levels are reached, offer a critical opportunity for Member States to address the most harmful aspects of agricultural intensification. He observes that, like similar ecosystem targets in the NRR, this provision grants Member States broad discretion to determine 'satisfactory levels' of butterfly abundance and diversity – without, however, offering clear definitions or scientific criteria for doing so. As a result, there is a risk of "shifting baseline syndrome," where the loss of butterfly populations prior to the creation of the Grassland Butterfly Index in the 1990s is unaccounted for, allowing Member States to set satisfactory levels reflecting a historically depleted state. This reflection opens debate about how satisfactory

levels for the purposes of the NRR should be determined, an issue that Member States will need to face before 2030.

The second group of essays instead addresses systemic issues, pointing to the ways in which the NRR opens the door to a shift in the underlying structure and principles of other areas of law.

The contribution by Alberto Jaci considers the role that private contractual instruments and litigation may play in aiding Member States to fulfil their obligations under the NRR. He analyses the possibility for private contractual agreements to include obligations supporting the Union's restoration objectives, including restoration agreements, payments for ecosystem services, green contractual clauses, alternative dispute resolution, and strategic environmental litigation. Building on this, he then examines the extent to which civil liability can help fill the enforcement gap, one of the issues that has undermined the effectiveness of the Habitats and Birds Directives to date. In this way, Jaci points towards an area that merits further study, one that is certainly critical for the success of the Union's environmental objectives.

The contribution of Stefano Porfido explores the broader question of the relationship between the NRR's habitat restoration obligations and the legal framework governing environmental liability and remediation in EU law. He analyses the Environmental Liability Directive and the revised Environmental Crime Directive to understand how these regimes approach the problem of environmental degradation, including how they involve public and private actors in the task of remedying illegal damage. He argues that the NRR is fundamentally distinct from existing remediation regimes, as it embraces a forward-looking logic, supported by continuous improvement and non-deterioration duties, in contrast to liability regimes grounded in rules regarding unlawfulness, causation, and attribution of harm. Nonetheless, Porfido argues that remediation and restoration should not be treated as isolated legal projects, but as complementary phases within a broader restoration *continuum*, inviting us to expand our understanding of the functions of environmental liability in the EU.

Lastly, the contribution by Franco Sicuro offers an analysis of the NRR from a national and constitutional perspective. He seeks to understand the extent to which the new objectives set by the Regulation express a renewed, science-based model of planning rationality that inte-

grates ecosystem restoration, climate action, and territorial governance, in particular in the light of the duty to protect the environment enshrined in Articles 9, 11, and 117(1) of the Italian Constitution. He argues that, by linking environmental protection to the social function of property and the constitutional regulation of economic activities, the NRR requires us to integrate ecological restoration objectives into territorial and economic planning. Ultimately, he seeks to strengthen the argument for prioritizing biodiversity conservation and restoration by showing that it is grounded not just in EU law, but in national constitutional principles dedicated to intergenerational justice and the preservation of the ecological conditions necessary for human life.

The RINASCI Project offered a timely opportunity for unravelling some of the challenges inherent in the NRR, both at a European and a national level. Ultimately, it showed that halting and reversing biodiversity loss in a manner that guarantees the Union's long-term resilience will require sustained, multi-level efforts across many fields of expertise, including the law. By analysing in detail key interpretive questions that Member States face in implementing the NRR, as well as deeper structural questions it poses about the relationship between biodiversity restoration and other critical legal frameworks, this collection aims to contribute to such efforts.

ESSAYS

MORGAN ELEANOR HARRIS

PUBLIC PARTICIPATION IN THE IMPLEMENTATION OF THE EU NATURE RESTORATION REGULATION: BEYOND LEGAL REQUIREMENTS?

SOMMARIO: 1. Introduction. – 2. Legal obligations to provide for public participation in decision-making. – 2.1 Environmental public participation rights in the EU. – 2.2 Participation in the development of plans and programmes relating to nature restoration. – 2.3 Public participation in the context of specific projects implementing nature restoration measures. – 3. Effective public engagement in matters related to biodiversity restoration. – 3.1 Benefits of public engagement beyond mandatory public participation. – 3.2 Risks of public engagement. – 3.3 Public engagement as a means to ensure the effective implementation of nature restoration duties. – 4. Conclusions.

1. *Introduction*

The Nature Restoration Regulation (EU) 2024/1991 (NRR)[1] calls for a "fair and cross-society" approach to halting biodiversity loss and bringing back European ecosystems.[2] However, it offers only limited indications as to what this means or how it should be done. Efforts are thus needed to clarify the extent to which public participation is required under EU law for activities connected with the implementation of the NRR. However, it may well be that the current legal framework on public participation falls short of what is necessary to guarantee the full and effective implementation of the NRR by the Member States, or to en-

[1] 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, OJ L 2024/1991 of 29 July 2024.

[2] Preamble para. 83 NRR.

sure that it takes place through "fair and cross-society" efforts, which may risk undermining the achievement of the EU's biodiversity targets in the long term. It is thus critical to understand the gap between the legal framework on public participation and the kind of effective public engagement needed to achieve the NRR's ambition of catalysing broad, ambitious efforts to restore biodiversity in the EU.

Ecological and governance literature has emphasized the benefits of involving stakeholders and the public in biodiversity restoration.[3] For one, public participation can serve as a means for raising awareness of biodiversity law and policy among the public and stakeholders, and thus fostering support for conservation efforts.[4] Indeed, biodiversity restoration may require changes to how economic activities take place, especially agriculture, fishery, forestry and recreation. Such changes are more likely to be perceived as fair and legitimate when affected stakeholders are involved in the decision-making process, which has the additional benefit of reducing the costs of enforcement.[5] Public participation can also improve the efficiency of conservation or restoration actions by allowing authorities to access information held by private bodies.[6] Beyond the practical benefits of involving the public in biodiversity restoration efforts, it is also a legal duty. Indeed, the Union is committed to guaranteeing the right to public participation in environmental matters as a party to the 1998 UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental

[3] FAO, SER & IUCN CEM, *Standards of practice to guide ecosystem restoration - A contribution to the United Nations Decade on Ecosystem Restoration 2021-2030*, Rome - Washington, DC - Gland, Switzerland, 2024.

[4] On the need to guarantee procedural and recognitional justice in the process of biodiversity restoration, see E. Ciscato, M. Meertens, *Striving for Just Ecological Restoration: A Critical Analysis of the EU Nature Restoration Regulation*, in *Transnational Environmental Law*, 2026, p. 1 ff.

[5] L. Liu et al., *Public participation in decision making, perceived procedural fairness and public acceptability of renewable energy projects*, in *Energy and Climate Change*, 2020, p. 100013 ff.; D. Marzo et al., *Drivers of Small-Scale Fishers' Acceptability across Mediterranean Marine Protected Areas at Different Stages of Establishment*, in *Sustainability*, 11/2023, p. 9138 ff.

[6] C. Rega, G. Baldizzone, *Public participation in Strategic Environmental Assessment: A practitioners' perspective*, in *Environmental Impact Assessment Review*, 2015, p. 105 ff.

Matters (the 'Aarhus Convention'),[7] which is implemented in numerous instruments of secondary law. Offering certain opportunities for participation is thus legally necessary, in addition to offering a concrete way to reaffirm the EU value of the rule of law and its other foundational values such as democracy, human rights and equality.[8]

In this context, this article seeks to clarify the current legal framework on public participation in environmental decision-making applicable to matters related to biodiversity restoration, and the extent to which public engagement beyond these legal minimums may be necessary to ensure an effective and a fair implementation of the NRR. First, it clarifies the legal duties to provide opportunities for public participation in decision-making related to biodiversity restoration plans and projects in EU law (section 2). Next, it examines the literature on public engagement in biodiversity conservation and restoration to identify potential gaps between the legal framework and what may be needed to realize the benefits of public involvement in these matters (section 3). Last, it concludes by offering reflections on ways forward for shaping more effective biodiversity governance in the EU (section 4).

2. *Legal obligations to provide for public participation in decision-making*

2.1. *Environmental public participation rights in the EU*

Within Europe, the principle of public participation, as enshrined in the Aarhus Convention, comprises three separate categories of rights: access to environmental information, participation in the preparation of projects, plans and programmes affecting the environment, and access to justice in environmental matters.[9] These three 'pillars' of rights are

[7] UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 450.

[8] M.E. Harris, *Environmental Rights and Equality in the EU: Addressing the Aarhus Paradox*, Abingdon - New York, 2026, pp. 23-24.

[9] On the principle of public participation in Europe see, *inter alia*, J. Ebbesson, *Principle 10: Public Participation*, in *The Rio Declaration on Environment and Development: a commentary*, J. E. Viñuales (ed.) Oxford, 2015, p. 287 ff; L. Krämer, *The EU*

certainly interdependent: the possibility of effectively contributing to a public consultation, for example, depends on having accurate and complete information about the matters considered,[10] and requires the possibility of going to court should public decision-makers fall short of their legal duties.[11] Nonetheless, this brief study will focus solely on the second pillar of participation: the right to participate in decision-making, in particular in matters related to biodiversity conservation and restoration.[12]

and Public Participation in Environmental Decision-Making, in *Procedural environmental rights: Principle X in theory and practice*, J. Jendrośka, M. Bar (eds.), Cambridge, 2017, p. 121 ff; J. Jendrośka, *The substantive right to environment and the procedural environmental rights under the Aarhus Convention - Part I*, in *Opolskie Studia Administracyjno-Prawne*, 2/2023, p. 141 ff; J. Jendrośka, *The substantive right to environment and the procedural environmental rights under the Aarhus Convention - Part II*, in *The Opole Studies in Administration and Law*, 2/2024, p. 43 ff.

[10] For this reason, the Aarhus Convention specifies in Article 6(2) exactly what information must be provided, and violations of thus duty are considered to be serious procedural flaws that effectively annul the right of the public to participate in a decision-making process, such that they may justify the annulment of subsequent decisions: see CJEU, Judgment [GC] of 15 January 2013, case C-416/10, *Križan*, ECLI:EU:C:2013:8 para. 88; CJEU, Judgment of 28 May 2020, case C-535/18, *Land Nordrhein-Westfalen*, ECLI:EU:C:2020:391 para. 62.

[11] *Inter alia*, CJEU, Judgment of 14 January 2021, case C-826/18, *Stichting Varkens in Nood and Others*, ECLI:EU:C:2021:7 para 52. Similarly, before the European Court of Human Rights, see ECtHR, judgment of 2 November 2006, *Giacomelli v Italy*, app. no. 59909/00 para 83.

[12] On the second pillar of participation in the EU, see J. Jendrośka, *Public participation in the preparation of plans and programs: some reflections on the scope of obligations under Article 7 of the Aarhus Convention*, in *Journal for European Environmental & Planning Law*, 4/2009, p. 495 ff.; J. Jendrośka, *Public Participation in Environmental Decision-Making. Interactions Between the Convention and EU Law and Other Key Legal Issues in its Implementation in the Light of the Opinions of the Aarhus Convention Compliance Committee*, in *The Aarhus Convention at ten: interactions and tensions between conventional international law and EU environmental law*, M. Pallemaerts (ed.) Groningen, 2011, p. 91 ff.; J. Mendes, *Participation in EU Rule-Making: A Rights-Based Approach*, Oxford, 2011; D. Obradovic, *EU Rules on Public Participation in Environmental Decision-Making Operating at the European and National Levels*, in *The Aarhus Convention at ten: interactions and tensions between conventional international law and EU environmental law*, M. Pallemaerts (ed.) Groningen, 2011, p. 149 ff.; L. Krämer, *The EU and Public Participation in Environmental Decision-Making*, in *Procedural Environmental Rights*, J. Jendrośka, M. Bar (eds.), 2018, p. 121 ff.; A. Tortora, *La partecipazione al processo decisionale*, in *La tutela dell'ambiente nel diritto internazionale ed europeo*, R. Giuffrida, F. Amabili (eds.), Torino, 2018, p. 85 ff.; G. Gattinara, M. Noll-Ehlers,

As mentioned, the NRR lacks a specific article dedicated solely to public participation;[13] instead, it offers only incidental indications on participation in the context of the National Restoration Plans (NRPs). Therefore, to understand what duties Member States may have, it is necessary to look beyond the NRR. Within the Aarhus Convention, the right to effectively participate in decision-making processes affecting the environment is enshrined in Articles 6, 7 and 8, which are also implemented in numerous provisions of EU law.[14] As public decisions in environmental matters require public authorities to balance numerous interests in a way that is resource-efficient and effective, authorities enjoy some margin of flexibility in setting arrangements for public participation.[15] Each category of decision-making presents unique legal issues that merit closer examination, in particular decisions related to plans and programmes, and those regarding specific projects.

2.2. *Participation in the development of plans and programmes relating to nature restoration*

Commentators have observed that the NRR, while formally a regulation, is structurally more akin to a directive, as it sets broad targets together with specific procedural and strategic planning obligations.[16]

The Scope and Requirements of Public Participation in EU Environmental Law, in *Sustainability through Participation?*, B. Peters, E.J. Lohse (eds.), Leiden, 2023, p. 139 ff.

[13] While the initial proposal included an article on access to justice (Article 16), there was no article on participation in decision-making processes regarding nature restoration plans or projects. See Proposal for a Regulation of the European Parliament and of the Council on nature restoration, COM(2022) 304 final of 22 June 2022.

[14] More specifically, these articles provide for the right to participate in decisions on projects subject to environmental impact assessment or that may otherwise have a significant impact on the environment (Article 6), the right to participate in the preparation of plans and programmes affecting the environment (Article 7), and the right to participate in the preparation of generally binding regulations impacting the environment (Article 8). This brief study will not focus on Article 8 due to the fact that the most incisive biodiversity restoration measures are carried out within strategic planning instruments and in relation to specific projects. The governance literature has, as a result, almost exclusively studied the phenomenon of participation at planning and project levels.

[15] UNECE, *The Aarhus Convention: An Implementation Guide*, Geneva, 2014.

[16] V. Capuano, *New Legislative Approach with Old Legislative Tools: the recent (ab) use of regulations in European Union Law*, in *Eurojus*, 4/2025, p. 145 ff.

As a result, NRPs assume a principal role in determining how Member States will achieve their objectives, a structure that recalls other EU environmental directives in relation to water, marine areas, air quality and waste. In its impact assessment accompanying the text of the NRR, the Commission explained that its choice of a regulation was motivated by the need to accelerate efforts to protect and restore ecosystems, ensuring the direct applicability of the new rules across the Member States.[17] The drawback of this approach is that, unlike directives, regulations may not be transposed by Member States.[18] Transposition would have offered an opportunity to resolve complex governance issues, such as the vertical and horizontal division of responsibilities among public authorities.[19] It would also have improved the democratic legitimacy at a national level by allowing open debate on the way the Regulation is to be implemented within the domestic legal framework.[20] The NRP may, at the least, offer an occasion for addressing this potential legitimacy gap through effective and broad public participation.

At the time of writing (Spring 2026), Member States are in the process of preparing their draft NRPs, which must be submitted to the Commission by 1 September 2026. The NRP must identify objectives, targets, measures and financial instruments to achieve the NRR's objectives, and must do so through concerted action between the competent public authorities, the public and stakeholders. Indeed, the preamble of the NRR states that the process of preparation of the NRPs must be "open, transparent, inclusive and effective."[21] In particular, the public must be given "early and effective" opportunities to participate,[22] and

[17] "Since a regulation does not need to be turned into national law, it means restoration measures can start sooner on the ground compared to a directive." Proposal for a Regulation of the European Parliament and of the Council on nature restoration, COM(2022) 304 final of 22 June 2022 p. 8.

[18] Article 288 TFEU.

[19] M.E. Harris, E. Ciscato, *Upscaling nature restoration in Italy: Barriers and facilitators*, in *Review of European, Comparative & International Environmental Law*, 3/2025, p. 661 ff.

[20] On criticisms of the democratic legitimacy of the NRR, see V. Heyvaert, *In Defence of Environmental Target Laws*, in *Transnational Environmental Law*, 2026, p. 1 ff.

[21] Article 14(20) NRR.

[22] Ibid.

public authorities must account for how public input and the needs of local communities and stakeholders were taken into account.[23]

As for the arrangements for public participation, the NRR specifically refers to the Strategic Environmental Assessment (SEA) Directive, stating that "consultations shall comply with the requirements set out in Directive 2001/42/EC."[24] This directive establishes rules for the conduct of SEA of certain plans and projects, and includes provisions regulating public participation.[25] Crucially, the NRR does not expressly provide that the NRP must be subject to SEA, only that public participation in the forms indicated in the SEA Directive must be guaranteed. From a textual analysis of the NRR, it is thus unclear whether SEA of the NRP is necessary. Generally, SEAs are mandatory under Article 3 of the same directive if two cumulative conditions apply. First, the plan or programme must relate to "agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use." Second, the plan must set the framework for the future development consent of projects subject to environmental impact assessment. This requirement has been interpreted by the CJEU as meaning that the plan must define substantial criteria and detailed rules applicable to projects subject to EIA.[26] While the first criterion is certainly met by the NRP, whether or not it meets the second criteria is a matter that will need to be decided by the courts.[27]

[23] Article 15(3) lett. w NRR.

[24] Article 14(20) NRR.

[25] See Article 6 of Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, OJ L 197 30 of 21 July 2001 (the "SEA Directive").

[26] Specifically, the CJEU states that the plan is subject to SEA when "by defining rules and procedures for scrutiny applicable to the sector concerned," it sets in place "a significant body of criteria and detailed rules for the grant and implementation of one or more projects likely to have significant effects on the environment." CJEU, Judgment of 27 October 2016, case C-290/15, *D'Oultremont and Others*, ECLI:EU:C:2016:816 para. 49.

[27] In the author's view, the two aspects of the NRP that are most likely to be deemed to set a substantive framework for future development consent are its contents regarding the identification of obsolete barriers to river connectivity to be removed in view of the Union's objective of creating 30,000 km of free-flowing rivers by 2030; and its provisions relating to Article 8 and the no net loss of urban greenspace or urban tree canopy cover, which will certainly impact future development consent of projects within these areas, including large projects that, due to their nature, are subject to EIA.

In addition to the SEA Directive, duties to provide opportunities for public participation in the preparation of the NRP derive from Article 7 of the 1998 Aarhus Convention, which states that the public has a right to participate during the preparation of plans and programmes relating to the environment generally. This duty applies whether or not a strategic environmental assessment is conducted and thus certainly applies to the NRP.

As for the persons entitled to participate, both the SEA Directive and the Aarhus Convention allow public authorities to identify the sphere of potential participants. While the Aarhus Convention specifies only that any limitations on the public entitled to participate must take into account the objectives of the Convention,[28] the SEA Directive offers Member States more specific guidance, setting out that they must include the public affected by the plan or programme or otherwise holding a legal interest in the same, including environmental associations or other organisations.[29] Some plans and programmes subject to SEA under EU law also indicate specific categories of stakeholders that must be consulted; for example, the Water Framework Directive 2000/60/EC states that public authorities must involve "users of water" in the preparation of river basin management plans.[30] Similarly, the NRR states in its preamble that Member States should engage, during the planning process, "landowners and land users and their associations, civil society organisations, business community, research and education communities, farmers, fishers, foresters, investors and other relevant stakeholders and the general public".[31] This extremely rich list of groups to be consulted suggests that public consultations on the NRP should be both open and targeted: open, in that they should permit anyone from these categories to contribute; targeted, in as much as efforts should be made to ensure that representatives of each of these groups actually do so.

[28] These objectives certainly include guaranteeing broad participation, as set out in the Preamble of the Aarhus Convention, paragraph 14, which states that the treaty aims to "encourage widespread public awareness of, and participation in, decisions affecting the environment and sustainable development."

[29] Article 6 para. 4 SEA Directive.

[30] The Water Framework Directive (WFD), for example, specifically mentions "users of water": Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for the Community action in the field of water policy, OJ L 327 1 of 22 December 2000.

[31] Preamble para. 83 NRR.

As mentioned, public authorities enjoy some margin of discretion in setting the arrangements for public participation in the preparation of the NRP. However, in accordance with the Aarhus Convention and the SEA Directive, they must: 1) guarantee that public consultations in the preparation of the NRP take place in a "transparent and fair" legal framework, which means that rules on consultations should be sufficiently complete and precise;[32] 2) ensure that the public is given the opportunity to participate when all options are open, that is, prior to any definitive commitments being made;[33] 3) provide all necessary information prior to consultations in a timely manner;[34] 4) set reasonable time frames for public contributions, taking into account the complexity of the matters under consideration;[35] 5) account for how public input was taken into consideration in its final decision, which is essential for the public to decide whether to challenge it in court.[36] These same requirements also apply to projects subject to environmental impact assessment, as will be discussed below.

In the case of the NRR, Member States have had over two years from its entry into force to complete their draft NRP; nonetheless, there are fears that public consultations on the draft may not meet the required standards of timeliness and effectiveness.[37] For one, many Member States have taken a considerable amount of time to gather data and to formally divide responsibility for the drafting of the NRP among their ministries and public agencies.[38] As a result, timeframes for public participation

[32] Article 3(1) Aarhus Convention.

[33] UNECE, *Aarhus Convention Implementation Guide (2nd edn.)*, ECE/CEP/72/Rev.1, 2014, p. 144.

[34] Ibid, p. 119; similarly, see CJEU, Judgment of 7 November 2019, case C-280/18, *Flausch and Others*, ECLI:EU:C:2019:928, para. 35.

[35] ACCC, *Compliance by Lithuania with its obligations under the Convention (Communication ACCC/C/2006/16)*, ECE/MP.PP/2008/5/Add.6 of 4 April 2008, para. 69.

[36] CJEU, Judgment of 30 April 2009, case C-75/08, *Mellor*, ECLI:EU:C:2009:279, para 66.

[37] See the December 2025 report by the European Environmental Bureau, ClientEarth, BirdLife international and the WWF, "National Restoration Plan Development Process: Mid-term assessment", available at https://www.restorenature.eu/en/our-work-past-actions/towards-restoring-nature-in-europe.

[38] In Italy, for example, responsibility for the preparation of the parts of the NRP related to Articles 10, 11 and 12 (pollinators, agricultural ecosystems and forest ecosystems) was delegated to the Ministry of Agriculture and Forestry through an agree-

have been compressed in several Member States, giving rise to concerns that the public may not be able to adequately study the draft NRP and offer meaningful contributions. Additionally, if consultations take place too close to the deadline for submitting the draft NRP, public authorities might not have sufficient time to fully study the input they have received and take it into account, as required by law.

Acknowledging potential issues with rushed consultations, some Member States intend to hold full public consultations after the submission of the draft plan to the Commission. In theory, doing so is not necessarily incompatible with their obligations under EU law, including Article 7 of the Aarhus Convention; indeed, the CJEU has admitted that *ex post* consultations may be acceptable so long as all options remain open and the public is offered an opportunity to give meaningful input on the proposed project or plan.[39] However, it may be questioned whether all options are open if consultations are held on draft NRPs after their submission to the Commission: indeed, the principle of sincere cooperation may be violated if the Member State unilaterally modified its NRP at this stage, especially if significant changes to the plan complicated the Commission's efforts to evaluate its adequacy and provide observations in a timely manner.[40] Therefore, it remains to be seen how Member States may ensure that public consultations held after the submission of the draft NRP comply with their duty to provide opportunities for public input at a moment when all options are open and prior to any commitments being made, while respecting the principle of sincere cooperation with regards to the Commission. Similar issues have been raised in relation to National Energy and Climate Plans (NECP) in some Member States, including Italy.[41]

ment finalized only in October 2025; available at https://www.mase.gov.it/portale/il-piano-nazionale-di-ripristino-pnr-dell-italia.

[39] C-416/10, *Križan*, cit. para. 87.

[40] Under Article 4(3) TEU, Member States must assist each other in carrying out tasks following from the Treaties or secondary law, facilitate the achievement of the Union's tasks and take appropriate measures to ensure the fulfilment of their obligations arising from either primary or secondary law. On sincere cooperation, see M. Niedźwiedź, *The role of the principle of sincere cooperation in the implementation of EU environmental law*, in *Cross-Border Pollution and Environmental Disputes in EU Law and Beyond*, A. Sikora-Kalėda et al. (eds.), Oxford, 2026, p. 143 ff.

[41] See the Communication to the Aarhus Convention Compliance Committee present-

It may be that no comments suggesting substantive changes to the plan are submitted during such consultations. However, it is reasonable to presume that the public would be less inclined to offer contributions proposing substantive modifications to a plan that has already been submitted to the Commission. If so, it could thus be argued that holding consultations within an SEA process after the submission of the draft plan to the Commission does not comply with the requirements of effectiveness under EU law in any case.

The consequences of the failure to comply with public participation requirements in the preparation of the NRP could be serious; indeed, it may give the public grounds to challenge the validity of the final plan in court. Indeed, the CJEU has held that Member States must allow for challenges to plans and programmes when public authorities fail to comply with essential procedural requirements, including those on public participation.[42] In particular, they must admit challenges when the procedural flaws were such that they "actually deprived the claimants of their right to participate in the decision-making process."[43] However, even in the case that an NRP was found to be flawed due to manifestly inadequate arrangements for public participation, its validity may still be maintained on a temporary basis, so long as certain conditions are met.[44]

ed by the environmental associations A Sud Ecologia e Cooperazione ACCC/C/2023/205 available at https://unece.org/env/pp/cc/accc.c.2023.205_italy. The Communication was found to be inadmissible due to ex-post consultations on the NECP; as such, the Committee found that the communicants had not yet exhausted domestic remedies. Efforts to challenge the Commission's approval of NECPs using the internal review mechanism provided by Article 10 of the Aarhus Regulation n. 1367/2016 have been rejected.

[42] C-535/18, *Land Nordrhein-Westfalen*, cit. para 61.

[43] CJEU, Judgment of 15 October 2015, case C-137/14, *Commission v Germany*, ECLI:EU:C:2015:683 para 80. In this case, the omission of essential information prior to a decision-making procedure had the effect of they must admit challenges when the procedural flaws was found to be so serious as to "actually depriv[e] the claimants of their right to participate in the decision-making process."

[44] CJEU, Judgment [GC] of 28 February 2012, case C-41/11, *Inter-environnement Wallonie*, ECLI:EU:C:2012:103 para. 58-62. Specifically: the contested plan must be otherwise in accordance with the EU directive or regulation on which it is based; the adoption of a new plan could not remediate the adverse effects of annulling the contested plan; the annulment of the contested plan would result in a legal vacuum with harmful consequences on the environment; and the contested plan is maintained only as long as is strictly necessary to remedy the flaws.

2.3. *Public participation in the context of specific projects implementing nature restoration measures*

Besides opportunities for participation in the drafting of the NRP, Member States must also provide for public participation in relation to certain projects and activities that are carried out in implementation of the plan if they are subject to environmental impact assessment under the EIA Directive[45] or to an 'appropriate assessment' under Article 6(3) of the Habitats Directive.[46] The right to participate here is limited to the "public concerned", a category that includes persons enjoying substantive rights or legitimate interests affected by the matter at stake, while environmental associations are considered to be part of the public concerned in any case.[47]

As for the EIA Directive, it sets out a minimum harmonization of rules applicable to the assessment of projects with a potentially significant impact on the environment. It provides a list of projects subject to mandatory EIA (Annex I) and others that may be subject to EIA, depending on their potential impacts (Annex II). Under the EIA Directive and Article 6 of the Aarhus Convention, the public concerned has a right to participate whenever an EIA is conducted, but not when decisions are made about whether an Annex II project should be subject to EIA.[48] Critically, Annex I and II projects must be assessed both when they are initially proposed as well as when they are modified, including if they are dismantled or demolished.[49]

Some projects carried out in order to actively restore or re-establish habitats may require impact assessment. In fact, Annex II includes pro-

[45] 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, OJ L 26/1 of 28 January 2012 ("EIA Directive").

[46] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206 7 of 22 July 1992 ("Habitats Directive").

[47] Defined in Article 2(5) of the Aarhus Convention and Article 1(2) lett. e) of the EIA Directive.

[48] Many Member States, including Italy, nonetheless guarantee opportunities for participation also in screening decisions: see Art. 19(4) of Legislative Decree n. 152 of 3 April 2006.

[49] Article 4(2-4) and Annex II(3h) of the EIA Directive require EIA screening for modifications to projects initially subjected to EIA when they may have significant adverse effects on the environment.

jects such as dams for water storage or energy production:[50] as a result, the removal of dams to meet a Member State's objectives to restore river connectivity under Article 9 NRR may trigger the need for an EIA, even where the barrier concerned is obsolete or in poor condition. The decision on whether or not EIA is required for a barrier removal project must consider the characteristics of the barrier, its location and its potential impact,[51] including whether it is in the vicinity of a protected area or is a component of a landscape of historical, cultural or archaeological significance. In such a case, the historic nature of a dam or levee and its influence on the broader landscape may be taken into account.[52] It is worth highlighting, however, that most restoration measures do not concern Annex II projects and should thus not be subject to EIA. If so, then opportunities for public participation do not need to be guaranteed.

Other projects may be subject to assessment – and thus to public participation – when they affect protected areas or species. Article 6 of the Habitats Directive requires public authorities to conduct an 'appropriate assessment' for plans and projects[53] that may have a significant impact on Natura 2000 sites or species protected under EU law. This assessment is

[50] Under the EIA Directive, EIA is mandatory for dams with capacity over 10 million cubic meters (Annex I para. 15). Instead, for smaller water storage facilities and hydroelectric projects, Member States must conduct an EIA only if the project could have a significant impact on the environment (Annex II para. 3 lett. h, para. 10 lett. f and g.

[51] Annex III, EIA Directive.

[52] On conflicts between heritage protection and biodiversity restoration in relation to dams in Estonia, see S. Jakobson, *Dams on Natura Rivers in Estonia: Collision of the Interests of Cultural Heritage and Biodiversity Protection*, in *Nordic Environmental Law Journal*, 2/2021, p. 31 ff. A subsequent decision of the Estonian Supreme Court (RKHKo 15.01.2024, 3-21-150/64), clarified that the Environmental Ministry has exclusive competence to decide on whether to seek a derogation under Article 6(4) of the Habitats Directive for historic dams within Natura 2000 sites, even if heritage protection interests may be invoked to justify the maintenance of the project, within the limits permitted by the Directive.

[53] For the CJEU, the definition of 'plan or project' for the purposes of the Habitats Directive includes not just "interventions in the natural surroundings", as defined in the EIA Directive, but any initiative that is "likely to have a significant effect on the conservation objectives of a site": see CJEU, Judgment of 7 November 2018, case C-293/17, *Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu*, ECLI:EU:C:2018:882 para. 66-68. This definition is broad enough to encompass not only active restoration measures, but also passive ones, which consist in removing or reducing pressures to favour ecological processes.; however, active restoration projects

more limited than an EIA, as it relates exclusively to the potential impact of the plan or project on the protected sites and species in view of the conservation objectives at stake.

Only plans and projects strictly connected to or necessary for the management of the protected area are exempt from the assessment requirement, which the Commission interprets as comprising projects functional to achieving favourable conservation status of protected habitats and species.[54] Restoration measures under the NRR are by definition aimed at achieving favourable conservation status, and thus would apparently fall within this exemption.[55] However, biodiversity restoration projects may sometimes have negative environmental impacts in the short term in order to secure gains in the medium or long-term. For example, habitat re-establishment can consist in the felling of trees to convert forested areas into grasslands, and river barrier removal can lead to heavy sediment flows and a deterioration of water quality until a new sediment balance is achieved. It is also possible that a project that benefits one protected area or species could have negative impacts on another. If so, then the project must be screened under Article 6(3) of the Habitats Directive and, if significant negative impacts are possible, a full appropriate assessment will need to be conducted. The public concerned has the right to participate in both the screening and the assessment procedure.[56]

within protected areas are more likely to require screening to verify whether they may have a potentially significant impact.

[54] See Commission Notice Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, 2021/C 437/01 of 28 October 2021 p. 8-9.

[55] This is implicit in the definition of 'good condition' under Article 3(4) NRR, which specifically states that it is "a state where the key characteristics of the habitat type, in particular its structure, functions and typical species or typical species composition reflect the high level of ecological integrity, stability and resilience necessary to ensure its long-term maintenance and thus contribute to reaching or maintaining favourable conservation status for a habitat." On the matter, see V. Mauerhofer, *Complement the directed: the EU's nature restoration regulations' relation to the habitats, birds, and environmental liability directives*, in *Restoration Ecology*, S1/2025, p. e70227 ff.

[56] The Habitats Directive requires that the public authorities consult the general public during this process, a requirement that the CJEU has read in conjunction with Article 6 of the Aarhus Convention. See CJEU, Judgment of the Court [GC] of 8 November 2016, case C-243/15, *Lesoochranárske zoskupenie VLK*, ECLI:EU:C:2016:838 para. 46-49.

When it comes to the arrangement for public participation in relation to specific projects requiring EIA or appropriate assessment, Member States are under a duty to ensure that "early and effective" opportunities to participate are guaranteed. The specific arrangements for participation of the public concerned in the decision-making process are determined by the proceeding authorities. Nonetheless, minimum standards are set out in the Aarhus Convention and the EIA Directive. As with arrangements for public participation in the SEA process, the public must be informed in a timely and effective manner of all information necessary to effectively contribute to the decision-making process, must be able to express their opinions and views in an effective manner by submitting in writing or at a public hearing or inquiry any comments, information, analyses or opinions that it considers relevant to the proposed activity,[57] and the public authorities must account for the public's contributions in their final determination. The standard of effectiveness here has the benefit of leaving public authorities with an ample margin to adapt arrangements to the social, cultural, or geographical context where participation takes place, even if it offers them only limited guidance on what might be needed at any given time.

Other consultation duties on specific projects may arise outside of the public participation framework, including when projects affect fundamental rights; however this matter goes beyond the scope of this brief study.[58]

The picture outlined above makes clear that legal duties to engage with the public in matters relating to nature restoration projects are im-

[57] Ibid para. 46.

[58] The European Court of Human Rights (ECtHR) has held that when projects seriously affect the enjoyment of the right to private life and home enshrined in Article 8 of the European Convention on Human Rights, public authorities may have a duty to consult with affected individuals and communities and to take their views into account. For example, see ECtHR, judgment [GC] of 8 July 2003, *Hatton and others v The United Kingdom*, app. no. 36022/97 para. 104; ECtHR, judgment of 10 November 2004, *Taşkın and others v Turkey*, app. no. 46117/99, para. 118-119; ECtHR, judgment of 28 March 2006, *Öçkan and others v Türkiye*, app. no. 46771/99 para. 43, 83. On Article 8 ECHR and public participation in decision-making, see M.E. Harris, *Public participation rights and fundamental rights in the EU*, in *Environmental sustainability as a protected collective interest in international and EU law*, G. Palmisano (ed.) Napoli, 2026, p. 557 ff.

portant but relatively limited. However, in order to engage effectively with the public and realize a "fair and cross-society" approach to implementing the NRR, efforts may be needed to go beyond strict legal requirements. The literature on the phenomenon of public engagement can offer insight into where Member States may need to make such efforts, which may imply either expanding opportunities for participation to matters where it is not mandatory by law, or modifying the arrangements for participation to ensure a more inclusive approach, such as opening up consultations beyond the "public concerned". The following section will explore the potential for public engagement beyond legal requirements in further detail, examining the benefits of broad engagement, the extent to which doing so many be legally required, and the gaps that may remain.

3. *Effective public engagement in matters related to biodiversity restoration*

3.1. *Benefits of public engagement beyond mandatory public participation*

There is a growing body of social science literature that can offer insights into the broader phenomenon of public engagement. This literature focuses not only on legally required participation procedures, but more broadly on the process by which stakeholders, other individuals, groups and/or organizations are involved, either passively or actively, in the process of public decision-making about matters that affect them.[59] This literature often refers to this process as 'public participation', but for the purposes of this study, the term 'public engagement' will be used to distinguish it from mandatory public participation procedures described in the section above.

The literature has offered various classifications of the forms of public engagement, starting with Arnstein's ladder of participation.[60] Often, scholars presume or argue that greater empowerment of stakeholders

[59] M.S. Reed et al., *A theory of participation: what makes stakeholder and public engagement in environmental management work?*, in *Restoration Ecology*, S1/2018, p. S8.

[60] S.R. Arnstein, *A Ladder Of Citizen Participation*, in *Journal of the American Institute of Planners*, 4/1969, p. 216 ff. Pretty instead classifies participation based on the degree of autonomy exercised by the participants, from manipulative participation

in decision-making is preferable, including for instrumental reasons.[61] Reed et al instead offer a purely descriptive classification of engagement mechanisms and attempts to understand what makes them effective, both in terms of substantive outcomes and in terms of public involvement.[62] They note that what level of public involvement is opportune depends on the context, and it cannot be presumed that 'higher' forms of public engagement necessarily lead to better results.[63] Moreover, the conservation or restoration objectives that plans or projects pursue are often pre-defined by law, which limits opportunities for 'higher' forms of engagement, in which both aims and measures are co-created. Because of this, both the objectives of consultations and their arrangements tend to be decided solely by public authorities, while self-organized participation is relatively rare,[64] more frequently found in strictly local matters.[65]

As for the benefits of engagement beyond minimum legal requirements, studies show that it can improve the effectiveness of public actions so long as it is well-designed to take into account contextual and institu-

– merely a pretence – to self-mobilization: J.N. PRETTY, *Participatory Learning For Sustainable Agriculture*, in *World Development*, 8/1995, p. 1247 ff.

[61] *Inter alia*, E.M. ROCHA, *A Ladder of Empowerment*, in *Journal of Planning Education and Research*, 1/1997, p. 31 ff. For example, in relation to forestry management, M.E. FERNANDES et al., *Participatory methods and approaches in the management of Mediterranean forests: a systematic literature review*, in *International Forestry Review*, 2/2024, p. 177 ff.

[62] Reed et al propose a 'wheel of participation', which classifies participation according to whether the initiative is top-down or bottom-up and what modes it takes, such as one-way communication, consultation, deliberation or co-production: M. S. REED et al., *A theory of participation: what makes stakeholder and public engagement in environmental management work?*, cit.

[63] Such benefits include providing public authorities with information, improving the quality of their decisions; increasing the credibility of public authorities and their decisions, thus improving compliance; building social capital and capacity for engagement of the participating communities: see Countryside & Community Research Institute, *The Nattergal Report on Stakeholder Engagement Best Practice for Landscape-scale Nature Recovery Projects*, Gloucestershire, 2024 p. 10-11.

[64] For example, see P. BURTON, J. MUSTELIN, *Planning for Climate Change: Is Greater Public Participation the Key to Success?*, in *Urban Policy and Research*, 4/2013, p. 399 ff.

[65] For this reason, many scholars emphasize the importance of scale in designing public engagement: see M.S. REED et al., *A theory of participation: what makes stakeholder and public engagement in environmental management work?*, cit.

tional factors.[66] This is especially critical in agricultural and marine contexts, where increasing participation in agro-environmental[67] and marine conservation schemes[68] depends on the active involvement of land managers and fishery operators. Particularly in these sectors, some scholars argue that engagement mechanisms should be institutionalized, integrating engagement practices into existing governance and decision-making structures.[69] Indeed, some observe that continuous engagement in the form of long-term partnerships with stakeholders or target communities can build their capacity to effectively interact with public authorities,[70] fostering institutional trust[71] and shifting key values.[72] As Soininen et al show, transformative change can occur in complex legal systems when public and private actors exercise collective agency, reshaping key principles and values underlying legal norms so as to promote sustainability.[73]

[66] *Inter alia*, E.J. Sterling et al., *Assessing the evidence for stakeholder engagement in biodiversity conservation*, in *Biological Conservation*, 2017, p. 159 ff.; S. Löfqvist et al., *How Social Considerations Improve the Equity and Effectiveness of Ecosystem Restoration*, in *Bioscience*, 2/2023, p. 134 ff.

[67] A. Sander et al., *Participation in individual and collective agri-environmental schemes: A synthesis using the Theory of Planned Behaviour*, in *Journal of Rural Studies*, 2024, p. 103255 ff.

[68] C.F. Gaymer et al., *Merging top-down and bottom-up approaches in marine protected areas planning: experiences from around the globe*, in *Aquatic Conservation: Marine and Freshwater Ecosystems*, S2/2014, p. 128 ff.

[69] *The Nattergal Report on Stakeholder Engagement Best Practice for Landscape-scale Nature Recovery Projects*, cit., p. 31-33.

[70] E.J. Sterling et al., *Assessing the evidence for stakeholder engagement in biodiversity conservation*, cit. p. 166; C.F. Gaymer et al., *Merging top-down and bottom-up approaches in marine protected areas planning: experiences from around the globe*, cit.

[71] A. González et al., *Empowering the public in environmental assessment: Advances or enduring challenges?*, in *Environmental Impact Assessment Review*, 2023, 107142.

[72] Indeed, Barritt argues that one of the aims of the Aarhus Convention is to promote environmental stewardship, shifting societal values in the direction of care for the environment: E. Barritt, *The Foundations of the Aarhus Convention: Environmental Democracy, Rights and Stewardship*, Oxford, 2020. For case studies, see M. Blicharska, P. Rönnbäck, *What factors enable or hinder engagement of civil society in ecosystem management? The case of 'pike factories' and wetland restoration in Sweden*, in *Journal of Environmental Planning and Management*, 5-6/2018, p. 950 ff.; S. Baumgarten et al., *Dynamics and Dependencies in Regional Collaboration for Biodiversity Restoration: Reflections from the Netherlands*, in *Environmental Management*, 2024, p. 80 ff.

[73] N. Soininen et al., *Harnessing legal system complexity for radical shifts to sustainability*, in *Nature Sustainability*, 2026, p. ff.

Ultimately, this can result in better designed, more effective agro-environmental schemes.

Given the benefits of more continuous and institutionalized engagement, both the Water Framework Directive 2000/60/EC (WFD)[74] and the Common Agricultural Policy (CAP) Strategic Plan Regulation (EU) 2021/2115[75] require Member States to create institutionalized frameworks for long-term cooperation with public and private stakeholders.[76] These partnerships offer public authorities an opportunity to collaborate with different interest groups and thus create a more balanced agricultural policy or water management plan. However, similar provisions are lacking in the NRR, leaving it each Member State to decide if institutionalizing public engagement is opportune and what form this may take, or whether to integrate nature restoration into existing cooperation mechanisms, such as those created under the CAP and the WFD.

3.2. *Risks of public engagement*

Despite the benefits of stakeholder participation in environmental governance, there are also risks when engagement is ill-designed or ineffective. Many scholars argue that public authorities should pay close attention to the socio-cultural context and power dynamics when engag-

[74] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for the Community action in the field of water policy, OJ L 327 1 of 22 December 2000.

[75] 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, OJ L 435/1 of 6 December 2021.

[76] Specifically, Article 106 of ibid provides that public authorities responsible for the preparation and implementation of CAP Strategic Plans must create partnerships with public and private stakeholders, including organizations representing agricultural producers and civil society, and involve these partners in the preparation of the draft plan: on these partnerships, see Commission Delegated Regulation (EU) 240/2014 of 7 January 2014 on the European code of conduct on partnership in the framework of the European Structural and Investment Funds, OJ L 74/1 of 14 March 2014.

ing with the groups of stakeholders, whether in the context of long-term partnerships or one-off public consultations.[77]

Other risks come with the failure to effectively communicate with participants and acknowledge their needs.[78] When conservation or restoration projects are perceived to inequitably distribute costs and benefits, or fail to respond to participant's expectations, this can increase mistrust and discourage future engagement.[79] The same can occur when engagement is followed by apparently unilateral decision-making,[80] which can also exacerbate public resistance and undermine long-term collaboration.[81] To lessen these risks, the literature suggests that public authorities should pay attention to the timing of opportunities for participation and engage with stakeholders beyond formal consultations or hearings,[82] and design arrangements to balance the power dynamics, both within the participating groups as well as between participants and public authorities.[83] They should also clarify at the outset what the legal constraints on

[77] M.S. Reed et al., *A theory of participation: what makes stakeholder and public engagement in environmental management work?*, cit.

[78] L. Bourne, *Targeted Communication: The Key to Effective Stakeholder Engagement*, in *Procedia - Social and Behavioral Sciences*, 2016, p. 431 ff.; A. González et al., *Empowering the public in environmental assessment: Advances or enduring challenges?*, cit., p. 4.

[79] M. Vespa et al., *New Process, Same Doubts: Participants' Perceptions of Strategic Environmental Assessment in Western Newfoundland*, in *Journal of Environmental Assessment Policy and Management*, 01/2017, 1750004; H. Suich, *The effectiveness of economic incentives for sustaining community based natural resource management*, in *Land Use Policy*, 2013, p. 441 ff.

[80] L. Vrieling et al., *Afraid, angry or powerless? Effects of perceived risks and trust in responsible parties on emotions towards gasquakes in the Netherlands*, in *Energy Research & Social Science*, 2021, p. 102063 ff.

[81] For this reason, some argue that the public participation and engagement, as frequently practiced, perpetuates injustices and oppression, especially on vulnerable communities: B. Cooke, U. Kothari (eds.), *Participation: the new tyranny?*, London: New York, 2001; M. Suškevičs et al., *Public participation in environmental assessments in the EU: A systematic search and qualitative synthesis of empirical scientific literature*, in *Environmental Impact Assessment Review*, 2023, 106944.

[82] M. Suškevičs et al., *Public participation in environmental assessments in the EU: A systematic search and qualitative synthesis of empirical scientific literature*, cit., p. 14.

[83] A. González et al., *Empowering the public in environmental assessment: Advances or enduring challenges?*, cit.

their decision-making are, such as mandatory provisions or objectives to be achieved, also to manage the expectations of the public.[84]

Even where opportunities are provided, there are multiple reasons that stakeholders may fail to engage with public authorities in matters related to biodiversity conservation and restoration. Strategic planning, in particular, is notoriously complex: often, the knowledge required to engage in consultations on these instruments is such that only industry groups and specialized environmental associations are able to effectively contribute.[85] Thus, the tendency to adopt an integrated approach to resource management – generally more effective in ensuring regulatory coherence[86] – can have the drawback of reducing the effectiveness of public engagement. In these cases, more targeted efforts to inform the public in an appropriate manner about the value of participation and the relevance of the matters subject to the decision-making processes may aid in encouraging broader participation, as can simplified information or arrangements for contributions.[87]

Context-sensitive public engagement should also take into account barriers to participation that may be present, especially those faced by

[84] G. Stoeglehner et al., *SEA and planning: 'ownership' of strategic environmental assessment by the planners is the key to its effectiveness*, in *Impact Assessment and Project Appraisal*, 2/2009, p. 111 ff.

[85] R. Therivel, A. González, *Introducing SEA effectiveness*, in *Impact Assessment and Project Appraisal*, 3-4/2019, p. 181 ff.; A. González et al., *Public engagement in strategic environmental assessment: What does it take?*, in *Journal of Environmental Planning and Management*, 2025, p. 1 ff.

[86] L. De Vito et al., *Implementing the water framework directive and tackling diffuse pollution from agriculture: Lessons from England and Scotland*, in *Water (Switzerland)*, 1/2020, p. 244 ff.

[87] A. González et al., *Public engagement in strategic environmental assessment: What does it take?*, cit., p. 17. Some literature notes the key role that mediators or "boundary-spanners" can play in communicating with communities that otherwise distrust either the public authorities involved or the information they wish to communicate: see H. Bressers, K.R.D. Lulofs (eds.), *Governance and Complexity in Water Management: Creating Cooperation through Boundary Spanning Strategies*, Cheltenham, 2010; S. Baumgarten et al., *Dynamics and Dependencies in Regional Collaboration for Biodiversity Restoration: Reflections from the Netherlands*, cit. Such is the case when groups are generally distrustful of scientific knowledge: B. Wynne, *Misunderstood misunderstanding: social identities and public uptake of science*, in *Public Understanding of Science*, 3/1992, p. 281 ff.

marginalized groups.[88] It is well-documented that public consultations tend to draw greater input from certain groups – e.g. persons with strong opposition to proposals, those with higher education, the well-connected, property owners, etc. – with the result that in some contexts greater opportunities for public input can worsen environmental inequality and injustice.[89] For example, socio-economic factors and age can be determinative of who participates and who does not,[90] including due to the fact that highly unequal socio-economic contexts can be characterized by power imbalances that depress democratic participation in general.[91] Thus, careful attention to the context in which participation or engagement takes place is essential to guarantee its effectiveness.

Despite this, neither the Aarhus Convention nor the SEA or EIA Directives expressly require public authorities to ensure that all potentially interested groups enjoy equal opportunities to be heard. In the case of the NRR, it is true that the regulation specifically calls for a "fair and cross-society" approach in its preambular text, and the Commission may decide to take this into account when assessing the NRPs of the Mem-

[88] M. Suškevičs et al., *Public participation in environmental assessments in the EU: A systematic search and qualitative synthesis of empirical scientific literature*, cit. In relation to agricultural operators specifically, see P. Hurley et al., *Co-designing the environmental land management scheme in England: The why, who and how of engaging 'harder to reach' stakeholders*, in *People and Nature*, 3/2022, p. 744 ff.

[89] This phenomenon was dubbed the 'Aarhus paradox' by Squintani: L. Squintani, *The Aarhus Paradox: Time to Speak about Equal Opportunities in Environmental Governance*, in *Journal for European Environmental & Planning Law*, 1/2017, p. 3 ff. On the phenomenon, see L. Squintani, H. Schoukens, *Towards equal opportunities in public participation in environmental matters in the European Union*, in *Managing Facts and Feelings in Environmental Governance*, L. Squintani et al. (eds.), Cheltenham, 2019, p. 22 ff.; M.E. Harris, *Environmental Rights and Equality in the EU: Addressing the Aarhus Paradox*, cit., pp. 27-31.

[90] Why this may be so depends on contextual factors: it could be that higher socio-economic status is correlated with different social capital, civic culture, knowledge, or trust in institutions. For examples among fishery operators, see M. Baker-Médard et al., *Classed conservation: Socio-economic drivers of participation in marine resource management*, in *Environmental Science & Policy*, 2021, p. 156 ff.; D. Marzo et al., *Drivers of Small-Scale Fishers' Acceptability across Mediterranean Marine Protected Areas at Different Stages of Establishment*, cit.

[91] J. Marquardt et al., *Reconciling democracy and sustainability: three political challenges and the role of democratic innovations*, in *Sustainability: Science, Practice and Policy*, 1/2025, p. 11-12.

ber States. Nonetheless, there is no clear definition of what such an approach entails; moreover, as part of the preambular text, it may be drawn upon for interpreting the substantive provisions of the regulation but is non-binding in itself.[92] Unfortunately, the lack of specific provisions on public participation in the NRR makes it difficult to argue that the regulation holds Member States to guarantee equally effective engagement and participation opportunities for all.

Nonetheless, there may be other legal bases for supporting such an approach. For one, EU law and the Aarhus Convention specifically call for "effective" participation. Therefore, Member States should not adopt arrangements for participation that practically exclude the contributions of key stakeholders.[93] As for barriers faced by certain groups, Article 3(2) of the Aarhus Convention holds public authorities to "endeavour to ensure" that assistance and guidance is provided to the public in order to facilitate their participation in decision-making processes. While this language suggests it is an obligation of best efforts, not of results,[94] it nevertheless should influence how public authorities approach public participation. As shown by Betti in this collection,[95] the fulfilment of best-efforts obligations is assessed according to a standard of diligence, which would require a prior needs assessment. Thus, Member States must, at the least, seek to identify groups of stakeholders that are potentially in need of guidance and assistance so as to enable them to participate in decision-making procedures affecting them. In practice, small-scale

[92] CJEU, Judgment of 19 November 1998, case C-162/97, *Nilsson and Others*, ECLI:EU:C:1998:554, para. 54; CJEU, Judgment [GC] of 19 December 2019, case C-418/18 P, *Puppinck and Others v Commission*, ECLI:EU:C:2019:1113, para. 76. As Klimas and Vaičiukaitė argue, recitals may be drawn upon to limit the meaning of ambiguous terms, but cannot be used against provisions whose meaning is clear: T. Klimas, J. Vaičiukaitė, *The Law of Recitals in European Community Legislation*, in *ILSA Journal of International and Comparative Law*, 1/2008, p. 1 ff.

[93] To this end, the 2015 Maastricht Recommendations, while non-binding in themselves, offer more specific guidance on how to adopt arrangements to a broader and more inclusive public participation in decision-making: see UNECE, *Maastricht Recommendations on Promoting Effective Public Participation in Decision-making in Environmental Matters prepared under the Aarhus Convention*, Geneva, 2015.

[94] M.E. Harris, *Environmental Rights and Equality in the EU: Addressing the Aarhus Paradox*, cit., p. 97.

[95] See contribution by A. Betti in this collection.

farmers and fishery operators are among the communities that are often "hard to reach" and may thus require special assistance and guidance to effectively engage.[96] As key stakeholders for the success of biodiversity restoration, Member States should consider whether Article 3(2) of the Aarhus Convention may require them to intervene to facilitate their effective participation.

3.3. *Public engagement as a means to ensure the effective implementation of nature restoration duties*

In the end, the strongest legal argument for going beyond minimum public participation requirements in implementing the NRR may be the need to guarantee the effective achievement of the substantive results it prescribes. Under EU law, Member States have a duty, based on the principle of primacy and sincere cooperation, to ensure that they comply with EU environmental law; if they do not, they risk the initiation of infringement proceedings by the Commission.[97] For the CJEU, there are only a limited number of potential defences that a Member State accused of infringing their duties may invoke. In particular, the Court has occasionally accepted defences relating to *force majeure*, understood as abnormal and unforeseeable circumstances outside the control of the party by whom it is pleaded and the consequences of which could not have been avoided by the exercise of all due care,[98] so long as public authorities act with diligence to put an end to the crisis.[99] However, the CJEU has held that generally Member States cannot invoke provisions, practices or situations prevailing in its domestic legal order – including the fact that responsibility has

[96] For example, see P. Hurley et al., *Co-designing the environmental land management scheme in England: The why, who and how of engaging 'harder to reach' stakeholders*, cit.

[97] Indeed, a significant proportion of infringement proceedings have arisen in the area of EU environmental law: see updated statistics available at https://ec.europa.eu/implementing-eu-law/member-state-infringement-cases/en.

[98] CJEU, Judgment of 25 January 2017, case C-640/15, *Vilkas*, ECLI:EU:C:2017:39 para. 53.

[99] CJEU, Judgment of 4 March 2010, case C-297/08, *Commission v Italy*, ECLI:EU:C:2010:115 para. 47-48.

been delegated to subnational authorities[100] – to justify its failure to observe obligations arising under EU law.[101]

The NRR contains several different types of substantive targets for restoration of habitats and ecosystems, which have different implications for public participation and engagement and the efforts needed to avoid infringing EU law. First, habitat-restoration targets set out in Articles 4 and 5 NRR require Member States to restore certain degraded habitats in terrestrial and marine areas. In regard to these targets, while Member States must put in place measures that are *adequate* to reaching good condition, they do not necessarily have to be the *most effective possible* measures. In other words, Member States have some flexibility to choose a slower or less efficient pathway to good condition, so long as there is progressive improvement of the habitat under restoration in accordance with Article 4(17) NRR. Thus, even if greater public engagement would accelerate the timeframe for the achievement of good condition (es. by improving compliance or expanding participation in voluntary schemes), it cannot be argued that Member States are under a duty to do so as a matter of course.

Second, the NRR requires Member States to reach specific targets in relation to indicators of ecosystem health, such as halting the decline of pollinator populations by 2030[102] and showing improvements in the common farmland and forest bird indices until a satisfactory level is reached.[103] Here, Member States's minimum efforts are not enough: they must reach these targets, measured objectively, save situations of *force majeure*. If the literature offers evidence that improvements in these ecosystems only result from the combination of appropriate policy and effective stakeholder engagement, then an argument can be made that restoration measures without engagement are ineffective and thus not in compliance with the Member States' duties under the NRR. If so, then Member States must seek opportunities to engage with the stakeholders

[100] CJEU, Judgment [GC] of 2 December 2014, case C-378/13, *Commission v Greece*, ECLI:EU:C:2014:2405 para 29.

[101] CJEU, Judgment [GC] of 12 November 2019, case C-261/18, *Commission v Ireland (Derrybrien Wind Farm)*, ECLI:EU:C:2019:955 para. 89.

[102] Article 10 NRR.

[103] Article 11(3) and Article 12(2) NRR respectively.

in order to guarantee the effectiveness of the NRR, whether or not public participation was legally required in the matters concerned.[104]

Moreover, the NRR implicitly encourages Member States to engage with the public in gathering data related to specific ecosystem indicators, especially the grassland butterfly index.[105] It thus showcases how public authorities can collaborate with the public in carrying out ecosystem restoration, educating them on pollinators and the ecological value of grassland habitats while at the same time acquiring critical information that would be otherwise costly to collect. Similarly, the common birds used in the indices for assessing the health of agricultural and forest lands can be identified also by non-scientists, again offering an opportunity for educating the public about ecosystems. Ideally, raising awareness of common birds can lead to opportunities to co-design programmes with land managers for increasing bird numbers or nesting sites in their lands,[106] such as in the form of results-based schemes.[107]

Existing long-term partnerships established under the CAP and the WFD offer a logical basis for starting such collaboration and engagement efforts. However, there is a risk here that participation may remain the exclusive domain of the "usual subjects", essentially undermining its transformational potential.[108] Therefore, collaboration with partners should not exclude other parties that may also be interested in biodiversity restoration measures under discussion. In addition, public authorities currently in charge of these partnerships should also take ownership

[104] This is also recognized in the Preamble of the NRR (para. 56): "Member States should meet those targets by putting in place effective restoration measures on farmland, working with and supporting farmers and other stakeholders for their design and implementation on the ground."

[105] See contribution by S. KALDERS in this collection.

[106] On the value of co-designing agro-environmental schemes, see J. WESTERINK et al., *Collaborative governance arrangements to deliver spatially coordinated agri-environmental management*, in *Land Use Policy*, 2017, p. 176 ff.

[107] Institute for European Environmental Policy, *Results-based Payments for Biodiversity Guidance Handbook: Designing and implementing results-based agri-environment schemes 2014-20*, London, 2014.

[108] R.M. COLVIN et al., *Approaches to identifying stakeholders in environmental management: Insights from practitioners to go beyond the 'usual suspects'*, in *Land Use Policy*, 2016, p. 266 ff.; E.J. STERLING et al., *Assessing the evidence for stakeholder engagement in biodiversity conservation*, cit., p. 166.

over the achievement of targets imposed by the NRR in agricultural and freshwater areas.[109] This would be facilitated were Member States to explicitly delegate the responsibility for achieving NRR objectives to these authorities. The next Multiannual Financial Framework 2028-2034[110] and the new CAP connected to the same – which will be implemented through National and Regional Partnership Plans – may offer an important opportunity to clarify the responsibilities of regional and subregional authorities with regard to nature restoration, and to ensure they have the resources they need to fulfil their role.[111]

Other formal and informal collaborations between public authorities and stakeholders in nature restoration may exist in relation to interests such as recreation (hunting, fishing) or economic activities (tourism). Even if basing biodiversity engagement on existing groups alone can have its drawbacks, as discussed above, it is precisely within this kind of long-term collaboration that culture and values can be shifted. The potential for these relationships to offer a starting point for effective engagement merits further study.

4. *Conclusions*

The legal framework has an important role to play in catalysing institutional and cultural change.[112] As biodiversity conservation and restoration requires broad shifts in how public authorities and economic operators approach natural resources, it is critical to understand the extent to which the law, as it stands, is fit for purpose and where it holds hidden

[109] On the importance of public authorities taking ownership in environmental planning, see G. STOEGLEHNER et al., *SEA and planning: 'ownership' of strategic environmental assessment by the planners is the key to its effectiveness*, cit.

[110] Proposal for a Regulation of the European Parliament and of the Council establishing the European Fund for economic, social and territorial cohesion, agriculture and rural, fisheries and maritime, prosperity and security for the period 2028-2034 and amending Regulation (EU) 2023/955 and Regulation (EU, Euratom) 2024/2509, COM(2025) 565 final of 16 July 2025.

[111] Proposal for a Regulation of the European Parliament and of the Council establishing the conditions for the implementation of the Union support to the Common Agriculture Policy for the period from 2028 to 2034, COM(2025) 560 final of 16 July 2025.

[112] L.M. FRIEDMAN, *Impact: How Law Affects Behavior*, Cambridge, Massachusetts, 2016.

potential to trigger transformation changes to sustainability.[113] It is here argued that the current framework on public participation in EU law is of great value, but gaps remain between public participation rules and the degree of engagement that is needed to effectively achieve the NRR's targets in a way that is fair and broadly-shared. As this study has shown, the current legal framework requires public participation only in connection with specific plans and projects and entails exchange that is limited in time and scope. Nonetheless, where participation is required, EU law holds authorities to engage with the public concerned in a manner that is early and effective, and possibly to provide guidance and assistance to groups facing special barriers to participation.

While formal participation is certainly important, efforts to expand public engagement beyond legal minimums may be necessary to achieve the NRR's substantive targets, as well-designed and context-responsive arrangements for participation can bring concrete benefits, in terms of ecological, cultural and social impacts. In particular, long-term collaboration with key communities can help bring about cultural changes, fostering acceptance and compliance. Existing institutionalized public engagement mechanisms found in the WFD and CAP frameworks may be a starting point for such efforts. For programmes of measures that depend on the involvement of stakeholders for their implementation – such as agro-environmental schemes – engagement may be necessary to ensure broad and active participation in measures and thus the achievement of legally binding targets. Other measures may be needed in contexts where such mechanisms do not exist, such as in the fisheries sector.

However, the need for effective public engagement in biodiversity restoration efforts raises a structural issue with the NRR: the disconnect between EU targets – set at a national level – and the scale of action where such collaboration is needed.[114] If public engagement at a local scale is necessary to effectively reach a Member State's targets, subna-

[113] N. Soininen et al., *Harnessing legal system complexity for radical shifts to sustainability*, cit. An example of legal 'nodes' described by Soininen et al that may enable transformation changes in relation to biodiversity governance could be the requirement of effectiveness in public participation rules, or Article 3(2) of the Aarhus Convention, discussed above.

[114] M.E. Harris, E. Ciscato, *Upscaling nature restoration in Italy: Barriers and facilitators*, cit.

tional authorities need both sufficient resources to carry it out as well as the responsibility, or at the least sufficient incentives, to do so.

Overall, the NRR offers a real opportunity to reshape the relationship between European society and its environment, not only confronting biodiversity loss but also improving Europe's climate resilience and long-term food security. The current legal framework on public participation offers a solid basis for involving the public in this transformation, but gaps remain, in particular when it comes to engagement beyond decision-making processes and ensuring that all parts of the public concerned are able to equally and effectively engage in matters concerning biodiversity restoration. This must be guaranteed in order to ensure that efforts to halt biodiversity loss are truly fair, broadly-supported and effective in the long term.

ABSTRACT

Public participation – Nature Restoration Regulation
Environmental impact assessment
Public engagement – 1998 Aarhus Convention

The Nature Restoration Regulation (EU) 2024/1991 (NRR) calls for a "fair and cross-society" approach to public participation, yet it provides only limited guidance on how this should be done. This article clarifies the legal framework governing public participation in this area, starting with the 1998 Aarhus Convention, the Habitats Directive, and the EIA and SEA Directives, and identifies where further efforts may be needed to ensure that biodiversity restoration efforts are effective and widely supported. First, it reconstructs the current legal framework on public participation in relation to plans and projects implementing the NRR. Next, drawing upon governance literature, it explores the potential benefits of broader public engagement in biodiversity conservation or restoration matters, along with the risks of ill-designed or ineffective engagement. It argues that going beyond legal minimums may not only be beneficial but, in respect of certain binding ecosystem targets, legally compelled. Ultimately, the article argues that even if the legal framework on participation may favour broad and inclusive participation, public authorities must be empowered to go beyond legal minimums and must be given ownership over the Union's biodiversity goals at a local scale.

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NATURE RESTORATION AND EU STATE AID LAW

Summary: 1. Introduction. – 2. The prohibition of State aid and its exceptions. – 3. The assessment of the aid measure: incentive effect, proportionality and balancing test. – 4. Nature restoration and the notion of "State aid". – 4.1. Aid for nature restoration and block exemption regulations. – 4.2. Nature restoration and the General Block Exemption Regulation ("GBER"). – 4.3. Nature restoration and the Environmental Guidelines ("CEEAG"). – 4.4. Nature restoration and agricultural subsidies in the context of the Common Agricultural Policy (CAP). – 4.5. Nature restoration and the Agricultural and Forestry Block Exemption Regulation ("ABER"). – 4.6. Nature restoration and the Agricultural and Forestry Guidelines ("AFG"): the measures applicable to the agricultural sector… – 4.7. …and to the forestry one – 4.8. Nature restoration and State aid for the Fishery and Aquaculture sector. – 5. Nature restoration as a service of general economic interest (SGEI)? – 6. Conclusions.

1. *Introduction*

Nature conservation is not new as an objective of EU law and policy. Since the very beginning of EU environmental policy, EU adopted measures aimed at protecting nature such as the Habitats directive,[1] and

* While the contribution is the result of an academic project shared by the authors, § 1, 2, 3, 4, 6 are attributed to Chiara Cellerino, § 4.1, 4.2, 4.3, 4.4., 4.5, 4.6, 4.7, 4.8 are attributed to Mario Barbano.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora OJ L 206, 22 July 1992, p. 7.

the Birds protection directive.[2] Several other pieces of EU legislation followed, with a view to impose to Member States obligations to protect nature and reduce pollution. Their effectiveness, however, has not been fully satisfactory for several reasons, which we cannot explore in this context. In any case, today, the need to intervene is somehow even more compelling, if one considers that, according to experts, and despite the prolific legislation in place, Europe's nature is in alarming decline, with more than 80% of habitats in poor condition.[3] This also justifies a shift from a language based on nature "conservation" to one based on nature "restoration", as enshrined in the recently adopted regulation (EU) 2024/1991 of 24 June 2024 on nature restoration (hereinafter, "Nature Restoration Regulation" or "NRR").[4] This is the main piece of legislation aiming to address these preoccupations, by setting particularly ambitious targets and timeframes on member States, in terms of restoration measure addressed to ecosystems both already protected by EU law (such as Natura 2000 sites) and not (e.g., urban ecosystems).[5]

[2] Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds OJ L 20, 26 Jan. 2010, p. 7.

[3] See European Commission website: https://environment.ec.europa.eu/ topics/ nature-and-biodiversity/ nature-restoration-regulation_en.

[4] According to Article 3.3 Regulation (EU) 2024/1991 of 24 June 2024 on nature restoration, OJ L, 2024/1991 "'restoration' means the process of actively or passively assisting the recovery of an ecosystem in order to improve its structure and functions, with the aim of conserving or enhancing biodiversity and ecosystem resilience, through improving an area of a habitat type to good condition, re-establishing favourable reference area, and improving a habitat of a species to sufficient quality and quantity." The Nature Restoration Regulation implements the EU biodiversity strategy 2030, as a fundamental part of the European Green deal. Action in the field of biodiversity is also imposed by EU and the member States international obligations, as deriving from the Convention on Biological Diversity, to which both EU and the MS are parties, and the Global Biodiversity Framework, adopted at the fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity on 7-19 December 2022, setting out action-oriented global targets for urgent action over the decade to 2030.

[5] In particular, it sets a framework within which Member States shall put in place effective and area-based restoration measures with the aim to jointly restore, as a Union target, at least 20% of land areas and at least 20% of sea areas by 2030, and all ecosystems in need of restoration by 2050. The Regulation establishes restoration obligations per each ecosystem type, to be further specified by Member States within their National Restoration Plans (NRPs). NRP must be submitted to the European Commission by September 1, 2026. E.g., restoration measures for terrestrial ecosystems must cover an

There is little doubt that achieving the targets set by the Nature restoration regulation requires substantial financial resources. Within their National Restoration Plans, Member States are expected to identify the sources of funding that will support restoration measures, including EU funding, national public resources, and where appropriate, private finance. The plans should explain how different funding streams will be coordinated and how financial resources will be used in a cost-effective and targeted manner. This approach reflects a broader EU policy trend towards the mainstreaming of biodiversity objectives across public spending, rather than confining them to a single budget line.

The research analyses how State-funded nature restoration activities can be framed under the applicable EU State aid rules. Firstly, the article provides an overview of State aid prohibition and relevant exemptions (§ 2), as well as of the key features of the Commission's compatibility assessment (§ 3). The analysis then addresses the cases whereby a nature restoration measure may not fall under the notion of aid (§ 4.1), as well as the measures that qualify as State aid but may be nevertheless exempted from the prohibition. Both horizontal and sectoral exemptions are examined in light of the EU jurisprudence and Commission's guidance, with a specific focus on those applicable to agriculture, forestry, fishery and aquaculture sectors (§§ 4, 4.1, 4.2, 4.3, 4.4., 4.5, 4.6, 4.7, 4.8). Subsequently, the potential of qualifying nature restoration activities as Services of General Economic Interest (SGEI) within the EU legal order is explored, taking stock of the CJEU case-law on aid for biodiversity conservation and suggesting its extension to ecosystem services (§ 5). In conclusion, the article stresses the need for applying State aid rules to nature restoration initiatives in line with the solidarity principle and that of integration of environmental protection into other EU policies (§ 6).

area of habitats listed in Annex I that is not in good condition equal to at least 30% by 2030 (then 60% by 2040 and 90% by 2050). Restoration of Natura 2000 sites may be given priority until 2030. Once such habitats have reached a good status, Member States put in place measures to ensure that areas "do not deteriorate significantly" (so-called non-deterioration obligation established in art. 4.11, second indent of the Nature restoration regulation): see contribution by BETTI in this collection. A similar approach applies to maritime ecosystems.

2. *The prohibition of State aid and its exceptions*

EU state aid control is a central component of EU competition policy. Because subsidies granted by Member States can give certain market operators an artificial advantage over competitors in other Member States, the Treaty on the Functioning of the European Union (TFEU) establishes a general prohibition on state aid that distorts competition and affects intra-EU trade. A State aid is generally prohibited if it is granted by the state or through state resources, it confers a selective advantage on certain undertakings, it distorts or threatens to distort competition, it affects trade between Member States.

This prohibition, laid down in Article 107(1) TFEU, is deliberately broad and captures a wide range of financial interventions, from direct grants and tax exemptions to guarantees and preferential loans.

At the same time, EU state aid control is not absolute. The Treaties recognise that, in certain circumstances, public intervention may be both legitimate and desirable. Articles 107(2) and 107(3) TFEU therefore provide for a series of exceptions, allowing aid that pursues objectives of common interest, provided that it is necessary, proportionate, and does not unduly distort competition.

In particular, the derogations provided for in Article 107(2) and (3) TFEU create significant normative leeway for Member States to deploy public spending policies in support of objectives of general interest, including environmental ones. The recognition, at Treaty level, of the legitimacy of public financial intervention aimed at pursuing such broadly defined general interests has in turn given rise to the notion of so-called "good aid", that is, aid measures deemed compatible with the internal market precisely because of the public interest objectives they serve.[6]

More precisely, under Article 107(2) TFEU, some types of aid are considered always compatible with the internal market. These include social aid granted to consumers, provided it is not discriminatory on the origin of the goods, aid to compensate damage from natural disasters or

[6] F. Munari, C. Cellerino, *Art. 107 TFEU*, in A. Tizzano (ed.), *Trattati dell'Unione Europea*, 2nd ed., Milan, 2014, p. 1073.; V. Di Bucci, *The Modernisation of State Aid Control and Its Objectives: Clarity, Relevance, Effectiveness*, cit.

exceptional occurrences, aid to the economy of certain areas of Germany affected by the former division of the country.

Under art. 107(3), other types of aid measures can be declared compatible with the internal market, after due assessment by the European Commission. These include aid to promote regional development in disadvantaged areas (art. 107(3), letter a) TFEU), aid to support Important Projects of Common European Interest (hereinafter, "IPCEI") or to remedy serious economic disturbances in a Member State (art. 107(3), lett. b) TFEU), aid to develop certain economic activities "*where such aid does not adversely affect trading conditions to an extent contrary to the common interest*" (art. 107(3), lett. c) TFEU), aid to promote culture and heritage conservation (art. 107(3), lett. d)), other categories of aid that may be specified by the Council (art. 107(3), lett. e) TFEU).

Pursuant to Article 108(3) TFEU, Member States must notify any new measure that may fall under the aid prohibition and cannot proceed without the Commission's prior authorization declaring whether the measure in question falls under the derogations above ('standstill clause'). Only certain categories of aid may be exempted from the notification requirement, provided that they fulfil the conditions laid down by Commission's regulations adopted under Article 108(4) TFEU (i.e., block exemption regulations, see, *infra*, § 4.1).[7]

With specific regard to environmental objectives, State aid measures are generally justified under the exceptions provided for in Article 107(3)(c) TFEU and, more recently, under Article 107(3)(b) TFEU. Over time, these Treaty-based derogations have been progressively clarified and operationalised through secondary legislation and soft law instruments, with the aim of exempting certain categories of aid from notification requirements or, more broadly, facilitating Member States' task in designing aid measures that pursue legitimate objectives, while at the same time streamlining the Commission's compatibility assessment. For our purposes, particular reference should be made to the 2022 Guidelines on State aid for climate, environmental protection and energy (hereinafter

[7] Council Regulation (EU) 2015/1588 of 13 July 2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid OJ L 248, 24 September 2015, p. 1.

also referred to as the "Environmental Guidelines" or the "CEEAG"[8]), the Guidelines for State aid in the agricultural and forestry sectors and in rural areas (hereinafter also the "Agricultural and Forestry Guidelines"[9]), as well as the General Block Exemption regulation[10] and the Agricultural Block exemption regulation.[11] The legal framework arising from the above-mentioned instruments must be coordinated also with the Common Agricultural Policy framework, which allows to mobilize investments both at EU and at Member States level and has significant implications for environmental objectives.[12]

[8] Communication from the Commission, Guidelines on State aid for climate, environmental protection and energy, 18.2.2022, pp. 1-89 (CEEAG). On these guidelines, see R. Baratta, *Aiuti di Stato e fragilità ambientali: i nuovi orientamenti della Commissione*, in *Diritto e Società*, 2022, p. 517 ff.; A Metaxas, *The new State Aid Guidelines on Climate, Environmental Protection and Energy: what changes do they bring?*, in L. Hancher and I. Herrera Anchustegui (eds.), *Research Handbook on EU Competition Law and the Energy Transition*, Cheltenham, 2024; T.G. Iliopoulos, *State aid assessment for renewable energy support schemes: deconstructing the Guidelines on State aid for Climate, Environmental Protection and Energy, in view of the recent major crises*, in *Review of European Administrative Law*, 2024, p. 45 ff. For an overview on the interplay between competition law and environmental sustainability, see C. Muraca, *Tutela della concorrenza e sostenibilità ambientale: un dialogo difficile ma necessario*, in *Rivista della regolazione dei mercati*, 2021, p. 70 ff.

[9] Communication from the Commission, Guidelines for State aid in the agricultural and forestry sectors and in rural areas, 21 December 2022, pp. 1-90.

[10] Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ L 187, 26 June 2014, pp. 1-78.

[11] Commission Regulation (EU) 2022/2472 of 14 December 2022 declaring certain categories of aid in the agricultural and forestry sectors and in rural areas compatible with the internal market in application of Articles 107 and 108 of the Treaty on the Functioning of the European Union, OJ L 327, 21 December 2022, pp. 1-81.

[12] Regulation (EU) 2021/2116 of the European Parliament and of the Council of 2 December 2021 on the financing, management and monitoring of the common agricultural policy and repealing Regulation (EU) No 1306/2013; 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 and connected legal acts, OJ L 435/1 of 6 December 2021.

3. *The assessment of the aid measure: incentive effect, proportionality and balancing test*

The compatibility assessment under Article 107(3)(c) TFEU requires the Commission to verify, first, whether the aid facilitates the development of certain economic activities (the positive condition) and, second, whether it affects trading conditions to an extent contrary to the common interest (the negative condition). Environmental considerations may influence this assessment, most notably in relation to the identification and evaluation of the elements of "common interest."

As regards the positive condition, the Commission must, in the first place, identify the economic activity facilitated by the measure, assess its positive effects for society at large, and determine its relevance considering specific EU policy objectives. A measure is regarded as facilitating an economic activity only if it produces an incentive effect. Such an effect is present where the aid induces the beneficiary to change its behaviour by engaging in additional economic activity, or in economic activity that is more environmentally sustainable, which it would not undertake in the absence of the aid or would pursue only in a more limited or different form. Consequently, the aid must not merely subsidise costs that the beneficiary would have incurred in any event, nor may it compensate for the normal commercial risks inherent in an economic activity.[13]

Turning to the negative condition, the Commission examines whether the aid is justified in light of the need for State intervention, as well as its appropriateness, proportionality, transparency, and its ability to avoid undue distortions of competition and trade. In particular, the proposed measure must be targeted at situations in which it can bring about a material development that the market alone is unable to deliver, for example by addressing market failures affecting the activities supported (the necessity of the aid). An aid is considered proportionate where the amount granted to each beneficiary is limited to the minimum necessary to enable the implementation of the aided project or activity.[14]

[13] Guidelines on State aid for climate, environmental protection and energy, cit.

[14] *Ivi*, par. 34.

As a final step, the Commission is required to balance the identified negative effects on competition and trade against the positive effects of the aid on the supported economic activities.

4. *Nature restoration and the notion of "State aid"*

Regarding the very notion of State aid, it is well established that the EU State aid rules apply only to "undertakings", broadly defined as any entity engaged in an economic activity, irrespective of its legal status or the way in which it is financed. Public bodies may be regarded as undertakings where they offer goods or services on a market. From this perspective, a key issue in nature restoration is whether the beneficiaries of public funding aimed at supporting or incentivising environmentally beneficial activities can be qualified as undertakings. While there is little doubt that this is the case where aid is granted to industrial operators – for example, to support the decarbonisation of production or improvements in energy efficiency – the application of the concept becomes more complex in other contexts. This is particularly true where the beneficiary carries out activities that are beneficial to the environment but do not necessarily involve market participation, such as, indeed, certain forms of nature conservation. In such cases, the qualification of the activity carried out by the beneficiary as economic or non-economic becomes a crucial factor in determining the applicability of State aid prohibition.

The Commission and the Court have long acknowledged that nature conservation activities, accessible to the general public free of charge, can be considered solely of a social and cultural nature and do not amount to economic activity.[15] This has led the Commission, in some cases, to exclude the existence of a state aid for measures aimed to support nature conservation projects. For example, in two decisions of 2017, the Commission acknowledged that a German measure relating to 100% support funding for basic protection and management activities in rural areas concerning nature conservation and landscape maintenance**,** carried out by non-profit private law legal entities or

[15] CJEU, 12 September 2013, Case T-347/09, *Commission v. Germany*.

public bodies responsible for the management of sites, were not to be considered as state aid, since no economic activity was taking place.[16] Tellingly, the nominal fee, exceptionally required from the public to access the areas and covering only a fraction of the true costs of management and conservation, was not considered a remuneration for the services provided and, therefore, did not affect the qualification of the activity as non-economic.

However, in other cases involving similar conservation projects, beneficiaries were considered undertakings, in view of economic activities carried out in connection with land conservation, such as wood sale, fishing and hunting charges.[17] As explained in more details below, other types of reasonings may apply in these cases (*infra*, § 5) and the approach taken by the Commission in the assessment of the nature of the activities carried out by the beneficiary can determine very relevant consequences on the assessment of subsidy and on its compatibility with the Treaties.

4.1. *Aid for nature restoration and block exemption regulations*

As anticipated above (§ 2), aid measures that meet certain conditions set out *ex ante* by the Commission can be implemented immediately by Member States, without application of the stand-still clause.[18] This simplification allows the Commission to focus on the measures that require deeper analysis due to their intensity (i.e., economic value) and overall impact on the internal market. As a result, aid awarded under block exemption provisions currently accounts for 36% of the total aid expenditure and 87% of all active State aid measures.[19]

[16] *Commission/Germany* SA.456445 and SA.46073. See, on these cases, P. Nicolaides, *Public Support for Nature Conservation is not State Aid*, 25 April 2017, available at www.lexxion.eu.

[17] See, for example, *Commission/Germany*, NN 8/2009.

[18] In detail, see, recently, E. Gambaro, *Derogations: Mandatory and Discretionary Exemptions - GBER - State Aids in Times of Crisis - The Temporary Framework*, in A. Santa Maria (ed.), *Competition and State Aid*, 3rd ed., Alphen aan den Rijn, 2025, p. 82 ff.; N. Landi, *Le deroghe al principio generale d'incompatibilità ex art. 107 §§ 2 e 3 TFUE e Regolamenti di esenzione per categoria*, in L.F. Pace (ed.), *Dizionario sistematico del diritto italiano e della concorrenza*, vol. 2, Roma, 2026, p. 39 ff.

[19] Commission, 2025 State aid Scoreboard, 15 January 2026, p. 7, at https://competition-policy.ec.europa.eu/state-aid/scoreboard_en.

Block exemptions are provided by a horizontal regime, namely the General Block Exemption Regulation (EU) 2014/651 ("GBER")[20], as well as by sector-specific regulations, including the Agricultural Block Exemption Regulation (EU) 2022/2472 ("ABER")[21] and the Fishery Block Exemption Regulation (EU) 2022/2473 ("FIBER").[22] All of the three above were amended in 2023 to align them with the European Green Deal objectives and contain specific provisions on nature restoration.

Within the relevant block exemption regime, the state measure shall meet its general requirements as well as the specific conditions of the applicable aid category. Nevertheless, the Member State concerned is required to ensure transparency by providing to the public essential information on the aid awarded (expenditure, beneficiaries, etc.).

In light of the above, is worth examining block exemption regimes that play a role in nature restoration, together with the relevant Commission's guidelines that apply in case the notification threshold is not met and thus the Commission's compatibility assessment is needed.

4.2. *Nature restoration and the General Block Exemption Regulation ("GBER")*

Section 7 of GBER exempts from notification requirement certain aid measures under Article 107(3)(c) TFEU aiming at environmental protection,[23] i.e., any action designed to reduce or prevent pollution and

[20] Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ L 187, 26 June 2014, pp. 1-78. On the topic, see: K. VAN BUIREN, A. ROSE, *The General Block Exemption Regulation*, in P. WERNER, V. VEROUDEN (eds), *EU State Aid Control: Law and Economics*, 2nd ed., Alphen aan den Rijn, 2025, p. 303 ff.

[21] Commission Regulation (EU) 2022/2472 of 14 December 2022 declaring certain categories of aid in the agricultural and forestry sectors and in rural areas compatible with the internal market in application of Articles 107 and 108 of the Treaty on the Functioning of the European Union, OJ L 327, 21 December 2022, pp. 1-81.

[22] Commission Regulation (EU) 2022/2473 of 14 December 2022 declaring certain categories of aid to undertakings active in the production, processing and marketing of fishery and aquaculture products compatible with the internal market in application of Articles 107 and 108 of the Treaty on the Functioning of the European Union, OJ L 327, 21 Dcember 2022, pp. 82-139.

[23] Articles 36 ff. GBER, cit. On the State aid law regime applicable to environmental aid under the GBER, see: L.SAURI ROMERO, K. STRUCKMANN, *Climate, Environ-*

damage to ecosystems, including measures "to protect and restore biodiversity."[24] In particular, "restoration" is defined as "the process of assisting the recovery of an ecosystem as a means of conserving biodiversity and increasing ecosystem resilience, notably to climate changem"[25] and appears thus in line with the notion established by the Nature Restoration Regulation.[26]

As a general rule, the GBER does not apply to primary agriculture production sector, with the exception of the category of environmental aid.[27] The fishery and aquaculture sector is excluded as well from the GBER's scope, apart from certain exceptions which, however, are not directly applicable to nature restoration.[28]

Within the category of environmental aid, Article 45 GBER allows for investment aid to individual undertakings[29] aiming at remediation of environmental damage, rehabilitation of natural habitats and ecosystems, protection or restoration of biodiversity, implementation of nature-based solutions for climate change adaptation and mitigation.[30]

Some measures are expressly excluded from the scope of the above-mentioned provision, namely aid to make good the damage caused by natural disasters, as it falls under a different legal basis (Article 107(2)(b) TFEU)[31] and aid for remediation or rehabilitation following

mental Protection and Energy Aid, in P. Werner, V. Verouden (eds), *op. cit.*, p. 949 ff., esp. 971 ff.; M. Segura, M. Clayton, *The new environmental and energy state aid guidelines: one year in place*, in *ERA Forum*, vol. 24, 2023, p. 135-147; M. Merola, O. Diaz, *Energy and Environment*, in B. Nascimbene, A. Di Pascale (eds), *The Modernisation of State Aid for Economic and Social Development*, Cham, 2018, p. 169-236; J. Maillo, *Balancing environmental protection, competitiveness and competition: critical assessment of the GBER and EEAG*, in *EStAL*, vol. 16, 2017, p. 4-10; B. Haslinger, *Aid for environmental protection*, in F. Saecker, J. Montag, *European State Aid Law*, Munich, 2016, p. 826 ff.

[24] Article 2(101), GBER, cit.

[25] Article 2(123d), GBER, cit.

[26] Article 3(3), NRR, cit.

[27] Article 1(3)(b), GBER, cit.

[28] Article 1(3)(a), GBER, cit.

[29] Article 1(2)(a)-(d), GBER, cit. In fact, apart from tax reductions under Article 44 GBER, all environmental aid measures of Section 7 must be awarded as individual aid.

[30] Article 45(2)(a)-(d), GBER, cit.

[31] Article 45(3), GBER, cit.

the closure of power plants and mining or extraction operations, which is subject to a different *ad hoc* regime.[32]

In line with the polluter-pays principle (Article 191(2) TFEU) and the provisions of the Environmental Liability Directive 2004/35/CE,[33] aid for remediation of environmental damage is allowed only where the liable entity cannot be identified or made to bear the costs that the damage has caused.[34]

Moreover, as mere compliance with the applicable law cannot be subsidized, aid can be granted for the implementation of the compensatory measures under the Habitats Directive[35] only where it covers the extra costs necessary to increase the scope or ambition of such measures.[36]

As far as environmental aid for climate change mitigation and adaptation is concerned (*sub* (d)), a "nature-based solution" is defined as "an action to protect, conserve, restore, sustainably use and manage […] ecosystems", which effectively addresses socio-economic and environmental challenges, "while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits."[37]

According to the general provision applicable to environmental aid, the aid is exempted from notification up to the threshold of EUR 30 million per undertaking per investment project.[38]

Eligible costs for remediation or rehabilitation aid (*sub* (a)-(b)) include the costs incurred for these works, less the increase in the value of the land or property,[39] which must be calculated by an independent expert[40]. In case of biodiversity restoration and implementation of nature-based solutions (*sub* (c)-(d)), eligible costs shall be the total costs of

[32] Article 45(4), GBER, cit.

[33] Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage OJ L 143, 30 April 2004, p. 56, as amended.

[34] Article 45(2), GBER, cit.

[35] Article 6(4), Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, 22.7.1992, p. 7.

[36] Article 45(5), GBER, cit.

[37] Article 2(123c), GBER, cit.

[38] Article 4(1)(s), GBER, cit.

[39] Article 45(6), GBER, cit.

[40] Article 45(7), GBER, cit.

the relevant works[41]. The aid may cover the 100% of the eligible costs in cases (a)-(b) and the 70% in cases (c)-(d)[42] (the latter value may increase depending on the size of the beneficiary undertaking).[43]

When all the conditions above are met, a presumption of incentive effect applies.[44]

A complementary role is played also by the category of aid to the final beneficiary under a financial product supported by InvestEU Fund. This measure expressly allows further aid for the enhancement and restoration of biodiversity and ecosystems, as well as for the protection of those already in good condition.[45]

Finally, it is worth recalling the exemption applicable to aid for studies and consultancy services on environmental protection, which can partially cover the related costs, irrespective of whether the consultancy findings are followed by an investment eligible for aid under the GBER.[46]

4.3. *Nature restoration and the Environmental Guidelines ("CEEAG")*

Outside the scope of GBER, the horizontal environmental aid measures supporting nature restoration are subject to notification requirement and thus Commission's compatibility assessment under Article 107(3)(c) TFEU. This legal basis is interpreted by the Commission in the above-mentioned CEEAG, which were revised in 2022 to take into account European Green Deal's policy objectives, while at the same time ensuring a level-playing field in the internal market.[47]

Due to their horizontal nature, the Environmental Guidelines apply also to sectors that are subject to a specific State aid regime, unless it is

[41] Article 45(8), GBER, cit.

[42] Article 45(9), GBER, cit.

[43] Article 45(10), GBER, cit.

[44] Article 6(5)(m)-(n), GBER, cit. This presumption applies also "where the remediation or rehabilitation costs exceed the increase in value of the land" (ibidem, letter m).

[45] Article 56e, (8)(a)(v) GBER, cit.

[46] Article 49, GBER, cit., esp. para. 2a.

[47] On the legal value of the Environmental Guidelines, see C. BANET, *Legal Status and Legal Effects of the Commission's State Aid Guidelines: The Case of the Guidelines on State Aid for Environmental Protection and Energy (EEAG)(2014-2020)*, in *EStAL*, 2020, p.172 ss.

stated otherwise.[48] Indeed, the rules on State aid in the agriculture and forestry sector or in the fishery and aquaculture sector fall outside the scope of the Environmental Guidelines and will be thus addressed separately (see, *infra*, §§ 4.5-4.8).[49]

As far as nature restoration is concerned, the Environmental Guidelines stress the importance of public financial support to the achieve the objectives of its Biodiversity Strategy for 2030.[50] While the Environmental Guidelines adopt a broad notion of environmental protection similar to the one introduced in the GBER,[51] biodiversity is defined by referring to the EU Taxonomy Regulation.[52]

In detail, Section 4.6 of the Environmental Guidelines sets out the criteria under which the Commission may authorize aid for remediation of environmental damage, including damage to the quality of the soil, surface water or groundwater or to the marine environment; rehabilitation of natural habitats and ecosystems from a degraded state; protection or restoration of biodiversity or of ecosystems; implementation of nature-based solutions for climate change adaptation and mitigation.[53]

Similar to the GBER, aid for rehabilitation following the closure of power plants or mining operations and aid remedying the damage caused by natural disasters are expressly excluded from the scope of the measures above.[54]

The role of nature-based solutions for combating climate change is highlighted by reference to Commission's Strategy for adaptation to climate change.[55] If the measure does not only remediate environmental

[48] CEEAG, cit. para. 12.

[49] CEEAG, cit. para. 13(a).

[50] CEEAG, cit. paras. 276-278. See 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 bringing nature back into our lives', COM(2020) 380 final.

[51] CEEAG, cit. para. 19, (39).

[52] Article 2, point (15), 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, OJ L 198, 22 June 2020, p. 13.

[53] CEEAG, cit. para. 281.

[54] CEEAG, cit. para. 280. Compare to CEEAG, cit. paras. 420 ff.

[55] Communication from the Commission to the European Parliament, the Coun-

damage but also contributes to the reduction of greenhouse gas emissions, it may overlap with the aid category that aims at this specific climate goal (Section 4.1 GBER) and thus further coordination is needed.[56] In this case, the Commission's assessment is carried out by identifying the predominant objective of the aid, and the Member State may be required to provide a comparison of the expected results, where appropriate on the basis of credible, detailed quantifications.[57]

The Commission's guidance on the incentive effect and on aid proportionality substantially reflects the considerations provided for by the GBER.[58] Conversely, aid intensity may reach up 100% of the eligible costs, irrespective of the aid sub-category in question (remediation, rehabilitation, restoration, implementation of nature-based solutions).[59]

Finally, it is worth noting that aid schemes approved under the Environmental Guidelines that exceed a certain budget (EUR 150 million in any given year or EUR 750 million over the total duration of the scheme)[60] are subject to an *ex post* evaluation, in order to ascertain "the necessity and the effectiveness of the aid measure in the light of its general and specific objectives."[61] While usually such an evaluation focuses more on economic analysis rather than on environmental considerations,[62] it may nevertheless play a role in combination with the instruments monitoring the implementation of the National Nature Restoration Plans.

4.4. *Nature restoration and agricultural subsidies in the context of the Common Agricultural Policy (CAP)*

In order to meet biodiversity restoration targets, the agricultural and forestry sectors must undergo significant transformation, without un-

cil, the European Economic and Social Committee and the Committee of the Regions 'Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change', COM(2021) 82 final.

[56] CEEAG, cit. paras. 77 ff.

[57] CEEAG, cit. para. 282 and nt. 124.

[58] See, respectively, CEEAG, cit. para. 283 ff. and 288 ff.

[59] CEEAG, cit. para. 291.

[60] CEEAG, cit. para. 456.

[61] CEEAG, cit. para. 458.

[62] Compare to Commission, SA.104903, France - Aid to ArcelorMittal France, C (2023) 5013 final, paras. 87 ff.

dermining other EU critical objectives, such as food security and social cohesion.[63] For this reason, the aid supporting nature restoration in this sector must be framed in the context of the Common Agricultural Policy (CAP), which expressly includes biodiversity protection among its specific objectives.[64]

The rules on competition, which include those on State aid, apply to agricultural production only to the extent determined by the European Parliament and the Council (Article 42 TFEU), taking into account the CAP's objectives (Article 39 TFEU). As a general rule, EU State aid rules apply to the sector,[65] but there are various derogations set out by the relevant EU secondary legislation.[66] Conversely, the forestry sector does not fall within the scope of Article 42 TFEU and may in principle benefit also from other horizontal State aid rules.[67]

By implementing the CAP, the EU provides financial support to the agricultural and forestry sectors and to rural areas. In particular, the CAP includes direct subsidies to farmers, market organization rules as well as rural development measures (the latter co-financed with Member States). The implementation of the CAP is supported by the EU budget through two funds, namely: i) the European Agricultural Guarantee Fund (EAGF), and ii) the European Agricultural Fund for Rural Development (EAFRD). While funding is provided at EU level, Member States are in charge of payment administration. Moreover, in line with their CAP

[63] On the topic, see: A. Runge-Metzger et al., *Turning climate action in agriculture into a business case for EU farmers: A "strawman" proposal*, EUI STG Policy Paper No. 2025/09.

[64] Article 6(1) of 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.

[65] See Article 145(1) Regulation (EU) 2021/2115 and Article 211(1) Regulation (EU) No 1308/2013.

[66] See *inter alia* Article 23 of Regulation (EU) No 228/2013, Article 17 of Regulation (EU) No 229/2013, Article 145(2) of Regulation (EU) 2021/2115, Article 211(2) of Regulation (EU) No 1308/2013 and Article 27 of Regulation (EU) No 1144/2014.

[67] See Agricultural Guidelines, cit., para. 496.

Strategic Plans, Member States allocate part of the funding within EU limits, and co-finance the programmes via their national budgets.[68]

In light of the above, the Commission commits to ensure that State aid control is enforced consistently with the EU's own common agricultural policy.[69]

4.5. *Nature restoration and the Agricultural and Forestry Block Exemption Regulation ("ABER")*

The ABER has been revised in 2022 and provides for several exemptions that are relevant for supporting nature restoration, under the categories of i) aid in favour of Small and Medium Enterprises ("SMEs") active in the sector (Sec. 1),[70] ii) aid for environmental protection in agriculture (Sec. 2)[71] and iii) aid in favour of forestry (Sec. 6),[72] and also iv) investment aid in favour of cultural and natural heritage conservation (Sec. 3), as far as it entails conservation of natural landscapes.[73]

In terms of general provisions, Article 4 ABER sets notification thresholds for each aid measure, to be calculated per gross grant equivalent, namely the amount aid awarded as a grant to the beneficiary, before any deduction of tax or other charges.[74] These rules should be also read in conjunction with those on cumulation, as the latter clarify whether the specific aid awarded under the ABER may be combined with other aid measures.[75] According to the principle of aid transparency, certain minimum information must be published in online databases.[76]

[68] Regulation (EU) 2021/2115, cit.

[69] See Agricultural Guidelines, cit., para. 6. On the topic, see K. Bacon, *European Union Law of State Aid*, 3rd ed., OUP, Oxford, 2017, p. 399 ff.; K. Rutkiewicz, A. Pruchnicka, *State Aid in the Agricultural and Forestry Sectors and in Rural Areas in Respect of the Competition Policy of the European Union*, in *Annals of the Polish Association of Agricultural and Agribusiness Economists*, vol. XIX, 2017, p. 250 ff.

[70] Articles 14 ff. ABER, cit.

[71] Articles 33 ff. ABER, cit.

[72] Articles 41 ff. ABER, cit.

[73] Article 36 ABER, cit. In this case, a recognition by the competent public authorities of the Member State concerned is required: ibidem, Article 36(2).

[74] Article 2(30) ABER, cit.

[75] Article 8(1)-(2) ABER, cit.

[76] Article 9 ABER, cit.

The applicant's submission of minimum information to the granting authority allows also for the recognition of the measure's incentive effect,[77] while additional conditions apply in case of *ad hoc* aid awarded to large enterprises.[78] Moreover, certain aid measures are deemed to have an incentive effect, provided that the specific requirements of the relevant aid sub-category are met.[79]

As far as the calculation of eligible costs is concerned, some simplifications may apply if the operation in question is at least partly financed through the EAFRD.[80] Aid intensity of certain measures within the environmental and forestry categories may be fixed on the basis of standard assumptions of additional costs and income foregone.[81]

That said, it is worth underlining the nature restoration dimension of the specific aid measures exempted under the ABER.

First of all, in case of investment aid in agricultural holdings linked to primary agricultural production, nature restoration is expressly included it the list of objectives that such investments must pursue.[82]

Aid for environmental protection in agriculture under Sec. 2 ABER is conditional on the adoption by farmers of commitments that go beyond the standard established by CAP, such as the Good Agricultural and Environmental Conditions ("GAEC"). The aid has a minimum duration of 5-7 years and is granted annually and per hectare, usually covering additional costs and income foregone. Nature restoration projects may be supported, for example, by aid for agri-environmental-climate commitments, which is awarded to undertakings that agree, on a voluntary basis, to shift to agricultural practices that make a positive contribution to

[77] Article 6(2) ABER, cit.

[78] Article 6(3) ABER, cit. It is worth noting that these requirements do not apply to municipalities that are autonomous local authorities carrying out economic activity, provided that their annual budget is less than EUR 10 million and their have less than 5 000 inhabitants.

[79] This is the case of including aid for disadvantages related to Natura 2000 areas, aid for investments in favour of the conservation of natural heritage, aid for the restoration of forests damaged by fires, aid for conservation of genetic resources in forestry, see Article 6(5), (h)-(i), (l) and (n) ABER, cit.

[80] Article 7(1) ABER, cit.

[81] Article 7(2) ABER, cit.

[82] Article 14(3)(g) ABER, cit.: "halting and reversing biodiversity loss, enhancing ecosystem services and preserving habitats and landscapes".

the environment and climate.[83] In this case the commitments must also go beyond the relevant mandatory requirements established by national and Union law for the use of fertiliser and plant protection products.[84] Result-based carbon farming schemes may be allowed in line with the Communication on Sustainable Carbon Cycles.[85] Another option is to provide aid for organic farming, whereby the beneficiary undertakes, on a voluntarily basis, to convert to or maintain organic farming practices and methods as defined in Regulation (EU) 2018/848.[86] Aid compensating farmers for disadvantages related to Natura 2000 areas are allowed,[87] provided that the disadvantage results from compliance with requirements that go beyond those imposed by CAP.[88]

Biodiversity protection is also the aim of aid for conservation of genetic resources, where the beneficiaries must undertake the commitment to rear farm animals of local endangered breeds or to preserve plant genetic resources naturally adapted to local conditions and under threat of genetic erosion.[89] A similar provision applies for the conservation of genetic resources in the forestry sector.[90]

Regarding the category of aid in favour of forestry (Sec. 6 ABER), several measures are applicable to nature restoration initiatives, such as aid for afforestation and the creation of woodland, covering the costs of establishment and an annual premium per hectare.[91] This measure focuses on investment operations, but some limitations apply to costs

[83] Article 34(1)-(2) ABER, cit.

[84] Article 34(3)-(5) ABER, cit.

[85] Article 34(10) ABER, cit. See Communication of the Commission of 15 December 2021 on Sustainable Carbon Cycles (COM(2021) 800 final).

[86] Article 35(2) ABER, cit. See Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007.

[87] Article 33 ABER, cit. The measure may cover also other delimited nature protection areas contributing to the ecological coherence of the Natura 2000 network under Article 10 of the Habitats Directive (e.g., maintenance of rivers and small woods that are essential for migration).

[88] Article 33(3) ABER, cit.

[89] Article 30(3) ABER. See, respectively, Articles 12 ff. and Article 4(1)(a) Regulation (EU) 2021/2115.

[90] Article 51 ABER, cit. In both cases, aid may cover the costs deriving from targeted actions, concerted actions and accompanying actions.

[91] Article 41(2) ABER, cit.

related to purchase of land.[92] Minimum environmental requirements are laid down in order to ensure that trees are planted in line with sustainable forest management principles,[93] as well as climate change adaptation needs.[94] ABER also envisages aid for agroforestry systems, namely land use systems where trees are grown in combination with agriculture on the same land.[95] In this case, the measure covers the costs of establishment, regeneration or renovation and an annual premium per hectare.[96]

Aid for investments improving the resilience and environmental value of forest ecosystems[97] aims at establishing commitments for *inter alia* the provision of ecosystem services or enhancement of the public amenity value of forest, or the improvement of the climate change mitigation and adaptation potential of ecosystems, "without excluding economic benefits in the long term."[98] As a general rule, non-native plant species cannot be used, but a derogation applies where support is provided in the framework of the CAP Strategic Plan.[99]

As regards aid for forest-environmental-climate services and forest conservation,[100] it is conditional on voluntary management commitments aiming at achieving at least one of the CAP specific objectives[101] and go beyond the relevant mandatory requirements established by the EU and national forestry legislation.[102]

Aid for the prevention and restoration of damage to forests may expressly include costs arising from restoring forestry potential damaged by fires, natural disasters, plant pest and climate change-related adverse events.[103] Notably, such aid is exempted not only under Article 107(3)(c) TFEU, as usually occurs for the ABER, but also under the damage

[92] Article 41(3)(a) ABER, cit.
[93] Article 41(7) and (12) ABER, cit.
[94] Article 41(12) ABER, cit.
[95] Article 2(9) and 42 ABER, cit.
[96] Article 42(2) ABER, cit.
[97] Article 44 ABER, cit.
[98] Article 44(2) ABER, cit.
[99] Article 44(2) ABER, cit.
[100] Article 46 ABER, cit.
[101] Article 6(1) of Regulation (EU) 2021/2115, which refers, as anticipated above, to biodiversity protection too.
[102] Article 46(2) ABER, cit.
[103] Article 43(2)(d) ABER, cit.

compensation derogation of Article 107(2)(b) TFEU;[104] if the aid is given under the first legal basis (Article 107(3)(c) TFEU), beneficiaries may be required to prove that such restoration will include adaptation measures to climate change.[105]

Finally, ABER envisages aid for compensating area-specific disadvantages resulting from certain mandatory requirements, namely those related to the implementation of the Habitats and Birds Directives borne by forest holders, forest managers and their associations.[106] Compared to the aid addressing disadvantages suffered by farmers, eligibility rules in the forestry sector do not require the beneficiary to go beyond the normative standards.[107]

The practice of aid awarded under the ABER is well established, as according to the latest official data, aid for a total of EUR 5.22 billion has been exempted under this instrument in 2024.[108] The ABER represents an important reference point for a swift implementation of NRRP, as it reduces the administrative burden on the Member State.

4.6. *Nature restoration and the Agricultural and Forestry Guidelines ("AFG"): the measures applicable to the agricultural sector…*

Pursuant to the interpretation of Article 107(3)(c) TFEU provided for by the Agricultural and Forestry Guidelines ("AFG"), a vast array of measures – both aid schemes and individual aid – relevant for nature restoration may be deemed compatible with the internal market by the Commission.[109] Like the CEEAG, the AFG can be divided in two parts: the first sets out a regime that applies to every measure falling under its scope, while the second provides guidance on the specific aid category. In the latter case, further distinction can be made between measures addressing the agriculture sector and those concerning the forestry one.

[104] Article 43(1) ABER, cit.
[105] Article 43(5)(c) ABER, cit.
[106] Article 45(1) ABER, cit.
[107] Article 45(2) ABER, cit.
[108] Commission, 2025 State aid Scoreboard, cit., p. 29.
[109] Agricultural and Forestry Guidelines, cit., para. 17. Even if granted under a scheme, individual aid that exceeds a certain threshold is subject to notification (ibidem, para. 35).

First of all, the scope of AFG regime is identified by clarifying that horizontal State aid instruments on aid compatibility, such as CEEAG and guidance on SGEI, apply to the sector under scrutiny unless the AFG provides specific rules.[110]

Secondly, the Commission undertakes to take into account, to the largest extent possible, the conditions laid down by the CAP legislation while carrying out its compatibility assessment.[111] In particular, the balancing test should consider also the impact of the aid on the attainment of the general and specific objectives of the CAP, including support to biodiversity.[112] Some presumptions of positive effects of the measure are established where the aid is co-financed by the EU under the CAP[113] or it is aligned with the sectoral objectives laid down in the Biodiversity Strategy and the Forestry Strategy.[114]

Such an approach reflects the principle of integration of environmental protection into other EU policies[115] as well as the need to ensure the overall coherence of the subsidy regime applicable to the sector.

Similar to the solution adopted in the CEEAG, also in this case an *ex post* evaluation must be carried out if the aid exceeds a certain intensity.[116]

As far as the specific aid categories are concerned, their structure partly reflects the one already illustrated with the ABER.

Firstly, the Commission makes aid to agricultural holdings[117] conditional on the pursuit of certain listed objectives, including the improve-

[110] Agricultural and Forestry Guidelines, cit., para. 30. This is the case of environmental aid measures, for which the Commission provides specific clarifications It is also worth noting that aid to undertakings active in the forestry sector or in rural areas may also be deemed compatible under the conditions and in compliance with general State aid rules, including the CEEAG (ibidem, 32).

[111] Regulation (EU) 2021/2115 and its delegated and implementing acts.

[112] Agricultural and Forestry Guidelines, cit., para. 136.

[113] Agricultural and Forestry Guidelines, cit., para. 138. See, e.g., Commission SA.111967 (2024/N) - Italy Piemonte: Payment for forest-environment and climate commitments (SRA 27), C(2024) 1218 final, 28.2.2024, para. 40; Id., SA.109467 (2023/N) - PSP 2023 - 2027 - Italy (Abruzzo) Payment for forest-environment and climate commitments (SRA 27), C(2024) 1159 final, 19.2.2024, para. 51.

[114] Agricultural and Forestry Guidelines, cit., para. 140.

[115] Article 11 TFEU.

[116] Agricultural and Forestry Guidelines, cit., paras. 638 ff.

[117] Agricultural and Forestry Guidelines, cit., paras. 144 ff. These holdings must be linked to primary agricultural production.

ment of environmental standards, as well as "halting and reversing biodiversity loss, enhancing ecosystem services and preserving habitats and landscapes."[118] Some combination with investment aid for the conservation of natural heritage located on agricultural holdings is possible, as shown by the Commission's practice.[119]

Some other aid categories are designed to stimulate voluntary efforts of farmers towards the implementation of higher environmental standards. This is the case of aid for agri-environment-climate commitments,[120] which include the conservation and the sustainable use and genetic resources, as well as the implementation of collective schemes and result-based payments schemes, such as carbon farming schemes.[121] Similarly, in case of aid for organic farming, the beneficiaries undertake to convert to farming practices that go beyond statutory requirements under the CAP and other relevant mandatory EU or domestic requirements (e.g., related to the use of fertilisers).[122]

Conversely, other aid measures envisaged by the AFG address the economic constraints deriving from the special nature protection regime applicable to the area where the agricultural activities are carried out. Such an approach is followed to compensate for certain mandatory requirements set out by the Habitats and Birds Directives, by the Water Framework Directive,[123] as well as in case of areas designated under the EAFRD regulation.[124]

[118] Agricultural and Forestry Guidelines, cit., para. 152(b) and (g). Regarding an aid covering, among other components, the costs of fences contributing to halting and reversing biodiversity loss, see Commission, SA.111449 (2024/N) - Germany Baden-Württemberg: Investments in nature conservation and landscape conservation, C(2024) 1687 final, 13.3.2024.

[119] Agricultural and Forestry Guidelines, cit., para. 164 ff. Commission, SA.108036 (2023/N) - Germany Saxony: Natural heritage - support for the restoration of agricultural support walls, 9.8.2023 C(2023) 5447 final, esp. paras. 58 ff.

[120] Agricultural and Forestry Guidelines, cit., paras. 197 ff. Within the decisional practice, see Commission, Germany, SA.113444 (2024/N) Hessen - Specific nature conservation measures on grassland; Id., SA.109332 (2023/N) - Germany Brandenburg: Contractual nature conservation in open land, C(2023) 3859 final, 6.6.2024.

[121] Agricultural and Forestry Guidelines, cit., paras. 211-212.

[122] *Ivi*, paras. 257-258.

[123] Agricultural and Forestry Guidelines, cit., paras. 240. See 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.

[124] Agricultural and Forestry Guidelines, cit., paras. 251, referring to Article 32

Remarkably, the nature restoration objective supports the authorization of aid aiming at closing agricultural production capacity.[125] According to Commission's guidance, Member States may grant such aid only to farmers whose capacity has been constant over the last five years[126] and the beneficiary must undertake a legally binding commitment that the closure is irreversible and production will not be relocated elsewhere.[127] Such an obligation must be transferrable to any future purchaser of the land.[128]

The AFG require Member States to impose significant limitations to land use once agricultural production has ceased: within two years, open farmland must be afforested or turned into nature area, in a way that avoids negative effects on the environment.[129] Agricultural land reconverted to wetland or peatland should not be afforested in a way that impedes the positive contribution of such ecosystems to climate change strategies.[130] As an alternative, after 20 years from effective closure land may be once again re-used, provided that had been maintained until then in good agricultural and environmental conditions.[131] Overall, the approach towards land management envisaged by the AFG seems in line with the underlying rationale behind the Nature Restoration Regulation.

In terms of aid intensity, when the agricultural production ceases due to environmental or climate reasons,[132] the aid may not only compensate the loss of value of assets (to be measured at the current selling value),[133] but also include an incentive payment up to 20% of the value of the assets concerned.[134] Such an incentive approach seems necessary to balance the

Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005.

[125] Agricultural and Forestry Guidelines, cit., para. 424. In fact, biodiversity protection, and the reduction of overall stocking densities in particular, is expressly recalled among the reasons supporting such aid.

[126] Agricultural and Forestry Guidelines, cit., para. 426.

[127] Agricultural and Forestry Guidelines, cit., para. 425.

[128] Ibidem.

[129] Agricultural and Forestry Guidelines, cit., para. 429.

[130] Ibidem.

[131] Ibidem. In this case, GAEC standards set out by the CAP apply.

[132] Ibidem.

[133] Agricultural and Forestry Guidelines, cit., para. 431.

[134] Ibidem.

impact of the commitments on landowners' and farmers' rights and may be further explored in the implementation of NRRP. As it will be shown below, a similar measure applies for the fisheries sector (*infra*, § 4.8).

The recent decisional practice offers examples of aid falling under the category described above.

The Danish aid scheme approved by the Commission under Article 107(3)(c) TFEU in February 2026 (SA. 119017)[135] supports landowners that voluntarily cease agricultural production on their land for both climate and biodiversity protection reasons. According to information available, landowners joining the scheme commit not to till their land nor to use pesticides or fertilisers in order to restore the soil natural hydrology and allow for the creation of wetlands. Landowners may also decide to cease forest land production whether the latter is connected by water to agricultural land.[136] The aid, whose overall amount is EUR 1.04 billion, would compensate for the permanent loss of income deriving from the commitments and the restrictions imposed, and would be awarded as direct grants or in the form of benefits in kind, such as technical consultancy or the purchase of goods and services.[137] In the same vein, also other decisions approving aid to ceasing agricultural production and re-creation of wetlands highlight a close proximity between climate and biodiversity objectives.[138]

Finally, the AFG envisages also measures that may enhance capacity building in favor of nature restoration, such as aid supporting the partic-

[135] As the decision has not been published yet (Feb. 2026), see Commission, Commission approves €1.04 billion Danish State aid scheme to support landowner climate projects, IP/26/384, 13 Feb. 2026. For a comparison between forestry schemes adopted in Denmark and in Finland, see: C. Süring, T. Hedemark Lundhede, *Private forest owner preferences for action - and result-based biodiversity restoration contracts - A discrete choice experiment in Denmark and Finland*, in *Forest Policy and Economics*, vol. 179, 2025, Article no. 103609.

[136] Commission, IP/26/384, cit.

[137] Ibidem.

[138] See Commission, Netherlands - Amendment to the Model Grant Scheme Quality Impulse Nature and Landscape SA.116417 (2024/N), C(2025) 3090 final, 15.5.2025; Id. Netherlands - Relocation scheme for peak-load nitrogen deposition, 111058 (2024/N), C(2024) 5059 final, 22.7.2024; Id., SA.102103 (2022/N) - Lithuania RRF - Implementation of the investment "Increasing Greenhouse gas Absorption Capacity" by restoring wetlands on agricultural lands, C(2023) 2230 final, 30.3.2023.

ipation of agricultural producers in quality schemes,[139] which may entail specific farming or production method.[140] The development of practices addressing the preservation of agricultural landscapes may also fall under the derogation applicable to aid for cooperation in the agricultural sector.[141]

4.7. *…and to the forestry one*

According to the Commission, the regime envisaged by the AFG applies to aid granted as part of a CAP Strategic Plan or additional national financing for rural development as well as to measures financed exclusively from national resources.[142] Therefore, forest-based industries or to timber extraction are explicitly excluded from the AFG scope.[143]

Focusing on the specific aid categories that may support nature restoration initiatives, reference is to be made, firstly, in investments in forest area development, where the Commission sets out very detailed compatibility conditions.

In case of aid for afforestation and creation of woodland,[144] some minimum environmental requirements apply to the choice of species, taking into account also the case where soil degradation impedes the planting of perennial woods.[145] In this vein, short-rotation plantations are excluded from the scope of the measure.[146] The aid may cover the cost of forest establishment, as well as an annual premium per hectare to compensate agricultural income foregone and maintenance costs.[147]

Investment aid may be granted also to support regeneration of agro-forestry systems,[148] namely "land use systems in which trees are grown in

[139] Agricultural and Forestry Guidelines, cit., paras. 255 ff.

[140] Ibidem, para. 274(b)(i)(2).

[141] Ibidem, para. 311(g).

[142] Ibidem, para. 21(b).

[143] Ibidem, para. 496.

[144] Ibidem, para. 503. See Commission, State Aid SA.118866 (2025/N) - Denmark Aid for afforestation, C(2025) 5815 final, 25.8.2025; Id., SA. 119788 (2025/N) - Denmark-Amendment of SA.57978 introducing aid to cover the costs of agricultural income foregone and maintenance, C(2025) 7436 final, 31.10.2025.

[145] Agricultural and Forestry Guidelines, cit., para. 504(d).

[146] Ibidem, para. 507.

[147] Ibidem, para. 506.

[148] Ibidem, para. 509.

combination with agriculture on the same land."[149] When elaborating this measure, Member States are required to take into account the land's environmental conditions as well as the need for sustainable agricultural use of the land.[150]

In order to enhance the provision of ecosystem services, also in a long-term perspective, aid may be granted to investments improving the resilience and environmental value of forest ecosystems.[151] Notably, these measures imply a long-term perspective which is in line with the NRR's goals.

Another relevant category is that of aid aiming at preventing and restoring damage to forests,[152] whose broad scope may include investments for maintaining the health of forests.[153] Depending on its rationale and objectives, the measure may be assessed by the Commission either under Article 107(2)(b) or 107(3)(c) TFEU.[154]

Adopting an approach similar to the one followed by the AFG in the agricultural sector, the Commission sets out the conditions for aid compensating area-specific disadvantages resulting from certain mandatory requirements,[155] as well as for investment aid supporting the conservation of natural heritage located in forests.[156]

Moreover, the AFG envisages a specific measure supporting forest-environment, climate services and forest conservation, conditional on the undertaking of voluntary management commitments in line with the CAP specific objectives, which the Member State must describe in detail in its notification.[157] Eligible costs for this aid may cover, among others, result-based payments schemes such as carbon farming,[158] which are deemed capable of ensuring environmental quality enhancement in a measurable way. In this case, an incentive payment up to the 20% of

[149] Ibidem, para. 33(10).
[150] Ibidem, para. 512.
[151] Ibidem, para. 524.
[152] Ibidem, para. 514 ff.
[153] Ibidem, para. 515(e).
[154] Ibidem, para. 520. No compensation, however, may be granted for loss of income deriving from disasters and adverse events.
[155] Ibidem, para. 548.
[156] Ibidem, para. 531.
[157] Ibidem, para. 555.
[158] Ibidem, para. 555(a).

the compensation may apply.[159] Alternatively, however, calculation of eligible costs may be carried out by estimating "the value of the forest-environment and climate services that are not remunerated by the market".[160] This kind of approach underlines that environmental services may play a significant role in State aid control, as it is further discussed (§§ 4.8 and 5).

Moreover, aid for forest conservation can be combined with other aid categories, such as that of aid for the conservation of genetic resources in forestry.[161]

From a different perspective, aid may be granted also for cooperation initiatives, which may include the elaboration of biodiversity protection strategies in line with the CAP specific objectives.[162]

The residual category of "other aid to the forestry sector with ecological, protective and recreational objectives" allows for a flexible approach towards measures that directly contribute to maintaining or restoring the ecological functions of forests and biodiversity.[163] Within this category, the Commission lays down the condition for the compatibility of i) aid for specific forest actions aiming at maintaining or restoring forest ecosystems[164]; ii) aid for maintaining and improving the soil quality, whereby Member State concerned is required to demonstrate that biodiversity is not reduced by fertilisation,[165] in line with the more general Do No Signif-

[159] Ibidem, para. 555(a).

[160] Ibidem, para. 555(b). In this case, reference is made to carbon farming and other relevant schemes. In case of environmental conservation operations and other duly justified cases, the aid for commitments to renounce the commercial use of trees and forests may be granted as a flat rate or as a one-off payment per unit, calculated on the basis of the income foregone (ibidem, para. 558).

[161] Ibidem, para. 560. See Commission, Czech Republic SA.53954 (2019/N) Aid for the protection and reproduction of forest tree genetic resources, C(2019) 6221 final, 21.8.2019.

[162] Agricultural and Forestry Guidelines, cit., para. 576.

[163] Ibidem, para. 596.

[164] Ibidem, para. 600. This measure may cover costs of treating and preventing the spreading of pests, tree diseases and invasive alien species, as well as compensation for the damages caused by them. See Commission, SA.120753 (2025/N) - Germany GAK group measure 5.F: Aid to tackle the damage caused by extreme weather conditions in forests - Fifth amendment of the aid scheme, C(2026) 7798 final, 21.11.2025.

[165] Agricultural and Forestry Guidelines, cit., para. 603.

icant Harm ("DNSH") criteria;[166] iii) aid for restoration and maintenance of *inter alia* natural habitat for animals in the forestry sector;[167] iv) aid to make good the damage in forests caused by protected animals.[168]

Over the period of application of the 2022 Agriculture and Forestry Guidelines, the decisional practice shows an increasing role of public financial support to nature restoration initiatives.[169] These decisions may provide useful case studies also for the elaboration of the NRRPs.

4.8. *Nature restoration and State aid for the Fishery and Aquaculture sector*

The Common Fisheries Policy ("CFP") aims at ensuring that marine biological resources are managed in a sustainable way. State aid supporting the fishery and aquaculture sector is embedded in the broader context of the CFP,[170] whose financial implementation is ensured by the European Maritime, Fisheries and Aquaculture Fund ("EMFAF").[171] From the State aid perspective,[172] the main sectoral rules are provided by the

[166] The role of DNSH criteria in State aid compatibility assessment has been recognised by the Commission in several of its soft law documents and, to a more limited extent, in the Commission's decisional practice: see M. Barbano, *La valutazione di compatibilità degli aiuti di Stato alla luce del criterio di sostenibilità ambientale "Do No Significant Harm"*, in *Quaderni AISDUE*, spec. iss., 2025, p. 2 ff.

[167] Agricultural and Forestry Guidelines, cit., para. 607. This measure must cover costs unrelated the implementation of the Habitat and Birds Directives, as the latter fall under another aid category

[168] Ibidem, para. 611. Beneficiaries in this case are required to adopt preventive measures (e.g., fences) in order to be deemed eligible for the aid.

[169] In the 2023-2025 period alone, around 70 decisions authorizing aid linked to nature conservation or restoration projects under the 2022 Agricultural Guidelines have been identified. By comparison, during the validity of the previous guidelines (2014-2022), around 200 decisions with the same characteristics had been traced back. The data have been elaborated via the DG COMP official database.

[170] Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC, OJ L 354, 28.12.2013, p. 22.

[171] Regulation (EU) 2021/1139 of the European Parliament and of the Council of 7 July 2021 establishing the European Maritime, Fisheries and Aquaculture Fund and amending Regulation (EU) 2017/1004, OJ L 247, 13.7.2021, p. 1.

[172] On the topic, see: K. Bacon, *op. cit.*, p. 399-436; D. Skerritt et al., *A 20-year ret-*

above-mentioned Fisheries Block Exemption Regulation ("FIBER") and the Fishery and Aquaculture Guidelines.[173]

According to the FIBER, aid up to the threshold of EUR 2,5 million per investment project (or EUR 1,25 million per undertaking per year) is exempted from notification requirement.[174] While the notions of biodiversity and ecosystem restoration, as well as that of the environmental services, can be found in the FIBER, none of those is explicitly defined.

As far as the fishery sector is concerned (Sec. 1), the FIBER allows aid for the protection and restoration of marine biodiversity and ecosystems and regimes in the framework of sustainable fishing activities (Article 26 FIBER). Under this provision, aid may be granted for the purchase and installation of facilities to protect marine areas from trawling and to restore degraded ecosystems, as well as for conducting related scientific studies.[175] In a capacity building perspective, aid may be granted also for the training of fishermen to a better management and conservation of marine resources.[176]

Notably, the FIBER exempts aid that maintains and enhances biodiversity and ecosystem services, including restoration of specific marine and coastal habitats.[177] This aid category may include positive conservation measures to preserve flora and fauna,[178] in line with Green Infrastructure principles.[179] Aid for environmental services is also allowed in the aquaculture sector, in particular for i) the development of aquaculture measures compatible with management requirements applicable to Natura 2000 areas; ii) direct support to conservation and reproduction of aquatic animals in the framework of programmes elaborated by na-

rospective on the provision of fisheries subsidies in the European Union, in *ICES Journal of Marine Science*, vol. 77, 2020, pp. 2741-2752; A. Nowak-Salles, *The WTO Agreement on Fisheries Subsidies and EU State Aid for Fisheries*, in *EStAL*, 2023, p. 86 ff.

[173] Commission, Guidelines for State aid in the fishery and aquaculture sector, 2023/C 107/01 (FAG).

[174] Article 3(1) FIBER, cit. During the grant period, the beneficiary shall comply with the rules of the Common Fisheries Policy (ibidem, Article 4(2)).

[175] Article 26(2)(b) FIBER, cit.

[176] Article 26(2)(c) FIBER, cit.

[177] Article 26(2)(d) FIBER, cit.

[178] Article 26(2)(d)(v) FIBER, cit.

[179] Commission Communication, Green Infrastructure (GI) - Enhancing Europe's Natural Capital, COM(2013) 249 final, 6.5.2013.

tional authorities; iii) aquaculture operations fostering the improvement of environment and of biodiversity.[180]

The provision of environmental services may provide also the justification for measures aiming at the diversification of income, both for the fishermen[181] and for those employed in the aquaculture sector.[182]

In its the Fishery and Aquaculture Guidelines ("FAG"), the Commission points out, first of all, that aid to this sector should contribute to the CFP and to environmental policy objectives, such as restoring river continuity under the Water Framework Directive.[183] Moreover, alignment with other EU policies, such as the Biodiversity Strategy, may trigger a presumption of wider positive effects of the aid.[184]

Notably, the FAG allows for aid aiming at permanent cessation of fishing activities. Specific compatibility conditions are set out,[185] but they may be exceptionally derogated where the cessation is based on the need to preserve marine biological resources, due to environmental degradation of local marine waters or unsustainable reduction of fishing spaces.[186]

The assessment envisaged above has been recently carried out by the Commission in its decision allowing a Croatian scheme for the permanent cessation of fishing activities.[187] This practice shows also a certain degree of regulatory coherence between the agricultural and fishery sectors.

[180] Article 39(1)(a)-(b) FIBER, cit.

[181] Article 19(a) FIBER, cit.

[182] Article 33(2) FIBER, cit. Investment aid in the aquaculture sector may include also practices fostering nature restoration initiatives, such as restoration of ponds and lagoons (see Article 33(1) and (4) FIBER, cit.).

[183] FAG, cit., para. 131.

[184] FAG, cit., para. 133 FIBER.

[185] FAG, cit., para. 273 FIBER.

[186] FAG, cit., para. 277 FIBER.

[187] Commission, SA.118191 (2025/N) - Croatia, State aid scheme to compensate for the permanent cessation of fishing activities, C(2025) 7073 final, 17.10.2025, esp. paras. 122 ff.

5. *Nature restoration as a service of general economic interest (SGEI)?*

The notion of SGEI is an additional route to incorporate environmental considerations within the EU law discipline of public spending. While article 106(1) TFEU requires Member States to ensure that public undertakings and those enjoying special or exclusive rights comply with the EU competition rules, including State aid rules, article 106(2) TFEU introduces a derogation allowing undertakings entrusted with the operation of SGEIs to be exempt from the application of competition and State aid rules, insofar as those rules would obstruct the performance of their public service tasks, provided that trade is not affected to an extent contrary to the "*interests of the Union*". Article 106(2) TFEU also provides the legal basis allowing for compensation of public service obligations, that might otherwise qualify as State aid, underpinning other doctrines and instruments such as the *Altmark* criteria[188], the SGEI Decision,[189] and the SGEI Framework.[190] Environmental services have benefited from this derogation. The *Diego Cali* case is a reference in point.[191] The Court of Justice held that the monitoring and prevention of oil pollution in the port of Genoa constituted a service of general economic interest (SGEI). The undertaking enjoyed exclusive rights and charged compulsory fees to port users. The grant of exclusive rights could be justified under Article 106(2) TFEU since the task involved continuous surveillance, specialised expertise, and public-interest environmental objectives that would be difficult to ensure under normal market conditions. This

[188] CJEU, 24 July 2003, Case C-280/00, *Altmark Trans and Regierungspräsidium Magdeburg*.

[189] Commission Decision of 20 December 2011 on the application of Article 106(2) of the Treaty on the Functioning of the European Union to State aid in the form of public service compensation granted to certain undertakings entrusted with the operation of services of general economic interest, in OJ L 7, 11 January 2012, pagg. 3-10.

[190] Communication from the Commission, European Union framework for State aid in the form of public service compensation, in OJ C 8 dell' 11 January 2012, pagg. 15-22. See also Commission Regulation (EU) 2023/2832 of 13 December 2023 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid granted to undertakings providing services of general economic interest, in *OJ* L 2832, 15 December 2023.

[191] CJEU, Case C-343/95, *Diego Cali & Figli Srl v Servizi ecologici porto di Genova SpA*.

judgment has since served as a basis for applying Article 106(2) TFEU to other environmental services, such as waste management.[192]

Having clarified the above, one may question whether nature conservation activities, when entrusted to an undertaking and carried out as an economic service or in connection with an economic activity may fall under the scope of Article 106(2) TFEU or connected doctrines.[193] This would imply the qualification of such activities as a SGEI or public services. To be clear, nature restoration and conservation projects, where entrusted to undertakings, are allowed in different ways under the exceptions provided for by the above-mentioned state aid legal framework, and the Commission usually prefers to assess their compatibility under art. 107(3) TFEU and related Guidelines (above, § 4.1 ff.).

However, the idea of considering such activities as SGEI under art. 106 TFEU would entail a more radical approach, capable to push a change of perspective in the allocation of public fundings, valorising in particular the wide-spread economic as well as environmental benefits to society deriving from this type of activities, in line with environmental solidarity objectives and with more recent trends of EU regulation in this field, as stemming in particular from the Nature restoration regulation.

As compared to previous legislation, the Nature restoration regulation focuses on the economic and societal benefits of healthy ecosystems, which deliver a range of so called "ecosystem services" that contribute significantly to productivity in certain sectors. In particular, its recital 14 underscores that "*biodiverse ecosystems such as wetland, freshwater, forest as well as agricultural, sparsely vegetated, marine, coastal and urban ecosystems deliver, if in good condition, a range of essential ecosystem services, and the benefits of restoring degraded ecosystems to good condition in all land and sea areas far outweigh the costs of restoration*." The underling idea is that restoring wetlands, rivers, forests, grasslands, marine ecosystems, and the species they host will help not only to increase

[192] CJEU, Case C-209/98, *Sydhavnens Sten & Grus A/S v Københavns Kommune*; Commission Decision N 330/2004 - Ireland - Waste Management Services.

[193] On the topic, see J. W. VAN DE GRONDEN, *State aid, Sustainable Management of Natural Sites and Sevices of General Economic Interest*, in *Market and Competition Law Review*, 2024, p. 17 ss; J. SMILA, E PRIMMER, *Legal analysis of the relationship between European State aid and nature conservation law, and economic instruments for biodiversity protection* (Policymix Report issue 7/2012).

biodiversity as a value *per se*, limit global warming and therefore mitigate climate change, but also secure the mentioned ecosystem services. These are services that nature does for free, like cleaning our water and air, pollinating crops, protecting us from floods and spreading diseases, increase resilience of our agricultural system and thus food security. They are clearly measurable in economic terms, by referring to the cost of replacing them through man-made activities (some of them are probably not completely replaceable). As a matter of facts, they contribute significantly to our GDP in sectors such as tourism, agri-food, wood production, allowing also savings in the public spending in sectors such as health system and natural disaster prevention. This is why it is generally stated that every 1 euro invested into nature restoration adds €4 to €38 in benefits.[194]

In light of the above considerations, it may be suggested that public compensation for such activities could be allowed not only under art. 107 TFEU exceptions, but also under art. 106 TFEU or connected doctrines. Indeed, Member States have a wide margin of discretion regarding the nature of services that can be classified as SGEIs. The Commission has already accepted in some cases that conservation projects qualify as SGEIs. This approach has not been challenged before the Court of Justice, although there is no clear judgment in which Article 106(2) TFEU has been expressly applied to a "pure" nature conservation activity. For example, in a case regarding two German measures entailing respectively the funding of large scale conservation projects and the gratuitous transfer of federally-owned land in natural heritage areas, accompanied by nature conservation obligations to beneficiaries selected through open procedure based on technical qualifications, the beneficiaries were considered undertakings, in view of the economic activities carried out in connection with the land, such as wood sale, fishing and hunting charges. Yet, the Commission held that *"nature restoration tasks entrusted by Germany to nature conservation entities pursue objectives which are of interest for society as a whole, namely the preservation of intact habitats… for future generations. These tasks can be construed as services rendered to all citizens…*

[194] See, Commission website, https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-regulation_en.

compensation for SGEI is the most correct approach for the measures put in place by Germany, which must be assessed globally". Hence, the measure was considered compatible with art. 106(2) TFUE.[195] While the decision is not fully convincing in its legal reasoning, due to the cumulative assessment of economic and non-economic elements within the alleged SGEI – i.e. nature conservation is not considered an economic activity according to the case-law of the Court of Justice, but when it is accompanied by economic exploitation of land, it may qualify as SGEI under art. 106 TFEU – it has the merit of acknowledging the value of nature restoration in terms of a service to society as a whole. Alternatively, one could apply the *Altmark* criteria,[196] to the extent that the beneficiary covers the costs necessary to provide healthy eco-system services to the public.

This situation should be distinguished from the one, analysed by the Court in the *Sātiņi-S* case, where an economic operator is compensated for loss deriving from the obligation to comply with national regulation arising from the implementation of the EU nature law (namely, the birds Directive). Indeed, the Court has clarified that the mere obligation to comply with EU law nature conservation obligations does not mean that an operator has been entrusted with public service obligations.[197]

6. *Conclusions*

Public funding directed towards nature restoration targets constitutes, in itself, an act of solidarity. More specifically, it may be understood as an expression of so-called "vertical solidarity", exercised by States and public authorities *vis-à-vis* their citizens and, more broadly, individuals. At the same time, depending on the design and objectives of public funding schemes, forms of "horizontal solidarity" may also emerge.[198] This

[195] State aid NN 8/2009 - Germany. Nature conservation; see, for similar findings, also State aid No SA.27301 (2015/NN) - the Netherlands. Alleged illegal State aid in connection with the subsidized acquisition or free granting of nature land.

[196] CJEU, 24 July 2003, Case C-280/00, *Altmark Trans and Regierungspräsidium Magdeburg*.

[197] CJEU, 27 January 2022, Case C-238/20, *Santini-S*, par. 48.

[198] For an analysis of the solidarity principle in EU law, based on the above-men-

occurs where public resources are channelled towards sectors of the green transition that, due to structural market failures, would otherwise fail to attract sufficient private investment. In such cases, public funding induces individuals, including undertakings, to engage in activities that benefit other individuals and society at large in terms of environmental sustainability.

Solidarity considerations are inherently rooted in EU State aid law and practice as well as in the ratio of art. 106 TFEU. In line with the integration principle established in art. 11 TFEU, environmental interests are protected under State aid secondary law and policy mainly through the declination of the exceptions provided for under art 107(3) TFEU and the related decisional practice of the European Commission. This helps to steer public funding towards goals of general environmental interest.

All the above analysed legal elements should be fully and coherently exploited to ensure the allocation of public fundings towards effective achievement of EU nature restoration goals. This would in turn fosters vertical solidarity between the Member states and individuals, as well as horizontal solidarity between individuals themselves, to the extent that State aid schemes are capable to orient the conduct undertakings to do things that they would not otherwise do, to the benefit of the environment and, therefore, of the public at large.

In this perspective, the notion of Services of General Economic Interest (SGEI) under Article 106(2) TFEU is an additional avenue for incorporating environmental interests into State aid law. Case law has long accepted that certain environmental services may qualify as SGEIs, thereby justifying derogations from competition and State aid rules. On this basis, it is proposed that some nature restoration activities entrusted to undertakings could, *inter alia*, be treated as SGEIs, in certain cases, given their broad societal and economic benefit. This could open an additional normative space to justify public spending in this field, in line with the actions required by the implementation of the Nature restoration regulation. The proposed solution points towards a possible shift from an approach based on the traditional "polluter pays" principle to-

tioned categories, see G. Morgese, *Il "faticoso" percorso della solidarietà nell'Unione europea*, in *I Post di AISDUE* (III) 2021, *aisdue.eu* and further references therein.

wards one embedding a new "beneficiary pays" principle. Such a shift would reflect a more solidaristic approach to environmental protection, one that acknowledges the collective benefits derived from healthy ecosystems and justifies collective financial responsibility for their preservation and restoration.

ABSTRACT

Nature restoration – State aid – SGEI
Environmental Aid – Agriculture and Forestry Guidelines
Fishery and Aquaculture Guidelines – Ecosystem Services.

In order to fulfil their obligations under the Nature Restoration Regulation (NRR), Member States are required to allocate resources to project enhancing biodiversity. The research analyses how State-funded nature restoration activities can be framed under the applicable EU State aid rules (Articles 107-108 TFEU). Firstly, the article provides an overview of State aid prohibition and relevant exemptions, as well as of the key features of the Commission's compatibility assessment. The analysis then addresses the cases whereby a nature restoration measure may not fall under the notion of aid, as well as the measures that qualify as State aid but may be nevertheless exempted from the prohibition. Both horizontal and sectoral exemptions are examined in light of the EU jurisprudence and Commission's guidance, with a specific focus on those applicable to agriculture, forestry, fishery and aquaculture sectors. Subsequently, the potential of qualifying nature restoration activities as Services of General Economic Interest (SGEI) within the EU legal order is explored, taking stock of the CJEU case-law on aid for biodiversity conservation and suggesting its extension to ecosystem services. In conclusion, the article stresses the need for applying State aid rules to nature restoration initiatives in line with the solidarity principle and that of integration of environmental protection into other EU policies.

Andrea Betti

ON THE LEGAL NATURE OF THE NON-DETERIORATION OBLIGATIONS IN THE NATURE RESTORATION REGULATION

Sommario: 1. Introduction. – 2. "Non-deterioration" obligations in the NRR. – 2.1. The elements of compromise. – 3. "Significant deterioration" in the NRR. – 4. The legal nature of the non-deterioration obligations in the NRR. – 5. Conclusions.

1. *Introduction*

The Nature Restoration Regulation (the "NRR" or "Regulation") constitutes one of the most significant initiatives in recent EU environmental action. Embedded within the broader framework of the European Green Deal,[1] it stems from the realisation that the approach adopted so far to conserve and protect the environment has proven insufficient, since the Union, as also confirmed by Recital 12 of the Regulation, has not yet succeeded in halting the decline of protected habitat types and species. For this reason, in 2022 the Commission introduced a proposal to adopt additional legally binding measures for the Member States.[2] In fact, as highlighted by the Commission in its Biodiversity Strategy for 2030, such duties are necessary to improve and expand the EU's network of protected areas and to develop an ambitious plan for nature restoration.[3]

[1] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Improving access to justice in environmental matters in the EU and its Member States, COM(2020) 643 final of 14 October 2020.

[2] Proposal for a Regulation of the European Parliament and of the Council on nature restoration, COM(2022) 304 final of 22 June 2022.

[3] Communication from the Commission to the European Parliament, the Council,

The NRR both continues and goes beyond the Habitats[4] and Birds[5] directives. It continues them insofar as those directives aim at the conservation and restoration of habitats and species through the creation of the Natura 2000 network and seek to prevent the deterioration of protected ecosystems while ensuring a prior assessment of any plan or project potentially harmful to them. It goes beyond them because the NRR introduces an intervention model based on a complex set of legal obligations for the Member States, which are not limited to the areas within the Natura 2000 network but extend their application to the entire territory of the Member States. Moreover, the NRR is characterised – unlike the Habitats and Birds Directives – by the specification of binding deadlines and precise quantitative targets for ecosystem restoration.[6]

Within this regulatory framework, particular importance is assumed by the "non-deterioration" obligations laid down in Articles 4(11) and 4(12) for terrestrial habitats, and Articles 5(9) and 5(10) for marine habitats, which are composed of two complementary dimensions:

1) A subsequent dimension, enshrined in Articles 4(11) second sentence and 5(9) second sentence, which requires Member States to adopt

the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final of 20 May 2020, p. 4.

[4] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206 7 of 22 July 1992.

[5] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20/7 of 26 January 2010.

[6] On the NRR in general, see M. Reese, "The EU's New Nature Restoration Law - Now for Implementation!", in *Journal for European Environmental & Planning Law*, 3-4/2024, p. 361 ff.; T. Van Der Sluis, V. Van Eetvelde, "Preparing for the EU-Nature restoration law to restore ecosystems", in 2024, p. ff.; R. Guarino, M. Meli (eds.), *Nature restoration law: Politiche, strategie e sfide attuative*, Pisa, 2025; J. Marquardt et al., "Reconciling democracy and sustainability: three political challenges and the role of democratic innovations", in *Sustainability: Science, Practice and Policy*, 1/2025, p. 1 ff.; V. Mauerhofer, "Complement the directed: the EU's nature restoration regulations' relation to the habitats, birds, and environmental liability directives", in *Restoration Ecology*, S1/2025, p. e70227 ff.; N. Soininen et al., "Ecological restoration hierarchy as a lens to reveal the foundational economic and legal structures impeding restoration", in *Restoration Ecology*, 2025, p. e70216 ff.; A. Trouwborst, "Rewilding and the EU Nature Restoration Law: Plotting the Course of Ecosystem Restoration in Europe", in *Journal for European Environmental & Planning Law*, 3/2025, p. 364 ff.

effective measures to ensure that areas already in good condition, or restored to good condition, do not significantly deteriorate.

2) A pre-emptive dimension, under Articles 4(12) and 5(10), which – as it will be argued – requires Member States to adopt protection measures even before the submission of the national restoration plans, in order to prevent long-term restoration targets from being undermined by further losses occurring during the planning phase.

As will be explained in greater detail below, the wording of these provisions gives rise to a tension that characterises the entire legislative text. On the one hand, the Regulation aims to establish precise and ambitious legal obligations for the Member States; on the other, it recognizes the need to find compromise with various political objections that emerged during the approval process, which have resulted in a text that appears less stringent than that of the Commission's original proposal.[7]

The central focus of our research is hence on the legal nature and binding force of these obligations. In fact, it is necessary to ask whether the provisions at issue establish strict result-oriented obligations, or rather obligations of conduct, based on the mere commitment of the States to adopt measures abstractly capable of preventing deterioration[8]. The answer to this question, as one can imagine, has significant practical implications for the possibility of bringing actions before national courts, or the potential liability of the State in cases where deterioration is not prevented. In this regard, the future case law of the Court of Justice will be decisive in determining the balance between the various tensions that shape this "new" legislative text. In the meantime, this article aims, first, to reconstruct the role of the "non-deterioration" obligations within the normative structure of the NRR. Second, it will seek to interpret those obligations, also considering analogous provisions in other legislative texts and in the relevant CJEU case law. Finally, it will analyse the structure of the obligations at issue in order to determine their legal nature and assess their effectiveness.

[7] A. Cliquet et al., "The negotiation process of the EU Nature Restoration Law Proposal: bringing nature back in Europe against the backdrop of political turmoil?", in *Restoration Ecology*, 5/2024, p. e14158 ff.

[8] As the preamble of the Regulation itself appears to suggest in Recital 37.

2. *"Non-deterioration" obligations in the NRR*

The core of the Regulation is defined by the set of obligations laid down in Articles 4 and 5.[9] These provisions list a series of obligations for the Member States, aimed at ensuring the progressive implementation of the restoration measures in terrestrial areas (Article 4) and marine areas (Article 5) and safeguarding the results achieved. The first paragraphs of Articles 4 and 5 outline the positive core of the restoration obligations, requiring Member States to adopt restoration measures for the habitats listed in Annexes I and II that are not in good condition, setting targets that are both temporally and quantitatively defined (30% of areas by 2030, 60% by 2040, 90% by 2050). These are complemented by provisions introducing possible derogations or corrective mechanisms, such as the possibility to exclude habitat types covering more than 3% of the territory of a Member State (Article 4(2) and Article 5(3)) or to reduce the final target to 90% where adequately justified (Article 4(5) and Article 5(6)). Paragraph 17 of Article 4 and paragraph 14 of Article 5 complete this structure by requiring Member States to ensure, in the long term, that at least 90% of the listed habitats reach a satisfactory condition. Articles 4(11), 4(12), 5(9) and 5(10), by contrast, occupy a complementary position in relation to these "active" obligations and operate as safeguards for the stability of the entire regulatory framework. Beginning with Article 4(11) and the corresponding Article 5(9), it should be noted that they set out another obligation of a "complementary" nature with respect to the first paragraphs of Articles 4 and 5, the so-called "continuous-improvement obligations."[10] Indeed, these provisions, in their first sentence, stipulate that the Member States "shall put in place measures which shall aim to ensure that the areas that are subject to restoration

[9] Dedicated, respectively, to terrestrial, coastal and freshwater habitats (Annex I of the Regulation) and to marine habitats (Annex II).

[10] B.J. De Leeuw, C. Backes, *The Non-Deterioration Obligation in the Nature Restoration Regulation - a Necessary and Proportionate Addition to the Habitats Directive or a Monstrosity with Disastrous Consequences for Society*?, Journal for European Environmental and Planning Law, 2024, p. 37 et seq.; E. Lees, O.W. Pedersen, "Restoring the Regulated: The EU's Nature Restoration Law", in *Journal of Environmental Law*, 2025, p. 1 ff., p. 12 *et seq*; L. Hildt, *Restore Now, Destroy Later? A Legal Analysis of the Non-Deterioration Obligations in the Nature Restoration Regulation and beyond*, ClientEarth, 2025, p. 8 et seq.

measures" listed in annex I and II "show a continuous improvement (…) until good condition is reached." Moreover, for habitats restored, in order to ensure the favourable conservation status of the protected species, they must show "a continuous improvement of the quality of the habitats of the species (…) until the sufficient quality of those habitats is reached."

Turning instead to the "non-deterioration" obligations, the "subsequent" non-deterioration duties are, as already mentioned, set out in the second sentence of Articles 4(11) and 5(9). Specifically, the NRR provides that "without prejudice to Directive 92/43/EEC, Member States shall put in place measures which shall aim to ensure that areas in which good condition has been reached, and in which the sufficient quality of the habitats of the species has been reached, do not significantly deteriorate". They thus apply to areas that have been successfully restored.

The "pre-emptive non-deterioration" obligations, by contrast, are set out in Articles 4(12) and 5(10), and require Member States to put in place measures aimed at preventing deterioration even before the publication of the national restoration plans. The wording of both provisions, in fact, states that: "Without prejudice to Directive 92/43/EEC, Member States shall endeavour to put in place necessary measures with the aim of preventing significant deterioration", specifically of areas where the habitat types listed in Annex I and II of the Regulation occur which are in "good condition" or areas which must otherwise be restored to meet the restoration targets set out in paragraphs 17 and 14 of articles 4 and 5. The rationale of these latter provisions is to prevent the progressive degradation of habitats during the interval between the planning phase and the implementation phase from rendering the restoration plans prepared by the Member States ineffective.[11]

2.1. *The elements of compromise*

While the "non-deterioration" obligations appear to reflect the intention to set out duties capable of ensuring the continuity and stability of the ecological restoration process, the compromises that led the legislature to weaken the normative force of such clauses cannot, however,

[11] On this regard, E. Lees, O. W. Pedersen, *op. cit.*, p. 13.

be overlooked. First and foremost, one must consider the broad range of derogations laid down in paragraphs 14 and 15 of Article 4 and in paragraphs 11, 12 and 13 of Article 5. Indeed, these provisions allow Member States to exclude the application of the obligations at issue where the deterioration is due to force majeure, to unavoidable transformations of habitats caused directly by climate change, to plans or projects of overriding public interest for which there are no less harmful alternatives, or again to actions or omissions attributable to third countries.

In the author's view, the scope of this system of derogations can be appreciated through a comparative analysis with similar regimes laid down, for example, by the Birds and Habitats Directives in their respective fields of application. Article 9 of the Birds Directive, in fact, allows Member States to derogate from the general prohibitions on the capture, killing, trade and disturbance of protected species only in exhaustively listed cases, which must be interpreted strictly,[12] such as for reasons of public health and safety, needs relating to agriculture and fisheries, scientific and educational purposes, or the possibility of authorising, in small quantities and under strict control, activities which would otherwise be prohibited. These narrowly framed exceptions are accompanied by equally specific formal obligations, such as the duty to state reasons and to notify the Commission, with the additional constraint that they must not jeopardise the conservation of the species concerned.

A different, but equally stringent approach is taken by the Habitats Directive, which under Article 6(4) essentially allows derogations from the obligation to protect Natura 2000 sites only where plans or projects of overriding public interest are at stake, where no less harmful alternatives exist, and subject to the requirement of compensatory measures capable of ensuring the "overall coherence" of the network – possibly with the Commission's approval in the case of certain priority species or habitats.[13]

[12] *Ex multis*, CJEU, Judgement of 17 March 2021, C-900/19, para. 29 et seq; judgment of 21 June 2018, C-557/15, *Commission v Malta*, para. 47; Judgement of 8 June 2006, C-60/05, *WWF Italia*, para. 33 and 34.

[13] As with the Birds Directive, those exceptions must be interpreted strictly. Inter alia, see: CJEU, Judgement of 26 October 2006, C-239/04, para. 25 et seq; Judgement of 20 September 2007, C-304/05, para. 82; Judgement of 16 February 2012, C-182/10, *Solvay*, para. 73.

Comparatively, therefore, the leeway granted by the NRR appears, based on its wording, to be quite broad. Indeed, while leaving intact the more stringent regime applicable to Natura 2000 sites,[14] it provides for derogations of a far more general (and presumptive) nature, even going so far as to allow the application of non-deterioration obligations at the biogeographical scale.[15]

The other major compromise element, as noted, is the very wording of the "non-deterioration" obligations, which appears to be the clearest indicator of how far the Commission's original proposal has been scaled back. The proposal, in fact, was significantly more stringent in its formulation of those obligations: the two non-deterioration duties (both pre-emptive and subsequent) set out in Article 4 – as well as those in Article 5 – were formulated as follows: the original "subsequent obligations" provided that the Member States "shall ensure" (rather than "shall put in place measures which shall aim to ensure" as in the final text) that areas in good condition "do not deteriorate" (as opposed to "do not significantly deteriorate"). Similarly, the pre-emptive obligations required, in the original formulation, Member States to ensure that places where the Habitats subject to restoration occur do not deteriorate (rather than "shall endeavour to put in place" measures "with the aim

[14] Indeed, this provision reasonably narrows the scope of the regulation's general derogation regime by stipulating that, within Natura 2000 sites, non-compliance with the obligations set out in paragraphs 11 and 12 is justified where it results only from: cases of force majeure, including natural disasters; unavoidable transformations of habitats directly caused by climate change or a plan or project authorised pursuant to Article 6(4) of Directive 92/43/EEC.

[15] Article 4(13) NRR provides: "With regard to paragraphs 11 and 12 of this Article, outside Natura 2000 sites, Member States may, in the absence of alternatives, apply the non-deterioration requirements set out in those paragraphs at the level of each biogeographical region of their territory for each habitat type and each habitat of species, provided that the Member State concerned notifies its intention to apply this paragraph to the Commission by 19 February 2025 and fulfils the obligations set out in Article 15(3), point (g), Article 20(1) point (j), Article 21(1) and Article 21(2), point (b)." In the literature, this derogation has been described as a "grand-scale derogation", and it has been noted that "The importance of this caveat to the non-deterioration obligation, therefore, is to allow deterioration of parts of habitats provided that other parts are enhanced or conserved, eg by compensatory measures. In theory, this could generate a significant degree of flexibility for Member States," E. Lees, O. W. Pedersen, *op. cit.*, p. 14.

of preventing significant deterioration"). As highlighted in the literature, "the compromise text focuses on measures to prevent deterioration, not the result that any deterioration is forbidden,"[16] which appears to have led to a shift from obligations of result to obligations of means, insofar as Member States are no longer required to guarantee absolutely the absence of deterioration, but only to adopt measures aimed to prevent a significant one.

3. *"Significant Deterioration" in the NRR*

In order to understand the non-deterioration obligations in the NRR, it is firstly necessary to clarify what is meant – or, at the very least, what could be meant – by "significant deterioration". In this regard, it has been rightly observed that[17] the NRR, similarly to the Habitats Directive and the Water Framework Directive (WFD),[18] does not provide any definition of the concept of deterioration, thereby making it necessary to look towards other relevant frameworks and to the case-law of the Court of Justice. For example, with regard to Article 4(1) of the WFD, in *Weser*, the Court clarified that a situation of "deterioration" is present when "as soon as the status of at least one of the quality elements (…) falls by one class, even if that fall does not result in a fall in classification of the body of surface water as a whole."[19] The Court also specified that "if the quality element concerned (…) is already in the lowest class, any deterioration of that element constitutes a 'deterioration of the status' of a body of surface water."[20] The definition of deterioration provided by

[16] B. J. De Leeuw, C. Backes, *op. cit.*, p. 34.

[17] L. Hildt, *op. cit.*, p. 15.

[18] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for the Community action in the field of water policy, OJ L 327 1 of 22 December 2000.

[19] CJEU, Judgement of 1 July 2015, C-461/13, *Weser*, para. 70; see also judgment of 4 May 2016, C-346/14, *Commission v Austria*, par 64. On the WFD and its non-deterioration obligations, see A. Cliquet, K. Decleer, H. Schoukens, "Restoring nature in the EU, The only way is up?", in C.H. Born, A. Cliquet, H. Schoukens, D. Misonne, G. Van Hoorick, *The Habitats Directive in its EU Environmental Law Context: European Nature's Best Hope?*, Routledge, 2015, p. 276-278.

[20] *Ibidem.*

the Court is, clearly, rather strict – especially when compared with the alternative approach that would reconstruct deterioration as the downgrading of the water body as a whole into a lower status class.[21] Furthermore, the Court emphasized that also temporary deteriorations may be relevant and must be taken into account.[22]

An even stricter reading of "deterioration" is contained in the Drinking Water Directive (DWD),[23] where Article 4(2) requires Member States to "ensure that the measures taken to implement this Directive are based on the precautionary principle" and "in no circumstances have the effect or allowing, directly or indirectly, any deterioration of the present quality of water intended for human consumption or any increase in the pollution of waters used for the production of water intended for human consumption." As evident, the formulation of this obligation is quite rigorous, leaving virtually no margin for tolerating even minimal or incidental declines in water quality and thereby establishing one of the most rigorous non-deterioration standards within EU environmental law.

Perhaps the most relevant "non-deterioration obligation" for our purpose is enshrined under the Habitats Directive. In this directive, Article 6(2) provides that Member States "shall take appropriate steps to avoid, the deterioration of the Natura 2000 sites" or the "disturbance" of protected species. Similarly to the NRR, not all degradations or disturbances are relevant, but only those that could be "significant in relation to the objectives" of the Directive, thereby introducing a threshold that narrows the scope of a notion that would otherwise be excessively broad. On this regard, the CJEU held, in *Sweetman*, that this provision should not be understood as establishing an unconditional ban on any form of deterioration. Instead, it lays down a duty to prevent only those forms of deterioration or disturbance that are significant, having regard

[21] In this regard, H. Josefssonn, "The Environmental Liability Directive, the Water Framework Directive and the Definition of 'Water Damage", in *Environmental Law Review*, 2018, p. 158.

[22] CJEU, *Weser*, cit. para. 67; see also CJEU, Judgement of 5 May 2022, C-525/20, *Association France Nature Environnement*, para. 45.

[23] Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast), OJ L 435/1 of 23 December 2020.

to the specific conservation objectives of a site.[24] Nevertheless, the Court has made clear, in the same judgment, that Articles 6(2) and 6(3) of the Habitats Directive must be interpreted jointly, as both provisions aim to ensure the same level of protection for natural habitats and the habitats of species.[25] Indeed, as rightly noted in the literature, if the assessment standards applicable to paragraphs 2 and 3 of Article 6 were divergent, the entire system of protection would become incoherent.[26]

Moreover, the Court has emphasised that deterioration refers not only to certain impacts, but also potential impacts that may compromise, even partially, the conservation or achievement of the ecological objectives of the site concerned. Indeed, in *Waddenzee*, the Luxembourg judges accepted the view that triggering the protective mechanism laid down in Article 6 does not require certainty of harm; rather, it is sufficient that there is a mere probability that a plan or project may have significant effects on the habitat in question.[27] If we were to adopt the same perspective in relation to the forms of "deterioration" envisaged by the NRR, we would reach the conclusion that the adjective "significant" is not decisive in delimiting the binding force of the provisions at issue but rather serves only to introduce a benchmark against which deterioration must be assessed, namely the objectives of the regulatory framework itself. An "abstract" notion of deterioration could, in fact, impose on Member States a disproportionate burden of monitoring and supervision that may be difficult to sustain from both an administrative and financial perspective – particularly in settings where knowledge about habitats remains incomplete. For this reason, as noted in the literature, an interpretation that links the "non-deterioration" obligations with those of "continuous improvement" could be given weight – allowing for limited deterioration provided that the habitats and species within sites where restoration measures are implemented continue, overall, to show improvement.[28] In this sense, Member States would be afforded a certain margin of flexibility, with the national planning process playing a central role in

[24] CJEU, Judgment of 24 November 2011, C-404/09, *Commission v Spain*, para. 142; judgment of 11 April 2013, C-258/11, *Sweetman*, para. 33.

[25] *Sweetman*, cit., para. 32.

[26] B. J. De Leeuw, C. Backes, *op. cit.*, p. 38.

[27] CJEU, Judgement of 7 September 2004, C-127/2002, *Waddenzee*, para. 41.

[28] B.J. De Leeuw, C. Backes, *op. cit.*, p. 38.

progressively defining and operationalising the concept of deterioration, even assessing the possibility of putting in place compensatory measures. This would make it possible to strike a balance among the various considerations underlying the Regulation, while still preserving the overall *result-oriented* structure of the system of restoration obligations.

However, in our view, such an approach – though reasonable – could find room only with respect to the obligations of subsequent non-deterioration. It is only after the planning phase, and during the stage of progressive implementation, that one may assess whether marginal deteriorations can be tolerated, provided that they do not compromise the overall trajectory of improvement in ecological conditions. For the pre-emptive non-deterioration obligations, by contrast, a more stringent approach seems more reasonable. In fact, from our view it is better – given the predominant precautionary function of the pre-emptive dimension – to place emphasis on the principle of prevention, giving weight to any deterioration, even merely potential. If, at first glance, distinguishing between two different notions of "deterioration" for the two categories of obligations may appear systemically incongruous, such a distinction can be justified by the different teleological functions that each group of obligations performs within the normative framework of Articles 4 and 5 NRR. The pre-emptive non-deterioration obligations (Articles 4(12) and 5(10)) operate even before the implementation of the national restoration plans, with the primary aim of preserving the ecological foundation necessary to achieve the Regulation's long-term objectives. These obligations therefore lie on a clearly precautionary and anticipatory plane, intended to prevent degradation dynamics – even those not yet sufficient to formally undermine the "good condition" of a habitat – from jeopardising its future restoration potential or from requiring more intensive and costly interventions at a later stage. From this perspective, adopting a rigorous concept of "deterioration", one that extends also to the potential risk of compromising ecological integrity, is fully justified given the precautionary function that these obligations are designed to fulfil. By contrast, the subsequent non-deterioration obligations (Articles 4(11) and 5(9)) operate after the restoration plans have been implemented – that is, once an area has been brought back into "good condition"[29] or

[29] For an overview of this issue, see V. MAUERHOFER, "Complement the directed:

once the habitats concerned have reached a sufficient quality under the Regulation. In this context, the logic of intervention seems to shift from a primarily preventive dimension to one of consolidating and stabilising the results achieved, a logic that must be reconciled with the obligations of continuous improvement. For this very reason, a greater degree of interpretative flexibility may be justified, allowing certain forms of deterioration if they occur within a broader framework of overall and ongoing improvement of the ecosystem concerned.

4. *The legal nature of the non-deterioration obligations in the NRR*

Having examined what may be understood by "significant deterioration" for the purposes of the NRR, it now seems appropriate to shift attention to the other focal issue of this research, namely the legal nature of the non-deterioration obligations in light of their attenuated wording. Indeed, as we have seen, the literal wording of the provisions under examination appears to reduce their binding force. In particular, Articles 4(11), second subparagraph, and 5(9), second subparagraph, of the Regulation provide that "Member States shall put in place measures aimed at ensuring that areas in which a good condition and a sufficient quality of species habitats have been achieved do not deteriorate to a significant extent", whereas Articles 4(12) and 5(10) state that Member States "shall endeavour to put in place the necessary measures in order to prevent significant deterioration."

As already noted, compared with the Commission's original proposal, the legislature seems to shift the centre of gravity of the obligations from the level of results to that of "conduct", or, in more strictly legal terms, to

the EU's nature restoration regulations' relation to the habitats, birds, and environmental liability directives", *op. cit*. In particular the author underscores the difference between "good condition" (GC) under the NRR and "favourable conservation status" (FCS) under the Habitats and Birds Directives, arguing that under the Habitats and Birds Directives, FCS constitutes the sole and ultimate legal objective in which restoration is only a means to attain and subsequently maintain that status, which is assessed across local, national and biogeographical levels and is fully justiciable. By contrast, the NRR introduces "good condition", together with related notions such as favourable reference area and sufficient habitat quality and quantity, as intermediate, process-oriented targets designed to contribute to, but not replace, the attainment of FCS.

recast them as *obligationes ad diligentiam*.[30] According to part of the literature, this transformation may substantially reduce their effectiveness and practical enforceability, weakening both the safeguarding function of the obligations and the legal certainty of national restoration plans.[31]

However, in the present author's view, although a redefined legal nature of the non-deterioration obligations cannot be called into question, the alleged reduction in their binding force may, in certain respects, be largely illusory. In fact, the new wording may reflect another type of obligations already known in international law: the so called "goal-oriented obligations."[32] This type of obligation designates a distinct category of international obligations that cannot be adequately captured by the traditional dichotomy between obligations of conduct and obligations of result. Unlike obligations of result, they do not require the achievement of a specific, concrete and exhaustively defined factual outcome, yet unlike obligations of conduct, they do not prescribe a particular procedure or set of acts to be followed. Rather, they commit States to pursue a given objective by setting in motion and maintaining an evolutionary process directed toward a certain end.[33] Compliance is therefore assessed not in binary terms of success or failure, but in light of the overall orientation, coherence and progression of State action toward the goals that must be achieved. Although such obligations may appear "softer" because of their open-ended structure, they nonetheless impose binding legal duties because States are required to act in good faith so as not to frustrate the objective pursued and may incur responsibility if their conduct manifestly departs from or undermines the agreed direction.

In this sense, it should be noted that the new wording of the non-deterioration obligations in the NRR, while reflecting an attempt to soften them, does not necessarily entail a substantial reduction in their justiciability. Indeed, the transformation into "goal-oriented" obligations, while shifting the focus away from the attainment of a specific outcome and

[30] On the distinction between the two types of obligations see R. Wolfrum, "Obligation of Result Versus Obligation of Conduct: Some Thoughts About the Implementation of International Obligations", in *Looking to the Future: Essays on International Law in Honor of W. Michael Reisman*, M.H. Arsanjani (ed.) Leiden, 2010, p. 363 ff.

[31] Cfr. B.J. De Leeuw, C. Backes, *op. cit.*, p. 33.

[32] See R. Wolfrum, *op. cit.*, p. 366-368.

[33] *Ibidem*.

towards the quality, coherence and timeliness of the measures adopted, does not lessen the legal commitment of Member States. Rather, it recalibrates the standard of review, transferring scrutiny from the level of material outcomes to that of due diligence and the substantive adequacy of the policies implemented in the light of the overall restoration process. Accordingly, the new wording appears to exclude situations of strict (objective) liability, in which a deterioration would be attributable to a Member State merely because it occurred, irrespective of any act or omission imputable to the national authorities. Such scenarios would, in any event, already have been ruled out by the derogations laid down in Articles 4(14), 4(15), 5(11), 5(12) and 5(13) of the Regulation, which relieve Member States of responsibility in cases of force majeure (including natural disasters) and unavoidable habitat transformations directly caused by climate change. In this sense, the real difference compared with the Commission's original proposal would lie in the reallocation of the burden of proof where a Member State is alleged to have breached one of the non-deterioration obligations. Under the initial version, the mere finding of a deterioration could have been sufficient to presume State responsibility, thereby requiring the Member State to demonstrate that the event was unavoidable or attributable to unforeseeable external causes. By contrast, the final version of the Regulation appears to reverse this dynamic. It is now for the Commission – or for any party alleging a breach – to establish the inadequacy of the measures adopted, that is, to show that the Member State failed to take all reasonably necessary actions to prevent or avoid deterioration.

This approach brings the NRR regime closer to that of Article 6(2) of the Habitats Directive, under which Member States enjoy a margin of discretion in designing safeguard measures, provided that those measures are capable of ensuring that the protected site is not compromised,[34] including with respect to merely potential threats.[35] Moreover, although it might be argued that the reversal of the *onus probandi* is liable to dilute the effectiveness of judicial protection of these obligations (particularly in proceedings brought under Article 260 TFEU), this concern may be mit-

[34] In this sense, *inter alia*, CJEU, Judgement of 14 January 2016, Case C-399/14, *Waldschlößchenbrücke*, para. 36-42.

[35] *Ibidem*.

igated in light of the legal notion of "deterioration" outlined by the Court for the Habitat directive. In fact, from the perspective adopted here, by embracing a concept of "non-deterioration" that also gives weight to purely potential harm, the evidentiary burden should not be understood as requiring proof of a direct causal link between a State's act or omission and a concrete damage. Rather, it should be framed as an assessment of the adequacy of the measures adopted in relation to a foreseeable and preventable risk, consistently with the principle of prevention.

Moreover, by taking into account the different teleological scopes of the "pre-emptive" and the "subsequent" dimensions of the obligations under consideration, a further distinction can be drawn. As argued about the "subsequent dimension" of the non-deterioration obligation, adopting a joint reading with the obligations of continuous improvement would, in our view, support a more flexible interpretation of these duties, insofar as the Regulation's long-term restoration objectives are respected and a steady overall improvement of the habitats subject to restoration measures can be observed. This perspective seems also coherent with the notion of "goal-oriented" obligation settled here. Nevertheless, in our opinion, the shift in the burden of proof would not undermine their effective protection. In fact, judicial review would not focus on establishing a strict causal link between the deterioration and the inadequacy of the measures adopted by the Member State. Rather, it would centre on an abstract assessment of the adequacy of those measures to prevent significant deterioration and, overall, to ensure the attainment of the Regulation's objectives. This implies that State responsibility, for the purposes of a possible infringement procedure, could still arise where it is shown that the national authorities failed to put in place an adequate system of monitoring, prevention and timely response in relation to known or reasonably foreseeable risks[36] of which the fact that harm has occurred would only be one element of proof.

[36] When there is scientific uncertainty about the existence or scale of risks to human health or to the environment the precautionary principle allows institutions to take protective action without having to wait for those risks to be fully proven or for actual harm to occur. On this theme see E. Scotford, *Environmental Principles and the Evolution of Environmental Law*, Oxford - Portland, 2017, p. 178-184; S. Pugliese, *Il rischio nel diritto dell'Unione europea, tra principi di precauzione, proporzionalità e standardizzazione*, Cacucci, Bari, 2017.

With regard to pre-emptive obligations, by contrast, given their strictly precautionary function, it appears more appropriate to emphasize the risk of any deterioration, since any damage may potentially jeopardize the achievement of the aims and objectives of the Regulation. In this respect, even though these duties may also be characterised as "goal-oriented" obligations, the relevant result cannot be conceived as the attainment of a predetermined ecological status, but rather as the prevention of any deterioration liable to irreversibly undermine the regulatory trajectory of restoration.

In other words, for both dimensions, where a breach of those obligations is alleged, the evidentiary assessment would focus not on establishing a direct link between environmental deterioration and an act or omission attributable to the Member State, but rather on demonstrating the mere inadequacy of the State's conduct in the light of the teleological scope of each obligation, irrespective of any causal connection with damage that has actually materialised.[37]

5. *Conclusions*

The analysis carried out here shows that the need to accommodate the political resistance of the Member States, at least *prima facie*, attenuated the wording of those obligations in comparison with the Commission's original proposal. Such attenuation, however, should not be understood as a retreat from the binding nature of the non-deterioration obligations, but rather as a "reconfiguration" of their legal logic. The shift from "obligations of result" to "goal-oriented" obligations, in the writer's view, does not necessarily entail a weakening of environmental protection but a displacement of the focus from material outcomes to administrative responsibility. In fact, if the NRR no longer requires Member States to guarantee the absolute absence of deterioration, instead, it obliges them to establish planning, monitoring and intervention systems capable of

[37] Moreover, similarly to what Advocate General Kokott observed about Article 4(4) of the Birds Directive, even in this context the occurrence of damage or deterioration may nevertheless constitute indicative evidence pointing to the insufficiency of the efforts undertaken, thereby requiring the Member State to demonstrate that it acted with due diligence. CJEU, Opinion of Advocate General Kokott of 14 September 2006, case C-418/04, *Commission v Ireland*, para. 110.

neutralising in a reasonably effective manner the risk of degradation, including purely potential risks. Within this framework, the notion of "significant deterioration" cannot be construed as a restrictive threshold limiting the binding force of the obligations. It must instead be read as a teleological criterion, in coherence with the case law developed under the Habitats Directive and the Water Framework Directive. As in those regimes, deterioration under the NRR does not coincide solely with actual and proven damage but should also encompass any threat – even if merely probable or foreseeable – assessed in the light of the restoration objectives pursued by the Regulation.

The distinction between pre-emptive and subsequent non-deterioration obligations further allows for a more nuanced articulation of the degree of rigour required of Member States. In the pre-emptive dimension (Articles 4(12) and 5(10)) the NRR performs a predominantly precautionary function so that, at this stage, deterioration must be understood in a particularly broad sense, including even the mere risk of compromising the ecological integrity of habitats. In the subsequent phase, once the restoration process has begun and a framework of continuous improvement is in place, a greater degree of interpretative flexibility may be justified, provided that the overall trajectory of ecological recovery is not undermined.

As regards enforceability, the reclassification of these obligations undoubtedly entails a reallocation of the burden of proof. Nevertheless, this shift does not necessarily undermine the effectiveness of judicial protection because if the core of judicial review no longer lies in establishing a causal link between State conduct and environmental damage that has already materialised, but rather in assessing the adequacy of the measures adopted in relation to known or reasonably foreseeable risks, courts remain able to scrutinise whether Member States have complied with their duties of diligence, prevention and monitoring, and to hold them accountable whenever the regulatory framework proves to be incapable of neutralising threats to the achievement of the restoration objectives. In this perspective – with particular reference to the "subsequent" non-deterioration obligations – even the mere absence of continuous improvement may constitute a strong indicator of inadequacy, capable of triggering State responsibility for breach of the obligations imposed by the Regulation.

ABSTRACT

Nature Restoration Regulation – Non-deterioration
Significant deterioration – Goal-oriented obligations
EU environmental law

This article examines the legal nature and binding force of the non-deterioration obligations introduced by the Nature Restoration Regulation (NRR), with particular reference to Articles 4(11), 4(12), 5(9) and 5(10). These provisions are constructed as safeguards, designed to preserve both the results of restoration measures and the ecological conditions necessary for the achievement of long-term restoration targets. The article argues that, although the final wording of the Regulation is less stringent than the Commission's original proposal, this does not necessarily entail a weakening of the obligations' legal force. Rather, the non-deterioration duties should be understood as goal-oriented obligations because they do not impose strict liability for every instance of deterioration, but require Member States to adopt coherent, timely and effective systems of planning, monitoring and preventing.
Furthermore, the article distinguishes between pre-emptive and subsequent non-deterioration obligations, arguing that the former performs a predominantly precautionary function, while the latter allow for a more flexible assessment within the broader trajectory of continuous ecological improvement.

Enrico Mezzacapo*

A COMMON PATH FOR RESTORING EU AGRICULTURAL ECOSYSTEMS: THE NATURE RESTORATION REGULATION AT THE CROSSROADS WITH THE COMMON AGRICULTURAL POLICY

Sommario: 1. Introduction: the food system polycrisis and the EU countermeasures. – 2. Filling the gaps of nature conservation in agriculture: the Green Deal's attempt. – 3. The incomplete green transition of the CAP 2023-2027. – 4. The Nature Restoration Regulation and agri-food considerations. – 5. Conclusions: towards a common restoration approach.

1. *Introduction: the food system polycrisis and the EU countermeasures*

The EU has increasingly acknowledged the urgency of addressing widespread ecosystem degradation and biodiversity loss in agricultural landscapes, as well as the need to tackle the structural crisis of food systems in a holistic manner.[1] Modern food systems are facing a complex poly-crisis: prevailing patterns of production, processing, and consumption drive environmental degradation, fuel climate change and biodiversity

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[1] The progressive recognition of the urgency to halt biodiversity loss and habitat deterioration is reflected, inter alia, in European Commission, Our Life Insurance, Our Natural Capital: An EU Biodiversity Strategy to 2020 COM(2011) 244 final (3 May 2011); European Commission, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives) SWD(2016) 472 final (16 December 2016); European Commission, Commission Staff Working Document - Evaluation of the EU Biodiversity Strategy to 2020 SWD(2022) 284 final (6 September 2022); EEA, State of Nature in the EU: Results from Reporting under the Nature Directives 2013-2018 (EEA Report No 10/2020, Publications Office of the European Union 2020).

loss, and yet still fail to deliver food security, equity, and public health.[2] EU-wide assessments[3] indicate that only around 15% of habitats are in favourable conservation status, while over 80% remain unfavourable, with limited recovery.[4] Agro-ecosystems, which cover nearly half of the EU's terrestrial area, are among those in the poorest condition, despite their importance for providing key ecosystem services for agriculture.[5] Soil assessments similarly suggest that 60-70% of soils are unhealthy.[6] Changes in agricultural practices, such as intensification and specialization, often supported by public policy incentives, as well as abandonment in marginal areas,[7] have long been identified as critical pressures on agricultural ecosystems.[8] Although some improvements are found (e.g. lower nitrate concentrations in groundwater and expansion of organic

[2] B. Fogel, J. Urhahn, M. Belay, J. Clapp, S. Fernandes, A. Jasim, R. Patel, S. Sama, R. Sengupta, *Seeds of Sovereignty: Contesting the Politics of Food*, Alameda Institute - Rosa-Luxemburg-Stiftung, June 2024. On the concept of polycrisis linked to food system, see also the well-known New York Times article by D. Wallace, *Food as You Know It Is About to Change*, in *The New York Times*, 28 July 2024.

[3] European Commission Joint Research Centre, Mapping and Assessment of Ecosystems and their Services: An EU Ecosystem Assessment, Publications Office of the European Union 2020, JRC123783, (the "MAES report").

[4] EEA, *State of Nature in the EU: Results from Reporting under the Nature Directives 2013-2018*, EEA Report No 10/2020, cit.

[5] Ibidem. The MAES report defines agro-ecosystems as "communities of plants and animals interacting with their physical and chemical environments that have been modified by people to produce food, feed, fiber, energy and other products for human consumption and processing."

[6] EEA, *Soil Monitoring in Europe: Indicators and Thresholds for Soil Health Assessments*, 2025.

[7] EEA, *Soil Monitoring in Europe*, cit. The cost of soil degradation in the EU is estimated at over EUR 50 billion per year. See also EEA, *State of Nature in the EU*, cit. On the legal debate concerning unsustainable incentives, see A. Iannarelli, *Gli accordi di sostenibilità*, in P. Borghi, I. Canfora, A. Di Lauro, L. Russo (eds.), *Trattato di diritto alimentare italiano e dell'Unione europea*, II ed., Milano, 2024, p. 63 ff.; P. Lattanzi, *La transizione verso un sistema alimentare sostenibile nel Green Deal*, in P. Borghi, I. Canfora, A. Di Lauro, L. Russo (eds.), *Trattato di diritto alimentare italiano e dell'Unione europea*, II ed., Milano, 2024, p. 29 ff.

[8] EEA, *The European Environment - State and Outlook 2015: Synthesis Report*, Luxembourg, 2015. The report already highlighted "no significant overall progress" towards the target of increasing the contribution of agriculture and forestry to maintaining and enhancing biodiversity, identifying agricultural intensification and land abandonment among the main pressures on biodiversity.

farming), they are uneven and insufficient to reverse historic losses, while climate change further amplifies pressures and long-term indicators such as farmland birds and grassland butterflies continue to decline.[9]

Over the last decade, the EU has increasingly acknowledged the strategic relevance of agri-food systems for climate mitigation and adaptation, biodiversity conservation, and ecosystem resilience, as reflected in the European Green Deal and its related initiatives, including the Farm to Fork Strategy ("FtF"), the EU Biodiversity Strategy for 2030, and the Soil Strategy.[10] Yet, despite their ambition, the transition towards sustainable food systems has been characterised by fragmentation, political resistance, and regulatory setbacks. Against this uneven backdrop, the adoption of the EU's Regulation on Nature Restoration (EU) 2024/1991 ("NRR")[11] marks a significant step forward: it introduces binding, progressive, and ecosystem-specific restoration obligations, including, importantly, dedicated provisions on agricultural ecosystems. The final, highly negotiated text, however, does not impose direct obligations on farmers; rather, Member States are responsible for implementation through the Nature Restoration Plans (NRPs), with discretion as to instruments and means.[12] Consequently, the effectiveness of agri-ecosystem restoration will depend, first, on how the Regulation's own agricultural provisions are implemented through NRPs, including the selection of measures, the definition of satisfactory levels, monitoring arrangements, and the capacity to translate restoration objectives into territorially specific obligations and incentives. Yet, given that agricultural land management is already deeply structured by other legal and financial frame-

[9] *Ivi*. MAES report, cit.

[10] European Commission, The European Green Deal, COM(2019) 640 final of 11 December 2019; European Commission, A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System, COM(2020) 381 final of 20 May 2020; European Commission, EU Biodiversity Strategy for 2030: Bringing Nature Back into Our Lives, COM(2020) 380 final of 20 May 2020; European Commission, EU Soil Strategy for 2030, COM(2021) 699 final of 17 November 2021.

[11] 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, OJ L 2024/1991 of 29 July 2024.

[12] Commission Implementing Regulation (EU) 2025/912 laying down rules for the application of Regulation (EU) 2024/1991 as regards a uniform format for the national restoration plans, OJ L of 26 November 2025.

works, its effectiveness will also strongly depend on how the NRR is coordinated with, and supported by, instruments such as the Common Agricultural Policy ("CAP"). Despite the persistent controversy over its environmental performance, the CAP remains the Union's most influential funding and governance framework shaping land use and farming practices.[13] This article seeks to understand whether the CAP, in its current and emerging post-2027 configuration, can operate as a credible framework for supporting the NRR's agricultural restoration objectives, or whether its prevailing financial and governance architecture risks reproducing the very pressures that restoration law seeks to reverse.

2. *Filling the gaps of nature conservation in agriculture: the Green Deal's attempt*

Conservation and restoration, which perform complementary ecological and legal functions in safeguarding the integrity and long-term functioning of ecosystems, have historically been structured in EU law through the Birds Directive ("BD") and Habitats Directive ("HD"), with the Natura 2000 regime they create.[14] However, the interaction between this framework and agricultural ecosystems has long been marked by a

[13] 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, OJ L 435 of 6 December 2021; Regulation (EU) 2021/2116 of the European Parliament and of the Council of 2 December 2021 on the financing, management and monitoring of the common agricultural policy and repealing Regulation (EU) No 1306/2013, OJ L 435 of 6 December 2021; and Regulation (EU) 2021/2117 of the European Parliament and of the Council of 2 December 2021 amending Regulations (EU) No 1308/2013 establishing a common organisation of the markets in agricultural products, (EU) No 1151/2012 on quality schemes for agricultural products and foodstuffs, (EU) No 251/2014 on the definition, description, presentation, labelling and the protection of geographical indications of aromatised wine products and (EU) No 228/2013 laying down specific measures for agriculture in the outermost regions of the Union, OJ L 435 of 6 December 2021.

[14] Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds, OJ L 20/7 of 26 January 2010; Council Directive 92/43/EEC of 21 May 1992 on the

structural mismatch: agriculture and human-induced land modifications are consistently reported among the main pressures on terrestrial ecosystems, yet the Nature Directives have not been sufficient to halt soil degradation, habitat loss, and broader ecosystem decline across the Union.[15]

There are several reasons for this. Although Natura 2000 sites permit productive uses and include substantial shares of agricultural-type habitats, their coverage remains limited to 18-24% of EU land, leaving large areas of intensively managed farmland outside site-based protection, conservation and restoration duties, and lacking robust biodiversity monitoring. Importantly, farmland accounts for roughly 40-47% of Natura 2000 terrestrial Land, and many protected habitats and species are closely dependent on or affected by agricultural management.[16] Nevertheless, the site-based legal architecture has struggled to respond to the cumulative, diffuse and transboundary pressures generated by contemporary agri-food production systems.[17] For one, large shares of intensively managed cropland and grassland lie outside the Directives' coverage, meaning that they do not benefit from comparable protection, conservation or restoration obligations. Crucially, this contributes to persistent knowledge and monitoring gaps regarding land-use change, habitat loss and fragmentation, and the ecological effects of agricultural intensification.[18] Indeed, several contributions in the restoration ecology literature have emphasised that restoration efforts must focus precisely where human economic activity is most intense, with the aim not to manage wil-

conservation of natural habitats and of wild fauna and flora, OJ L 206/7 of 22 July 1992 (together, the "Nature Directives").

[15] European Commission, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives), SWD(2016) 472 final of 16 December 2016, p. 30

[16] EEA, Natura 2000 sites designated under the EU Habitats and Birds Directives, available online. See also European Commission, *Farming for Natura 2000. Guidance on How to Integrate Natura 2000 Conservation Objectives into Farming Practices, Based on Member States' Good Practice Experiences*, Brussels, 2019.

[17] Grasslands (11%) and croplands (36%) cover about 47% of the total terrestrial ecosystems of the Union: European Commission, Joint Research Centre, *EU Ecosystem Assessment: Summary for Policymakers*, Luxembourg, 2021, JRC123783.

[18] EEA, State of Nature in the EU, cit. On the application of Article 6(1), 6(2) and 6(3) of the Habitats Directive, see H. Schoukens, A. Cliquet, *Biodiversity offsetting and restoration under the European Union Habitat Directive: balancing between no net loss and deathbed conservation?*, in *Ecology and Society*, 2016, 21, 4.

derness, nor to transform productive land into pristine nature, but to navigate complex socio-ecological systems in which conservation must coexist with livelihoods.[19]

Within designated sites, duties have largely operated through the preventive logic of Article 6 of the Habitats Directive, especially the non-deterioration obligation and the *ex-ante* assessment of plans and projects, without clear, time-bound restoration mandates capable of reversing degradation at scale.[20] As reflected in the Nature Directives Fitness Check, this structure is not fully equipped to address diffuse agricultural pressures and landscape-scale decline.[21] This is precisely why the shift from merely relieving pressures and preventing deterioration to actively improving ecosystem condition becomes central to re-engaging agricultural landscapes as domains of transformation.[22]

The limited effectiveness of the Nature Directives in agricultural ecosystems is rooted in the historically parallel development of EU agri-food and environmental law. Indeed, the CAP has its genesis in the objective of increasing agricultural productivity, ensuring a fair standard of living for the agricultural community, securing the availability of supplies, stabilising markets, guaranteeing reasonable prices for consumers, and harmonising competition conditions across participating States. The CAP has progressively moved beyond a productivist rationale, structured around coupled payments and strong market intervention,[23] towards a

[19] J. A. Harris et al., *Ecological restoration and global climate change*, in *Restoration Ecology*, 2006, 14, p. 170 ff.; R. Guarino, G. Bazan, P. Marino, *La sindrome delle aree protette*, in S. Pignatti (ed.), *Aree protette e ricerca scientifica*, Pisa, 2011, p. 143 ff.; J. McPhie, *Mental Health and Wellbeing in the Anthropocene: A Posthuman Inquiry*, Cham, 2019; D.H. Meadows, D. L. Meadows, J. Randers, W.W. Behrens III, *The Limits to Growth*, New York, 1972.

[20] Through a rich body of case law, the Court has progressively narrowed the room for discretion left to Member States, especially with regard to the preventive and assessment obligations under Article 6(2) and 6(3). See, inter alia, Court of Justice 2 August 1993, case C-355/90, *Commission v Spain*; Court of Justice 15 May 2014, case C-521/12, *Briels and Others*; Court of Justice 7 November 2018, case C-323/17, *People Over Wind and Sweetman*.

[21] European Commission, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives), cit., p. 7, pp. 30-31.

[22] Ibidem, pp. 40-42.

[23] The CAP relied on a strongly interventionist system of market and price support: producers benefited from guaranteed prices, external products were subject to border

decoupled model in which agriculture is recognised as serving functions beyond food production. As part of this shift, farmers have increasingly come to be seen as providers of public goods and ecosystem services relating to biodiversity, soil, water, and landscape protection.[24] The CAP has undergone a series of reforms including the 1992 "MacSharry" reform, the 1999 "Agenda 2000" reform, the 2003 "Fischler reform", and the 2013 greening reform.[25] From 2003 onwards, the policy was reoriented towards curtailing market-intervention instruments as far as possible, through the introduction of direct payments largely decoupled from production.[26] The decoupling of payments was accompanied by environ-

protection through tariffs, and public intervention mechanisms were triggered when market prices fell below set thresholds. Support was linked to aggregate levels of production, thereby reinforcing output-oriented incentives within a common regulatory framework. See F. Sotte, G. Brunori, *Genesis of the Common Agricultural Policy*, in F. Sotte, G. Brunori (eds.), *European Agricultural Policy: History and Analysis*, Cham, 2025.

[24] See A. Iannarelli, *Gli accordi di sostenibilità*, in P. Borghi, I. Canfora, A. Di Lauro, L. Russo (eds.), *Trattato di diritto alimentare italiano e dell'Unione europea*, II ed., Giuffrè, Milano, 2024, p. 63 ff.

[25] On the CAP reforms, see F. Sotte, G. Brunori (eds.), *European Agricultural Policy*, cit.; M. Goldoni, *Sostenibilità, agricoltura, riforma della PAC post 2020*, in S. Masini, V. Rubino (eds.), *La sostenibilità in agricoltura e la riforma della PAC*, Bari, 2021, p. XIII ff.; E. Mezzacapo, A. Manzoni, *Ecological Sustainability and the Law: the European Green Deal and the New Frontiers of Sustainability - Sustainability in the Agri-Food Sector: The Tortuous Path of Common Agricultural Policy towards a Food System Approach*, in E. Chiti, A. Giorgi (eds.), *Ecological Sustainability and the Law*, Torino, 2024.

[26] Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers, OJ L 270 of 21 October 2003; Regulation (EC) No 73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy, OJ L 30 of 31 January 2009; Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy, OJ L 347 of 20 December 2013; Regulation (EU) 2021/2115, cit. See also L. Costato, *La riforma della PAC del 2003 e le norme agrarie del trattato*, in *Rivista di diritto agrario*, 2005, I, p. 478 ff.; Id., *Attività agricole, sicurezza alimentare e tutela del territorio*, in *Rivista di diritto agrario*, 1/2008, p. 453 ff.; Id., *Riforma della PAC e rifornimento dei mercati mondiali di prodotti agricoli alimentari*, in *Rivista di diritto agrario*, 1/2011, p. 87 ff.;

mental and food safety standards.[27] By contrast, EU environmental law evolved from a corrective market mechanism into an autonomous preventive and integrative field grounded in Treaty principles such as prevention, precaution and polluter-pays.[28] Despite these reforms, agri-environmental integration has remained partial and institutionally fragile.[29] This still leaves a fragmented legal landscape in which biodiversity, soil, food security and safety, agricultural production and rural development are often governed through compartmentalised and, at times, misaligned objectives.

The European Green Deal and, in particular, the Biodiversity Strategy for 2030 elevate ecological restoration as a mechanism for enhancing ecosystem integrity and resilience across landscapes. They frame ecosystems not merely as objects of protection, but as indispensable infrastructures for climate neutrality, adaptation and biosphere integrity.[30] However, this emerging ecological-sustainability orientation remains unevenly embedded in enforceable law: sectoral strategies adopt the language of urgency but often stop short of translating political commitments into binding obligations capable of reshaping legally entrenched incentives in the agri-food regime.[31] The ambiguity is particularly ev-

Id., *La PAC riformata, ovvero la rinuncia a una politica attiva*, in *Rivista di diritto agrario*, 1/2012, p. 393 ff.

[27] Regulation (EU) No 1307/2013, cit.

[28] For a reconstruction of the evolution of environmental law, see P. Craig, G. De Búrca (eds.), *The Evolution of EU Law*, Oxford, 2021; E. Orlando, *The evolution of EU policy and law in the environmental field: achievements and current challenges*, in C. Bakker, F. Francioni (eds.), *The EU, the US and Global Climate Governance*, London, 2016, p. 61 ff.

[29] European Court of Auditors, *Biodiversity on Farmland Continues to Decline Despite Specific CAP Measures*, Luxembourg, 2020; European Court of Auditors, *Common Agricultural Policy and Climate: Half of EU Climate Spending but Farm Emissions Are Not Decreasing*, Special Report No 16/2021, Luxembourg, 2021.

[30] M. Biscosi, *From natura to nature restoration. The ecological objective of the Green Deal at the legal litmus test*, in E. Chiti, A. Giorgi (eds.), *Ecological Sustainability and the Law*: *The European Green Deal and the New Frontiers of Sustainability*, Torino, 2024, p. 149 ff.; E. Chiti, *Managing the ecological transition of the EU: the European Green Deal as a regulatory process*, in *Common Market Law Review*, 1/2022, p. 19 ff.; E. Chiti, *Oltre la disciplina dei mercati: la sostenibilità degli ecosistemi e la sua rilevanza nel Green Deal europeo*, in *Rivista della Regolazione dei mercati*, 2/2022, p. 468 ff.

[31] E. Mezzacapo, *La Nature Restoration Law: analisi delle implicazioni per gli ecosistemi agroalimentari*, in *Rivista di diritto agrario*, 2/2025, p. 578 ff.

ident in the FtF Strategy, which sets ambitious quantified targets on reduction of pesticide and fertilizers, antimicrobials sales and enhancement of organic farming,[32] yet leaves the core concept of a "sustainable food system" under-defined.[33] This was planned in the envisaged *lex generalis* horizontal legislative Framework for Sustainable Food Systems (FSFS),[34] now officially an abandoned project of the Commission, which weakens the normative plan of the Strategy and increases the risk of the politicisation and conflict between competing production- and ecology-centred narratives.[35]

Indeed, the reformed CAP, the proposed FSFS framework and other initiatives, such as the withdrawn Sustainable Use of Pesticides Regulation (SUR)[36], the stalled Sustainable Food Labelling framework initiative[37] and the NRR itself, have triggered an exceptional agri-food backlash and "food security" narratives. These discourses have often misrepresented both restoration ecology and the legal scope of the proposed measures: restoration, indeed, has often been framed as a costly and naïve return to the past or to "1950 ecosystem conditions."[38] This

[32] Commission, Farm to Fork Strategy, cit.

[33] H. Schebesta, J. J. Candel, *Game-changing potential of the EU's Farm to Fork Strategy*, in *Nature Food*, 2020, p. 586 ff.

[34] European Commission, Inception Impact Assessment. Sustainable Food System Framework Initiative, Ares(2021)5902055 of 28 September 2021. See also the preparatory documents made available by the Commission on the legislative framework for sustainable food systems.

[35] H. Schebesta, *How to save the Farm to Fork Strategy: a two-phased approach*, in *European Food and Feed Law Review*, 4/2023, p. 231 ff. On the politicisation of food sustainability, see J. J. Candel, G. E. Breeman, S. J. Stiller, C. J. Termeer, *Disentangling the consensus frame of food security: the case of the EU Common Agricultural Policy reform debate*, in *Food Policy*, 2014, p. 47 ff.

[36] Proposal for a Regulation of the European Parliament and of the Council on the sustainable use of plant protection products, COM(2022) 305 final of 22 June 2022.

[37] On the sustainable food-labelling initiative, see European Economic and Social Committee, Towards a Sustainable Food Labelling Framework to Empower Consumers to Make Sustainable Food Choices, NAT/857-EESC-2022 adopted on 26 October 2022; E. Sanye Mengual et al., *Sustainability Labelling in the EU Food Sector: Current Status and Coverage of Sustainability Aspects. Knowledge to Support Policymaking*, Luxembourg, 2024.

[38] A. Cliquet, A. Aragão, M. Meertens, H. Schoukens, K. Decleer, *The negotiation process of the EU Nature Restoration Law Proposal: bringing nature back in Europe against the backdrop of political turmoil?*, in *Restoration Ecology*, 5/2024, e14158.

has affected other instruments as well, such as the Deforestation-Free Products Regulation ("EUDR"),[39] whose application was subsequently postponed, and the Soil Monitoring and Resilience Directive,[40] which was transformed from a more ambitious soil health framework into a weaker monitoring-oriented instrument.[41] Many of the food-sustainability claims were only weakly connected to the scientific rationale and legal design of the measures at stake. In practice, these contentious political cycles have prevented some initiatives from being adopted, led to the introduction of greater flexibilities, derogations and, at times, diluted objectives, and even led to the postponement of already adopted legislation, as in the case of EUDR.[42]

3. *The incomplete green transition of the CAP 2023-2027*

Among the FtF policy package, the reform of the CAP for the 2023–2027 programming period occupies a pivotal, cross-cutting position. The current CAP accounts for approximately EUR 378.5 billion of the Union's own resources, representing around 31% of the EU budget under the 2021-2027 Multiannual Financial Framework.[43] This is not only the Union's largest budgetary instrument shaping food production: it is also one of the most consequential legal, financial and policy frameworks for territorial land management and thus for transforming the ecological conditions that enable or impede restoration at scale. In this respect, the CAP can become a meaningful enabler of ecological restoration only where it

[39] Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation, OJ L 150 of 9 June 2023.

[40] Directive (EU) 2025/2360 on soil monitoring and resilience, OJ L 2025 of 2 November 2025.

[41] On the EUDR postponement debate, see Copa-Cogeca, *Postpone EU Deforestation Regulation*, 2024; on the Soil Monitoring and Resilience Directive, see Society for Ecological Restoration Europe, *A Deceiving Transition from a Soil Health Law to a Directive for Soil Monitoring and Resilience*, 2025.

[42] A useful mapping of protests, demands and concessions was provided by Euractiv, *Map: farmers protests lead to concessions almost everywhere, 2024*.

[43] The relevant figures may be consulted on the European Commission webpage on the Common Agricultural Policy.

converges with the "public money for public goods" rationale, operationalised through income support for farmers that is genuinely aligned with a "do-no-significant-harm" orientation.[44] This could be achieved first, by reducing and reversing the production-driven pressures that degrade productive ecosystems and, second, by actively incentivising restorative management practices that rebuild biodiversity, enhance soil functions and strengthen climate resilience. The CAP 2023–2027 therefore sits at the core of the Union's first attempt to translate its FtF Strategy and biodiversity objectives into on-farm governance, including biodiversity recovery, climate mitigation and adaptation, and soil health.[45]

The 2023-2027 CAP is anchored in a reconfigured governance system centred on Member State CAP Strategic Plans ("CSPs"). Under Regulation (EU) 2021/2115, each Member State must design a single strategic plan covering both pillars, identifying national and regional needs, selecting interventions, and defining target values under the CAP performance framework. This delivery model is framed as a shift from compliance with detailed EU-level rules towards performance-based governance, with Member States enjoying broader discretion over how CAP objectives are pursued. In formal terms, CSPs are expected to "reflect" the Green Deal sectoral strategies.[46] Article 6 of Regulation 2021/2115 enumerates nine specific objectives, several of which internalise the priorities of the Green Deal and its sectoral strategies, including that of contributing to climate mitigation and adaptation and to carbon sequestration; encouraging the sustainable management of water, soil, air; and halting and reversing biodiversity loss by enhancing eco-

[44] The "do no significant harm" principle excludes support for, or the carrying out of, economic activities that significantly harm any environmental objective within the meaning of Article 17 of Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020, OJ L 198 of 22 June 2020. On the principle of "public money for public goods", see V. Zahrnt, *Public Money for Public Goods: Winners and Losers from CAP Reform*, ECIPE Working Paper No 8, 2009; G. Pe'er et al., *Is the CAP fit for purpose? An evidence-based fitness-check assessment*, 2017.

[45] Art. 6, Regulation (EU) 2021/2115, cit.

[46] Ivi. See also European Commission, Recommendations to the Member States as regards their Strategic Plan for the Common Agricultural Policy, COM (2020) 846 of 18 December 2020; European Court of Auditors, *Common Agricultural Policy Plans - Greener, but Not Matching the EU's Ambitions for the Climate and the Environment*, Special Report No 20/2024, Luxembourg, 2024.

system services and preserving habitats and landscapes.[47] This framing sustains the long-standing "public money for public goods" narrative. CAP payments are increasingly justified not as unconditional income support, but as public expenditure that should be conditioned on ecologically and socially desired outputs. Indeed, agricultural landscapes in good condition are crucial to generating ecosystem services. These enable the production of food, fibre and other biological resources; regulate and maintain services, such as pollination, water retention, erosion control, carbon sequestration, soil fertility, nutrient cycling and natural pest regulation; and provide cultural services, including the preservation of rural landscapes, traditional knowledge, recreational values and territorial identity.[48] In this context, ecological restoration enters the CAP debate not as an external environmental agenda imposed upon agricultural policy, but as a possible means of rebuilding the ecological and social conditions on which the CAP's own objectives increasingly depend.[49] This is significant because it strengthens the justification for redirecting CAP expenditure towards practices that generate measurable ecological functions and socially valuable outcomes, rather than merely compensating land ownership or income loss.

In practice, however, the legal strength of the "public money for public goods" expectation is limited. While the Commission issues extensive recommendations and conducts *ex ante* approval and *ex post* review of the CSPs, the enforceability of Green Deal targets within CAP implementation remains structurally weak. Indeed, Member States must set targets largely measuring uptake of schemes, without a robust EU-level

[47] Art. 6, Regulation (EU) 2021/2115, cit.

[48] FAO, *Ecosystem Services Sustain Agricultural Productivity and Resilience*, Rome, 2016; FAO, *The State of the World's Biodiversity for Food and Agriculture*, Rome, 2019; IPBES, *The Assessment Report on Pollinators, Pollination and Food Production. Summary for Policymakers*, Bonn, 2016; C. Kremen, A. Miles, *Ecosystem Services in Biologically Diversified versus Conventional Farming Systems: Benefits, Externalities, and Trade-Offs*, in *Ecology and Society*, 4/2012, p. 40 ff.; L.A. Garibaldi et al., *Farming Approaches for Greater Biodiversity, Livelihoods, and Food Security*, in *Trends in Ecology & Evolution*, 2017, 42, p. 68 ff.

[49] A. Saba, *Legal Implications of Results-based Agri-Environmental and Climate Commitments in the EU Common Agricultural Policy*, Springer, 2025; M. Cafagno, G. Cavalieri (eds.), *Servizi ecosistemici e tutela giuridica dell'ambiente*. Mimesis, 2025.

mechanism ensuring that broad uptake translates into verifiable ecological outcomes.[50]

For restoration governance, the crucial question is not whether ecological language is present in the objectives, but how far that language is operationalised through binding baselines and sufficiently ambitious incentives. Historically, the CAP's greening has been criticised as formally extensive but materially weak, producing marginal land-use change relative to the scale of biodiversity and climate degradation.[51] That critique has triggered the political impetus for reform after 2014–2020 and underpins the claim that the CAP 2023-2027 should have a more substantive role in aligning agriculture production to the Green Deal's objectives. Yet the legal design of the current CAP architecture remains stubbornly ambivalent. On the one hand, environmental ambition is formally high; at the same time, many of the financial support channels continue to be grounded in area-based income support, often encouraging intensive production, with real pro-environmental measures instead channelled through voluntary instruments and flexible implementation choices.[52]

As has been widely observed, the CAP remains heavily shaped by the distributional logic of Pillar I.[53] The European Agricultural Guarantee Fund ("EAGF") finances direct payments, while the European Agricultural Fund for Rural Development ("EAFRD") supports rural development initiatives. Within the 2023–2027 CAP budget of approximately EUR 386 billion, Pillar I retains the bulk of financial weight, accounting for roughly 75% of total expenditure, or around EUR 291 billion.[54] With-

[50] As it emerges in the ECA, *Special Report 21/2017: Greening: a more complex income support scheme, not yet environmentally effective*, 2017. See also J. Cuadros-Casanova et al., *Opportunities and challenges for Common Agricultural Policy reform to support the European Green Deal*, in *Conservation Biology*, 3/2023, e14052.

[51] European Court of Auditors, *Common Agricultural Policy and Climate*, cit.

[52] A. Peeters, *A Green Deal for Implementing Agroecological Systems: Reforming the Common Agricultural Policy of the European Union*, Braunschweig, 2023; E. Mezzacapo, *Mind the gap: assessing Member States' implementation of Farm to Fork targets within the 2023-2027 Common Agricultural Policy*, in *European Journal of Risk Regulation*, 2/2024, p. 265 ff.

[53] G. Pe'er et al., *Action needed for the EU Common Agricultural Policy to address sustainability challenges*, in *People and Nature*, 2020, 2, 2, p. 305 ff.

[54] European Parliament, *Policy Department for Structural and Cohesion Policies,*

in Pillar I, the Basic Income Support for Sustainability (BISS) remains the central instrument, accounting for around 51% of funding.[55] BISS is predominantly calculated based on an entitlement- and area-based logic linked to eligible hectares, which historically tends to reproduce land concentration dynamics and weakly differentiates between low-impact and high-impact production models. From a restoration perspective, this is crucially problematic. A policy that allocates most of its funding through this system has limited capacity to drive the targeted, sometimes disruptive management changes required to reverse biodiversity decline or restore ecological functions at a landscape level. The implication is clear: if the CAP is to support restoration, ecological objectives cannot remain peripheral to the main funding stream but must meaningfully condition it.

The first mechanism through which the CAP 2023-2027 claims to embrace a greener orientation is its "enhanced conditionality", which ties income support to compliance with Statutory Management Requirements (SMRs), largely reflecting obligations already binding under EU law, with nine Good Agricultural and Environmental Conditions (GAECs) and a new element of social conditionality.[56] Together, these SMRs cover minimum standards on climate change mitigation, water, soil, biodiversity and landscape protections, public and plant health, food safety and phytosanitary products, and animal welfare.[57] The synergies between the CAP conditionality baseline and the Nature Restoration Regulation are largely built in: indeed, when the GAEC standards are read alongside the restoration measures listed in Annex VII to the NRR and referred to in Article 14(16), significant synergies emerge. Concretely, these synergies are visible across key areas: wetland and peatland protection (GAEC 2; Annex VII measures 1, 2 and 4), buffer strips and restrictions along wa-

Comparative Analysis of the CAP Strategic Plans and their Effective Contribution to the Achievement of the EU Objectives, Brussels, 2023.

[55] Article 21, Regulation (EU) 2021/2115, cit.

[56] Art. 14, Regulation 2021/2115, cit., introduces social conditionality setting basic labour standards, the breaches of which may trigger reductions of CAP payments. Member States must operationalise it by setting detailed rules, penalties, and effective labour inspection/enforcement systems. Annex IV defines its minimum scope, covering transparent employment conditions (e.g. contracts) and workers' health and safety, including proper equipment use. See I. Canfora, V. Leccese, *La sostenibilità sociale nella nuova PAC*, in Rivista di diritto agrario, 1/2022, p. 114 ff.

[57] See Annex III of Regulation 2115/2023. See L. Russo, *op. cit*.

tercourses (GAEC 4; measures 9 and 19), maintaining soil cover (GAEC 6; measures 16 and 17), crop rotation (GAEC 7; measure 17), and allocating a minimum share of arable land to non-productive areas or landscape features (GAEC 8; measures 20, 21 and 23). Similar convergences can be found in permanent grassland safeguards (GAEC 1 and GAEC 9; measures 16, 17, 20, 21 and 32).[58]

However, two structural weaknesses limit the relevance of SMRs to restoration. First, GAEC implementation is highly mediated by Member State discretion.[59] While they could, for example, voluntarily raise their level of ambition, as some GAECs allow different top-up options, they instead often opt for minimum standards and, in some cases, for derogations or simplification measures, thereby generating divergent definitions, exemptions, and operational thresholds.[60] As noted by the European Court of Auditors, these choices are frequently justified by farm profitability concerns or limited market opportunities for alternative crops.[61] Further derogations were granted by the Commission in response to the demands of the tractor protests in Brussels.[62] These derogations have demonstrated how quickly ecological baselines in the agri-food context can be relaxed in response to political pressure framed in terms of farm profitability or food-security concerns.[63] Moreover, fol-

[58] The comparison is between the GAEC standards in Annex III to Regulation (EU) 2021/2115, cit., and Annex VII to Regulation (EU) 2024/1991, cit.

[59] A. Matthews, *An ambitious CAP is needed to underpin the green transition*, in *Recht der Landwirtschaft*, 11-12/2023, p. 290 ff.; M. Lovec, I. Rac, E. Erjavec, *External shocks, policy spillovers, and veto players: (post)exceptionalist Common Agricultural Policy and the case of the 2023-2027 reform*, in *Journal of European Integration*, 4/2024, p. 433 ff.; A. Matthews, *The CAP in the 2021-2027 MFF negotiations*, in *Intereconomics*, 2018, 53, 6, p. 306 ff.

[60] For further details on GAEC derogations, see European Commission, Press Release IP/24/582.

[61] The derogations concerned, *inter alia*, GAEC 7, GAEC 8 and GAEC 2: see European Court of Auditors, *Common Agricultural Policy Plans*, cit.

[62] On this point, see also Politico, *Europe's farmer protests are spreading. Here's where and why*, 2024.

[63] Again, European Court of Auditors, *Common Agricultural Policy Plans*, cit., p. 23-24. See also Greifswald Mire Centre, *Briefing paper on the role of peatlands in the new European Common Agricultural Policy*, November 2019. It is reported that 16 Member States – including Ireland and Poland, both responsible for high GHG emissions from agricultural peatlands – have postponed the obligation to protect them

lowing the latest simplification package, besides the derogated GAEC 8, several changes were triggered in many of the CSPs compromising the effectiveness of certain conditionalities and creating fragmentation and gaps in data.[64] As a matter of legal-institutional design, this indicates that conditionality cannot be treated as a stable ecological floor unless derogation practice is tightly constrained and justified through transparent, evidence-based criteria.[65]

The other emblematic ecological instrument of the last CAP reform is the replacement of the 2014 "greening measures" with the so-called "eco-schemes".[66] These are a set of agricultural practices that are intended to remunerate farmers for practices that deliver public goods and go beyond the conditionality baseline.[67] Member States are required to offer eco-scheme options covering agricultural practices deemed beneficial for climate, biodiversity, and the environment and must earmark 25% of their direct payments budget to this end.[68] However, these are climate and biodiversity practices designed as voluntary incentive-based instru-

until 2025, justifying this decision on the grounds that these areas had not yet been fully mapped.

[64] Regulation (EU) 2025/2649 of the European Parliament and of the Council of 19 December 2025 amending Regulation (EU) 2021/2115 as regards the conditionality system, types of intervention in the form of direct payment, types of intervention in certain sectors and rural development and annual performance reports and Regulation (EU) 2021/2116 as regards suspensions of payments, annual performance clearance and controls and penalties, OJ L 2025/2649 of 31 December 2025. On these developments, see A. Matthews, *What can we learn from the dismantling of GAEC 8?*, 2024, available at https://capreform.eu/what-can-we-learn-from-the-dismantling-of-gaec-8/.

[65] Ibidem.

[66] Art. 31, Regulation 2021/2115, cit. Under the former greening regime, access to the greening payment was tied to basic payment entitlements and conditional on compliance with 3 cumulative practices (crop diversification, permanent grassland maintenance, and ecological focus areas) across eligible hectares. In the 2023-2027 CAP, those greening requirements are largely folded into enhanced conditionality as the baseline, while eco-schemes operate as a separate, voluntary top-up: basic income support is payable irrespective of eco-scheme participation.

[67] The Commission published a document listing eco-schemes for "areas of action" these must cover at least two of the categories listed in Article 31(4) mitigation/adaptation; water quality; soil quality; biodiversity; pesticide use; animal welfare; antimicrobial resistance), supported by a detailed menu of eligible interventions, including the maintenance/creation of landscape features and non-productive areas.

[68] See Art 31(1)-(4), especially art 31(2)-(3), Regulation 2021/2115, cit.

ments for farmers, rather than obligation-based instruments. While this has improved their political acceptability, it has not solved the problems of effectiveness. Evidence suggests that where basic payments to small and medium-sized farmers are low or requirements are minimal, eco-schemes risk functioning as quasi-automatic top-ups rather than as a transformative incentive.[69] In fact, approximately 82% of eco-schemes provide payments primarily designed to compensate for additional costs and foregone income rather than to drive changes in the way of conducting agricultural practices.[70] Instead, where requirements are ambitious, uptake may be weak unless payments are sufficiently calibrated and administrative burdens reduced. Studies have also shed light on the weaknesses of eco-scheme implementation across Member States. Among the 158 eco-schemes adopted, ambition and design vary so widely that they risk functioning as a fragmented procurement patchwork rather than a coherent tool for delivering on environmental targets.[71] In several Member States, they have tended to support already-existing practices or low-demand actions, with limited additionality. A problematic example can be seen in the Italian case where the largest scheme in terms of budget is allocated to support reductions in antibiotic use in livestock, framed as compensating potential income losses linked to animal health, while leaving largely unaddressed the underlying intensity of production that is a key driver of recurrent animal health problems.[72] In Germany,

[69] F. Pierangeli et al., *Gli eco-schemi del PSP italiano, un'opportunità per l'agricoltura e la sostenibilità: com'è andato il primo anno di attuazione*, 2024, available at https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/25936.

[70] European Court of Auditors, *Common Agricultural Policy Plans*, cit.; T. Runge et al., *Implementation of eco-schemes in fifteen European Union Member States*, in *EuroChoices*, 2/2022, p. 19 ff.

[71] T. Nemcová et al., *New CAP Unpacked and Unfit*, BirdLife Europe and European Environmental Bureau, December 2022; European Commission, Directorate-General for Agriculture and Rural Development, *Mapping and Analysis of CAP Strategic Plans: Assessment of Joint Efforts for 2023-2027*, Luxembourg, 2023, p. 539; European Court of Auditors, *Common Agricultural Policy Plans*, cit., p. 25; M. Lassalas et al., *The declination of the new Common Agricultural Policy in France will not be environmentally ambitious*, paper presented at the XVII EAAE Congress, Rennes, 29 August-1 September 2023; BirdLife International, NABU, *The Untapped Potential of Eco-Schemes*, 2024.

[72] On the Italian CAP Strategic Plan, see European Commission, *CAP Strategic Plan 2023-2027: Italy*; European Commission, *Mapping and Analysis of CAP Strategic Plans*, cit.

following lower-than-expected uptake, the competent authorities revised the eco-scheme design for the 2024 claim year, including raising certain premium rates and simplifying measures, so as to make participation more attractive to farmers.[73]

From the standpoint of ecological restoration, eco-schemes could provide scalable pathways to restore farmland diversity, reduce pressures associated with intensive practices and pollution (e.g. buffer strips, rotation, non-productive features, extensive grazing regimes, reduced input systems), but their transformative capacity depends first of all on the clarity of the ecological objectives they set, and therefore on their clear additionality and enforceability; second, on the adequacy of payments in light of their voluntary nature; and third, on monitoring and evaluation methodologies capable of linking payments to ecological outcomes. A future CAP eco-scheme could be framed as an EU-wide restoration framework with a common minimum core and national and regional tailoring, to avoid one-size-fits-all measures in highly diverse farming landscapes. However, this should have a solid landscape-level approach with scientifically sound links to restoration objectives, and possibly include a reward component for coordinated uptake, given the fragmentation of action across European farmlands.

The EAFRD pillar contains interventions with potentially higher levels of environmental additionality, including agri-environment-climate commitments, support for organic farming, cooperation measures, and knowledge transfer.[74] Member States must allocate a minimum share of Pillar II spending to environment- and climate-relevant interventions.[75] In principle, Pillar II seems to be structurally better suited to restoration because it can finance multi-annual commitments, results-based schemes, cooperation at landscape scale, and targeted investments that

[73] CAP Network, *Improving the Design and Implementation of Eco-Schemes in the New CAP Strategic Plans (CSPs): Experiences from the First Year of Implementation*, 2024.

[74] Art. 69(7), Regulation 2021/2115, cit. See P. Lattanzi, *Accesso alle misure di sviluppo rurale e contratti agroambientali*, in *Rivista di diritto agrario*, 1/2020, p. 68 ff.

[75] These include support for environmental and climate-related activities; natural or other area-specific constraints; area-specific disadvantages resulting from certain mandatory requirements; investments, including irrigation investments; setting-up aid for young farmers and new farmers; rural business start-up; risk-management tools; cooperation; and knowledge exchange and dissemination of information.

support ecological functions.[76] However, many interventions are continuations of previous measures.[77] The "investment" measures can also be vague and difficult to assess in terms of ecological impacts, and the performance indicators structure has changed substantially across programming periods, weakening comparability and accountability.[78]

Another crucial concern in the design of the CAP is the fair distribution of financial support. This is surely not only a matter of equity and social justice, but also of achieving environmental benefits and supporting transformative change.[79] In a context where many farmers face rising costs, pronounced market power asymmetries, and escalating climate and ecological shocks, the distributive design of CAP support becomes decisive. If public payments continue to follow land ownership and historical entitlements rather than the measurable delivery of societal and environmental value, they risk reinforcing structural lock-ins and narrowing the space for a genuine ecological transition. Such lock-ins manifest as barriers to market entry, bargaining asymmetries, dependencies, land access barriers, and limited capacity to absorb transition costs, thus weakening the credibility of conditionality-based environmental requirements.[80]

Instruments such as the Complementary Redistributive Income Support for Sustainability (CRISS) aim to achieve a fairer distribution of direct payments by shifting part of income support away from larger beneficiaries towards small and medium-sized farms.[81] The key novelty of the

[76] See A. Arzeni, *L'impresa rurale: l'agricoltura multifunzionale e le nuove esigenze imprenditoriali*, in A. Arzeni, R. Esposti, F. Sotte (eds.), *Politiche di sviluppo rurale tra programmazione e valutazione*, Milan, 2003, p. 75 ff.

[77] European Court of Auditors, *Common Agricultural Policy Plans*, cit.

[78] Ibidem. See also D. Baldock et al., *Realigning Selected CAP Payment Schemes Towards Sustainable Agriculture: Exploring Options, Benefits and Risks*, Brussels, 2024.

[79] I. Canfora, V. Leccese, *op. cit.*

[80] On equity and social justice in EU food policy, see O. De Schutter, *Towards a Common Food Policy for the European Union*, IPES-Food, Brussels, 2019, p. 12 ff.; on the broader issue of equity in agriculture, see E. Tsioumani, *Fair and Equitable Benefit-Sharing in Agriculture: Reinventing Agrarian Justice*, London, 2020.

[81] Art. 29, Regulation 2021/2115, cit. This instrument operates as an additional payment on the first hectares for farmers who are already eligible for the BISS. To ensure better targeting, Member States may define different eligible hectare ranges and/or differentiate unit amounts by regions or groups of territories.

CAP 2023-2027 is the introduction of a minimum ring-fencing allocation of at least 10% of their direct payments envelope to CRISS. The implementation has been varied but has so far been relatively positive, with the majority of the Member States reaching 10% of CRISS ring-fence goal, with 11 Member States exceeding it.[82] However, besides the wide adoption of CRISS, these instruments struggle to offset the macro-distributional effects of a payment architecture still centred on eligible hectares rather than on the demonstrable delivery of environmental public goods. Studies over the past decade indeed show a concerning pattern: the top 20% of beneficiaries still receive on average 78-80% of total CAP financial flows.[83] The concentration is even sharper at the apex, with the top 10% receiving 63% and the top 1% around 27% on average. In Italy and Spain, the top 1% captures around 30%, rising to 40% in the Netherlands.[84]

CAP law allows Member States to reduce very large direct payments through two instruments. First, "capping" is a voluntary upper limit that may be imposed on individual beneficiaries, while "degressivity" refers to a progressive reduction in payments above a specified threshold in order to redistribute support.[85] Besides the obvious benefits for small farmers, the resources formerly provided to large beneficiaries could be redeployed to fund other CAP instruments, such as agri-environment climate measures. However, these voluntary tools have been used only sparingly in practice by the Member States.[86] In the proposal of the CAP

[82] Four Member States allocate as much as 20%, while eight rely on derogations, and two, namely Denmark and Malta, do not apply CRISS at all. Targeting also varies, with some using multiple hectare bands and others applying differentiated territorial rates. See European Commission, *The 28 CAP Strategic Plans Underway: Summary of Implementation in 2023-2024 - Facts and Figures*, 2024; European Commission, *Mapping and Analysis of CAP Strategic Plans*, cit.

[83] A. J. Kortleve et al., *Over 80% of the European Union's Common Agricultural Policy supports emissions-intensive animal products*, in *Nature Food*, 5/2024, p. 288 ff.; European Commission, DG AGRI, *Future of EU Livestock: How to Contribute to a Sustainable Agricultural Sector? Final Report*, Luxembourg, 2020; European Court of Auditors, *Common Agricultural Policy and Climate*, cit.; I. Terluin, D. Verhoog, *Distribution of CAP Pillar I Payments to Farmers in the EU*, in *PianetaPSR*.

[84] Greenpeace, *Who CAPtures the Cash?*, 2026, available at https://www.greenpeace.org/eu-unit/issues/nature-food/47855/who-captures-the-cash/.

[85] Art. 17, Regulation 2021/2115, cit.

[86] European Commission, *Mapping and analysis of CAP Strategic Plans*, cit.

2028-2034,[87] the introduction of mandatory degressivity and capping (EUR 100,000) in the simplified Degressive Area-Based Income Support (DABIS) does not seem to be an improvement, according to recent simulations.[88]

At the same time, Coupled Income Support (CIS), which is a voluntary instrument that delivers financial support linked to production rather than solely to eligible hectares and is widely applied by Member States, continues to channel substantial resources to livestock production, often without meaningful environmental conditions or justifications. Where coupled support reinforces ruminant production, it risks entrenching methane-intensive systems and supporting destructive land-use patterns. Intensive production is accompanied by pressure on grasslands, nutrient surpluses, land and water pollution from chemical pesticides, dependence on feed imports, and habitat simplification, which are ecologically incompatible with restoration objectives.

Beyond CIS, a broader concern lies in the CAP's limited capacity to actively disincentivise the farming models most closely associated with ecological degradation. Recent analysis estimates that between 70-77% of CAP subsidies received by farmers supported high-emitting meat and dairy production.[89] Studies have indeed shown that beef and lamb receive roughly 580 times more CAP subsidies than legumes, while dairy receives around 500 times more support than nuts and seeds.[90]

[87] Proposal for a Regulation of the European Parliament and of the Council establishing the European Fund for economic, social and territorial cohesion, agriculture and rural, fisheries and maritime, prosperity and security for the period 2028-2034 and amending Regulation (EU) 2023/955 and Regulation (EU, Euratom) 2024/2509, COM(2025) 565 final of 16 July 2025.

[88] Ivi, Art. 6(3,4). On this, see A. Matthews, *What impact will degressivity and capping have?*, 2025, available at https://capreform.eu/what-impact-will-degressivity-and-capping-have/.

[89] FoodRise, *CAP at the Crossroads: Reforming EU CAP Subsidies to Support Healthy Sustainable Diets*, 2026; European Court of Auditors, *Common Agricultural Policy Plans*, cit.; R. Talenti, G. Corsini, *The new Common Agricultural Policy approach towards the livestock sector and food waste. Lying at which point of the sustainability continuum?*, in E. Chiti, A. Giorgi (eds.), *Ecological Sustainability and the Law*, Torino, 2024, p. 55 ff.

[90] FoodRise, cit.

Moreover, restoring farmland biodiversity is inseparable from tackling pesticide-related pressures, especially in light of the decline of pollinator abundance and diversity.[91] However, CAP instruments such as eco-schemes have struggled to operationalise credible pesticide-reduction pathways.[92] Conditionalities relevant to pesticide externalities have been weakened by exemptions and derogations, and eco-schemes aimed at pesticide use reduction have often been of limited ambition or poorly targeted.[93] With the withdrawal of the proposed Sustainable Use of Pesticides Regulation,[94] the CAP is consequently at risk of being the sole instrument for ensuring pesticide-related ecological recovery, largely through voluntary, weakly enforceable instruments.

High livestock density, simplified monocultures, and heavy dependence on synthetic fertilisers and pesticides pose direct threats to ecosystem integrity and, by extension, to the feasibility of restoration at scale.[95] While the FtF Strategy and the CAP's specific objectives formally recognise the need to address these pressures, the CAP's architecture does not embed binding, sector-specific pathways for doing so, for example on emissions reduction or production intensity, against which interventions can be measured and enforced.[96] This is not merely a legal and policy inconsistency. It also raises a question of legitimacy: a system repeatedly justified through a "public money for public goods" rationale should not, through the design of its dominant spending streams, continue to subsidise practices that are structurally associated with ecological degradation.[97]

[91] EEA, *Protecting and restoring Europe's wild pollinators and their habitats*, 2025; Id., *Reversing pollinator decline: why Europe must act now*, 2025.

[92] Institute for European Environmental Policy, *Are CAP Strategic Plans Supporting Farmers to Use Biocontrol Products? Assessing the Provisions in Seven CAP Strategic Plans*, Brussels, 2025.

[93] See again EU CAP Network, *Improving the Design and Implementation of Eco-schemes in the new CAP*, cit.

[94] Proposal for a Regulation of the European Parliament and of the Council on the sustainable use of plant protection products and amending Regulation (EU) 2021/2115, COM(2022) 305 final of 22 June 2022, formally withdrawn by the Commission on 6 May 2024.

[95] EEA, *Solutions for Restoring Europe's Agricultural Ecosystems*, 22 October 2024.

[96] This is also recognised by the European Court of Auditors, *Common Agricultural Policy Plans*, cit.

[97] European Court of Auditors, *Biodiversity on Farmland Continues to Decline*, cit.

Some national experiences illustrate both the potential and the limits of this implementation framework. Italy offers a particularly relevant case because the implementation of restoration objectives operates within a highly fragmented governance landscape, marked by regional administrative competences, uneven technical capacities, complex land-tenure patterns and the need to coordinate biodiversity, agricultural, soil and rural-development instruments. Recent literature on nature restoration in Italy has highlighted that upscaling restoration depends not only on formal legal obligations, but also on governance facilitators such as administrative coordination, scientific expertise, stakeholder trust, social capital and multidisciplinary project teams.[98] This confirms that NRPs will have to function not simply as planning documents, but as institutional devices capable of organising cooperation across levels of government and across sectors.[99]

Germany, by contrast, shows the difficulty of calibrating voluntary eco-schemes: lower-than-expected uptake required adjustments in premium rates and administrative simplification, revealing the delicate balance between ecological ambition, administrative feasibility and farmers' willingness to participate.[100] These examples confirm that the CAP-NRR interface will be effective only if national discretion is accompanied by common ecological benchmarks, credible incentives and monitoring systems capable of distinguishing formal uptake from genuine ecological outcomes.[101]

Looking ahead, the current debate on the CAP 2028-2034, read in the light of the new Vision for Agriculture and Food[102] and the broader legislative package accompanying the draft MFF 2028–2034,[103] points

[98] M.E. Harris, E. Ciscato, *Upscaling Nature Restoration in Italy: Barriers and Facilitators*, in *Review of European, Comparative & International Environmental Law* 3/2025, p. 661 ff.

[99] Biodiversa+, *Dialogue on National Restoration Plans and Knowledge Needs for the Implementation of the Nature Restoration Regulation*, 2025.

[100] BirdLife Europe and NABU, *The Untapped Potential of Eco-Schemes*, cit.

[101] EU CAP Network, *Improving the Design and Implementation of Eco-Schemes in the New CAP Strategic Plans*, cit.

[102] European Commission, A Vision for Agriculture and Food: Shaping Together an Attractive Farming and Agri-Food Sector for Future Generations, COM(2025) 75 final of 19 February 2025.

[103] European Commission, A Dynamic EU Budget for the Priorities of the Future

to a potentially widening gap between agricultural policy and the Union's restoration agenda.[104] Preliminary analyses of the Commission's post-2027 budgetary proposals suggest that the CAP may face significant pressure for simplification, greater national flexibility and possible reductions in dedicated agricultural spending, although the final architecture remains subject to political negotiation.[105] A greater reliance on national co-financing would add a further layer of fragility: by tying ambition to fiscal capacity and domestic political cycles, it risks deepening disparities between Member States and creating incentives for a *de facto* "race to the bottom" on environmental standards.[106] Taken together, these developments would dilute the CAP's environmental traction precisely when implementation of binding restoration duties is becoming more demanding.[107]

4. *The Nature Restoration Regulation and agri-food considerations*

The adoption of the EU Nature Restoration Regulation constitutes an unprecedented legal inflection point in the Union's environmental and agri-food governance, because it translates what had long remained a strategically affirmed but normatively underdetermined ambition into a directly applicable framework of binding objectives, time-bound trajec-

- The Multiannual Financial Framework 2028-2034, COM(2025) 570 final of 16 July 2025.

[104] WWF, *EU Vision for Agriculture Backs Environmental Proofing but Presents a Blurred Roadmap for Transformation*, 2025.

[105] European Commission, COM(2025) 565 final, cit. See also IDDRI, *The CAP within the MFF 2028-2034: Key Issues for the Agricultural Sector*, Issue Brief, 5 September 2025.

[106] On the nationalization see EPR, *The CAP for the period 2028-2034: Overview of the Commission proposal*, 2025. The risk of fragmentation is also highlighted in European Court of Auditors *Opinion 05/2026 concerning the Commission proposals for the CAP 2028-2034*, 2025.

[107] M. Lovec, I. Rac, E. Erjavec, *External shocks, policy spillovers, and veto players:(post)exceptionalist Common Agricultural Policy and the case of the 2023-2027 reform*, in *Journal of European Integration*, 2024, 46, 4 ff. On the urgency of ecological restoration, see A. Cliquet, *Ecological restoration as a legal duty in the Anthropocene*, in L. Squintani et al. (eds.), *Charting Environmental Law Futures in the Anthropocene*, Cham, 2019, p. 59 ff.

tories, and accountability mechanisms,[108] thereby reconfiguring ecological restoration into a self-standing regulatory objective with autonomous legal consequences for Member States.

The legal novelty is sharpened by the choice of a regulation rather than a directive: it responds to the EU's diagnosis that fragmentation, delays, and uneven enforcement have structurally undermined prior biodiversity strategies, and it reduces interpretive divergence by turning restoration into a directly enforceable duty with progressive and time-bound objectives.[109] This shift is warranted by the transboundary nature of ecosystem degradation and by the Union's need to deliver international commitments coherently and without delay, given the insufficiency of voluntary national action.[110]

At the level of legal architecture, the NRR couples an overarching ambition with progressively staged, ecosystem-specific obligations: Article 1 frames a Union objective of implementing restoration measures that "jointly cover" at least 20% of terrestrial and marine areas by 2030 and address all ecosystems in need of restoration by 2050.[111] Articles 4 and 5 establish binding quantitative trajectories for habitat types listed in Annexes I and II through graded milestones (30% by 2030, 60% by 2040, 90% by 2050) for areas not in good condition, and complementary duties to "re-establish" habitat types.[112] The legal significance of this design lies in its attempt to move beyond the conservation and restoration approach that has prevailed thus far and towards a more performative

[108] See E. Ciscato, *Il carattere trasformativo del Regolamento europeo sul ripristino della natura nelle politiche ambientali*, in *Rivista giuridica dell'ambiente*, 4/2024, p. 1105 ff.

[109] European Commission, Impact Assessment Report Accompanying the Proposal for a Regulation on Nature Restoration, SWD(2022) 167 final of 22 June 2022, p. 116.

[110] Kunming-Montreal Global Biodiversity Framework, adopted by the Conference of the Parties to the Convention on Biological Diversity at COP15, Montreal, 7-19 December 2022. See also A. Friedrich, F. Ekardt, *Assessing the effectiveness of the EU Nature Restoration Law measured against the CBD target to preserve biodiversity*, in *Environmental Sciences Europe*, 1/2026; M. Alabrese, E. Mezzacapo, *La Convenzione sulla Diversità Biologica e il ripristino della natura: obblighi internazionali e impatti nel diritto dell'Unione europea*, in S. Masini (ed.), *Ripristino della natura e rigenerazione territoriale*, Bari, 2025, p. 237 ff.

[111] Art. 1, NRR.

[112] Arts. 4 and 5 NRR.

regulatory logic: restoration becomes mandatory and more measurable, reviewable, and at least in principle justiciable, precisely because it is attached to deadlines and benchmarkable ecological states rather than to open-ended commitments.[113]

Crucially, the Regulation defines "restoration" and its key components – good condition, favourable reference area, and sufficient species habitat quality and quantity – as a process of actively or passively assisting ecosystem recovery to improve structure and functions, aiming at its long-term resilience.[114] Restoration is thus framed as a process-based measure that does not aim to merely recreate a single historical state; it recognizes, instead, that ecosystems evolve along a temporal continuum and that law must regulate both the direction and conditions of recovery, rather than mandate a static ecological target to be achieved.[115] The regulation implicitly requires Member States to institutionalise baseline assessments, to identify drivers of degradation, and to design measures capable of restoring ecological processes rather than merely producing cosmetic "greening" outputs.[116]

In fact, the NRR embeds a governance innovation of high legal relevance through the NRPs. Member States must prepare NRPs for submission in 2026, covering actions up to 2050, including information on assessment, spatial prioritisation, assessment of measures, governance arrangements, and financing; these plans are not merely administrative

[113] A. Cliquet et al., *Legal Assessment of the Proposal for an EU Nature Restoration Law*, Report by the Legal Working Group of the Society for Ecological Restoration Europe, 2023; N. Lucifero, *Ripristino degli ecosistemi agricoli*, in S. Masini (ed.), *Ripristino della natura e rigenerazione territoriale*, Bari, 2025, p. 131 ff.

[114] On the underlying restoration-ecology doctrine, see E. Higgs, *Nature by Design: People, Natural Process, and Ecological Restoration*, Cambridge (MA), 2003; R.J. Hobbs, D.A. Norton, *Towards a conceptual framework for restoration ecology*, in *Restoration Ecology*, 2/1996, p. 93 ff.; A.F. Clewell, J. Aronson, *Ecological Restoration: Principles, Values, and Structure of an Emerging Profession*, 2nd ed., Washington, 2013; J.A. Harris et al., *op. cit.*

[115] L. Balaguer et al., *The historical reference in restoration ecology: re-defining a cornerstone concept*, in *Biological Conservation*, vol. 176, 2014, p. 12 ff.

[116] That ambition is reinforced by an anti-offsetting logic embedded in the target-setting structure: compensatory measures, including biodiversity offsetting, cannot be counted towards restoration targets, since this would undermine net gains and enable double counting. This is consistent with the Court of Justice's strict approach under Article 6 of the Habitats Directive.

outputs but instruments through which binding EU targets are territorialised, monitored, operationalised, and rendered reviewable.[117]

In this context, Earth observation technologies can significantly strengthen the delivery and enforcement of certain indicators.[118] Sentinel time series monitoring under Copernicus and the shift towards continuous area monitoring can help make ecosystem change measurable at scale, support early detection of non-compliance, and reduce reliance on costly field inspections by targeting genuinely problematic cases, as already occurs in CAP controls in some Member States.[119] The Regulation also establishes an iterative planning cycle, with mandatory reviews by 2032 and 2042 and at least every 10 years thereafter.[120] The Commission may assess completeness, coherence and ambition and request revisions where plans fall short, creating an accountability loop comparable with the EU Climate Law and the CAP Strategic Plans framework.[121] Finally, NRPs embed multi-level and participatory governance as a practical requirement, given the need for robust data infrastructures, stakeholder engagement, land tenure sensitivity, cross sectoral coordination, and adaptive long-term management.[122]

The monitoring and reporting provisions in Articles 19-21 consolidate this accountability turn by formalising review obligations and linking the revision of the plan to evidence of insufficiency. Article 20 establishes detailed monitoring frameworks across habitats, encouraging the use of advanced technologies and public data accessibility while empow-

[117] Chapter III, Arts. 14-17 NRR. On the link between restoration objectives and performative legal design, see E. Lees, O. W. Pedersen, *Performative environmental law*, in Modern Law Review, 1/2025, p. 124 ff.

[118] See the Copernicus Land Monitoring Service: https://land.copernicus.eu/en. The NRR refers to Earth observation in Arts. 15 and 20. In Commission Implementing Regulation (EU) 2025/912, georeferenced data are required throughout the uniform format for national restoration plans. For urban ecosystems, Article 3 defines "urban green space" and "urban tree canopy cover" by reference to areas calculated through the Copernicus Land Monitoring Service.

[119] European Court of Auditors, *Using New Imaging Technologies to Monitor the Common Agricultural Policy: Steady Progress Overall, but Slower for Climate and Environment Monitoring*, Special Report No 04/2020, Luxembourg, 2020.

[120] Art. 19 NRR.

[121] Art. 14, 15 and 19(3, 5) NRR.

[122] Art. 15, 14(7, 9) NRR.

ering the Commission to set benchmarks for "satisfactory levels" and to standardise methods.

A core innovation is the NRR's ecosystem-type approach, which, while building on and remaining in synergy with the Natura 2000 structure, attaches binding duties and monitoring requirements beyond the annex-based protection by creating tailored regimes for ecological systems that are structurally underregulated or treated peripherally under existing instruments: urban ecosystems (Article 8), river connectivity and floodplains (Article 9), pollinators (Article 10), agricultural ecosystems (Article 11), forest ecosystems (Article 12), and a complementary Union-level tree-planting objective (Article 13).[123] These provisions extend restoration beyond protected sites; indeed, they require Member States to address landscape-scale degradation driven by land use, infrastructure and sectoral incentives. This is an essential shift for dealing with agrifood pressures, since these rarely stop at Natura 2000 boundaries and CAP-influenced land management affects soil carbon, landscape structure and biodiversity across entire territories. Article 8 establishes an embryonic EU "urban green code" through a no-net-loss obligation for national urban green space and tree cover by 2030 (baseline 2024), followed by an upward-trend requirement from 2031.[124] Article 9 mandates the inventory and prioritised removal of artificial barriers to restore river connectivity towards the 25,000 km free-flowing rivers target by 2030, coupled with a maintenance duty for restored connectivity and floodplain functions.[125] Article 10 is legally novel in setting an outcome-based deadline to reverse pollinator decline by 2030 and ensure an upward trend thereafter, while empowering the Commission to standardise monitoring via delegated acts and mobilise EU agencies.[126] Article 12 likewise binds Member States to show an upward trend in parameters and struc-

[123] Arts. 4-13 NRR (ecosystem-specific obligations) and recitals on complementarity with the Nature Directives.

[124] This is notable because it treats urban ecosystems as relevant objects of biodiversity and climate resilience governance and because, as a regulation, it is directly applicable and capable of affecting planning and property configurations, rather than remaining a purely programmatic exhortation.

[125] European Commission, *Barrier Removal for River Restoration*, Brussels, 2021.

[126] Commission Delegated Regulation (EU) 2025/2188 establishing a science-based method for monitoring pollinator diversity and pollinator populations, OJ L 2025/2188 of 26 November 2025.

tural indicators reflecting forest ecosystem complexity, including species quality, quantity and connectivity.[127]

Within this ecosystem-type approach, Article 11 is the first EU restoration provision explicitly dedicated to agricultural biodiversity and agri-ecosystem health parameters. It is also the provision that most clearly reveals the regulation's internal compromises and the persistence of the structural agricultural-environmental law divide.

The first paragraph immediately frames a general obligation for Member States to implement restoration measures to enhance biodiversity in agricultural ecosystems – which are additional to those under Article 4 – phrasing it with a "taking into account" that foregrounds climate change, rural socio-economic needs, and the need to ensure sustainable agricultural production. This presents restoration as conditional upon production continuity and rural viability, with "sustainable production" likely read more in socio-economic than ecological terms. This broad and indeterminate qualifier may operate as a gateway for justifying expansive Member State discretion, potentially legitimising suspensions, derogations, or permissive implementation choices that accommodate a wide range of production-oriented practices, including pathways bordering on re-intensification despite foreseeable adverse effects on farmland biodiversity.[128]

The second paragraph then requires an increasing national trend in at least two of three indicators: grassland butterflies index[129], soil organic carbon stock in cropland mineral soils[130], and the share of agricultural

[127] The parameters are: dead wood, age structure, connectivity, soil carbon, dominance of native species, species diversity; and Article 13's three-billion-trees objective attempts to prevent greenwashing by embedding qualitative principles (species diversity, age structure, priority to native species, connectivity functions), while leaving effectiveness contingent on monitoring and the operational definition of quality benchmarks.

[128] G. Spoto, *Ambiente e agricoltura nel Regolamento (UE) sul ripristino della natura*, in *Rivista di diritto alimentare* 2/2025, p. 143 ff.

[129] On the Common Butterfly Index, see contribution by S. Kalders in this collection.

[130] The Soil organic carbon stock in mineral soils of cropland is an indicator describing the stock of organic carbon in mineral cropland soils at a depth of 0-30 cm. The unit of measurement is tonnes of organic carbon per hectare. The methodology follows Annex V of Regulation (EU) 2018/1999, in accordance with the 2006 IPCC Guidelines

land with high-diversity landscape features,[131] which is to be measured against a 2024 baseline starting in 2030 and every 6 years thereafter until "satisfactory levels" are achieved.[132] Annex IV describes the three indicators in detail and, *inter alia*, sets the relevant monitoring methodologies. However, Member States retain discretion both on the choice of measures and on the specific satisfactory levels to be achieved; indeed, such levels are not predefined at EU level, but each Member State must determine them by 2030 through an open and effective process grounded in scientific evidence and based on national and local conditions.

A further indicator that Member States are required to improve is the farmland bird index. Under Article 11(3), Member States must establish the baseline level by September 2025, with each Member State taking into account the species listed in Annex V.[133]

Article 11(4) then sets progressive targets for restoring drained peatlands in agricultural use (30% by 2030, 40% by 2040, 50% by 2050), with a minimum share to be rewetted, including several flexibility clauses allowing them to reduce restoration efforts in the presence of negative impacts on infrastructure or overriding public interests. The provision also clarifies that obligations of rewetting do not directly bind farmers and that this voluntary measure should be incentivised through support.[134]

for national greenhouse gas inventories, and is supported by the LUCAS (Land Use and Coverage Area frame Survey) soil component: see A. Jones et al., *LUCAS Soil 2022: JRC Technical Report*, Publications Office of the European Union, 2021.

[131] The share of agricultural land covered by high-diversity landscape features indicator measures the percentage of agricultural land (share of utilised agricultural area) occupied by high-diversity landscape features, such as buffer strips, hedges, isolated trees or tree groups, tree lines, field margins, parcels, ditches, streams, small wetlands, terraces, cairns, stone walls, small ponds, and cultural elements. These are natural or semi-natural permanent vegetation elements embedded in agricultural settings that deliver ecosystem services and contribute to biodiversity

[132] Art 11(1, 2) and Annex IV NRR.

[133] Art. 11(3) NRR. In particular, Member States must then achieve an index of: 110,120,130 by respectively 2030, 2040, and 2050. This is valid where their populations are historically more depleted; or, where populations are historically less depleted, 105/110/115 by 2030/2040/2050.

[134] Art. 11(4) NRR. On peatland restoration, see M. Meertens, *Resolving the peatland restoration conundrum: mapping different stakeholder interests*, paper presented at Research Day Law and Criminology, 2024.

Despite sustained resistance from the agricultural sector and other key stakeholders – which even led to the proposed removal of Article 11 at one stage of the legislative process – it was ultimately kept in the final text.[135] By bringing agricultural ecosystems within the Regulation's restoration logic beyond a strictly Natura 2000-based approach, and by introducing indicators that can capture the condition of ecosystems and guide measurable improvement, the provision represents one of the Regulation's most significant achievements. Moreover, it is important to underline how the regulation affects agriculture beyond Article 11. As discussed above, the Regulation also engages agriculture through obligations relating to terrestrial habitats, pollinators, and hydro-morphological connectivity. The holistic logic of the Regulation is precisely to function as a legal bridge between biodiversity restoration, soil health, and climate mitigation within farming systems, by translating ecological functionality into monitorable parameters and by forcing NRPs to treat agricultural landscapes as socio-ecological systems rather than as production surfaces. However, the original indicator-based design of Article 11 was more constraining. The final compromise softened it into an "aim to achieve" duty, broadened exceptions, and lengthened monitoring cycles, making the provision easier to defend politically, but more difficult to legally enforce. In practice, this flexible drafting, especially the socio-economic "take into account" language, may operate as a litigation buffer if "satisfactory levels" remain under-defined or contested.

Article 27 is emblematic of the political compromises surrounding agri-food restoration under the NRR: it creates an "emergency brake" allowing the Commission, via implementing acts, to temporarily suspend the application of Article 11. This can happen where an undefined "unforeseeable, exceptional and unprovoked" event outside Union control produces serious EU-wide consequences for the availability of land needed to ensure sufficient agricultural production.[136] Because the trigger and severity threshold are left largely indeterminate, the clause potentially

[135] This was the AM 34/47 July 2023 to the European Parliament deleting what was once Article 9 on the restoration of agricultural ecosystems. This was cancelled including the restoration targets for drained peatlands. See the details of the EEB press release: https://eeb.org/en/weber-fails-to-derail-eu-green-deal-but-parliament-agrees-to-a-weakened-nature-restoration-law/.

[136] Art. 27 NRR.

enables a wide range of situations to justify relaxation of already diluted agri-ecosystem obligations.

The provision emerged in a highly politicised debate dominated again by "food security" claims,[137] which are often framed narrowly in relation to the production and availability of food, despite scientific evidence and Commission statements suggesting that EU food security vulnerabilities are more strongly linked to other factors such as access to food, the impacts of production intensification, climate risks, biodiversity loss, and import dependencies (i.e. energy, fertilisers, and animal feed), rather than environmentally oriented measures.[138] This framing is problematic because it appears to institutionalise the misleading inference that suspending restoration obligations generates "food security" gains; if anything, under conditions of accelerating climate volatility, a precautionary logic would point in the opposite direction, i.e. towards contingency mechanisms that preserve, if not strengthen, restoration and resilience-building measures precisely when extreme events threaten productive capacity. The food security argument should therefore be legally and analytically dismantled. Food security cannot be reduced to the mere physical availability of agricultural land or to short-term production volumes.[139] It also includes access to food, affordability, nutritional adequacy, stability over time, the resilience of food systems to shocks, and the strategic autonomy of supply chains in relation to external dependencies such as energy, fertilisers, feed and critical in-

[137] See the reconstruction in K. Decleer, A. Cliquet, *Nature restoration: proposed EU law under threat*, in *Nature*, vol. 619, 2023, p. 252. See also the legal assessment explaining why COPACOGECA's objections to the proposed Nature Restoration Law are misguided conducted by Society for Ecological Restoration Europe (SERE) Legal Working Group, *EU Nature Restoration Law: myths and misconceptions debunked*, 2023; SERE, *The EU Nature Restoration Law: legal concerns on the trilogue draft agreement*, 2023. Similarly, see the UN Environmental Programme (UNEP) report, *European Union proposes law to bring back nature*, 2022.

[138] Politico, *Europe's farmer protests are spreading. Here's where and why*, cit.

[139] In the Report on the 1996 World Food Summit 13-17 November 1996, WFS 96/REP, food security is defined as: "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". See also M. Alabrese, G. Strambi, *Food sovereignty and food security: concepts and legal framework*, in *Rivista di diritto agrario*, 4/2019, p. 736 ff.

puts.[140] Once these dimensions are distinguished, the opposition between restoration and food security becomes far less convincing. In the long term, the degradation of soils, pollinator decline, biodiversity loss, water scarcity and climate-related shocks undermine the ecological foundations of agricultural production itself. Restoration measures may therefore contribute to food security by reducing systemic vulnerability, strengthening ecosystem functions and increasing the adaptive capacity of farming systems.[141] The legal problem with Article 27 is not that it recognises the need to respond to exceptional crises, but that it risks translating a narrow production-centred understanding of food security into a suspension mechanism for precisely those restoration obligations that could strengthen food-system resilience over time.[142]

Although Article 11 targets primarily bind Member States and do not impose direct constraints on farmers, the cumulative effect of derogations, emergency clauses, flexible drafting, and softened targets is to weaken the effectiveness and narrative coherence of the agri-food restoration package. Moreover, the clause is best understood as a product of the current political cycle and its incentives: because it is drafted in open-textured terms and activated by the Commission, it may be mobilised in the future not only in response to objective necessity but also in response to shifting political preferences. This risk is amplified by the well-known temporal asymmetry between ecological and political timescales: ecosystems evolve across decades and centuries, whilst political mandates barely span five to seven years. This temporal mismatch creates a fundamental tension in conservation and restoration planning.[143]

Beyond the concessions made specifically in relation to agriculture, the final NRR text also reflects a broader structural softening introduced

[140] Commission Staff Working Document, Drivers of food security, SWD(2023) 4 final of 4 January 2023.

[141] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions**,** Safeguarding food security and reinforcing the resilience of food systems, COM(2022) 133 final of 23 March 2022.

[142] On this point, E Mezzacapo, *La Nature Restoration Law*, cit.

[143] V. Amici et al., *Long-term patterns of change in a vanishing cultural landscape: a GIS-based assessment*, in *Ecological Informatics*, vol. 37, 2017, p. 38 ff.

through political compromises that shaped the overall level of constraint and ambition within which agri-ecosystem restoration will operate.

For one, the "non-deterioration" obligation of restored and re-established ecosystems in Articles 4 and 5 is now limited to the obligation of Member States to prevent "significant deterioration".[144] This of course risks turning a safeguard into an interpretively malleable threshold.[145] For another, if the expanded derogation architecture, which includes *force majeure*, defence and security, unavoidable climate-driven transformations, third-country actions, and overriding public interest, is broadly applied, it may dilute the long-term cumulative effect on which restoration depends. This scenario thereby exposes agricultural production to serious vulnerabilities arising from climate-driven disruptions, undermining its long-term resilience.[146]

Moreover, there was a step-back from a clearer and binding historical benchmark as a baseline for restoration. The post-trilogue negotiations replaced "take into account documented losses for at least the last 70 years"[147] language with the more open-ended requirement to "take into account records of historical distribution and the projected changes".[148] This may entrench shifting-baseline dynamics, enabling less demanding reference periods and a quiet lowering of ambition.[149] This baseline softening is particularly consequential for agricultural landscapes. CAP reforms promoting agri-environmental integration were themselves justified as a corrective response to cumulative ecological deterioration driven by farming intensification over the post-war decades. That diagnosis becomes harder to operationalise where restoration baselines are no longer anchored to a clear historical degradation trajectory.

[144] Art. 4(11, 12) NRR. On the non-deterioration obligation, see contribution by A. Betti in this collection.

[145] B. J. de Leeuw, *The non-deterioration obligation in the Nature Restoration Law*, in *Journal for European Environmental and Planning Law*, 1/2024, p. 22 ff.

[146] H. Schoukens, *Non-regression clauses in times of ecological restoration law: Article 6(2) of the EU Habitat Directive as an unusual ally to restore Natura 2000?*, in *Utrecht Law Review*, 1/2017, p. 124 ff.

[147] See Art. 11(2.iii) of the Proposal for a Regulation of the European Parliament and of the Council on nature restoration, COM(2022) 304 final of 22 June 2022.

[148] Art. 14(2.iii) NRR.

[149] S.K. Papworth, *Evidence for Shifting Baseline Syndrome in Conservation*, in *Conservation Letters*, 2/2009, p. 93 ff.

Finally, and perhaps most consequentially for the NRR's transformative potential, the regulation remains financially underdetermined: while it requires NRPs to indicate cost estimates, financing frameworks, and the identification of harmful subsidies, it does not establish a dedicated EU budget line.[150] Articles 14(10) and 15(5) explicitly frame the NRPs as a coordination instrument *vis-à-vis* the CAP: Member States must identify synergies between restoration objectives and agricultural and forestry practices, including CAP interventions, and the NRPs must contain an overview of their interaction with the CSPs.[151] At the same time, Article 14(11) draws a clear legal boundary: implementation does not in itself create an obligation to reprogramme CAP (or CFP or other) funding. This asymmetry – a strong procedural expectation of coherence, but no budgetary reallocation duty – creates a problematic grey zone for implementation. As argued in this article, it is necessary to identify synergies, share interoperable monitoring parameters, disseminate best practices and exchange information on effective measures in order to translate "synergies" from declaratory statements into an implementable, verifiable restoration delivery system across Member States. It appears clear that agri-ecosystem restoration will only be credible if it is mainstreamed into the CAP framework, which shapes land management and absorbs roughly one-third of the entire Union's MFF. This is not merely political but legally relevant because Article 192(5) TFEU anticipates financial support considerations where environmental measures entail disproportionate costs for public authorities, and because restoration effectiveness is structurally dependent on long-term, stable investment rather than one-off projects.[152] At the same time, the CAP's own structural features, notably the dominance of area-based income support and wide national discretion, may operate as a constraint on restoration rather than an enabler. However, the CAP-NRR interface also creates an opportunity to develop shared socio-ecological parameters and interoperable indicators to handle, in a more integrated way, the integrity and resilience of agri-ecosystems.

[150] Art. 15(3) (u) NRR.
[151] Arts. 14(10) and 15(5) NRR.
[152] Art. 192(5), Treaty on the Functioning of the European Union.

5. *Conclusions: towards a common restoration approach*

The Nature Restoration Regulation marks a significant shift in EU environmental law. Its deepest innovation lies not only in the introduction of new targets, indicators, or planning obligations, but in the legal repositioning of restoration itself: no longer as an aspect of conservation, but as an autonomous regulatory objective aimed at improving ecosystem conditions across territories. In agricultural landscapes, this shift is particularly consequential, because it relocates biodiversity decline, soil degradation, and ecosystem resilience from the margins of EU agricultural governance to its normative centre.

This shift will not be measured by the ambition of the Regulation *in abstracto*, nor by the symbolic importance of Article 11 alone. Its credibility will depend on whether restoration can be translated into a stable delivery architecture within the policy framework that most deeply structures land management in the Union, namely the Common Agricultural Policy. This is the central tension that this article seeks to highlight. The NRR recognises the need for coordination with the CAP and requires Member States to identify synergies through the National Restoration Plans, but it stops short of imposing any duty to realign CAP spending accordingly. The result is a structural asymmetry: strong ecological ambition and procedural coordination on the one hand, but weak financial steering and limited redistributive correction on the other.

This asymmetry matters because the CAP still largely operates through a spending logic that remains only partially compatible with restoration. As long as the dominant architecture of support continues to privilege area-based income distribution, broad flexibility, and insufficiently constrained production-oriented incentives, restoration risks being treated as an added layer to be accommodated rather than as a guiding rationale capable of reshaping the use of agricultural land. In this sense, the real challenge is not simply better coordination between two EU instruments, but a deeper legal and institutional reordering of the relationship between agricultural support, ecological baselines, and public value.

The broader implication is that the future of agri-ecosystem restoration in the EU will depend less on the declaratory recognition of synergies than on the capacity to embed restoration into the ordinary grammar of agricultural governance: funding priorities, conditionality, monitor-

ing systems, and measurable outcomes. The National Restoration Plans may provide the procedural space for this transition, and new monitoring technologies may strengthen evidence and enforceability. But unless the CAP is progressively reoriented towards outcome-based ecological delivery, the Union risks institutionalising a mismatch between binding restoration duties and the financial logic of its main land-use policy.

From this perspective, the post-2027 CAP should not merely acknowledge the NRR as one component of the environmental framework with which synergies may be developed, but should internalise restoration as a core element of agricultural support. This could be achieved, for instance, by integrating restoration-related indicators into the CAP performance framework, so that CAP implementation is assessed not only through uptake and expenditure indicators, but also through verifiable changes in ecosystem conditions. Moreover, direct payments should be progressively linked to socio-ecological outcomes or, at the very least, to robust result-oriented proxy indicators, particularly in relation to soil organic carbon, high-diversity landscape features, grassland biodiversity, peatland restoration and pollinator recovery. The CAP could provide stronger incentives for collective and landscape-scale interventions, since many restoration outcomes depend on ecological connectivity and coordinated action beyond individual farms. The CAP Strategic Plans and the NRPs should be connected through interoperable monitoring systems, shared spatial data, common indicators and transparent reporting methodologies. Without such integration, the Union risks maintaining two parallel governance architectures: one legally committed to restoration, and another financially capable of shaping land use but insufficiently aligned with that commitment.

The analysis therefore shows that, without a reallocation of environmentally harmful or weakly conditioned support towards restoration-oriented and result-based measures, neither instrument is likely to contribute effectively to the transition envisaged by the Green Deal. For this reason, the post-2027 reform cycle should be read as more than another stage in the evolution of the CAP. It is likely to determine whether the Nature Restoration Regulation will become the foundation of a more coherent and enforceable restoration agenda in agricultural landscapes or remain a legally ambitious framework constrained by structurally misaligned incentives.

ABSTRACT

Nature Restoration Regulation
Common Agricultural Policy – Agricultural ecosystems
Ecological restoration – CAP Strategic Plans
National Restoration Plans – Sustainable food systems

This article examines the relationship between the EU Regulation on Nature Restoration and the EU Common Agricultural Policy in the restoration of EU agricultural ecosystems. It asks whether the CAP, in its current and emerging post-2027 configuration, can operate as a credible delivery framework for the Nature Restoration Regulation's agricultural restoration objectives, or whether its prevailing financial and governance architecture risks reproducing the very pressures that restoration law seeks to reverse. The article argues that the main challenge is not the absence of formal synergies between the two instruments, but the asymmetry between a binding restoration mandate and an agricultural support system that remains largely organised around area-based payments, insufficient socio-ecological parameters, and voluntary instruments often designed or implemented in ways that preserve existing intensive production models and national status quo rather than steering a genuine environmental transition. In this context, the article first situates the Nature Restoration Regulation against the limits of the EU nature conservation framework in agricultural landscapes, where site-based protection and preventive duties have proved insufficient to address diffuse, cumulative and agricultural landscape-scale pressures. It then examines the green delivery model of the CAP 2023-2027, focusing on CAP Strategic Plans, conditionality, eco-schemes, rural development measures, coupled support and distributional inequalities. The article subsequently analyses the Regulation's agricultural provisions, particularly Article 11, the role of National Restoration Plans, the emergency clause in Article 27, and the coordination provisions linking restoration planning with CAP instruments. It concludes that agri-ecosystem restoration will remain fragile unless the post-2027 CAP internalises restoration as a core criterion of agricultural support through stronger ecological baselines, result-oriented indicators, landscape-scale incentives, interoperable monitoring systems and a reallocation of environmentally harmful or weakly conditioned support towards restoration-oriented measures.

Siemen Kalders*

THE RESTORATION OF GRASSLAND BUTTERFLIES: LEGAL OPPORTUNITIES AND CHALLENGES UNDER THE NATURE RESTORATION REGULATION

Sommario: 1. Introduction. – 2. Setting the Scene: Grassland Butterflies in Europe. – 2.1. European Butterfly Monitoring Scheme and the Grassland Butterfly Index. – 2.2. Agricultural intensification, nitrogen deposition, and climate change. – 3. The Grassland Butterfly Index in the Nature Restoration Regulation. – 3.1. The legal duties to restore agricultural ecosystems. – 3.2. Synergy with associated and closely-connected provisions. – 4. Challenges and opportunities for grassland butterfly restoration. – 4.1. The setting of satisfactory levels in the absence of a definition and scientific criteria. – 4.2. Historic butterfly losses and shifting baselines. – 5. Conclusions and outlook

1. *Introduction*

Butterflies are declining throughout the European Union. Data from the European Butterfly Monitoring Scheme indicate that butterflies in grasslands are particularly declining, as represented in the Grassland Butterfly Index. The Grassland Butterfly Index is a scientific tool that features the trends of 17 grassland butterfly species as an indicator for other grassland butterflies and ecosystem quality.[1] A recent report revealed a 50% decline in this index between 1991 and 2023.[2]

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[1] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, in *Butterfly Conservation Europe*, 2020, p. 1 ff.

[2] C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, in *Butterfly Conservation Europe*, 2025, p. 1 ff.

Within this background, the Nature Restoration Regulation (EU) 2024/1991 aims to contribute to the long-term and sustained recovery of biodiverse ecosystems, including the restoration of agricultural ecosystems and grassland butterflies.[3] The research objective is to clarify the place of the Grassland Butterfly Index within the Nature Restoration Regulation and analyse the potential legal implications for the restoration of butterflies in Europe.

In Part 2, the paper sets the scene for butterfly monitoring, providing a scientific background on the decline of butterflies in Europe and the main pressures affecting them. In Part 3, the study describes and examines the Grassland Butterfly Index as enshrined in Article 11 of the Nature Restoration Regulation. The study contextualises the Grassland Butterfly Index within the restoration of agricultural ecosystems, describes its features and aspects, and highlights how it can complement and synergise with other provisions in the Nature Restoration Regulation. In Part 4, the study examines the potential challenges and opportunities for restoring grassland butterflies and other butterflies in light of their historical decline. In Part 5, the study concludes by reiterating the main findings and the broader implications for butterfly restoration in Europe.

2. *Setting the Scene: Grassland Butterflies in Europe*

2.1. *European Butterfly Monitoring Scheme and the Grassland Butterfly Index*

Butterflies have been studied and monitored quite extensively, in contrast to many other insect groups. In Europe, the European Butterfly Monitoring Scheme is a comprehensive scheme that collects data from national monitoring schemes in 31 European countries, including all EU Member States.[4] Whereas butterfly populations are characterised by

[3] Regulation (EU) 2024/1191 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869, OJ L 2024/1991 (the "NRR" or "Nature Restoration Regulation").

[4] C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, cit.

year-to-year fluctuations, this scheme can reveal long-term trends using data collected since 1991.

One of the main contributions of the European Butterfly Monitoring Scheme is the European Red List of Butterflies (2025), as it provides a comprehensive overview of the threatened status of butterflies in Europe.[5] For the EU, 68 of the 431 extant butterfly species are considered threatened with extinction, specifically 5 critically endangered, 39 endangered, and 24 vulnerable.[6] Thus, 15.8% of butterfly species in the EU are threatened with extinction, while 15.1% of butterfly species are near threatened.[7] Although this may seem like a low percentage, it marks a significant increase in the number of threatened butterflies compared to the previous European Red List of Butterflies (2010).[8] The previous Red List assessed only 30 butterfly species in the EU as threatened, indicating that the number of threatened butterflies in the EU has more than doubled from 30 to 68 species in the last 15 years.[9]

Another contribution of the European Butterfly Monitoring Scheme is the Grassland Butterfly Index.[10] The Grassland Butterfly Index is a multi-species index measuring changes in the population abundance of 17 grassland butterfly species in Europe.[11] These 17 grassland butterflies were selected because they are characteristic of European grasslands, occur in large parts of Europe covered by national monitoring schemes,

[5] Trends were calculated separately for Europe and the EU Member States, of which only the results for the EU will be discussed in this paper. The Red List identifies assessable species as critically endangered (CR), endangered (EN), vulnerable (VU), near threatened (NT) or least concern (LC). The threatened categories encompass critically endangered, endangered, and vulnerable species; C.A.M. Van Swaay et al., *European Red List of Butterflies*, Publications Office of the EU, 2025.

[6] One butterfly species (*Pieris wollastoni*) has been extinct at the European level since 1986 and was consequently excluded; Ibid.

[7] Ibid.

[8] Ibid.

[9] Ibid.

[10] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[11] *Anthocharis cardamines, Coenonympha pamphilus, Cupido minimus, Cyaniris semiargus, Erynnis tages, Euphydryas aurinia, Lasiommata megera, Lycaena phlaeas, Lysandra bellargus, Lysandra coridon, Maniola jurtina, Ochlodes sylvanus, Phengaris arion, Phengaris nausithous, Polyommatus icarus, Spialia sertorius* and *Thymelicus acteon.*

and have grasslands as their primary habitat.[12] The latest technical report on the Grassland Butterfly Index (2025) showed a 50% decline between 1991 and 2023, indicating that the average abundance of the 17 indicator species had halved compared to 1991.[13] None of them are threatened with extinction, with 5 near threatened (all of which are specialists), and the remaining 12 least concern.[14]

Nonetheless, studies emphasise that grassland butterflies are declining across the EU, necessitating urgent action to reverse the decline.[15] The data show that some regions are losing butterfly populations at an alarming rate. In Flanders, for example, 19 out of 64 indigenous butterfly species went extinct during the 20th century, while half of the remaining butterfly species were considered threatened with extinction.[16] Specialist butterfly species in nutrient-poor biotopes, such as semi-natural grasslands, continue to decline in Flanders.[17]

2.2. *Agricultural intensification, nitrogen deposition, and climate change*

Several pressures are causing butterflies and grassland butterflies to decline. The primary pressures are habitat loss and degradation, chemical pollution, and climate change.[18] In general, the significant impact of human activities on nature and the environment in highly anthropogenic regions results in small and highly fragmented butterfly habitats that suffer from agricultural intensification and homogenization, high nitrogen deposition, climate change, and other anthropogenic pressures.[19]

[12] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[13] C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, cit.

[14] C.A.M. Van Swaay et al., *European Red List of Butterflies*, cit.

[15] C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, cit.

[16] D. Maes, H. Van Dyck, *Butterfly diversity loss in Flanders (north Belgium): Europe's worst case scenario*, in *Biological Conservation*, 2001, 99, p. 263 ff.

[17] D. Maes et al, *Challenges and bottlenecks for butterfly conservation in a highly anthropogenic region: Europe's worst case scenario revisited*, in *Biological Conservation*, 2022, 274, p. 1 ff.

[18] M.S. Warren et al., *op. cit*.

[19] D. Maes et al., *op. cit.*; M.S. Warren et al., *op. cit.*

The most significant pressure is habitat loss and degradation.[20] Agricultural intensification is often regarded as one of the primary drivers of habitat loss and degradation, leading to declines in butterfly and other insect populations,[21] especially where habitat management has shifted away from traditional regimes of grazing or hay cutting to modern large-scale and intensive farming practices.[22] Both factors lead to the loss, degradation, fragmentation, and isolation of suitable habitats for butterflies, resulting in a substantial loss of host plants, foraging and nectar resources, breeding sites, and resting places.[23] These issues are not limited to agricultural contexts, as butterflies are also declining in nature protection areas. In this respect, a study in Northern Austria found that many grassland butterflies, such as the dusky large blue (*Phengaris nausithous*) and the marsh fritillary (*Euphydryas aurinia*), have disappeared from a nature protection area, as habitat modifications have occurred and the habitats of these grassland butterfly species have deteriorated over the past decades.[24]

Another pressure is chemical pollution, covering various substances that adversely affect butterflies and their habitats, including pesticides and nitrogen deposition.[25] Nitrogen deposition is a significant environmental concern in many EU Member States, such as the Netherlands and Belgium.[26] For butterflies in particular, nitrogen pollution is also a concern because it can change the microclimate or nature of the vegetation where

[20] Ibid.

[21] Agricultural intensification is a set of patterns of land-use change characterised by the common feature of increased use of the same resources for agricultural production, typically resulting in continuous cultivation of the same land, ploughing of grasslands for agricultural crops, and reseeding and/or fertilisation of pastures and habitats; M.S. Warren et al, *op. cit.*; K.E. Giller et al, *Agricultural intensification, soil biodiversity and agroecosystem function*, in *Applied Soil Ecology*, 1997, 6, p. 3 ff.

[22] M.S. Warren et al, *op. cit.*

[23] Ibid.

[24] J.C. Habel et al, *Butterfly loss in urban landscapes and nature reserves*, in *Journal for Nature Conservation*, 2024, 78, p. 1 ff.

[25] M.S. Warren et al, *op. cit.*

[26] H. Schoukens, *Atmospheric nitrogen deposition and the habitats directive: tinkering with the law in the face of the precautionary principle?*, in *Nordic Environmental Law Journal*, 2015, 2, p. 25 ff; H. Schoukens, *Nitrogen deposition, habitat restoration and the EU Habitats Directive: moving beyond the deadlock with the Dutch programmatic nitrogen approach?*, in *Biological Conservation*, 2017, 212, p. 484 ff.

butterflies breed, which especially affects butterfly species specialised in nutrient-poor habitats, such as grasslands.[27] This supports the evidence that specialist butterflies in grasslands and other nutrient-poor habitats are declining, while generalist grassland butterflies remain relatively stable.[28] For example, the wall brown butterfly (*Lasiommata megera*) has declined in the Flemish Region of Belgium and in the Netherlands due to nitrogen deposition, as it encourages vegetation growth and reduces the amount of bare ground where the butterflies can breed.[29]

Another pressure is climate change, which leads to changes in abundance, distribution, species assemblages, composition, and interactions with other species.[30] A key consequence of climate change is the migration of butterflies to cooler environments to cope with changing climatic conditions.[31] Another consequence of climate change is a change in the phenology of butterflies, including changes in overwintering strategies and activity timing.[32] One of the primary overwintering strategies is winter diapause, a phenomenon similar to hibernation.[33] Many butterflies induce, maintain, or disrupt their winter diapause in response to specific environmental cues, such as temperature.[34] Due to climate change, these environmental cues are shifting, which may lead to developmental traps that result in lost generations.[35] For example, the wall brown butterfly (*Lasiommata megera*) breaks its winter diapause at the end of its second generation if there are unseasonably warm autumn conditions, which causes the third generation to be introduced during winter instead of autumn.[36] As a result of climate change, successive generations of butterflies are increasingly susceptible to winter mortality, leading to a decline

[27] M.S. Warren et al, *op. cit.*

[28] D. Maes et al, *op. cit.*

[29] M.S. Warren et al, *op. cit.*

[30] J.A. Harvey et al., *Scientists' warning on climate change and insects*, in *Ecological Monographs*, 2023, 93, p. 1 ff.

[31] Ibid.

[32] J.A. Harvey et al., *op. cit.*

[33] H.K. Gill, G. Goyal, G. Chahil, *Insect Diapause: A Review*, in *Journal of Agricultural Science and Technology*, 2017, 7, p. 454 ff.

[34] J.A. Harvey et al., *op. cit.*

[35] Ibid.

[36] J.A. Harvey et al., *op. cit.*; D. Maes et al, *IUCN Rode Lijst van de dagvlinders in Vlaanderen*, Instituut Natuur-en Bosonderzoek, 2021, p. 1 ff.

in the species throughout Europe.[37] However, climate change can also have positive effects on (grassland) butterflies. For example, the Queen of Spain fritillary butterfly (*Issoria lathonia*) is a grassland butterfly that has expanded its population and distribution in the Flemish Region of Belgium due to the increased presence of its host plants as a result of climate change.[38]

To summarise, habitat loss and degradation, chemical pollution, and climate change are considerable pressures on butterflies. Moreover, the analysis and examples demonstrate that these pressures interact and amplify their adverse effects on butterflies. As a consequence, the legal approach to reverse the decline of butterflies must ensure a transversal approach that tackles these issues altogether.

3. *The Grassland Butterfly Index in the Nature Restoration Regulation*

3.1. *The legal duties to restore agricultural ecosystems*

The Nature Restoration Regulation aims to contribute to the long-term and sustained recovery of biodiverse and resilient ecosystems by restoring degraded ecosystems.[39] Furthermore, the Regulation aims to enhance food security, which is a crucial objective within the context of agricultural ecosystems.[40] To achieve these objectives, the Nature Restoration Regulation establishes a framework within which Member States shall put in place effective and area-based restoration measures with the aim of jointly covering at least 20% of land areas and at least 20% of sea areas by 2030, and all ecosystems in need of restoration by 2050.[41]

The Nature Restoration Regulation provides several ecosystem-specific regimes, including for agricultural ecosystems.[42] Agricultural ecosystems are all natural and semi-natural agricultural habitats, as well as agri-

[37] Ibid.
[38] D. Maes et al, *IUCN Rode Lijst van de dagvlinders in Vlaanderen*, cit.
[39] Article 1(1)(a) NRR.
[40] Article 1(1)(c) NRR.
[41] Article 1(2) NRR.
[42] Article 11 NRR.

culturally improved grasslands and croplands.[43] Natural and semi-natural agroecosystems are of very high biodiversity importance, since they are highly species-rich and provide habitats for farmland birds, insects, and many other species.[44] Furthermore, agricultural ecosystems play a crucial role in providing food and other essential ecosystem services, such as carbon sequestration and storage.[45] However, strong evidence shows that agricultural habitats and associated species are declining both in quality and quantity, resulting in highly impoverished agricultural biodiversity.[46] For example, agricultural semi-natural habitats listed in Annex I of the Habitats Directive[47] are among the most threatened habitat types in the EU, while many associated species of these habitats are also threatened.[48]

The legal duties for Member States to restore agricultural ecosystems are laid down in Article 11 of the Nature Restoration Regulation.[49] The regime centres on a general obligation in paragraph 1, which requires Member States to put in place the restoration measures necessary to enhance biodiversity in agricultural ecosystems, in addition to the areas subject to restoration measures under Article 4(1), (4), and (7), taking into account climate change, social and economic needs of rural areas, and the need to ensure sustainable agricultural production in the EU.[50] This general obligation is supplemented with indicators to measure whether progress in the general obligation has been achieved (paragraph 2), restoration targets for farmland birds (paragraph 3), and restoration targets for drained peatlands (paragraph 4).[51]

[43] European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[44] Ibid.

[45] Ibid.

[46] Ibid.

[47] Directive 92/43/EEC of the Council of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 22 July 1992.

[48] European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[49] Article 11(1) NRR.

[50] Article 11(1) NRR; R.H.W. Frins et al, "De EU-Natuurherstelverordening: krijgt de natuur eindelijk de plek die zij verdient?", in *Tijdschrift voor Europees en Economisch Recht*, 2025, 73, p. 432 ff.

[51] Ibid.

Article 11(2) establishes the obligation for Member States to put in place measures which shall aim to achieve an increasing trend at the national level of at least two out of three agroecosystem indicators until satisfactory levels are reached.[52] These three agroecosystem indicators are the Grassland Butterfly Index, the stock of organic carbon in cropland mineral soils, and the share of agricultural land with high-diversity landscape features.[53] Originally, the legislative proposal required an increasing trend for each indicator, but this was softened to only two out of three indicators.[54]

The Grassland Butterfly Index has been selected as one of the agroecosystem indicators for two reasons. Firstly, grassland butterflies are considered highly efficient proxies for assessing grassland and ecosystem quality.[55] Butterflies are well-documented, measurable, and sensitive to environmental changes and climate change, occur in a wide range of habitat types with highly characteristic species assemblages, and represent many other insects and species of higher taxonomic levels.[56] Moreover, butterflies are sensitive to the primary pressures on general biodiversity that various EU policies aim to mitigate, including habitat loss and degradation, chemical pollution, and climate change.[57] Secondly, data on these grassland butterflies have been available since 1991 and are periodically updated through the European Butterfly Monitoring Scheme.[58] Furthermore, the data are considered reliable, especially since the Common Agricultural Policy utilises the Grassland Butterfly Index as an impact indicator.[59]

[52] Article 11(2) NRR; European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[53] Ibid.

[54] European Parliament, Resolution on the proposal for a regulation of the European Parliament and of the Council on nature restoration, OJ C 26 November 2024.

[55] European Commission, Communication EU Pollinators Initiative, 2018, COM(2018) 395 final; European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, SWD(2022) 167 final.

[56] Ibid.

[57] Ibid.

[58] Ibid.

[59] Ibid.

As mentioned, the Grassland Butterfly Index encompasses 17 grassland butterfly species, such as the dingy skipper (*Erynnis tages*) and the wall brown (*Lasiommata megera*).[60] If Member States select it as an indicator for assessing their agricultural ecosystems, they are not required to put in place measures to achieve an increasing trend for all grassland butterfly species in their territory, nor for each individual grassland butterfly species covered by the Index. Rather, the increasing trend is to be attained in the geometric mean of the species trends of the 17 grassland butterfly species.[61]

The Grassland Butterfly Index will be determined and monitored at the national level.[62] National trends may differ from the European trend of a 50% decline between 1991 and 2023, making the achievement of an increasing trend more or less demanding.[63] Progress in the grassland butterfly index will be measured in the period from 18 August 2024 until 31 December 2030, and every six years thereafter.[64]

The Nature Restoration Regulation does not require specific restoration measures to be established, leaving it to Member States to choose which measures to adopt and implement in order to achieve an increasing trend. To aid Member States when preparing their national restoration plans, Annex VII of the Nature Restoration Regulation provides a list of different examples of restoration measures.[65] Several of these anticipated measures can contribute to the Grassland Butterfly Index, such as introducing high-diversity landscape features in arable land and intensively used grassland, increasing the agricultural area subject to agroecological management approaches, changing mowing regimes on grasslands and re-establishing extensive grazing with domestic livestock, reducing the use of chemical pesticides, improving connectivity across habitats to enable the development of populations, and allowing for species' mi-

[60] *Anthocharis cardamines, Coenonympha pamphilus, Cupido minimus, Cyaniris semiargus, Erynnis tages, Euphydryas aurinia, Lasiommata megera, Lycaena phlaeas, Lysandra bellargus, Lysandra coridon, Maniola jurtina, Ochlodes sylvanus, Phengaris arion, Phengaris nausithous, Polyommatus icarus, Spialia sertorius* and *Thymelicus acteon*.

[61] Annex IV NRR.

[62] Article 11(2) NRR.

[63] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.; C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, cit.

[64] Article 11(2) NRR.

[65] Article 14(16)(a) *juncto* Annex VII NRR.

gration and adaptation to climate change.[66] These anticipated measures can synergise and complement each other well in order to achieve an increasing trend in the Grassland Butterfly Index. For example, a study in Sweden demonstrated that the marsh fritillary (*Euphydryas aurinia*) can recover quickly and effectively from extreme droughts caused by climate change by ensuring that the patch network of habitats is relatively large and well-connected, since larger and well-connected areas of habitat are likely to provide a broader range of resources and microclimates.[67] These findings suggest that the recovery of the marsh fritillary and other grassland butterflies may be supported by maintaining and increasing connectivity throughout the patch network, thereby also simultaneously enhancing the resilience of the butterflies to climate change and extreme weather events, such as droughts.[68]

In summary, the Grassland Butterfly Index is a scientific indicator featuring the trends of 17 grassland butterfly species. The Nature Restoration Regulation enshrines the Grassland Butterfly Index as one of the three indicators to measure progress by Member States in enhancing biodiversity in agricultural ecosystems. Member States are required to put in place restoration measures in order to achieve an increasing trend in the Grassland Butterfly Index until satisfactory levels are reached, while enjoying a wide margin of discretion for establishing restoration measures needed to achieve the increasing trend.

3.2. *Synergy with associated and closely-connected provisions*

Several other provisions and restoration obligations of the Nature Restoration Regulation are complementary and work in synergy with the Grassland Butterfly Index, supporting the achievement of the overarching objective of restoring ecosystems across the Member States' land and sea areas.[69] Hence, restoration measures for the Grassland Butterfly Index may contribute to fulfilling other restoration targets and obliga-

[66] Annex VII(17), (18), (19), (22) NRR.

[67] V. Johansson et al, *Quick recovery of a threatened butterfly in well-connected patches following an extreme drought*, in *Insect Conservation and Diversity*, 2022, 15, p. 1 ff.

[68] Ibid.

[69] Recital 65 NRR.

tions of the Nature Restoration Regulation, and vice versa. This paper identifies three critical synergies, specifically the agroecosystem indicator of high-diversity landscape features, the restoration of habitats of grassland butterflies listed in the Habitats Directive, and the restoration of pollinators.

The first synergy is with one of the other indicators for agricultural ecosystems, specifically the share of agricultural land with high-diversity landscape features.[70] High-diversity landscape features are elements of permanent natural or semi-natural vegetation present in an agricultural context, which provide ecosystem services and support for biodiversity.[71] Examples are buffer strips, hedgerows, individual or groups of trees, tree rows, field margins, patches, ditches, streams, small wetlands, terraces, cairns, stonewalls, small ponds, and cultural features.[72] These high-diversity landscape features provide space for butterflies, increase connectivity between habitats, provide important food and foraging resources, and serve as shelters, reservoirs, breeding and resting sites.[73] One restoration measure that particularly benefits grassland butterflies is sowing wildflower strips as an enhancement of buffer strips, since this increases the quantity of pollen and nectar foraging resources for adults, as well as provides space for the host plants of many grassland butterfly larvae, including the meadow brown butterfly (*Maniola jurtina*) and the European common blue butterfly (*Polyommatus icarus*).[74] However, the mere presence of a certain host plant is sometimes insufficient, since

[70] Article 11(2)(c) NRR.

[71] European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[72] Annex VII(16) NRR; Recital 57 NRR; European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[73] Recital 57 NRR; European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

[74] R.J. Blake et al, *Enhancement of Buffer Strips Can Improve Provision of Multiple Ecosystem Services*, in *Outlooks on Pest Management*, 2012, 23, p. 258 ff.; A. Kolkman, C. Dopagne, J. Piqueray, *Sown wildflower strips offer promising long term results for butterfly conservation*, in *Journal of Insect Conservation*, 2022, 26, p. 387 ff.

many butterflies have specific criteria for breeding and oviposition, such as leaf composition.[75]

The second synergy concerns the restoration of habitats of species listed in Annexes II, IV, and V of the Habitats Directive.[76] Article 4(7) of the Nature Restoration Regulation requires Member States to put in place restoration measures for the terrestrial habitats of the species listed in Annexes II, IV and V to the Habitats Directive that are necessary to improve the quality and quantity of those habitats until sufficient quality and quantity of those habitats is achieved.[77] These measures include re-establishing these habitats and enhancing connectivity between habitats of these three grassland butterflies.[78] The Habitats Directive lists three grassland butterflies of the Grassland Butterfly Index, specifically the marsh fritillary (*Euphydryas aurinia*), the large blue (*Phengaris arion*), and the dusky large blue (*Phengaris nausithous*).[79] Furthermore, the Habitats Directive also lists other butterflies, insects, and species that occur in grasslands, such as the Danube clouded yellow (*Colias myrmidone*).[80] Restoration measures established for the grassland habitats of these species, such as reducing fragmentation, may help to achieve an increasing trend in the Grassland Butterfly Index.

The third synergy is with the restoration of pollinator populations.[81] A pollinator is defined as "a wild insect which transports pollen from the anther of a plant to the stigma of a plant, enabling fertilisation and the production of seeds", which encompasses butterflies.[82] Butterflies are

[75] Ibid.

[76] Article 4(7) NRR.

[77] Ibid.

[78] Ibid.

[79] The marsh fritillary is listed in Annex II of the Habitats Directive since 1992. The large blue (*Phengaris arion*) is listed in Annex IV of the Habitats Directive since 1992. The dusky large blue (*Phengaris nausithous*) is listed in Annexes II and IV of the Habitats Directive since 1992.

[80] European Commission, *Action Plan for the Conservation of the Danube Clouded Yellow* Colias myrmidone *in the European Union*, Publications Office of the EU, 2012.

[81] B.J. De Leeuw, *De bescherming van bestuivers in het Europese natuurbeschermingsrecht en het wettelijk kader voor gewasbeschermingsmiddelen*, in *Tijdschrift voor Agrarisch Recht*, 2025, 1, p. 10 ff.

[82] Article 3(12) NRR; European Commission, Staff Working Document on Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, 2022, SWD(2022) 167 final.

traditionally considered to be poor pollinators.[83] However, a recent study has established the importance of butterflies in pollinating the generalist plant species *Knautia arvensis*, suggesting that butterflies may be more effective pollinators than traditionally believed.[84] Without prejudice to the scientific debate on the effectiveness of butterflies as pollinators, Article 10(1) of the Nature Restoration Regulation requires Member States to improve pollinator diversity and reverse the decline of pollinator populations at the latest by 2030 and thereafter achieve an increasing trend of pollinator populations until satisfactory levels are achieved.[85] Pollinator population trends are assessed using a common pollinator indicator and a pollinator species richness indicator based on data collected from four target species groups, specifically bees, hoverflies, butterflies, and moths.[86] Consequently, when Article 10(1) is read together with the indicator-based approach for monitoring and assessing trends in pollinator populations, it is conceivable, purely from a theoretical perspective, that Member States can meet their restoration obligations for pollinator populations without improving butterfly diversity or reversing the decline of butterfly populations. However, from a practical perspective, this possibility is significantly constrained, as butterflies have been explicitly designated as target species for assessing the trends of pollinators, placing them at the core of the pollinator regime established under Article 10 of the Nature Restoration Regulation. In this respect, butterflies may have specific ecological requirements that differ from those of other pollinators.[87] A recent

[83] D.H. Morse, *The turnover of milkweed pollinia on bumble bees, and implications for outcrossing*, in *Oecologia*, 1982, volume 53, p. 187 ff; M.S. Percival, *Floral biology*, Oxford-New York, 1965; C. Wiklund, T. Ericksson, H. Lundberg, *The wood white butterfly* Leptidea sinapis *and its nectar plants: A case of mutualism or parasitism?*, in *Oikos*, 1979, p. 358 ff.

[84] J. Ollerton et al, *Butterflies, bumblebees and hoverflies are equally effective pollinators of* Knautia arvensis (Caprifoliaceae), *a generalist plant species with compound inflorescences*, in *Journal of Applied Entomology* 2025, p. 685 ff.

[85] Article 10(1) NRR.

[86] Articles 2 and 9 Delegated Regulation (EU) 2025/2188 of the European Commission of 19 September 2025 supplementing Regulation (EU) 2024/1991 of the European Parliament and of the Council by establishing a science-based method for monitoring pollinator diversity and pollinator populations, OJ L 2025/2188.

[87] G.A. Bishop et al., *Critical habitat thresholds for effective pollinator conservation in agricultural landscapes*, in *Science*, 2025, 389, p. 1314 ff.

study focused on the critical habitat threshold for effective pollinator conservation (and restoration) in agricultural landscapes, meaning the minimum habitat coverage required to support the conservation and restoration of the pollinator group concerned.[88] It found that butterflies require the highest habitat coverage compared to other pollinators, since many butterfly larvae have specialised habitat requirements and are sensitive to landscape simplification.[89] Hence, larger and more diverse semi-natural habitat elements are necessary to effectively restore grassland butterflies compared to other pollinators.[90] This suggests that there is no one-size-fits-all approach for restoring grassland butterflies and pollinators.

In summary, other restoration obligations under the Nature Restoration Regulation are complementary and work in synergy with the Grassland Butterfly Index.[91] In particular, increasing the share of agricultural land with high-diversity landscape features, restoring habitats of grassland butterfly species listed in the Habitats Directive, and restoring pollinator populations may contribute to achieving an increasing trend in the Grassland Butterfly Index. Vice versa, restoration measures established by Member States aiming to achieve an increasing trend in the Grassland Butterfly Index may contribute to fulfilling these other restoration targets and obligations.

4. *Challenges and opportunities for grassland butterfly restoration*

4.1. *The setting of satisfactory levels in the absence of a definition and scientific criteria*

A legal-ecological concept introduced with the Nature Restoration Regulation is "satisfactory levels". In addition to the restoration of agricultural ecosystems, the concept is also used in other provisions of the Nature Restoration Regulation, specifically for the restoration of pol-

[88] Ibid.
[89] Ibid.
[90] Ibid.
[91] Recital 65 NRR.

linators,[92] urban ecosystems,[93] and forest ecosystems.[94] The concept of satisfactory levels plays a prominent role in these restoration regimes, as the Nature Restoration Regulation requires that increasing trends are achieved until these satisfactory levels are reached. Despite its prominence, there is considerable ambiguity and legal uncertainty surrounding the concept.

As a starting point, the Nature Restoration Regulation leaves it to the Member States to set satisfactory levels in accordance with Article 14(5). The Regulation neither defines the concept nor lays down any scientific criteria or minimum standards. This contrasts with other legal-ecological concepts used in the Nature Restoration Regulation, such as the good condition of habitat types.[95] The legislative rationale for leaving satisfactory levels undetermined was to allow Member States to take into account national and local ecological considerations when setting satisfactory levels.[96] As mentioned, some regions in the EU are characterised by severe butterfly losses, such as the Flemish Region in Belgium. From this perspective, it is beneficial to allow Member States to take into account their national and local levels of butterfly abundance and diversity when setting the levels that they consider satisfactory.

Notwithstanding the lack of substantive requirements, the Nature Restoration Regulation sets out several procedural requirements for Member States when setting satisfactory levels. In particular, Member States shall set satisfactory levels through an open and effective process, based on an assessment using the latest scientific evidence, and in accordance with a guiding framework to be developed by the European Commission by 31 December 2028.[97]

As a consequence of this regulatory design, satisfactory levels will vary across Member States, which is not a problem in itself, as it allows for tailoring to the national context. However, the lack of a definition

[92] Article 10(1) NRR.

[93] Article 8(2)-(3) NRR.

[94] Article 12(2)-(3) NRR.

[95] Article 4(1), (2), (3), (11), (12) *juncto* Article 3(4) NRR.

[96] R.H.W. Frins et al, *De EU-Natuurherstelverordening: krijgt de natuur eindelijk de plek die zij verdient?*, in *Tijdschrift voor Europees en Economisch Recht*, 2025, 73, p. 432 ff.

[97] Article 14(5) and 20(10) NRR.

and scientific criteria to determine what constitutes a satisfactory level raises questions about decision-making powers and the level of discretion granted to Member States, which may eventually impede effective butterfly restoration.

In their study, Lees and Pedersen addressed four 'interpretive puzzles' of the Nature Restoration Regulation.[98] One of their overarching observations is that many of the interpretive puzzles concern the degree to which Member States are authorised to label the restoration actions themselves, taking into account the level of oversight by the European Commission and the Court of Justice.[99] This is a delicate balance, as flexibility for the Member States could accelerate progress by making concrete improvements more likely, while excessive flexibility and discretion could risk lowering environmental protection levels.[100] In this respect, Lees and Pedersen find that, in contrast with previous patterns in EU environmental law, such as the Waste Framework Directive[101], the plan-making approach of the Nature Restoration Regulation encourages Member States to articulate what constitutes their restoration measures and what the objective is intended to be.[102]

Building on their findings, this study posits that Member States can self-define what constitutes satisfactory levels for the Grassland Butterfly Index, as no definition or scientific criteria are provided in the Nature Restoration Regulation. This complete Member State-led interpretation and application of the ultimate restoration target risks setting low levels of butterfly protection by Member States. Furthermore, it may also be difficult for the European Commission and the Court of Justice to assess and scrutinise these national satisfactory levels, since there is no reference or standard to assess compliance. This seems to contradict patterns observed in EU environmental law, whereby a 'centralisation of definitions' is normally expected to be greater in a regulation than in a directive, in light of the fear that Mem-

[98] E. Lees, O.W. Pedersen, *Restoring the Regulated: The EU's Nature Restoration Law*, in *Journal of Environmental Law*, 2025, 37, p. 75 ff.

[99] Ibid.

[100] Ibid.

[101] Ibid.

[102] Ibid.

ber State-led interpretations could lead to lower levels of environmental protection.[103]

An interesting parallel can be made with the favourable conservation status of species in the Habitats Directive.[104] The study of Epstein illustrates the complexity and difficulties of interpreting and applying this legal-ecological concept by reference to Swedish wolves. The favourable conservation status of species is defined in the Habitats Directive, which contains several scientific criteria for assessing whether the conservation status of a species can be considered favourable.[105] However, even though it provides a definition with specific scientific criteria, several elements of the concept remain unclear, such as to what extent historical population levels play a role.[106] Furthermore, although the Court of Justice had ruled several times on the responsibilities of Member States in managing species that have not reached a favourable conservation status, difficulties persisted because the Court had not elaborated on what the favourable conservation status entails.[107] Consequently, the study of Epstein illustrates that, even with normative definitions that incorporate scientific criteria, the interpretation, implementation, and enforcement of legal-ecological concepts are complex and difficult. This study posits that this will become even more complex for satisfactory levels without any substantive guidance.

In this respect, the development of a guiding framework on the setting of satisfactory levels by the European Commission will be crucial to resolve these problems and shed light on this legal-ecological concept introduced in the Nature Restoration Regulation.[108] The following section will further illustrate the issue of satisfactory levels by delving into historic butterfly losses and shifting baselines.

[103] Ibid.

[104] Articles 1(i) and 2(2) Habitats Directive; Y. Epstein, *Favourable Conservation Status for Species: Examining the Habitats Directive's Key Concept through a Case Study of the Swedish Wolf*, in *Journal of Environmental Law*, 2016, 28, p. 221 ff.

[105] Ibid.

[106] Ibid.

[107] Ibid.

[108] Article 14(5) *juncto* Article 20(10) NRR.

4.2. *Historic butterfly losses and shifting baselines*

Assessing restoration success of the Nature Restoration Regulation requires understanding how the state of biodiversity and butterflies have changed, not only over recent years but also over a long period.[109] This is a specific concern for setting satisfactory levels for the Grassland Butterfly Index, as butterflies had been declining prior to the start of monitoring and calculation of the Grassland Butterfly Index. Ignoring or overlooking these historical butterfly losses may lead to shifting baselines in the setting of satisfactory levels.

The problem of shifting baselines refers to the changing human perceptions of biological systems due to the loss of experience about past conditions, including a lack of historical information about the environment's previous state.[110] As a result, there is a gradual accommodation of the creeping disappearance of biodiversity and species, as well as the use of inappropriate reference points for establishing and evaluating targets for restoration measures.[111]

Although butterflies are the most extensively monitored insect group worldwide, there is limited information on their historical abundance and diversity. Monitoring of butterflies generally began in 1991, serving as the baseline for the Grassland Butterfly Index.[112] However, substantial decreases in grassland butterfly populations likely occurred before 1990, as highlighted in the seminal paper of Van Strien et al. (2019).[113] In this study, researchers analysed opportunistic butterfly records from 1890 to 2017 to quantitatively estimate the overall long-term change in the occurrence of butterfly species in the Netherlands.[114] The study estimated that butterfly populations decreased by 84% during that period, including

[109] A.J. Van Strien et al, *Over a century of data reveal more than 80% decline in butterflies in the Netherlands*, in *Biological Conservation*, 2019, 234, p. 116 ff.

[110] D. Pauly, *Anecdotes and the shifting baseline syndrome of fisheries*, in *Trends in Ecology & Evolution*, 1995, 10, p. 430 ff.; S.K. Papworth et al, *Evidence for shifting baseline syndrome in conservation*, in *Conservation Letters*, 2009, 2, p. 93 ff.

[111] Ibid.

[112] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.; C.A.M. Van Swaay et al., *EU Grassland Butterfly Index 1991-2023*, cit.

[113] A.J. Van Strien et al, *op. cit.*

[114] Ibid.

a significant decline in grassland butterflies.[115] The estimated butterfly loss occurred mainly between 1890-1939 and 1981-1990, which is prior to the start of butterfly monitoring and the calculation of the Grassland Butterfly Index.[116] As a result, decades of undocumented butterfly decline create an evidentiary deficit that complicates the setting of satisfactory levels, whereby national satisfactory levels may suffer from the shifting baseline syndrome: while setting satisfactory levels and evaluating trends in grassland butterflies, we are unaware of historical losses.[117]

In this respect, there is the question of whether Member States are legally required to take into account the lack of scientific information about historical butterfly losses when setting satisfactory levels for the Grassland Butterfly Index in order to avoid or minimise shifting baselines.

As a starting point, there is no provision in the Nature Restoration Regulation that explicitly imposes a legal duty on Member States to take into account historical butterfly losses prior to 1991. Even in the absence of an explicit legal duty, this paper argues that there are multiple pathways in favour of such a legal duty.

The first pathway is based on the interpretation of the procedural requirement to set satisfactory levels based on an assessment using the latest scientific evidence.[118] The seminal paper of Van Strien et al. (2019) qualifies as the latest scientific evidence on the lack of information about historical butterfly diversity losses and the related concern of shifting baselines, as it has been referenced by various scientific-technical reports, such as the technical report establishing the grassland butterfly indicator,[119] the scientific report on the Proposal for an EU Pollinator Monitoring Scheme,[120] the WWF Living Planet Report,[121] an OECD re-

[115] Ibid.

[116] Ibid.

[117] Ibid.

[118] Article 14(5) NRR.

[119] C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[120] S.G. Potts et al., *Proposal for an EU Pollinator Monitoring Scheme*, Publications Office of the European Union, 2021.

[121] R. Almond, M. Grooten, T. Petersen (eds.), *Living Planet Report 2020. Bending the Curve of Biodiversity Loss*, WWF, 2020, p. 1 ff.; S. Doornbos (ed.), *Living Planet Report Nederland. Natuur en landbouw verbonden*, WWF, 2020, p. 1 ff.

port,[122] and policy documents and technical reports of EU institutions.[123] Accordingly, Member States are required to set satisfactory levels based on an assessment using the latest scientific evidence, including the Van Strien study on the lack of information regarding historical butterfly losses that occurred before the start of the national monitoring schemes and the calculation of the Grassland Butterfly Index.[124]

The second pathway is based on the interpretative effects of the technical report by Butterfly Conservation Europe that developed the Grassland Butterfly Index.[125] Annex IV of the Nature Restoration Regulation specifies that the methodology for the Grassland Butterfly Index is the one developed and used in a technical report by Butterfly Conservation Europe, wherein several indicators for butterflies in Europe were developed, including the Grassland Butterfly Index.[126] This technical report by Butterfly Conservation Europe qualifies as soft law within the definition of Senden (2014), who described soft law as "rules of conduct that are laid down in instruments which have not been attributed legally binding force as such, but nevertheless may have certain (indirect) legal effect, and that are aimed at and may produce practical effects".[127] Consequently, the technical report can produce legal effects as a form of soft law, although it is not legally binding in itself.[128] In particular, the interpretative effects of soft law condition the process of interpreting hard law norms in the Nature Restoration Regulation and circumscribe the margin of discretion of administrative authorities in the setting of

[122] OECD, *How Was Life? Volume II. New Perspectives on Well-Being and Global Inequality since 1820*, OECD Publishing, 2021, p. 1 ff.

[123] Science for Environmental Policy, *Pollinators: importance for nature and human well-being, drivers of decline and the need for monitoring*, Publications Office of the European Union, 2020; European Parliamentary Research Service, *Protecting Pollinators in the EU*, Publications Office of the European Union, 2021.

[124] Article 14(5) NRR.

[125] Annex IV NRR; C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[126] Articles 11(2) and 20(11)(a) *juncto* Annex IV NRR; Recital 87 NRR.

[127] L. Senden, *Soft Law in European Community Law*, London, 2014; L. Arroyo Jiménez, *Beyond bindingness: A typology of EU soft law legal effects*, in P.L. Láncos, N. Xanthoulis, L. Arroyo Jiménez (eds.), *The legal effects of EU soft law: theory, language and sectoral insights*, Cheltenham, 2023, p. 9 ff.

[128] Ibid.

satisfactory levels.[129] In this way, the 2020 technical report can serve as a voluntary aid in interpreting the Grassland Butterfly Index in the Nature Restoration Regulation, since it contains the methodology of the Index, as explicitly stated in Annex IV of the Nature Restoration Regulation.[130] The 2020 technical report does not contain a specific section outlining historical butterfly loss and how to address the issue of a lack of information on these historical losses. Nonetheless, the technical report explicitly recognises that "[f]urthermore substantial decreases probably already happened before the start of the indicator calculation in 1990", referring to the findings of the Van Strien study.[131] This sentence highlights the methodological limitations of the Grassland Butterfly Index, as its calculation happened after butterflies had probably been declining for decades. Therefore, the technical report supports the interpretation that Member States must take into account the historical loss of butterflies prior to 1991, as this reflects a methodological limitation of the Grassland Butterfly Index.[132]

The third pathway is based on the application of the precautionary principle as one of the overarching environmental law principles in the EU.[133] Although the Nature Restoration Regulation does not explicitly refer to the precautionary principle, it applies as one of the foundations of the high level of environmental protection pursued by the EU. In this respect, an analogy can be drawn to the Habitats Directive, whereby the Court of Justice ruled in the Waddenzee case that the Habitats Directive is based on the precautionary principle, even though the principle is not explicitly mentioned in the text of the directive.[134] The European Commission considers that the precautionary principle should be ap-

[129] Ibid.

[130] Annex IV NRR.

[131] Annex IV NRR; C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[132] Articles 11(2) and 14(5) *juncto* Annex IV NRR.

[133] Article 191(2) TFEU; Communication from the Commission on the precautionary principle, COM(2000) 1 final of 2 February 2000. See also N. De Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules*, Oxford, 2020; P. Sands et al, *Principles of International Environmental Law*, Cambridge, 2018; J.B. Wiener, *Precautionary principle*, in L. Krämer, E. Orlando (eds.), *Principles of Environmental Law*, Cheltenham, 2018, p. 174 ff.

[134] CJEU 7 September 2004, case C-127/02, *Waddenzee*; J. Verschuuren, *Shellfish*

plied in those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain, and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environmental, human, animal, or plant health may be inconsistent with the high level of protection.[135] Thus, there are three prerequisites: the existence of scientific uncertainty, the performance of a scientific evaluation, and the identification of possible negative effects.[136] Firstly, the historical decline of grassland butterflies is a situation affected by uncertain scientific evidence, as there is limited data that clearly demonstrates the historical loss of grassland butterflies before 1991, the degree of such loss, and the causes and consequences of this loss. Hence, there is scientific uncertainty about the historical decline of butterflies prior to 1991. Secondly, opportunistic butterfly records from before 1991 provide a sufficient basis for a scientific evaluation of historical losses.[137] In any case, the Nature Restoration Regulation also requires Member States to make a scientific assessment using the latest scientific evidence.[138] Thus, there is and will be a scientific evaluation of the decline of butterflies, including an assessment of historical losses. Thirdly, the possible negative effects relate to the shifting baselines syndrome that would impede effective butterfly restoration, which is inconsistent with the high level of environmental protection. If Member States were to ignore historical butterfly declines prior to 1991, inappropriate reference points would be used to set satisfactory levels. This would hinder Member States from putting in place effective and area-based restoration measures for the Grassland Butterfly Index, thereby failing to adhere to the overarching objectives of the Nature Restoration Regulation to achieve the long-term and sustained recovery of biodiverse and resilient ecosystems.[139] Thus,

for Fishermen or for Birds? Article 6 Habitats Directive and the Precautionary Principle, in *Journal of Environmental Law*, 2005, 17, p. 265 ff.

[135] European Commission, Communication from the Commission on the precautionary principle, cit.; K. De Smedt, E. Vos, *The Application of the Precautionary Principle in the EU*, in H.A. Mieg (ed.), *The Responsibility of Science*, Berlin, 2022, p. 163 ff.

[136] Ibid.

[137] A.J. Van Strien et al, *op. cit.*; C.A.M. Van Swaay et al., *Assessing Butterflies in Europe - Butterfly Indicators 1990-2018*, cit.

[138] Article 14(5) NRR.

[139] Articles 1(1)(a) and 11(2) NRR.

the precautionary principle is applicable by virtue of the uncertain scientific evidence on historical butterfly losses, whereby objective scientific evaluations highlight the possible negative effects of shifting baselines in the setting of satisfactory levels, which is inconsistent with the high level of environmental protection aimed for in the Nature Restoration Regulation as a policy of the EU.[140] As a consequence, Member States must act in accordance with the precautionary principle when setting satisfactory levels for the Grassland Butterfly Index, specifically taking into account the historical loss of butterflies prior to the monitoring of butterflies and the calculation of the Grassland Butterfly Index.

There is a fourth future pathway, specifically the guiding framework by the European Commission to be developed by 31 December 2028.[141] This guiding framework provides the European Commission with the opportunity to clarify and expand on the existence, scope, and content of the legal duty of Member States to take into account historical butterfly diversity losses prior to calculating the Grassland Butterfly Index, thereby avoiding shifting baselines in national satisfactory levels.

However, setting satisfactory levels based on these historical butterfly losses also has certain limits. One of the main issues is that the datasets of historical butterfly abundance and diversity are incomplete, methodologically inconsistent, and uneven between Member States, which may complicate their integration into the national satisfactory levels. Moreover, this interpretation could result in satisfactory levels that are difficult to attain, while the scientific and normative grounds underpinning those levels may remain insufficiently justified. As a consequence, it may incentivise legal and political contestation over certain elements concerning the use of historical data on butterfly losses, such as which historical reference year should be used as an alternative to 1991, potentially shifting attention away from the effective restoration of ecosystems and grassland butterflies.

In summary, this paper argues that Member States have a legal duty to take into account the historical decline of butterflies prior to 1991 when setting satisfactory levels for the Grassland Butterfly Index, thereby avoiding shifting baselines in national satisfactory levels. This inter-

[140] Article 191(2) TFEU.
[141] Article 20(10) NRR.

pretation is based on three pathways, specifically the requirement to have an assessment based on the latest scientific evidence, the interpretative effects of the 2020 technical report from Butterfly Conservation Europe, and the precautionary principle. The guiding framework by the European Commission would be the most concrete and suitable opportunity to elucidate on the legal duty to take into account historical butterfly losses when setting satisfactory levels. In this way, the European Commission can contribute to the high level of environmental protection pursued through the Nature Restoration Regulation, as it clarifies appropriate reference points to be used for setting satisfactory levels for the Grassland Butterfly Index.

5. *Conclusions and outlook*

Butterfly monitoring in Europe is centred around the European Butterfly Monitoring Scheme, which consolidates data from national monitoring schemes and has helped develop the Grassland Butterfly Index. The Grassland Butterfly Index is a well-established scientific indicator featuring 17 grassland butterfly species characteristic of grasslands throughout Europe. Data reveal that grassland butterflies are declining at an alarming rate, reflected in a 50% decline in the Grassland Butterfly Index.

The Nature Restoration Regulation transforms the Grassland Butterfly Index from a scientific indicator into a legal indicator for measuring the progress of Member States in enhancing biodiversity in agricultural ecosystems. If a Member State chooses the Grassland Butterfly Index as one of the indicators for agricultural ecosystems, it is required to put in place measures which shall aim to achieve an increasing trend at the national level of the Grassland Butterfly Index until satisfactory levels are reached. For this purpose, Member States have discretion over which restoration measures to establish.

The Grassland Butterfly Index presents both challenges and opportunities to address the significant decline in butterfly diversity over the last century. The main challenge pertains to setting satisfactory levels for the Grassland Butterfly Index, which is also relevant for other restoration regimes using this legal-ecological concept, such as pollinators and

other indicators of urban, agricultural, and forest ecosystems.[142] Satisfactory levels are an ambiguous legal-ecological concept, as the Nature Restoration Regulation neither defines nor provides any substantive requirements. However, the Nature Restoration Regulation outlines specific procedural requirements, stipulating that Member States must set satisfactory levels through an open and effective process, using an assessment based on the latest scientific evidence, and in accordance with a guiding framework to be adopted by the European Commission.[143] As a consequence of this regulatory design, the setting of satisfactory levels depends on the interpretation given by Member States to this legal-ecological concept, while scrutiny and enforcement are difficult without further guidance by the European Commission.

In this respect, one particular issue arises in the setting of satisfactory levels for the Grassland Butterfly Index. Butterflies have been declining before their monitoring and the calculation of the Grassland Butterfly Index. Ignoring these historical butterfly losses may lead to shifting baselines in national satisfactory levels, as inappropriate reference points may be used. Although there is no explicit legal duty, this paper argues that Member States may be required to take into account historical butterfly losses prior to 1991 on the basis of the required assessment based on the latest scientific evidence regarding these historical butterfly losses, the interpretative effects of the technical report by Butterfly Conservation Europe, and the precautionary principle to ensure a high level of environmental protection. Within the guiding framework, the European Commission could clarify and expand on the legal duty of Member States to consider the lack of information on historical butterfly losses when setting satisfactory levels.

The severity of butterfly losses and the variety of interconnected pressures require Member States to adopt a transversal approach. In this respect, the Nature Restoration Regulation does not exist in isolation, but is part of the broader *acquis communautaire* that may support or hamper the effective restoration of grassland butterflies. For example, Regulation (EC) 1107/2009[144] requires Member States to conduct rig-

[142] Articles 8(2)-(3), 10(1), 11(2), 12(2) NRR.
[143] Articles 14(5) and 20(10) NRR.
[144] Regulation (EC) 1107/2009 of the European Parliament and of the Council of

orous evaluations of plant protection products, including whether the product has no unacceptable effects on the environment, having particular regard to its impact on non-target species, such as grassland butterflies.[145] Another relevant policy is the Common Agricultural Policy, given that, in the past, it has driven agricultural intensification by favouring input-intensive systems.[146] Several measures under CAP can support the restoration of grassland butterflies, such as reducing the use and risk of pesticides, including via integrated pest management (IPM), expanding and restoring environmentally sensitive permanent grasslands, and providing economic incentives to increase the amount of in-farm habitats, such as margins and buffer strips, and pollen-providing crops.[147]

Against this broader regulatory backdrop, the Grassland Butterfly Index in the Nature Restoration Regulation presents a concrete legal opportunity to strengthen butterfly restoration efforts across the EU. The Nature Restoration Regulation transforms the Grassland Butterfly Index from a scientific indicator to a legal benchmark for the restoration of agricultural ecosystems. Its relevance will be determined through the preparation of national restoration plans, in which Member States are required to specify the measures to be established in order to achieve an increasing trend of the Grassland Butterfly Index. The choices made at this stage will be decisive for whether the ambitions for butterfly restoration are translated into operational commitments and efforts by Member States.

21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC, OJ L 24.11.2009.

[145] Articles 4(e)(ii) and 29(1)(e) Regulation (EC) 1107/2009, cit.; In this respect, see S. KALDERS, *The Restoration of Insects: Challenges and Opportunities under the Nature Restoration Law*, in *European Environmental and Energy Law Review*, 2025, 34, p. 142 ff.

[146] I. CUADROS-CASANOVA et al, *Opportunities and challenges for Common Agricultural Policy reform to support the European Green Deal*, in *Conservation Biology*, 2022, 37, p. 1 ff; I. HODGE, J. HAUCK, A. BONN, *The alignment of agricultural and nature conservation policies in the European Union*, in *Conservation Biology*, 2015, 29, p. 996 ff.; M. EMMERSON et al, *How Agricultural Intensification Affects Biodiversity and Ecosystem Services*, in *Advances in Ecological Research*, 2016, 55, p. 43 ff.

[147] I. CUADROS-CASANOVA et al, *op. cit.*

ABSTRACT

Nature Restoration Regulation
Pollinators – Grassland Butterfly Index
Satisfactory Levels – Shifting Baselines

Butterfly abundance and diversity are declining in Europe. In particular, butterflies living in grassland habitats are declining at an alarming rate, as reflected in a 50% decline in the Grassland Butterfly Index. The Grassland Butterfly Index is an indicator from the European Butterfly Monitoring Scheme based on the trends of 17 grassland butterfly species characteristic of European grasslands. Article 11 of the Nature Restoration Regulation EU 2024/1991 (NRR) transforms the scientific indicator into a legal indicator to measure the progress of Member States in restoring agricultural ecosystems. The research objective is to clarify the place of the Grassland Butterfly Index within the NRR and analyse the potential legal implications for the restoration of butterflies in Europe. By creating a legal indicator for the restoration of agricultural ecosystems, the NRR offers the opportunity to strengthen butterfly restoration in the EU, while granting Member States broad discretion in selecting the restoration measures. At the same time, the setting of national satisfactory levels presents legal challenges, as the NRR provides no definition or scientific criteria to interpret this ultimate restoration target. This is further complicated by the historical loss of butterflies prior to the calculation of the Grassland Butterfly Index, which, if not accounted for, may lead to shifting baselines.

Alberto Jaci*

CIVIL LIABILITY, CONTRACTUAL INSTRUMENTS AND STRATEGIC LITIGATION IN THE IMPLEMENTATION OF THE NATURE RESTORATION REGULATION (EU) 2024/1991

Sommario: 1. The new paradigm of nature restoration between public and private law. – 2. The crisis of public enforcement and the emergence of new private actors. – 3. Civil liability as an instrument of indirect implementation of the NRR. – 4. Negotiated and contractual instruments of environmental enforcement. – 5. Environmental ADR and strategic litigation: a new balance between conflict and cooperation. – 6. Towards an integrated model of private environmental enforcement.

1. *The new paradigm of nature restoration between public and private law*

The adoption of Regulation (EU) 2024/1991[1] (hereinafter "NRR") marks a systemic turning point in European environmental law. It represents the most ambitious attempt, within the framework of the European Green Deal of 2019,[2] to translate into legally binding obligations the goal of "*bringing nature back into our lives*",[3] namely, to restore degraded

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[1] 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, OJ L 2024/1991 of 29 July 2024.

[2] S. Paleari, *The Impact of the European Green Deal on EU Environmental Policy*, in *The Journal of Environment & Development*, 2022, 31, p. 196 ff.

[3] K. Sowery, *A Walk on the Wild Side: Wild Law and the EU's Nature Restoration Law*, in *Journal of International Wildlife Law & Policy*, 2024, 27, p. 328 ff.

ecosystems, halt the loss of biodiversity, and re-establish the ecological functionality of European territories.[4]

Unlike previous legislative acts concerning environmental protection – which were predominantly aimed at preventing and reducing damage[5] – the NRR introduces a proactive model, intended not merely to protect but to regenerate nature, thereby laying the foundations for a law of restoration rather than one of mere conservation.[6]

This paradigm shift produces significant legal effects. The implementation of the NRR requires not only structural cooperation between different levels of government,[7] but also the active involvement of private actors[8] – individuals, companies, and civil society organisations – as co-implementers of restoration measures.[9] In this sense, private law, traditionally perceived as a sphere of autonomy and exchange,[10] is progressively being reconfigured as an instrument of environmental governance,[11] capable of giving practical effect to public obligations of pro-

[4] V. Di Stefano, S. D'Alessandro, G. Di Domenico, *Biodiversity loss, climate change, and Nature Restoration Law in the modern legal system of the European Union*, in L. Salvati (ed.), *Environmental Sustainability and Global Change: Forests, Agriculture, and Soils vis à vis Human Disturbance*, Amsterdam, 2025, p. 245 ff.

[5] For instance, the Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, OJ L 143 30 April 2004. See: P. Wenneras, *A Progressive Interpretation of the Environmental Liability Directive*, in *Journal for European Environmental & Planning Law*, 2005, 2, p. 257 ff.

[6] E. Lees, O.W. Pedersen, *Restoring the Regulated: The EU's Nature Restoration Law*, in *Journal of Environmental Law*, 2025, 37, p. 75 ff.

[7] D. Hering et al, *Securing success for the Nature Restoration Law. The EU law would complement many others, but challenges loom*, in *Science*, 2023, 382, p. 1248 ff.

[8] A. Trouwborst, *Rewilding and the EU Nature Restoration Law: Plotting the Course of Ecosystem Restoration in Europe*, in *Journal for European Environmental & Planning Law*, 2025, 22, p. 364 ff.

[9] J. Penca, M. Tănăsescu, *The transformative potential of the EU's Nature Restoration Law*, in *Sustainability Science*, 2025, 20, p. 643 ff.

[10] G. Di Lorenzo, *Spunti di riflessione in tema di diligenza e autonomia privata nel diritto privato italiano*, in M. Heidemann (ed), *The Transformation of Private Law -Principles of Contract and Tort as European and International Law*, Berlin, 2024, p. 537 ff.

[11] M. Meli, *La centralità della questione ambientale e le ricadute sul diritto privato*, in *Diritto Costituzionale*, 2023, 3, p. 99 ff.

tection through mechanisms of liability, contractual arrangements, and collective action.[12]

From a conceptual standpoint, the cross-cutting nature of the ecological objective challenges the traditional distinction between public and private law.[13] While public authority remains the cornerstone of environmental planning and programming, the private sector today assumes a complementary enforcement function,[14] which may manifest itself both in contentious forms – through litigation and civil liability – and in cooperative forms, through agreements and voluntary instruments of collaboration. The very notion of legitimate interest increasingly converges with that of a diffuse collective interest, delineating a process of horizontalisation in environmental protection.[15] This convergence is to be understood in a functional, rather than structural, sense. While the protection of environmental goods tends to blur the practical boundaries between individual, collective, and diffuse interests, the corresponding legal positions continue to operate under distinct regimes, particularly as regards standing, burden of proof, and the nature of the remedies available.

This contribution does not argue for a dissolution of that distinction, but rather for a functional re-reading of the respective roles of public and private law. The proposed integration concerns the level of enforcement techniques and remedial instruments, without implying a dogmatic fusion of legal categories or a redefinition of their traditional systematic boundaries.

By establishing binding result-oriented obligations for the Member States, the NRR thus opens a twofold front: on the one hand, the need to

[12] E. Guarna Assanti, G.M. Caruso, *Il diritto al clima e la c.d. climate change litigation: prospettive, strumenti e limiti nella tutela degli interessi adespoti*, in *La Cittadinanza Europea*, 2025, 1, p. 5 ff.

[13] This conflict is evident not only domestically, but also internationally. In this regard, see: D. McGillivray, J. Wightman, *Private rights, public interests and the environment*, in T. Hayward, J. O'Neill (eds.), *Justice, Property and the Environment. Social and Legal Perspectives*, London, 1997, p. 144 ff.

[14] A.H. Rashed, A. Shah, *The role of private sector in the implementation of sustainable development goals*, in *Environment, Development and Sustainability*, 2021, 23, p. 1 ff.

[15] P. Maddalena, *L'ambiente: riflessioni introduttive per una sua tutela giuridica*, in *Ambiente & Sviluppo*, 2007, 6, p. 477 ff.

ensure the effectiveness of restoration measures;[16] on the other, the possibility for private actors to act in order to remedy the non-compliance or inertia of public authorities, in the name of the protection of common natural goods.[17]

Such private action should not be construed as a form of substitutive power vis-à-vis public authorities, but rather as a legally structured mechanism of activation and control, aimed at reinforcing compliance with restoration obligations through liability, standing to sue, and remedial claims consistent with the public framework established by the Regulation.

This entails the implicit recognition of a shared responsibility – public and private – in the pursuit of the Union's ecological objectives.[18]

Within this framework, private law no longer operates solely as a discipline governing inter-individual relations but assumes a functional role in achieving public environmental aims.

The resulting model of shared responsibility does not imply a symmetrical or undifferentiated allocation of obligations between public and private actors. Rather, it reflects a functional differentiation of roles, in which public authorities retain planning and regulatory primacy, while private actors contribute through legally typified instruments capable of complementing and supporting public enforcement.

Actions for environmental damage, restoration contracts, green clauses, mechanisms of payment for ecosystem services (PES), and forms of alternative dispute resolution (ADR) in environmental matters constitute concrete manifestations of this transformation.[19]

What emerges is a model of polycentric enforcement,[20] in which envi-

[16] I. Perissi, *Assessing the EU27 Potential to Meet the Nature Restoration Law Targets*, in *Environmental Management*, 2025, 75, p. 711 ff.

[17] M.C. Kanyama, *Ecological restoration in rights-of-nature laws and restoration as a substantive right of nature: challenges and opportunities*, in *Restoration Ecology*, 2025, p. 1 ff.

[18] M. Cordier, T. Poitelon, W. Hecq, *The shared environmental responsibility principle: new developments applied to the case of marine ecosystems*, in *Economic Systems Research*, 2019, 31, p. 228 ff.

[19] C. Knill, D. Liefferink, *The establishment of EU environmental policy*, in A. Jordan, V. Gravey (eds.), *Environmental Policy in the EU*, London, 2021, p. 13 ff.

[20] D.H. Cole, *From global to polycentric climate governance*, in *Climate Law*, 2011, 2, p. 395 ff.

ronmental protection is jointly carried out by public authorities, private actors, and organised communities.

Methodologically, this study adopts a functional approach typical of private law, focusing on the capacity of existing legal categories to operate as instruments for the effective implementation of public environmental objectives. The analysis does not seek to redefine the traditional dogmatics of private law, but rather to explore their adaptive potential in response to the result-oriented obligations introduced by the NRR.

2. *The crisis of public enforcement and the emergence of new private actors*

One of the major critical issues in the implementation of European environmental law lies in the deficit of public enforcement.[21] Despite the complexity and breadth of the European environmental acquis, practical experience shows that the administrative capacity of Member States is often insufficient to ensure the effectiveness of the rules.[22] The result is a disconnect between an advanced normative framework and its actual implementation: a gap that the European Commission itself has repeatedly highlighted in its reports on the environment and compliance with Union law.[23]

In the case of the NRR, this difficulty risks becoming even more pronounced. The Regulation does not merely prescribe protection objectives; rather, it imposes positive, result-oriented obligations (Articles 4-12),[24] whose fulfilment requires complex planning measures, multilevel coordination, and substantial financial resources. Member States must prepare national restoration plans with verifiable intermediate milestones, within a framework of strict timelines and scientifically de-

[21] M. Hedemann-Robinson, *Enforcement of European Union Environmental Law. Legal Issues and Challenges*, London, 2015.

[22] A. Weale, *Environmental Rules and Rule-making in the European Union*, in A. Jordan (ed.), *Environmental Policy in the EU*, London, 2005, p. 143 ff.

[23] E. Hattan, *The Implementation of EU Environmental Law*, in *Journal of Environmental Law*, 2003, 15, p. 273 ff.

[24] L. Hildt, *Levers for successful implementation of the EU Nature Restoration Law: preparing for systemic biodiversity litigation*, in *Restoration Ecology*, 2025.

fined indicators.[25] However, the effective implementation of such plans will largely depend on the capacity to integrate ecological objectives into economically intensive sectors – such as agriculture, forestry, energy, and infrastructure – where the interests at stake are multiple and often conflicting[26]. In this context, administrative action alone is likely to be structurally inadequate. National and local authorities are required to balance environmental priorities with economic constraints, operating within narrow political margins and, at times, under the pressure of entrenched territorial interests. The risk is that of a differentiated and fragmented implementation, which would undermine the unitary objective pursued by the NRR.

From a legal standpoint, this structural deficit of public enforcement raises a question of effectiveness as well as of institutional competence. The issue is not whether public authorities retain exclusive responsibility for environmental restoration – which they do – but whether the existing administrative apparatus is sufficient, on its own, to ensure compliance with result-oriented obligations characterised by long timeframes, scientific uncertainty, and territorial complexity.

The Court of Justice of the European Union has repeatedly emphasised that the effectiveness of environmental law cannot depend on the political discretion of Member States but must be ensured through legal mechanisms of control and accountability (C-237/07 *Janecek*,[27] C-664/15 *Protect Natur*,[28] C-240/09 *Lesoochranárske zoskupenie*[29]).

It is within this framework that the substitutive role of private actors emerges with increasing force.

The notion of substitution must be carefully qualified. Private actors do not replace public authorities in the exercise of environmental powers, but rather intervene through legally recognised forms of activation,

[25] A. Bluszcz, A. Manowska, N. Suhaili Mansor, *Assessment of the Potential of European Union Member States to Achieve Climate Neutrality*, in *Sustainability*, 2024, p. 3 ff.

[26] E. Marquard et al, *Underpinning the EU Nature Restoration Regulation: five success factors for effective measures in the Member States*, in *Restoration Ecology*, 2025, 33, p. 1 ff.

[27] CJEU, Judgment of 25 July 2008, Case C-237/07, *Dieter Janecek c Freistaat Bayern*.

[28] CJEU, Judgment of 20 December 2017, Case C-664/15, *Protect Natur*.

[29] CJEU, Judgment of 8 March 2011, Case C-240/09, *Lesoochranárske zoskupenie*.

pressure, and supplementation, operating within the boundaries of public objectives and under judicial or administrative oversight.

The task of environmental protection, traditionally entrusted to the State alone, is now progressively being opened to the active participation of individuals, associations, and economic operators, by virtue of the principle of horizontal subsidiarity[30] (Article 11 TEU and Article 118 [4] of the Italian Constitution[31]). Horizontal subsidiarity, in this context, does not function as a general empowerment clause, but as a principle of legal openness that allows private subjects to assume a complementary enforcement role when public action proves insufficient or ineffective. Its relevance therefore lies primarily in the procedural and remedial dimension, rather than in the attribution of autonomous regulatory powers.

This principle, when read through an ecological lens, allows private parties to contribute to the pursuit of the general environmental interest not only by complying with the law, but also through direct or cooperative actions aimed at prompting, complementing, or replacing public intervention.[32]

On a practical level, this transformation manifests itself through a variety of actors: environmental associations entitled to bring judicial or administrative actions in matters concerning environmental damage;[33] economic operators adopting voluntary standards or ecological compensation contracts (such as biodiversity offsets);[34] and, finally, foundations and citizens participating in territorial regeneration projects through instruments of citizen participation or community agreements.[35] From

[30] J. Van Zeben, *Subsidiarity in European Environmental Law: A Competence Allocation Approach*, in *Harvard Environmental Law Review*, 2014, 38, p. 415 ff.

[31] C. Buzzacchi, *Sostenibilità ambientale e domini collettivi: una manifestazione virtuosa di sussidiarietà*, in *Consulta online*, 2024, p. 1114 ff.

[32] L. Schiano Di Pepe, *Principio di trasparenza ed esigenze di riservatezza in materie di interesse generale a confronto davanti alla Corte di giustizia: il caso della tutela dell'ambiente*, in *Rivista Giuridica dell'Ambiente*, 2019, 1, p. 53 ff.

[33] M. Delsignore, *La legittimazione a ricorrere delle associazioni ambientali: questioni aperte*, in *Rivista Giuridica dell'Ambiente*, 2020, 1, p. 179 ff.

[34] C. Langpap, *Voluntary agreements and private enforcement of environmental regulation*, in *Journal of Regulatory Economics*, 2015, 47, p. 99 ff.

[35] F. Fratini, *Rigenerazione tra sostenibilità, citizen empowerment e agopuntura urbana*, in *BDC*, 2020, p. 91 ff.

a dogmatic perspective, these figures do not share a uniform legal status. Their capacity to act derives from heterogeneous sources – statutory standing, representative legitimacy, contractual engagement, or participation in administrative procedures – each of which entails distinct conditions, limits, and remedial consequences. This plurality confirms that private environmental enforcement operates through differentiated legal channels rather than through a single, unified private power.[36]

The private dimension is therefore not reduced to an ancillary role but becomes a structural component of multilevel environmental governance,[37] capable of exerting influence both in terms of legal liability and in terms of negotiated implementation.

The crisis of public enforcement thus becomes an opportunity for a functional redefinition of private law. From an instrument governing economic relations, private law is increasingly encompassing integrative and corrective functions typical of public action, and is thus capable of fostering dynamics of spontaneous compliance, co-regulation, and contractual cooperation.

The legal relevance of this private dimension lies not in the creation of new subjective environmental rights in the strict sense, but in the progressive recognition of procedural and remedial positions capable of activating public duties and ensuring their effectiveness. In this sense, private participation functions as an enforcement catalyst rather than as an autonomous source of environmental regulation. Accordingly, the emergence of private actors in the enforcement of environmental restoration should be understood as a functional response to the limits of public implementation, grounded in existing legal mechanisms of liability,[38] standing, and cooperation. This evolution does not alter the public nature of restoration obligations but contributes to their practical realisation by embedding them within a broader and more resilient legal enforcement framework.

[36] H.W. Micklitz, *The Transformation of Enforcement in European Private Law: Preliminary Considerations*, in *European Review of Private Law*, 2015, 23, p. 495 ff.

[37] J. Newig, O. Fritsch, *Environmental governance: participatory, multi-level- and effective?*, in *Environmental policy and governance*, 2009, 19, p. 197 ff.

[38] B. Pozzo, *The liability problem in modern environmental statutes*, in *European Review of Private Law*, 1996, 4, p. 111 ff.

3. *Civil liability as an instrument of indirect implementation of the NRR*

Civil environmental liability today constitutes one of the most significant theoretical and practical junctions in the evolution towards a polycentric model of enforcement in environmental law.[39]

In the context of the NRR, it assumes a renewed function: no longer merely a compensatory remedy for an unlawful act that has already been consummated, but also a tool of normative pressure and an instrument for the indirect implementation of the environmental restoration obligations imposed by the European legislator.[40] From this perspective, civil liability becomes a means of realising the principle of effectiveness, capable of internalising ecological costs into the conduct of public and private actors and of promoting compliance with restoration objectives. [41]

Civil liability is traditionally conceived as a mechanism for compensating harm;[42] in contemporary legal thinking, by contrast, it tends to assume a regulatory function, aimed at shaping future behaviour and preventing the recurrence of systemic damage.[43]

This transformation fits within the framework of the fundamental principles of European environmental law and marks the progressive metamorphosis of liability into an instrument of ecological governance,[44] capable of integrating preventive, reparatory, and deterrent functions.[45]

[39] M. Wilde, *Civil Liability for Environmental Damage*, Alphen aan den Rijn, 2013.

[40] N. Žiha, M. Sukačić, *The impact of EU Nature Restoration Law on private property rights - between the environmental protection and the (in)compatibility with the Roman legal tradition*, in *EU and comparative law issues and challenges series*, 2025, 9, p. 224 ff.

[41] M. Haq, *Civil Law and Environmental Protection: Expanding Liability for Sustainable Justice*, in *Journal of Artificial Intelligence and Digital Business*, 2025, 4, p. 3480 ff.

[42] C. Salvi, *La responsabilità civile*, Milan, 2005.

[43] G.D. Comporti, *Codice dell'ambiente e responsabilità ambientale*, in *Rivista Quadrimestrale di Diritto dell'Ambiente*, 2022, 1, p. 14 ff.

[44] B. Pozzo, *Towards Civil Liability for Environmental Damage in Europe: the "White Paper" of the Commission of the European Communities*, in *Global Jurist Topics*, 2001, 1.

[45] This development is linked to the polluter pays principle, set out in Article 191(2) TFEU and transposed by Article 3 of Directive 2004/35/EC on environmental liability, now an integral part of the European Green Deal. From this perspective, civil liability acts not only as an *ex post* remedy, but also as a compliance mechanism and an incentive for voluntary restoration. Although the NRR does not directly regulate civil liability, it

In the Italian legal system, the issue takes on particular importance with regard to liability for omission. The case law of the Corte di Cassazione has recognised that an omission may give rise to liability where there exists a specific legal duty to prevent the event[46] (Article 2043 of the Civil Code in conjunction with Article 40(2) of the Criminal Code).[47] In environmental matters, such a duty may derive either from domestic rules or from European restoration obligations. Consequently, the failure by a public authority or by an operator to comply with the obligations arising from the NRR may constitute the basis for a claim for damages or restoration, grounded in the violation of a duty of environmental protection. In this sense, liability for omission operates as a bridge between public obligations of environmental protection and private law remedies, without transforming the underlying public duty into a full-fledged individual right. The civil claim remains functionally linked to the enforcement of a legally defined obligation, rather than to the assertion of an autonomous subjective entitlement to environmental restoration.

The establishment of liability, however, encounters the inherent complexity of ecological phenomena,[48] in which the degradation of ecosystems or the loss of biodiversity are the result of multifactorial processes.[49] This calls for the elaboration of more flexible criteria of attribution,[50] based on probabilistic presumptions or on forms of joint liability inspired by the models of market share liability or collective environmental risk liability, capable of overcoming the rigidity of the traditional causal

reinforces its indirect function by requiring Member States to take appropriate measures to ensure that restoration objectives are achieved (Article 4 NRR). The case law of the Court of Justice, starting with *Janecek*, has also recognised that the failure of the authorities to put in place protective measures may constitute a legally relevant violation, paving the way for the establishment of forms of liability for inaction, both on the part of the public administration and economic operators.

[46] G. Annunziata, *Le nuove frontiere della responsabilità civile*, Milan, 2016.

[47] Cass. Civ., Sez. III, 20 February 2018, order no. 4024.

[48] C. Osimani, *Il danno ambientale: l'interazione tra il danno ambientale e la tutela della salute*, in *Rivista Giuridica dell'Ambiente*, 2021, 2, p. 319 ff.

[49] J. Phelps et al, *Environmental liability litigation could remedy biodiversity loss*, in *Conservation Letters*, 2021, 14, p. 1 ff.

[50] U. Salanitro, *I criteri di imputazione della responsabilità ambientale*, in *Ambiente & Sviluppo*, 2011, 1, p. 19 ff.

paradigm.[51] Such adaptations should nonetheless be approached with methodological caution. The relaxation of traditional causal standards in environmental matters does not imply their abandonment, but rather a contextual recalibration justified by the scientific uncertainty and cumulative nature of ecological harm and must remain anchored to principles of proportionality and legal certainty.

Another aspect of this evolution concerns the extension of compensable damage.

A conceptually sound use of civil liability in the context of environmental restoration requires a clear distinction between different forms of environmental damage, as they correspond to heterogeneous legal interests and remedial regimes. Public environmental damage concerns the impairment of the environment as a collective good and primarily entails restorative measures aimed at re-establishing ecological functionality. Civil or indirect environmental damage, by contrast, relates to the reflexive harm suffered by individual subjects and is traditionally addressed through compensatory remedies, although restorative measures may also be relevant insofar as they protect individual interests. Alongside these categories, the loss of ecosystem services represents a functional dimension of environmental damage that cuts across the public–private divide, as it affects both collective and individual interests through the deterioration of measurable ecological functions. Within the framework of the NRR, this distinction is essential in order to determine standing and to calibrate remedies, avoiding the conflation of heterogeneous legal positions and ensuring the coherence of civil liability as an instrument of indirect implementation.

The NRR, however, introduces an additional perspective focused on the obligation to restore ecosystem services[52] – such as soil fertility, carbon sequestration capacity, or water regulation – endowed with measurable economic and functional value.[53]

[51] A. Nacar, *Probabilistic Liability and Judicial Insurance for Environmental Risks*, in *Istanbul Law Review*, 2025, 83, p. 605 ff.

[52] V. Mauerhofer, *Complement the directed: the EU's nature restoration regulations' relation to the habitats, birds, and environmental liability directives*, in *Restoration Ecology*, 2026, p. e70227 ff.

[53] A. Trouwborst, *Rewilding and the EU Nature Restoration Law: Plotting the Course of Ecosystem Restoration in Europe*, in *Journal for European Environmental and Planning Law*, 2025, 22, p. 364 ff.

As a result, environmental damage may be understood not only as the material deterioration of the environment but also as the loss of ecological functionality,[54] thus allowing for the recognition of liability for damage arising from the loss of ecosystem function.[55]

In light of the foregoing, the civil judge assumes a central role in ensuring the effectiveness of the NRR. His or her role does not end with assessing damages but extends to guiding and prompting administrative action, through judgments that may order the adoption of restoration measures or the implementation of plans consistent with European obligations.[56] This judicial role should not be understood as a substitution for administrative discretion, but as a form of legality control aimed at ensuring that restoration obligations are concretely implemented in accordance with their legally binding content. Judicial intervention thus remains ancillary and corrective, operating within the limits defined by the regulatory framework and the technical assessments underlying restoration planning.

By means of orders for specific performance (Article 2058 of the Civil Code)[57] or *astreintes* (Article 614-bis of the Code of Civil Procedure),[58] the judge may render the restoration obligation effective, thereby helping to bridge the gaps in public enforcement.[59]

Looking ahead, the evolution towards an ecological model of civil liability, capable of combining reparation, prevention, and deterrence, represents one of the key elements for achieving the objectives of environmental restoration.

[54] T.H. Oliver et al, *Biodiversity and Resilience of Ecosystem Functions*, in *Trends in Ecology & Evolution*, 2015, 30, p. 673 ff.

[55] C. Scognamiglio, *Danno ambientale e funzioni della responsabilità civile*, in *Responsabilità civile e previdenza*, 2013, 4, p. 1063 ff.

[56] M. Delsignore, *Il ruolo del giudice nel decostruire l'applicazione della scienza nelle controversie di diritto ambientale*, in *Rivista quadrimestrale di diritto dell'ambiente*, 2024, 1, p. 133 ff.

[57] G. Spoto, *I danni punitivi e il risarcimento del danno ambientale*, in F. Alcaro, C. Fenga, E. Moscati, F. Pernice, R. Tommasini (eds.), *Valori della persona e modelli di tutela contro i rischi ambientali e genotossici. Esperienze a confronto*, Florence, 2015, p. 349 ff.

[58] M. Bove, *La misura coercitiva di cui all'art. 614 bis c.p.c.*, in *Judicium. Il processo civile in Italia e in Europa*, 2010, p. 781 ff.

[59] L. Bergkamp, *Liability and Environment: Private and Public Law Aspects of Civil Liability for Environmental Harm in an International Context*, The Hague, 2001.

It translates the solidaristic and participatory logic of the NRR into a legal architecture of shared responsibility, in which public and private actors jointly bear the burden – and the duty – of protecting and regenerating nature.

Accordingly, civil environmental liability, as reconfigured in light of the NRR, does not merely serve compensatory purposes, but functions as a differentiated and legally structured instrument for the indirect implementation of restoration obligations. Its effectiveness depends on a rigorous conceptual distinction between forms of environmental damage, a cautious adaptation of standards of causation, and a clear delimitation of judicial remedies, all of which contribute to preserving dogmatic coherence while enhancing ecological effectiveness.

4. *Negotiated and contractual instruments of environmental enforcement*

The effective implementation of the NRR cannot rely exclusively on authoritative or sanction-based instruments.

The principle, now firmly established in European environmental law, according to which "the protection of the environment is a common task"[60] implies the activation of cooperative and negotiated forms of action among public authorities, economic operators, and civil society.[61]

Within this framework, contractual and para-contractual instruments represent an essential channel for the "bottom-up" realisation of restoration objectives, giving rise to a model of private and relational enforcement.

From a dogmatic perspective, the recourse to negotiated and contractual instruments in environmental matters requires a preliminary clarification of their legal nature.[62] These instruments do not transform environmental protection into a freely disposable interest, nor

[60] M. Cecchetti, L. Rocchetti, E. Bruni Liberati, *Tutela dell'ambiente: diritti e politiche*, Naples, 2021.

[61] A. Proelss, Principles of EU Environmental Law: An Appraisal, in Y. Nakanishi (ed), Contemporary Issues in Environmental Law. The EU and Japan, Berlin, 2016, p. 29 ff.

[62] M. Pennasilico, *Sviluppo sostenibile e "contratto ecologico": un altro modo di soddisfare i bisogni*, in *Rassegna di diritto civile*, 2016, 37, p. 1291 ff.

do they privatise public regulatory functions.[63] Rather, they operate within a legally framed space in which private autonomy is oriented towards the pursuit of public environmental objectives, under conditions of compatibility with mandatory rules and administrative oversight.

Private law, far from being a neutral domain, now reveals itself as a laboratory of regulatory innovation.[64] The contract, traditionally conceived as an instrument of autonomy and exchange, is reinterpreted as a vehicle for ecological cooperation, capable of integrating public sustainability objectives within voluntary legal relationships[65]. This evolution manifests itself in various sectors – from energy to water management and biodiversity protection – and finds in the NRR a privileged field of application, since it allows the implementation of restoration interventions through agreements and voluntary obligations of result. The binding force of such instruments derives not from their voluntary character as such, but from the legal recognition of the environmental interest pursued as worthy of protection within the private law system.[66] This recognition justifies the imposition of enforceable obligations of conduct or result, while preserving the non-disposable nature of the underlying environmental values.

The negotiated approach, in this sense, is not confined to an abstract principle but finds concrete expression in instruments that make cooperation between the public and private spheres operational:[67] for instance, land stewardship agreements concluded between local authorities and landowners for the sustainable management of natural areas; ecological compensation contracts through which economic operators finance habitat restoration projects; or sustainability protocols embedded in sup-

[63] U. Salanitro, *Tutela dell'ambiente e del clima nella teoria dei beni*, in *Rivista di diritto civile*, 2025, 71, p. 637 ff.

[64] A. Zoppini, P. Sirena, I poteri privati e il diritto della regolazione, Rome, 2018.

[65] Y. Yaoyao, L. Meng, L. Hongda, *How Eco-Participating Firms Can Increase Their Willingness to Cooperate Sustainability: A Perceived Contractual Equity Perspective*, in *Sustainability*, 2024, 16, p. 5 ff.

[66] B. Pozzo, *Private Law and Environmental Sustainability*, in M. Santos Silva, A. Nicolussi, C. Wendehorst, P.S. Coderch, M. Clément, F. Zoll (eds), *Routledge Handbook of Private Law and Sustainability*, London, 2024, p. 3 ff.

[67] O.O. Cherednychenko, *Rediscovering the public/private divide in EU private law*, in *European Law Journal*, 2020, 26, p. 27 ff.

ply-chain agreements that commit enterprises to the recovery of ecosystem services.

Through such mechanisms, negotiation becomes an operational means of implementing the NRR, capable of replacing or complementing authoritative intervention by adapting restoration measures to the environmental and social specificities of each territory.[68]

In this perspective, a system emerges in which private intentions become a channel for the indirect implementation of European environmental law, realising an enforcement model co-produced by public and private actors.

A first model, under progressive theoretical and practical elaboration, is that of the restoration agreements (*accordi di recupero ambientale*).[69] These agreements may take different forms but share a common function: to legally bind the parties to the performance of environmental protection or ecological compensation measures, in conformity with the objectives of the NRR.[70] From a private law standpoint, the validity of these agreements is grounded in a specific environmental cause, consisting in the legally relevant interest in ecosystem restoration or compensation. This cause differentiates restoration agreements from purely commercial transactions and justifies their qualification as atypical contracts under Article 1322(2) of the Italian Civil Code, provided that their content and effects remain consistent with the mandatory environmental framework.

Examples of such instruments can be found, in embryonic form, in ecological compensation contracts adopted in certain jurisdictions (as in the case of France[71]) and in the environmental restoration conventions provided for under Italian law on the remediation of contaminated sites (Articles 242 et seq. of Legislative Decree No 152/2006).[72]

[68] An example from England: C. Anthony, *Implementing nature restoration law through localized collaboration: insights from England*, in *Restoration Ecology*, 2026, e70101.

[69] E. Ciscato, *Il carattere trasformativo del Regolamento europeo sul Ripristino della Natura nelle politiche ambientali*, in *Rivista Giuridica dell'Ambiente*, 2024, 4, p. 1105 ff.

[70] G. Provvisiero, *Il regolamento sul ripristino della natura e i suoi effetti sugli ordinamenti degli Stati membri*, in *Italian Paper on Federalism*, 2025, 1, p. 69 ff.

[71] M. Combe, I. Doussan, M. Lucas, *Quel contrat de compensation?*, in *Hal*, 2022, 8, p. 2 ff.

[72] G. Garzia, *Emergenze ambientali, azione amministrativa e bonifica dei siti contaminati*, in *Rivista quadrimestrale di diritto dell'ambiente*, 2015, 3, p. 25 ff.

These experiences demonstrate that the binding force of consent may constitute a more effective guarantee for the fulfilment of ecological obligations than public coercion alone.

Restoration agreements may assume different configurations, depending on the actors involved and the aims pursued.[73] These configurations must be distinguished on a dogmatic level, as they give rise to different legal regimes.[74] Public-private restoration agreements are subject to principles of administrative legality and transparency, while agreements concluded exclusively between private parties operate within the framework of contractual autonomy, even if they are still oriented towards a public-interest purpose. Multistakeholder arrangements, in turn, raise additional issues of representation, accountability, and enforceability, particularly where collective or community interests are involved.[75] In some cases, they materialise as public-private agreements, concluded between administrations and economic operators for the performance of recovery or ecological compensation measures;[76] in others, they take the form of agreements between private parties, such as companies or landowners, who mutually undertake to carry out conservation or regeneration activities, possibly through collective or mutualistic cooperation. There also are multistakeholder agreements, in which local authorities, communities, and associations share the management of restored areas or sensitive habitats,[77] thereby creating participatory models of territorial stewardship and enhancement.

In each of these instances, the contract becomes a means of legal and

[73] A. Akhtar-Khavari, A. Telesetsky, *From protection to restoration: a challenge for environmental governance*, in D. Fisher (ed), *Research Handbook on Fundamental Concepts of Environmental Law*, Cheltenham, 2022, p. 45 ff.

[74] B. Pozzo, *Liability for environmental harm in Europe: towards a harmonized regime?*, in *Hitotsubashi Journal of Law and Politics*, 2016, 44, p. 43 ff.

[75] U. Salanitro, *Il danno ambientale tra interessi collettivi e interessi individuali*, in *Rivista di diritto civile*, 2018, 64, p. 246 ff.

[76] U. Salanitro, *Il risarcimento del danno all'ambiente: un confronto tra vecchia e nuova disciplina*, in F. Alcaro, C. Fenga, E. Moscati, F. Pernice, R. Tommasini (eds.), *Valori della persona e modelli di tutela contro i rischi ambientali e genotossici. Esperienze a confronto*, Florence, 2015, p. 1 ff.

[77] V. Giampietro, F. Giampietro, *Analisi di rischio ed obiettivi di bonifica sostenibili e ragionevoli*, in *Ambiente & Sviluppo*, 2014, 2, p. 112 ff.

operational coordination,[78] translating the principle of ecological co-responsibility promoted by the NRR into concrete obligations. From a legal standpoint, instruments to this end may take the form of atypical contracts under Article 1322(2) of the Italian Civil Code,[79] based on a cause of environmental restoration,[80] or of public-law agreements pursuant to Article 11 of Law No 241/1990. In both cases, their binding effect derives from the principle of private autonomy and from the legal system's recognition of the worthiness of the environmental interest pursued.[81] Alongside restoration agreements, the NRR opens up significant space for private economic instruments of enforcement.

Among these, the PES schemes represent a model already consolidated in comparative environmental law:[82] a subject (public or private) remunerates another for the creation or maintenance of ecosystem services, such as reforestation, habitat conservation, or water protection.[83] These instruments, already used in the forestry and water sectors, can serve as a channel for private financing of restoration, thereby reducing the burden on public finances.

From a civil law perspective, PES schemes and result-based restoration contracts[84] may be qualified as obligations to perform environmental acts, the content of which is defined through objective ecological indicators. The synallagmatic structure of these agree-

[78] B.J. Richardson, *The Emerging Age of Ecological Restoration Law*, in *Review of European, Comparative & International Environmental Law*, 2016, 25, p. 277 ff.

[79] G. Bausilio, *Contratti atipici*, Padua, 2014.

[80] I. Baisi, *Gli 'appalti verdi' come perno della transizione ecologica. Norme e prospettive alla luce del nuovo Codice dei Contratti Pubblici*, in Aa.Vv., *Le transizioni e il diritto: atti delle giornate di studio*, Trento, 2023.

[81] V. Carone, *Il ripristino ecosistemico nell'ordinamento europeo. Profili giuridici ed economico-finanziari del Regolamento (UE) 2024/1991*, in *Diritto Pubblico Comparato ed Europeo*, 2025, 2, p. 271 ff.

[82] J. Salzman, G. Bennett, N. Carroll, A. Goldstein, M. Jenkins, *Payment for Ecosystem Services: Past, Present and Future*, in *Texas A&M Law Review*, 2018, 6, p. 200 ff.

[83] H. Yan, H. Yang, X. Guo, S. Zhao, Q. Jiang, *Payments for ecosystem services as an essential approach to improving ecosystem services: A review*, in *Ecological Economics*, 2022, 201, p. 107591 ff.

[84] M. Olivieri, M. Andreoli, D. Vergamini, F. Bartolini, *Innovative Contract Solutions for the Provision of Agri-Environmental Climatic Public Goods: A Literature Review*, in *Sustainability*, 2021, 13, p. 3 ff.

ments, whereby payment is conditional upon the achievement of measurable restoration outcomes, strengthens their enforceability and aligns private incentives with the effectiveness requirements of the NRR.

This model is consistent with Articles 17 and 18 of the NRR, which encourage Member States to develop "innovative financing mechanisms" for restoration.[85]

From a civil-law perspective, these contracts may be characterised as obligations to perform environmental acts (*obbligazioni di facere ambientale*),[86] the object of which can be determined according to technical and scientific parameters (for instance, an increase in forest cover or reduction of soil erosion).

A further instrument of private enforcement is represented by environmental clauses (or green clauses) incorporated into ordinary contracts.[87] These are clauses introducing obligations of conduct or of result with ecological content – such as the sustainable management of natural resources, the use of low-impact inputs, or the implementation of environmental compensation measures.[88]

Such clauses, already widespread in public procurement and supply contracts, are now extending to private contractual relationships, where they serve as mechanisms of contractual self-regulation of environmental impact.[89] They do not merely reflect ethical or reputational commitments but give rise to legally binding obligations whose breach may trigger contractual remedies, including specific performance or termination. Their legitimacy is grounded in the principles of good faith and social function of the contract, which

[85] H. Schoukens, A. Cliquet, *Ecological restoration and the rights of nature in the EU. Natural twins or a Pandora's box*, in J. García Ruales, K. Hovden, H. Kopnina, C.D. Robertson, H. Schoukens (eds.), *Rights of Nature in Europe. Encounters and Visions*, London, 2024.

[86] F. Gambino, *Le obbligazioni. Il rapporto obbligatorio*, Turin, 2015.

[87] E. Uysal, *Sustainability Clauses in 'Public' Contracts*, in *European Review of Contract Law*, 2024, 20, p. 105 ff.

[88] M. Pennasilico, *Contratto e uso responsabile delle risorse naturali*, in *Rassegna di diritto civile*, 2014, 35, p. 753 ff.

[89] For a critical reading on the subject, see: V. Ulfbeck, O. Hansen, *Sustainability Clauses in an unsustainable Contract Law?*, in *European Review of Contract Law*, 2020, 16, p. 188 ff.

allow environmental considerations to be integrated into the core of the contractual exchange.

From a systematic standpoint, green clauses embody a manifestation of sustainable contractual autonomy, consistent with the principle of good faith (Article 1375 of the Civil Code)[90] and with the social function of the contract (Article 1322(2) of the Civil Code).[91] They allow ecological costs to be internalised within the logic of exchange, anticipating and complementing public regulatory intervention.

Looking ahead, these clauses could become part of a European model of environmental contract law, in which compliance with the NRR's objectives would serve as a general criterion of contractual validity or worthiness. Negotiated and contractual instruments are thus not merely alternatives to administrative action but constitute a complementary form of enforcement.[92] They contribute to the construction of a shared and multi-level responsibility, in which the effectiveness of environmental law depends not only on public authority but also on the capacity of the private system to self-bind in ecological terms.[93] In this sense, the contract is transformed into an act of ecological citizenship, through which private actors assume legal commitments for the protection of natural common goods.[94]

In the Italian context, the negotiated enforcement model outlined above finds only partial and still fragmented applications. Certain instruments, such as PES schemes[95] have been introduced in some regional

[90] P. Gallo, *Contratto e buona fede. Buona fede oggettiva e trasformazioni del contratto*, Turin, 2009.

[91] C. Irti, *Gli "appalti verdi" tra pubblico e privato*, in *Contratto e impresa/Europa*, 2017, p. 185 ff.

[92] D. Owen, *The Negotiable Implementation of Environmental Law*, in *Stanford Law Review*, 2023, 75, p. 137 ff.

[93] A. Oriolo, *L'ambiente: diritti e responsabilità in ambito internazionale ed europeo*, in *Ambiente e diritto: dogmi moderni, prassi antica*, 2023, p. 223 ff.

[94] A. Allen, *Towards ecological citizenship: Institutional violence and the social contract*, in *The Ecological Citizen*, 2024, 7, p. 173 ff.

[95] A. Paletto, I. De Meo, S. Morelli, *Payment systems for ecosystem services (PES): analysis of national and international literature*, in *L'Italia Forestale e Montana*, 2020, 75, p. 281 ff.

regulations (for instance, Veneto[96] and Lombardia[97]) and in forestry and water protection programmes.[98] However, a significant gap remains in the absence of specific provisions on environmental restoration agreements within Legislative Decree No. 152/2006,[99] as well as in the still limited diffusion of land stewardship agreements,[100] which could become effective instruments of cooperation between public and private actors in the management of environmental assets.[101] Green clauses in civil and commercial contracts also represent an increasing sign of integration between contractual autonomy and sustainability.

Nonetheless, a unitary legal framework capable of recognising such instruments as genuine sources of environmental obligations endowed with enforceability and systemic value is still lacking.

Italian law thus stands at a transitional stage,[102] in which practical experiences and local experiments anticipate a model of legal cooperation that the NRR now calls upon to be consolidated at the European level.

The challenge for private law lies in granting full validity and enforceability to these instruments, overcoming the traditional diffidence towards agreements pursuing public aims. This could occur through leg-

[96] P. Gatto, E. Vidale, L. Secco, D. Pettenella, *Exploring the willingness to pay for forest ecosystem services by residents of the Veneto Region*, in *Bio-based and Applied Economics*, 2014, 3, p. 21 ff.; M. Gaglio, M. Lanzoni, F. Goggi, E.A. Fano, G. Castaldelli, *Integrating payment for ecosystem services in protected areas governance: The case of the Po Delta Park*, in *Ecosystem Services*, 2023, 60, p. 101516 ff.

[97] M. Ruberto, G. Branca, S. Troiano, R. Zucaro, *The economic value of ecosystem services of irrigation: a choice experiment for the monetary evaluation of irrigation canals and fontanili in Lombardy*, in *Italian Review of Agricultural Economics*, 2022, 77, p. 27 ff.

[98] A. Sbandati, *Servizi ecosistemici, servizio idrico integrato e componenti tariffarie: l'opportunità dei Payments for Ecosystem Services*, in D. Poli (ed), *I servizi ecosistemici nella pianificazione bioregionale*, 2020, p. 115 ff.

[99] F. Giampietro, *Analisi critica del D.Lgs. N. 152/2006: gli obiettivi ed i tempi di una vera riforma*, in F. Giampietro (ed), *Commento al Testo Unico Ambientale*, Turin, 2006, p. 4 ff.

[100] F. Giampietro, *La responsabilità per danno all'ambiente nel TUA: un passo avanti e due indietro…*, in *Ambiente & Sviluppo*, 2007, 12, p. 1051 ff.

[101] A. Vatn, *Environmental Governance - From Public to Private?*, in *Ecological Economics*, 2018, 148, p. 170 ff.

[102] M. Pennasilico, *La transizione verso il diritto dello sviluppo umano ed ecologico*, in A. Buonfrate, A. Uricchio (eds.), *Trattato breve di diritto dello sviluppo sostenibile*, Milan, 2023, p. 37 ff.

islative or judicial recognition of restoration agreements as sources of environmental obligations deserving of judicial protection, with binding effects also *vis-à-vis* third parties or the community at large. Only in this way will it be possible to transform private autonomy into a legal infrastructure for the implementation of the NRR, integrating administrative action and overcoming the opposition of the public and private spheres.

Overall, negotiated and contractual instruments do not operate as substitutes for administrative enforcement, but as complementary mechanisms capable of translating restoration objectives into legally enforceable commitments. Their effectiveness depends on a clear identification of their legal nature, *causa*, and limits, which allows private autonomy to function as a structured and reliable component of the broader enforcement architecture of the NRR.

5. *Environmental ADR and strategic litigation: a new balance between conflict and cooperation*

Contemporary European environmental law stands at a crossroads between contentious justice and cooperative justice.[103] On the one hand, the implementation of the NRR depends on the existence of effective judicial instruments to sanction inertia or breaches of restoration obligations; on the other, the pursuit of ecological objectives requires avoiding the decision-making paralysis that may result from litigation, including by promoting consensual mechanisms of conflict resolution.[104]

From a legal standpoint, the growing relevance of ADR mechanisms in environmental matters raises a preliminary question concerning the compatibility between consensual dispute resolution and the public, non-disposable nature of environmental interests. This compatibility can only be affirmed insofar as ADR operates as an instrument for implementing, rather than negotiating away, legally binding restoration obligations.

[103] E. Van Gool, *Searching for 'Environmental Justice' in EU Environmental Law*, in *European Energy and Environmental Law Review*, 2022, 31, p. 334 ff.

[104] P. Glasbergen, *Environmental dispute resolution as a management issue*, in P. Glasbergen (ed), *Managing Environment Disputes. Network Management as an Alternative*, London, 1995, p. 1 ff.

It is within this tension that the role of ADR[105] and strategic litigation[106] emerges as complementary vectors of environmental enforcement.

Environmental litigation, although essential for the protection of rights and the guarantee of legality, is characterised by long timeframes, high costs, and significant technical-scientific complexity.[107]

These structural limits do not undermine the centrality of judicial enforcement but explain the complementary role of ADR as a preventive and anticipatory tool, capable of addressing conflicts before environmental harm becomes irreversible and before judicial intervention turns predominantly reparatory.

In many cases, judicial resolution occurs when the environmental damage has already become irreversible. For this reason, a trend has progressively developed, both at the European and national levels, towards "dialogical" environmental justice,[108] which values mediation, assisted negotiation, and arbitration as tools capable of anticipating the resolution of disputes and transforming them into opportunities for cooperation.[109]

Article 9 of the Aarhus Convention – recalled by the Court of Justice of the European Union as an instrument for the effectiveness of environmental law – does not exclude the use of non-judicial review procedures, provided that they ensure impartiality, transparency, and public access.[110]

From this perspective, forms of environmental ADR appear as instruments of cooperative enforcement, in which the voluntary participation of the parties combines with the public purpose of restoring the

[105] J.A. Siegel, *Alternative Dispute Resolution in Environmental Enforcement Cases: A Call for Enhanced Assessment and Greater Use*, in *Pace Environmental Law Review*, 2007, 24, p. 187 ff.

[106] M.E. Lessa, *Climate Litigation as Strategic Litigation*, in *Environmental Law Reporter*, 2025, 55, p. 10056 ff.

[107] E. Guarna Assanti, *Il contenzioso climatico europeo: profili evolutivi dell'accesso alla giustizia in materia ambientale*, Milan, 2024.

[108] S. Vermeylen, *Environmental justice and epistemic violence*, in *Local Environment. The International Journal of Justice and Sustainability*, 2019, 24, p. 89 ff.

[109] U. Salanitro, *Tutela dell'ambiente e strumenti di diritto privato*, in *Rassegna di diritto civile*, 2009, 2, p. 472 ff.

[110] G. Samvel, *Non-Judicial, Advisory, Yet Impactful? The Aarhus Convention Compliance Committee as a Gateway to Environmental Justice*, in *Transnational Environmental Law*, 2020, 9, p. 211 ff.

environmental condition *ex ante*. Environmental mediation constitutes the most flexible form of ADR.[111] It may be used to settle disputes between public authorities, enterprises, and local communities regarding the implementation of protection projects, land use, or the siting of green infrastructure. Unlike traditional mediation, environmental mediation is characterised by a multi-actor and technical-scientific dimension,[112] in which the mediator plays a facilitative role that is not only legal but also ecological.

From a legal standpoint, mediation can be regarded as an instrument of collaborative implementation of the NRR, allowing for the conclusion of restoration agreements consistent with the Regulation's objectives.[113] When formalised and approved, such agreements may acquire enforceable status, ensuring the binding nature of the agreed measures and reducing recourse to ordinary judicial proceedings. The legitimacy of environmental mediation depends, however, on the existence of clear legal boundaries. While parties may negotiate the modalities and timing of restoration measures, they cannot validly dispose of the minimum level of environmental protection imposed by mandatory law or by the objectives of the NRR.

Environmental negotiation, which is more informal, represents a means of building consensus around restoration measures, useful in preventing conflicts and social opposition.[114] Both mechanisms contribute to achieving a dynamic balance between economic and ecological interests, avoiding the paralysis resulting from irreconcilable disputes.

The position of environmental arbitration is more problematic. Although it allows for swift and technically qualified decisions, it encounters objective limits stemming from the public nature of environmental

[111] J. Alkhayer, N. Gupta, C.M. Gupta, *Role of ADR methods in environmental conflicts in the light of sustainable development*, in *Earth and Environmental Science*, 2022, 1084, p. 3 ff.

[112] C. Choquette, V. Fraser, *Environmental Mediation. An international survey*, London, 2018.

[113] L. Cominelli et al., *Environmental Mediation and Facilitation in Italy: Theoretical Insights and Practical Experience on Non-Adjudicative Mechanisms and "Total Conflicts"*, in S. Ali (ed.), *Comparative and Transnational Dispute Resolution*, 2023, p. 153 ff.

[114] C. Albin, D. Druckman, *Negotiating Effectively: Justice in International Environmental Negotiations*, in *Group Decision and Negotiation*, 2017, 26, p. 93 ff.

interests.[115] Arbitration may be admitted only for disputes of a patrimonial or obligatory nature – for example, concerning restoration or ecological compensation contracts – but it cannot replace judicial review of administrative acts or environmental plans.[116] This limitation stems from the public-interest dimension of environmental protection, which constrains the arbitrability of disputes involving restoration obligations. Arbitration may therefore operate only with respect to patrimonial and contractual aspects of environmental relationships, without encroaching upon the determination of public environmental duties or planning authorizations.

The challenge lies in identifying a balance between private autonomy in dispute resolution and the need to safeguard the collective interest, which requires transparency and guarantees of genuine impartiality.[117] In this sense, a model of regulated or publicly administered arbitration is emerging, one that is designed to preserve the public function of restoration while retaining the speed and technical expertise typical of arbitration. Alongside alternative settlement mechanisms, strategic environmental litigation represents a crucial tool for prompting the fulfilment of restoration obligations.[118] It consists in the targeted use of judicial action, not merely to obtain a favourable ruling in the specific case, but to produce systemic or policy-shaping effects. From a dogmatic perspective, strategic litigation does not presuppose the existence of a general subjective right to environmental restoration; rather, it relies on the activation of procedural mechanisms in defence of legally binding public obligations, transforming access to justice into a mechanism for ensuring the effectiveness and coherence of the environmental regulatory framework.

In recent years, both European and national courts have witnessed an increase in strategic climate and environmental actions – it suffices to

[115] X. Shao, *Environmental and Human Rights Counterclaims in International Investment Arbitration: at the Crossroads of Domestic and International Law*, in *Journal of International Economic Law*, 2021, 24, p. 157 ff.

[116] B. McGarry, *The Protection of the Environment Through Inter-State Arbitration*, in E. Sobenes, S. Mead, B. Samson (eds.), *The Environment Through the Lens of International Courts and Tribunals*, London, 2022, p. 99 ff.

[117] D. French, *Finding Autonomy in International Environmental Law and Governance*, in *Journal of Environmental Law*, 2009, 21, p. 255 ff.

[118] R. Luporini, *Strategic litigation as a tool to advance climate change adaptation? Challenges and Prospects*, in *Yearbook of International Disaster Law*, 2021, 4, p. 202 ff.

mention the *Urgenda*[119] and *KlimaSeniorinnen*[120] cases – which have contributed to redefining the boundaries of public and private responsibility in ecological matters.

Within the framework of the NRR, strategic litigation may perform three main functions: a prompting function, aimed at triggering the adoption or adjustment of national restoration plans; an interpretative function, guiding the judicial definition of concepts such as "restoration", "degraded ecosystem", or "result-oriented obligation"; and a deterrent function, through the recognition of liability for omission or ecological damage. The effectiveness of such actions, however, depends on the breadth of procedural standing and on the availability of effective remedies, such as specific performance or interim measures capable of preventing irreversible harm.

The viability of such actions depends on the availability of effective remedies and on a legally circumscribed notion of standing, capable of balancing broad access to justice with requirements of seriousness, representativeness, and a sufficient connection to the environmental interest at stake.

The coexistence of cooperative instruments and contentious instruments (strategic litigation) does not represent a contradiction, but rather a functional complementarity. Given its systemic and intertemporal nature, environmental restoration requires a hybrid form of environmental justice, in which mediation and negotiation promote the shared implementation of measures,[121] while strategic litigation ensures the accountability and systemic coherence of public and private action.

The shift from a paradigm of opposition to one of co-responsibility marks the maturity of European environmental law,[122] which recognises the value of conflict as a driver of normative evolution, yet directing its outcome towards cooperation.

[119] Court of Cassation of the Netherlands, Judgment of 9 October 2018, Case n. 200.178.245/01, *Urgenda v. Netherlands*.

[120] ECtHR, Judgment of 9 April 2024, application n. 53600/20, *Verein KlimaSeniorinnen Schweiz v. Switzerland*.

[121] A. Minguet, *Environmental justice movements and restorative justice*, in *The International Journal of Restorative Justice*, 2021, 4, p. 58 ff.

[122] T. Delreux, F. Ohler, *Climate Policy in European Union Politics*, in *Oxford Research Encyclopedia of Politics*, 2019.

From this perspective, the environmental justice of the future will not be limited to sanctioning, but will also aim to restore, promoting solutions that combine legal obligation and social dialogue.[123]

The NRR offers an ideal testing ground for this model: a dialogical, participatory, and polycentric environmental law, in which jurisdiction and negotiation operate in synergy to ensure the effective regeneration of European ecosystems[124]. The coexistence of ADR mechanisms and strategic litigation reflects a functional differentiation of enforcement tools rather than a normative tension. While ADR facilitates cooperative implementation and conflict prevention, litigation ensures accountability and legal coherence, thereby contributing jointly to the effective and legally structured realisation of the restoration objectives pursued by the NRR.

6. *Towards an integrated model of private environmental enforcement*

The analysis conducted thus far confirms that the implementation of Regulation (EU) 2024/1991 entails a structural reconfiguration of environmental enforcement, overcoming the traditional public-law monopoly and moving towards an integrated, polycentric model in which private actors, public authorities, and organised communities share responsibility for nature restoration. This reconfiguration does not entail a general empowerment of private actors, but rather a selective expansion of legally recognised standing and access to remedies, aimed at enhancing the effectiveness of restoration obligations while preserving the public nature of the interests involved.

A decisive element of this transformation lies in the progressive recognition of private standing, which may be a functional prerequisite for the effectiveness of restoration obligations. Although the NRR formally addresses Member States with its result-oriented duties, its practical implementation depends on the capacity of individuals and collective

[123] A. Martin et al, *Environmental Justice and Transformations to Sustainability*, in *Environment: Science and Policy for Sustainable Development*, 2020, 62, p. 19 ff.

[124] B. Pozzo, *Environmental Liability: The Difficulty of Harmonizing Different National Civil Liability Systems*, in M. Peeters, M. Eliantonio (eds), *Research Handbook on EU Environmental Law*, Cheltenham, 2020, p. 231 ff.

actors to activate mechanisms of control, accountability, and substitution in cases of administrative inertia or non-compliance.

Such standing should not be equated with the recognition of a full-fledged subjective right to environmental restoration. Rather, it reflects the attribution of procedurally structured positions that allow private and collective actors to trigger the enforcement of legally binding public duties, without altering their underlying public-law nature. European case law, inspired by the Aarhus Convention,[125] has already paved the way for this evolution by transforming access to justice from a procedural guarantee into a substantive instrument of effectiveness, recognising the autonomous standing of citizens and environmental organisations to enforce Union environmental law. The NRR fits coherently within this trajectory, implicitly encouraging a participatory and action-oriented conception of environmental protection.

The legal interests involved in environmental restoration remain plural and differentiated, ranging from individual interests affected by environmental degradation to collective and diffuse interests linked to the protection of natural commons. Their convergence operates primarily at the level of enforcement and remedies, rather than through a unification of their substantive legal qualification.

The emergence of a plural conception of legally protected environmental interests[126] – ranging from individual positions to collective and diffuse interests – allows environmental restoration to be framed as a relational legal obligation, grounded in the fundamental right to a healthy environment and projected into concrete claims for compliance, injunctive relief, and restoration.

Procedural instruments, such as actions for specific performance, injunctive measures, participatory interventions and collective actions, thus become essential tools for translating the NRR's objectives into enforceable legal practice, while preserving proportionality and procedural certainty through criteria of seriousness, representativeness, and territorial connection.

[125] P. Oliver, *Access to Information and to Justice in EU Environmental Law: The Aarhus Convention*, in *Fordham International Law Journal*, 2013, 36, p. 1423 ff.

[126] C. Konkes, *Green Lawfare: Environmental Public Interest Litigation and Mediatized Environmental Conflict*, in *Environmental Communication*, 2018, 12, p. 191 ff.

The availability of such remedies must remain subject to criteria of proportionality, technical feasibility, and consistency with administrative planning, so as to prevent judicial enforcement from resulting in fragmented or contradictory restoration measures.

Within this integrated framework, private law instruments assume a constitutive, rather than ancillary, role.[127] Their constitutive function does not lie in the creation of autonomous private environmental rights, but in their capacity to translate public restoration obligations into legally enforceable duties through liability, contractual commitments, and procedurally channelled forms of participation.

Civil liability operates as a mechanism of indirect implementation, capable of internalising ecological costs and addressing both active conduct and omission in breach of restoration duties.[128] Contractual and negotiated instruments – such as restoration agreements, payment for ecosystem services, and green contractual clauses[129] – further complement this model by transforming voluntary cooperation into binding legal commitments aligned with the NRR's ecological objectives. Environmental ADR and strategic litigation, in turn, contribute to balancing cooperation and accountability, ensuring that restoration remains both effective and socially legitimate.

The central normative implication of this analysis is that private participation in environmental enforcement must be institutionally recognised and legally structured.[130] Restoration agreements, in particular, should be acknowledged as sources of binding environmental obligations,[131] worthy of judicial protection and capable of integration within national restoration plans as subsidiary instruments of implementation. Such recognition would consolidate the convergence between private

[127] B. Pozzo, *Diritto privato e ambiente. Uno sguardo di diritto comparato*, in *Diritto pubblico comparato ed europeo*, 2024, p. 801 ff.

[128] F. Giampietro, *Responsabilità civile per danno all'ambiente: iniziative internazionali ed esperienza italiana*, in *Il Foro Italiano*, 1986, 109, p. 489 ff.

[129] M. Antonioli, *La sostenibilità dello sviluppo tra principi del diritto, proceduralizzazione, eticità e crescita economica*, in *Rivista Italiana di Diritto Pubblico Comunitario*, 2017, 1, p. 17 ff.

[130] Similarly, see contribution by M.E. Harris in this collection.

[131] M. Eliantonio, E. Lees, M. Peeters, *The Evolving Role of Principles in EU Environmental Law*, in *Review of European Administrative Law*, 2025, 18, p. 5 ff.

autonomy and public interest, transforming private law into a stable infrastructure for ecological governance.

The NRR thus signals the emergence of a new paradigm of European private law grounded in multilevel ecological responsibility. Public responsibility, collective enforcement, and private commitment coexist within a relational legal architecture oriented towards restoration rather than mere prevention. In this model, private standing, liability, and contractual autonomy are not in opposition to public authority,[132] but complementary expressions of a shared legal duty to protect and regenerate natural commons.

[132] M. Pennasilico, *Contratto ecologico e conformazione dell'autonomia negoziale*, in *Giustizia Civile*, 2017, 4, p. 809 ff.

ABSTRACT

Private Environmental Enforcemen – Civil Liability
Restoration Obligations – trategic Litigation

This article examines the evolving role of private law in the implementation of the Nature Restoration Regulation (EU) 2024/1991, arguing that the Regulation inaugurates a paradigm shift from environmental protection towards ecosystem restoration through a model of shared and polycentric enforcement.
The study analyses how structural deficiencies in public enforcement may be addressed through private-law mechanisms, including civil liability, restoration agreements, payment for ecosystem services, green contractual clauses, alternative dispute resolution, and strategic environmental litigation. Particular attention is devoted to the capacity of these instruments to reinforce compliance with result-oriented restoration obligations while preserving the public character of environmental interests.
Adopting a functional and comparative perspective, the article demonstrates that private actors increasingly perform complementary enforcement functions alongside public authorities. It concludes that the effective implementation of the NRR requires the institutional recognition of legally structured forms of private participation, capable of integrating administrative action within a coherent framework of ecological governance and environmental accountability.

Stefano Porfido

REMEDIATION OF ENVIRONMENTAL DAMAGE UNDER THE EU ENVIRONMENTAL LIABILITY REGIMES

Sommario: 1. Introduction. – 2. The Environmental Liability Directive. – 2.1. The subjective scope of the ELD. – 2.2. The meaning of damage. – 2.3. Remedial obligations. – 2.4. Gaps in the enforcement of ELD remedial obligations. – 2.5. Preventive actions. – 3. The Environmental Crime Directive. – 3.1. The subjective scope. – 3.2. The material scope. – 3.3. Remedial obligations. – 4. Conceptual differences between liability-based remediation and ecological restoration. – 5. Future research path: potential normative convergences? – 6. Conclusion.

1. *Introduction*

In response to the current global climate and ecological crises, the EU Green Deal has championed ecological restoration as a vital strategy for protecting biodiversity, enhancing human well-being, and supporting climate mitigation and resilience. The EU Nature Restoration Regulation (NRR) serves as the primary legislative framework for achieving these broad objectives.[1] However, while enhancing ecosystem integrity is essential, it is equally vital to safeguard nature from unlawful activities such as waste dumping, illegal deforestation, or trafficking of protected species. Establishing a robust level of protection provides the necessary foundation to halt environmental degradation and foster thriving ecosys-

[1] 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 [2024] OJ L 2024/1991. See B.J. Richardson, "The Emerging Age of Ecological Restoration Law" in *Review of European Comparative & International Environmental Law*, 2016, p. 277 ff.

tems. As the Society of Ecological Restoration (SER) emphasises, ecological prosperity is the sum of interconnected practices conceptualised through a 'restoration continuum', comprising four major restorative phases, namely: 1) reducing societal impacts, 2) remediation, 3) rehabilitation, and 4) restoration.[2]

This analysis focuses on the remediation phase, particularly on liability-based remedial actions established under the EU legal regimes addressing unlawful environmental damage. Two main liability regimes characterise the EU legal framework in the environmental sector. The first is an administrative liability regime, introduced by the Environmental Liability Directive (ELD) in 2004,[3] which remains largely unaltered to date. The second entails a criminal law liability system, currently represented by the new Environmental Crime Directive (ECD)[4] adopted in 2024, which now includes provisions dedicated to the 'restoration of environmental damage'.

By adopting a descriptive approach, the purpose of this work is to provide interpretative guidance in understanding the differences between liability-based environmental remediation and ecological restoration obligations under the NRR. This guidance is timely in light of

[2] G.D. Gann et al., "International principles and standards for the practice of ecological restoration", in *Restoration Ecology*, 2019. The restoration continuum refers to these four categories of restoration activities as follows: (1) reduction of negative environmental and societal impacts, such as pollution and unsustainable resource use and management; (2) removal of contaminants, pollutants and other threats, often known as remediation; (3) rehabilitation of ecosystem functions and services in highly modified areas such as former mining sites and degraded production systems; and (4) ecological restoration, which aims to remove degradation and assists in recovering an ecosystem to the trajectory it would be on if degradation had not occurred, accounting for environmental change. This work does not look at rehabilitation, although it is mentioned but not defined, in the ELD. From an ecological standpoint, rehabilitation is more than remediation, for it aims at improving the ecosystem services, whereas remediation focuses on removing contaminants and reinstating pre-damage conditions. However, rehabilitation falls short of restoration, as it prioritises ecosystem functioning over the recovery of native ecosystems.

[3] Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage [2004] OJ L 143/56.

[4] Directive (EU) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC [2024] OJ L 2024/1203.

the recent adoption of the ECD and the NRR and the often-confusing terminology used by the EU legislator, specifically the use of 'restoration' in different legislative settings without clarification.[5] This analysis differs from other exegetical works on the EU's ambiguous terminological approach in the environmental remediation sector since it does not focus on the terminology *per se*, but rather on the legal context in which such terms are used.[6] For space constraints, this analysis only addresses remediation under the aforementioned environmental liability directives; a thoughtful examination of the ecological restoration obligations under the NRR remains outside its scope. For these obligations, reference is made to the other contributions in this special issue.

The analysis unfolds as follows: Sections 2 and 3 explore the scope of environmental remediation obligations respectively under the ELD and ECD. Section 4 discusses the different logics underpinning liability-based remediation and ecological restoration under the NRR. From a *de lege ferenda* perspective, Section 5 suggests future research avenues on potential normative convergences among these regimes. Section 6 concludes.

2. *The Environmental Liability Directive*

The Environmental Liability Directive (ELD) establishes the key legal framework for environmental liability, placing obligations on the polluter to prevent and remedy environmental damage. The genesis of this Directive began in 1993 with the adoption of the Green Paper on remedying environmental damage,[7] and its adoption process was marked by difficulties in harmonizing civil law liability regimes. In 1999, the sinking of the oil tanker *Erika*, off the coast of Brittany, France, provoked an

[5] E.g. the ECD introduces the term 'restoration' in the realm of liability-remedial obligations.

[6] See A. MENDES et al., "Towards a legal definition of ecological restoration: Reviewing international, European and Member States' case law", in *Review of European, Comparative & International Environmental Law*, 2023, p. 3 ff., who explore how the term restoration is used in the EU case-law.

[7] Commission (EC) 'Green Paper on remedying environmental damage' COM (1993) 47 final, 14 May 1993.

immense environmental disaster, prompting the urgent need for a legal framework to address environmental damage restoration. This led to the publication of the White Paper on Environmental Liability in 2000,[8] marking a shift from a comprehensive civil law liability regime covering all environment-related damages, including damage to property and to health, towards an administrative solution restricted to environmental damage.[9] This shift speeded up discussions and paved the way for the adoption of the ELD in 2004, which addresses damages to biodiversity and the contamination of sites, while leaving MSs to regulate the reparation of traditional damage.

The ELD is based on the environmental principles set out in Article 191(2) of the Treaty on the Functioning of the European Union (TFEU): the preventive principle, the rectifying pollution at source principle and the polluter pays principle. Particularly, Recital 2 of the ELD clarifies that "the prevention and remedying of environmental damage should be implemented through the furtherance of the polluter pays principle", which thus constitutes "the fundamental principle of this Directive". Its Article 1 'Subject Matter' confirms that the Directive aims primarily to enforce the polluter pays principle.[10]

The centrality of the polluter pays principle (PPP) reflects the public nature of the ELD liability mechanism. Precisely, as some commentators on this Directive have noted, the term 'environmental liability' might be misleading for civil-law lawyers, as it might suggest a system of civil claims under tort law, which falls outside the scope of this Directive.[11] Instead, the ELD seeks to harmonise Member States' administrative sys-

[8] Commission (EC) 'White Paper on environmental liability' COM (2000) 66 final, 9 February 2000.

[9] Ibid, para. 8 'Conclusion': The Commission considers as the most appropriate option that of a Community framework directive on environmental liability, providing for strict liability – with defences – with respect to traditional damage (namely damage to health and property) and environmental damage (contamination of sites and damage to biodiversity in Natura 2000 areas) caused by EC regulated dangerous activities, and fault-based liability for damage to such biodiversity caused by non-dangerous activities.

[10] Article 1 ELD states that "The purpose of this Directive is to establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage."

[11] G. Winter et al, "Weighing up the EC Environmental Liability Directive", in *Journal of Environmental Law*, 2/2008, p. 163 ff.

tems by creating a common framework of powers to require the polluters to 'pay', i.e. to shoulder the environmental-related costs associated with their economic operations. As explicitly stated in Recital 14 and Article 3(3) of the ELD, these costs do not extend to what are referred to as 'traditional damages,' such as physical injury or economic loss suffered by private individuals. Instead, they pertain exclusively to the costs associated with preventing and remedying environmental damage. In a nutshell, the Directive's objective is to ensure that private polluters are held financially responsible for the environmental costs stemming from their operations, in order not to transfer these costs onto public authorities and society at large.

This objective implements the PPP, which basic idea is to internalize the social costs borne by the public authorities for pollution prevention and control.[12] Precisely, this principle "calls for ensuring that in every case where the environment has been, or runs the risk of being, polluted, the accountable person bears the costs resulting from the pollution or from the measures taken for the purpose of preventing the costs of his or her conduct".[13] The PPP rests upon economic foundations, concerned with ensuring a level playing field among economic actors operating in the market.[14] Competition, and thus the market, would be distorted if some operators were allowed to pollute more than their competitors without bearing the associated environmental costs, effectively externalizing these costs onto society.

From these economic roots, the PPP then evolved into "an established legal principle".[15] In 1989, 'pay' started to enshrine a remedial

[12] N. DE SADELEER, *Environmental Principles: from Political Slogans to Legal Rules*, Oxford, 2005, p. 35.

[13] U. BEYERLIN, "Different Types of Norms in International Environmental Law: Policies, Principles and Rules", in D. BODANSKY, J. BRUNNÉE, E. HEY (eds.), *The Oxford Handbook of International Environmental Law*, Oxford, 2006, p. 441 ff.

[14] OECD Council Recommendation, "Guiding Principles concerning the International Economic Aspects of Environmental Policies" of 26 May, 1972, where the Council stated that "The Polluter-Pays Principle constitutes for Member countries a fundamental principle for allocating costs of pollution prevention and control measures introduced by the public authorities in Member countries", p. 18, para: 1. This understanding was adopted by the European Community in 1973 into the first European Community Environmental Action Program, Principle 5.

[15] B. LUPPI, F. PARISI, S. RAJAGOPALAN, "The Rise and Fall of the Polluter Pays Prin-

function, that is an obligation set upon the polluter to remedy environmental harm.[16] This evolution is somehow connected to the adoption of the ELD, with both reflecting the increased political sensibility toward environmental issues related to the risks of industrial pollution, of which several environmental disasters, such as the aforementioned *Erika* oil-spillage in 1999, are paradigmatic. As such, pollution was no longer seen solely in economic terms, but rather also as social costs calling on the polluter to give account before society. The ECD ultimately codified this newly remedial function, opening the path for its further evolution in terms of criminal liability, as we see later in this Chapter.

The strong historical and political tie that links the ELD and the PPP suggests a profound difference between the remedial duties under this Directive and remedial actions considered from an ecological standpoint. Both are functional to achieve the proper conditions for ecological restoration to occur. However, the ELD pursues the additional goal of maintaining a level playing field among economic operators, by addressing the risk that the costs associated with pollution produced by such operators are instead shouldered by society.

This synthesis between social considerations concerning the impact of environmental pollution and those concerning the functioning of the market marks the distinctive subjective and material scope of duties under the ELD. Particularly, the ELD's key provisions include replace with who the operator is, what the meaning of damage is, and the relevant threshold, what the preventive measures are, and what the power of the public administration to enforce this regime is. These aspects are addressed in the following subparagraphs.

2.1. *The subjective scope of the ELD*

Article 2(6) of the ELD provides an encompassing definition of 'operator', covering any natural or legal, private or public person who

ciple in Developing Countries", in *International Review of Law and Economics*, 1/2012, p. 135 ff.

[16] Notably, with the adoption of OECD, *Recommendation on the Application of the Polluter-Pays Principle to Accidental Pollution*, Recommendation C(89)88, adopted 7 July 1989.

operates or controls the occupational activity.[17] The second part of this definition extends liability to individuals or entities holding decisive economic power, such as entrepreneurs (natural or legal persons) who are "the holder of a permit or authorisation for such an activity or the person registering or notifying such an activity",[18] but not to lower ranking positions such as directors or officers. However, the term control remains vague, making it possible to extend liability to a parent or grandparent company exercising a decisive economic power over the business and the environmental policy of a subsidiary.[19]

The ELD functions through a dual liability framework, applying either strict or fault-based requirements depending on the specific activities and damages covered. Under Article 3(1), lett. (a), strict liability applies to the remediation scheme targeting environmental damage caused by the 'operation' of any of the 'occupational activities' listed in Annex III of the ELD. This liability also encompasses preventive obligations, triggered by the mere occurrence of an imminent threat of damage from these activities. Essentially, the occurrence of damage, or even the risk of damage, automatically imposes remedial or preventive duties on the operator. Under Article 3(1) lett. (b), a fault-based regime applies specifically to damage to protected habitats and species caused by activities not covered in Annex III.

2.2. *The meaning of damage*

Article 2, para. 2 defines 'damage' as a measurable adverse change in a natural resource or measurable impairment of a natural resource

[17] *Ex* Article 2, para. 6, 'operator' means any natural or legal, private or public person who operates or controls the occupational activity or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of such an activity has been delegated, including the holder of a permit or authorisation for such an activity or the person registering or notifying such an activity. Article 2, para. 7 defines occupational activities as "any activity carried out in the course of an economic activity, a business or an undertaking, irrespectively of its private or public, profit or non-profit character".

[18] Article 2, para. 6 ELD.

[19] L. Bergkamp, "The Environmental Liability Directive and Liability of Parent Companies for Damage Caused by Their Subsidiaries ('Enterprise Liability')", in *European Company Law*, 5/2016, p. 183 ff.; U. Salanitro, "La nuova disciplina della responsabilità per danno all'ambiente", in *La responsabilità civile*, 2006, p. 678 ff.

service which may occur directly or indirectly. The wording 'natural resource' refers to protected species and natural habitats, water and land,[20] and the concept of 'natural resource services' is defined as the functions performed by these natural resources for the benefit of another natural resource or the public.[21] Consistently, Article 2, para. 1 limits the scope of environmental damage to any significant adverse effect on ecological or human use functions concerning three different natural parts, namely biodiversity, i.e. species and natural habitats, water, and land.

The Directive sets out a detailed legal regime for managing and mitigating environmental damage in these areas to ensure their protection. Each category has a specific regulatory framework, to which we will now turn.

Protection of biodiversity. For biodiversity, the ELD provides an integrated system of protection, focusing on protected species and natural habitats as outlined in the Birds Directive and Habitats Directive. Any damage that significantly affects the conservation status of these species or natural habitats constitutes environmental damage for the purpose of the ELD, with the responsible party bearing the costs of remedial measures. Importantly, this definition of damage applies irrespective of whether the harm occurs within or outside a designated protected area.[22]

To be considered relevant under the ELD, damage must meet a certain threshold of severity described as *significant* for the purposes of the Habitat and Birds Directives. Under Article 2, para. 1 ELD, environmental significance should be assessed based on the conservation status of habitat, species and biological diversity listed in relevant annexes,[23]

[20] Article 2, para. 12 ELD.

[21] Article 2, para. 13 ELD.

[22] E. BRANS, "Liability for damage to public natural resources under the 2004 EC Environmental Liability Directive. Standing and assessment of damage", in *Environmental Law Review*, 7/2005, p. 93 ff.

[23] Under Article 1, lett. (k) Habitat Directive, a significant damage is the one that hampers the capacity of sites of community importance "to contributes significantly to the maintenance or restoration at a favorable conservation status of a natural habitat type in Annex I or of a species in Annex II and may also contribute significantly to the coherence of Natura 2000 referred to in Article 3, and/or contributes significantly to the maintenance of biological diversity within the biogeographic region or regions concerned".

and the conservation status of bird species,[24] to be determined following criteria laid down under Annex I of ELD. The baseline condition refers to the natural conditions prior to the damage,[25] and it is necessary to determine not only the relevance threshold of severity but also to set the remediation goals and quantify the loss of use, requiring compensatory remediation.[26]

Protection of Water. Environmental damage to water is defined as any harm that significantly impacts the ecological, chemical, or quantitative status or the ecological potential of the waters concerned, as specified under the Water consistency Directive, as well as the marine waters concerned, as defined by the Marine Strategy Framework Directive.[27] The damage, which must meet the 'significant' threshold of severity, applies to the water concerned, which should be interpreted as damage to a water body, in the sense used under the Water Directive. Although some commentators questioned the exact equivalence between the two wordings,[28] the common interpretation is that the ELD looks only at the water in a water body.[29] Conversely, waters used in industry and, arguably, ephemeral waters are not covered by the ELD.[30] The term 'water body' should be interpreted in a broad way, including surface, transi-

[24] Articles 1, 2 and 4 of the Birds Directive.

[25] Article 2, para. 14, ELD states that baseline condition' means the condition at the time of the damage of the natural resources and services that would have existed had the environmental damage not occurred, estimated on the basis of the best information available.

[26] This notion of baseline condition differs from the one used to fulfil restoration obligations under the NRR, which looks at the original conditions of the ecosystem to be restored. See C Guilfoyle and others, 'Estimating reference conditions using baseline vegetation data to inform large-scale ecosystem restoration efforts' (2024) 27 Applied Vegetation Science e12796.

[27] Article 2, para. 1 lett. (b) (i) and (ii) ELD.

[28] S. Mudgal et al, *Implementation challenges and obstacles of the Environmental Liability Directive*, European Commission, 2013, pp. 59-60.

[29] U. Salanitro, *Directive 2004/35/EC on Environmental Liability. Study in the framework of the EFFACE research project*, Catania, p. 9.

[30] Ibid. Ephemeral waters are a subset of temporary waters that contain water only after irregular rainfall or flow events. For insights into different categories of temporary waters, see R.E.W. Smith et al., *Assessing and managing water quality in temporary waters. Australian and New Zealand Guidelines for Fresh and Marine Water Quality,* Canberra, 2020.

tional, coastal, ground waters and their sediments.[31] More doubtful is whether wetlands should be considered a water body,[32] although an extensive interpretation might be more fine-tuned with the broad notion of water body. It is important to note that the "significant" threshold relates to the water status itself and does not require the water body to shift from one quality status to a lower one as defined in the Water Directive.[33] Furthermore, the ELD does not mandate that the significant damage must affect the entire water body; consistently with the PPP and the precautionary principle, it suffices that a significant part of it is impacted to establish reparative obligations.[34] For example, damage significantly affecting part of a river stream or a section of a lake is relevant under the ELD, without waiting for such damage to expand and affect the entire water body, a solution in conflict with the precautionary principle.

Protection of Land. In the absence of a specific directive for soil protection within the EU framework, the ELD plays a pivotal role in addressing land contamination, albeit with a narrower scope compared to biodiversity and water protection. The ELD defines damage to land as "any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms".[35] This third aspect of environmental damage differs from the previous two because the focus is specifically on preventing significant risks to human health caused by contamination, rather than addressing the intrinsic value of the land itself. It is debated if relevant damage may arise indirectly from the consumption or the use of agricultural or industrial products coming from contaminated land.[36]

[31] K. Salès, S. Mudgal, V. Fogleman, *Study on ELD Effectiveness: Scope and Exceptions, Final Report*, Brussels, 2014, p 82.

[32] Ibid, pp. 73-74.

[33] N. de Sadeleer, "La directive 2004/35 sur la responsabilité environnementale : avancée ou recul pour le droit de l'environnement des Etats membres", in G. Viney, B. Dubuisson (eds), *Les responsabilités environnementales dans l'espace européen*, Brussels, 2006, pp. 731-777.

[34] S. Mudgal et al. *Implementation challenges and obstacles of the Environmental Liability Directive*, Brussels, 2013, p. 100.

[35] Article 2, para. 1, lett. (c), ELD.

[36] See V. Fogleman, "The concept of damage (soil, water, biodiversity)", paper pre-

Furthermore, unlike the well-coordinated frameworks for biodiversity and water, the coordination of damage to lands with other EU legislative pieces is not detailed, making assessments more complex. It is arguable that the ELD applies without prejudice to more stringent provisions of Union legislation,[37] consistent with its relationship to national legislation as outlined in Article 16 of the ELD. These considerations are particularly relevant in light of the Directive on Soil Monitoring and Resilience.[38] This autonomous regime for soil protection requires careful coordination with the ELD to ensure coherence and complementarity between the two frameworks.

2.3. *Remediation obligations*

When the environmental damage has occurred, the ELD imposes primary obligations upon the operator to act, which entail informing without delay the competent authority of all relevant aspects of the situation and taking preventive and remedial actions.[39] We now turn to the latter actions, while preventive measures are discussed later in this section.

The rules for remediating damage to biodiversity and water differ from those for addressing land damage.[40] Regarding the former, Annex II ELD requires that remediation of environmental damage "is achieved through the restoration of the environment to its baseline condition by

sented at the Workshop on Environmental Liability and Environmental Crime, Brussels, 2014, available at www.efface.eu.

[37] L. BERGKAMP, A. VAN BERGEIJK, "Scope of the ELD regime", in L. BERGKAMP, B.J. GOLDSMITH (eds), *The EU Environmental Liability Directive. A commentary*, Oxford, 2013, p. 74 ff.

[38] Directive (EU) 2025/2360 of the European Parliament and of the Council of 12 November 2025 on soil monitoring and resilience, OJ L 2025/2360 of 26 November 2025.

[39] Articles 6 and 7 ELD. *Ex* Article 6 ELD, remedial measures imply (a) all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and (b) the necessary remedial measures, in accordance with Article 7. Article 8 imposes secondary duties to bear the costs "for the preventive and remedial actions taken pursuant to this Directive", unless exceptions listed therein apply.

[40] See broadly B. VAN DEN BROEK, "Environmental liability and nature protection areas: Will the EU Environmental Liability Directive actually lead to the restoration of damaged natural resources?", in *Utrecht Law Review*, 1/2009, p. 117 ff.

way of primary, complementary and compensatory remediation". The ELD uses the word restoration tied with the concept of a baseline condition, which refers to the state that would have existed if the damage had not occurred. Therefore, under the ELD the duty to remediate through restoration implies an effort to achieve an *ex-ante* condition, i.e. the physical reinstatement of the baseline condition. This outcome might be achieved either through the direct replacement of the damaged natural resources with identical ones or, where appropriate, by introducing equivalent or similar natural components. If restoration efforts at the affected site are insufficient to achieve the baseline condition, additional complementary measures may be implemented elsewhere, such as at an adjacent site. These measures mitigate the overall ecological impact and ensure that the polluter remains accountable for the environmental costs of their actions. In any case, the scale of the remedial measures must be determined to compensate for interim losses of functions and services covering the period needed to fully restore biodiversity or water status.

More in detail, Article 7(1) ELD requires the operator to identify the potential remedial measures on a case-by-case basis, with the competent authority taking the final decision as to which remedial measure should be implemented (Article 7(2)). Annex II of the ELD provides a framework of duties and criteria to follow when selecting these measures. Particularly, it identifies three categories of remedial actions applicable to environmental damage or imminent threats to water, protected species, or natural habitats: primary remediation, complementary remediation, and compensatory remediation.[41]

Primary remediation is any remedial measure which returns the damaged natural resources and/or impaired services to, or towards, baseline condition.[42] These measures include immediate remedial actions, such as cleaning up, to halt the incident and mitigate further damage as well as medium to long-term remedial actions with the goal of restoring the environment to its baseline condition. This process is often described as

[41] See Department for Environment, Food and Rural Affairs (Defra), *The Environmental Damage (Prevention and Remediation) Regulations 2009: Guidance for England and Wales*, 2nd Update, 2009, available at https://assets.publishing.service.gov.uk/media/5a7c0031e5274a7202e18ec3/pb13895-indepth-guide-regs09.pdf, particularly from p. 73 for definitions of primary, complementary and compensatory remediation.

[42] Annex II, para. 1, lett. (a) ELD.

'restoration in kind' and aims to return the environment to the condition it would have been in if the damage or threat had not occurred.[43]

Complementary remediation is any remedial measure taken in relation to natural resources and/or services to compensate for the fact that primary remediation does not fully restore the damaged natural resources and/or services.[44] It does not substitute primary remediation but contributes to enhance its overall effectiveness in restoring the natural resource services to a level equivalent to that prior to the damage.

Compensatory remediation integrates primary and complementary remediation. It is defined as any action taken to compensate for interim losses of natural resources and/or services that occur from the date on which the damage occurred until primary remediation has achieved its full effect.[45] The key concept here is 'interim loss', which refers to the temporary inability of damaged natural resources to provide their ecological functions or services during the period needed for primary and complementary remediation processes.[46] Compensatory remediation thus addresses the estimated ecological losses incurred during the timeframe from the beginning of primary remediation process to its conclusion.[47] Incidentally, these compensatory measures should not be confused with those set forth under the Habitats Directive as a condition for the State to legitimately approve a project that affects the integrity of a Natura 2000 site.[48] Despite the common objective, i.e. compensating different habitats similar to those impacted so as to ensure the overall ecological balance, their background is different. Under the ELD, compensatory measures are linked to unlawful activities, whereas under the Habitat Directive they refer to authorised projects.

Finally, regarding damage to soil, Annex II of ELD outlines a distinct and less detailed remedial regime, establishing that measures must be

[43] B. Pozzo, "Environmental Liability: The Difficulty of Harmonizing Different National Civil Liability Systems" in M. Peeters, M. Eliantonio (eds.), *Research Handbook on EU Environmental Law*, Cheltenham, 2020, p. 231 ff.

[44] Annex II, para. 1, lett. (b) ELD.

[45] Ibid, lett. (c).

[46] Ibid, lett. (d).

[47] As such, it does not cover any financial compensation to the public, as specified in Annex II, para. 1, ELD.

[48] Article 6(4) Habitat Directive.

taken to ensure, as a minimum, that relevant contaminants are removed, controlled, contained, or diminished.[49] This difference reflects the different focus of soil remediation, on human health rather than on the soil status per se. As such, the goal of remediation is not to return the damaged soil to a baseline condition, but rather to ensure that the contaminated land no longer poses a significant risk of adversely affecting human health.[50] This requires targeted remediation efforts to either eliminate or substantially reduce the risk posed by contaminants, thus ensuring that the soil is safe for its intended use.

2.4. *Gaps in the enforcement of ELD remediation obligations*

Article 4 of the ELD establishes exceptions to its liability regime. These exceptions include cases where the damage is caused by third parties, or by a natural phenomenon of an exceptional, inevitable and irresistible character. Additionally, the ELD allows MSs to establish defences in favour of the operator, shielding it from strict liability. For instance, MSs could adopt a permit defence, which could derogate from the polluter pays principle when the polluter can prove that the relevant damage occurred as an outcome of activities explicitly authorized and fully compliant with the permit.[51]

Beside these exceptions, a point to be stressed is the role that the public authority plays under the ELD to ensure the remediation of environmental damage. Articles 5(4)[52] and 6(3)[53] ELD impose an obligation upon the public authority to require that preventive as well as remedial measures are taken by the operator, as the term *shall* makes clear. However, the relevant question here is whether the public authority is also obliged to take preventing or remedial measures itself when the operator fails to comply with its legal obligations. The previously mentioned Articles suggest that in these cases, the public authority is entitled to, i.e.

[49] Annex II, para. 2, ELD.

[50] Ibid.

[51] Bergkamp, van Bergeijk, *op. cit.*, p 89 ff.

[52] The first sentence of this Article states "The competent authority shall require that the preventive measures are taken by the operator."

[53] The first sentence of this Article states "The competent authority shall require that the remedial measures are taken by the operator."

has the power, but is not obliged to substitute for the polluter.[54] This interpretation is supported by several scholars.[55] A further indirect support for this this interpretation could be inferred from the the possibility for legal and natural persons to challenge the discretionary decision of the public authority not to remediate, as laid down in Articles 12 and 13 ELD on access to justice.

This raises the risk that the environmental damage will remain untreated, when the public administration fails to make the operator pay, and at the same time refuses to take adequate actions due to contingencies such as budget restrictions and the difficulty of recovering costs from non-complying operators.[56]

2.5. *Preventive actions*

A last key point to address concerns the regime of preventive actions, to which we now turn, with a view to bridge this section with the next one on the preventive function of the Environmental Crime Directive. Under Article 5 ELD, operators have the duty to carry out preventive measures if their activities cause an "imminent threat" of environmental damage, defined as "a sufficient likelihood that environmental damage will occur in the near future."[57] This obligation is supported by further obligations on MSs to ensure that the operator informs the competent authority, as soon as possible, by disclosing relevant information regarding the threat.[58] The preventive measures that the operator must carry out in such a case are defined as "any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing and minimizing that damage."[59]

[54] This interpretation seems to be supported by the use of *may*, instead of *shall*, in the wording of Articles 5(4) and 6(3) ELD, second sentence.

[55] WINTER et al, *op. cit.*, p. 164; POZZO, *op. cit.*, p. 11 ff; DE SADELEER, *op. cit.*, p. 768 ff.; M. BALLESTEROS et al., *Experience gained in the application of the ELD biodiversity damage, Final Report (2014) for the European Commission*, Brussels, 2014, 92-93.

[56] WINTER et al, *op. cit.*, p. 174.

[57] Article 2, para. 9 ELD.

[58] Article 5, para. 2, ELD.

[59] Ibid, para. 10.

The duty to prevent environmental damage under the ELD is significantly different from the duty to remediate it in at least two respects. Firstly, it does not require the threshold of severity to be met that applies to damages to biodiversity and water. The logic of preventive duties is precisely that of preventing the damage from becoming *significant*. Secondly, the permit defence does not apply to preventive measures content-wise. Again, the logic of granting a permit is precisely that of reducing the risk of damages by regulating risk activities, not to obstruct preventive actions when an imminent threat of damage is known.

Finally, as mentioned at the beginning of this Section, the ELD is primarily oriented to the enforcement of the PPP. While preventive actions are an expression of the preventive principle, they also align with the PPP because the operator, not the public, bears the costs of these measures. In this sense, their adherence to the preventive principle could not be separated from their functionality to enforce the PPP.

With this in mind, we will now turn to the examination of key aspects of the ECD, coherently with the purposes of this analysis.

3. *The Environmental Crime Directive*

In addition to the ELD, the 2024 Directive on Environmental Crimes (ECD) constitutes the other main legal framework imposing liability-based duties to reinstate the damaged environment within the EU legal area. Adopted pursuant to Article 83(2) TFEU, the adoption of the first Environmental Crime Directive in 2008 represented a landmark and pioneering achievement in enhancing environmental protection,[60] aimed at harmonising the MSs' responses to major environmental threats that are severe enough to be labelled as criminal.[61]

[60] Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law [2008] OJ L 328/28.

[61] Article 83(2) TFEU justifies the EU intervention in criminal law based on the principle of effectiveness. This article states that: "If the approximation of criminal laws and regulations of the Member States proves essential to ensure the effective implementation of a Union policy in an area which has been subject to harmonisation measures (…)". Environmental crimes are not euro-crimes established un-

Despite its original intent, the 2008 ECD fell short of harmonising domestic regimes to effectively tackle environmental crimes, as evidenced by data on the ever-increasing scale of this criminal phenomenon.[62] Major shortcomings included a lack of coordination among enforcement agencies, insufficient data-sharing, the excessive complexity of the definitions environmental offences and an absence of detailed sanctions.[63] The new ECD aims to address these shortcomings,[64] by placing particular emphasis on enforcement-related aspects.[65]

Like the ELD, the ECD is grounded in the environmental principles laid down in Article 191(2) TFEU.[66] However, the criminal liabil-

der Article 83(1) TFEU, namely terrorism, trafficking in human beings and sexual exploitation, corruption, counterfeiting of means of payment, computer crime and organised crimes. In its judgment of 13 September, Case C-176/03, *Commission v Council (Environmental Crimes)*, para. 48, the ECJ concluded that, although criminal law and criminal procedure generally fall outside the EU's competence, the EU legislature may still adopt measures touching Member States' criminal law when this is necessary to ensure the full effectiveness of its environmental protection rules. For an overview of the problematic genesis of the ECD, see R. Pereira, *Environmental Criminal Liability and Enforcement in European and International Law*, Leiden, 2015, pp. 172-218.

[62] For an in-depth study of the European situation, see L. Colantoni, G.S. Sarno, M. Bianchi, *Fighting Environmental Crime in Europe. An Assessment of Trends, Players and Action*, Istituto Affari Internazionali/Ambitus, 2022, available at https://www.iai.it/it/pubblicazioni/c09/fighting-environmental-crime-europe-assessment-trends-players-and-action.

[63] For a synthesis of the faults in the 2008 ECD's legal architecture see C. Gerstetter et al, *Environmental Crimes and the EU: Synthesis of the Research Project 'European Union Action to Fight Environmental Crime*, 2016, available at https://efface.eu/sites/default/files/publications/EFFACE_synthesisreportfinal_online/index.pdf.

[64] For the full evaluation, see Commission Staff Working Document, 'Evaluation of the Directive 2008/99/EC on the protection of the environment through criminal law' SWD (2020) 259 final of 28 October 2020.

[65] M. Faure, M. Lu, "European Environmental Criminal Law and Enforcement" in S.L. Smith, I. Sahramäki (eds), *Research Handbook on Environmental Crimes and Criminal Enforcement*, Cheltenham, 2024, p. 324 ff.

[66] This novel regime, grounded on Article 83(2) TFEU, has revitalised doctrinal debate on the justification of the EU powers in the criminal law sector. See J. Öberg, V. Mitsilegas, K. Caunes, "European Integration in Context: Questioning the Normative Foundations of European Criminal Law; In This Issue", in *European Law Journal*, 2021, p. 350 ff.; J. Öberg, "Normative Justifications of EU Criminal Law: European Public Goods and Transnational Interests", in *European Law Journal*, 2021, pp. 408 ff.

ity regime introduced by the ECD follows its own logics and purposes that may diverge from the administrative liability regime under the ELD, despite their shared goal of enhancing environmental quality.

While the ELD aligns closely with the polluter pays principle, the ECD is primarily concerned with the prevention of environmental damage through criminal punishment. The European Commission justified the need for a criminal liability regime on the basis of the deterrent capacity of criminal law, as well as on its communicative function -conveying the message to society that criminal harm to the environment is wrong- and on the broader criminal law procedural tools giving law enforcement agencies more pervasive investigative powers.[67] That said, the polluter pays principle is also relevant to justify environmental criminal liability. Specifically, the criminal regime introduced in 2008 followed the economic rationale of the ELD, by seeking the harmonisation of domestic punitive regimes within the EU. Without such harmonisation, committing environmental detrimental crimes in certain EU regions would be more economically advantageous than in others, leading to market distortion. However, and at the same time, the 2008 ECD also represented an evolution of the remedial function embedded in the PPP as codified by the ELD. It conveyed the message that *environmental crime does not pay*, i.e. that in the EU space there is no room for illegal gains at the expense of the environment. Therefore, by introducing criminal liability certain activities are radically prohibited, regardless of the capacity of the polluter to remediate the resulting damage. This is a fundamental distinction from the ELD, which targets the legality of the damage, not of the conduct itself. Therefore, the criminal liability regime extends the scope of the polluter pays beyond the mere economic quantification of environmental damage and related remedial actions to be borne by the polluter, as stipulated under the ELD. From a criminal perspective, *pay* encompasses not only the cost of remediation but also punishment as well as the confiscation of illicit gains.[68]

The new 2024 ECD has inherited this connection between criminal liability and the PPP, framing it within a more mature framework of

[67] J. Öberg, G. Olav, "Criminal Sanctions in the Field of EU Environmental Law", in *New Journal of European Criminal Law*, 4/2011, pp. 402 ff.

[68] As recalled in Recital 49 ECD.

environmental protection, innovating both the quantity and quality of environmental offences, as well as the content of sanctions, which now explicitly introduces remedial obligations.[69]

With this in mind, we now turn to the scope of the ECD that informs its remedial obligations.

3.1. *The subjective scope*

Articles 3 and 6 of the ECD establish a criminal liability regime that applies to both natural and legal persons. For legal persons, the ECD refers to entities recognised as such under applicable national laws, such as corporations. However, States, public bodies exercising state authority, and international organisations are excluded from this definition. As may be evident, the subjective scope of the ECD is broader than that of the ELD that focuses strictly on operators as previously defined. Instead, the ECD extends also to include common citizens, members of criminal organizations, and, within corporations, directors, officers and employees. As such, it includes the operator as defined in the ELD, but it is not limited to it. However, although in principle anyone could be criminally liable, in practice most of the offences listed under Article 3 are tailored to economic activities, and thus to economic operators. This is consistent with the economic soul of the PPP. Notably, the criminalisation of legal persons is not new, having been established under the 2008 ECD. However, the updated regime is more pervasive and has greater potential to address serious corporate environmental offences, as will be discussed later.

The ECD distinguishes between the liability of natural and legal persons. Natural persons are subject to fault-based liability, since Article 3 requires the conduct to be carried out with at least serious negligence. Conversely, Article 6 establishes a strict liability regime for legal persons, for failing to prevent the perpetration of environmental crimes by their own personnel.

[69] For a detailed analysis of the new ECD, see M. Faure, "The EU Environmental Crime Directive 2024: A Revolution in EU Environmental Criminal Law?", in *Journal of Environmental Law*, 3/2024, pp. 323 ff.

3.2. *The material scope*

The ECD establishes a vast array of offences against the environment, including measures protect the wildlife and habitats, tackle deforestation, and ensure the effective enforcement of environmental legislation in fields such as chemicals and waste management.[70]

To fall within the scope of the ECD, such offences must meet two concurring criteria: they must be unlawful and must meet specific thresholds of severity.

Regarding the first criterion, the unlawfulness clause has traditionally served as the constitutive element of criminal liability in the environmental sector, reflecting the administrative dependence of environmental criminal law on administrative law.[71] The underlying assumption is that under our current paradigms of industrial production and consumption, some level of environmental degradation is nearly impossible to avoid; consequently, an absolute prohibition of any environmental impact would be *de facto* and *de jure* impossible to reconcile with most human development. The unlawfulness clause thus enshrines the balancing of competing needs left to administrative authorities and formalised through norms and standards laid down in administrative permits.[72] Conduct carried out consistently with such permits is, in principle, lawful. The new ECD maintains this requirement, stating that "For the purpose of this Directive, conduct shall be unlawful where it breaches: (a) Union law which contributes to pursuit of one of the objectives of the Union's

[70] Article 3(2) ECD. The 2024 ECD improves compliance with the *lex certa* principle compared to the 2008 ECD, by including an explicit list of offences directly within the body of the directive. This aspect is highlighted by G.M. Vagliasindi, "The Relationship between EU Criminal Law and Environmental Law", in V. Mitsilegas, M. Bergström, T. Quintel (eds), *Research Handbook on EU Criminal Law*, Cheltenham, 2024, p. 265 ff.

[71] A. di Landro, "Environmental Criminal Law Dependence on Administrative Law: Assessing the Opportunity for a Limited Number of Offences Being Autonomous from Administrative Law", in *LCEonline*, 1/2022, p. 29 ff. The concept of accessory nature was first coined in the German doctrine, see W. Winkelbauer, *Zur Verwaltungsakzessorietät des Umweltstrafrechts*, Berlin, 1985.

[72] A. Di Landro, "L'abusività della condotta nei reati ambientali. Questioni de iure condito e de iure condendo", in *Lexambiente*, 3/2023. For the idea of environmental law as compromise between competing needs, see S. Bernstein, *The Compromise of Liberal Environmentalism*, New York, 2001.

policy on the environment as set out in Article 191(1) TFEU; or (b) a law, regulation or administrative provision of a Member State, or a decision taken by a competent authority of a Member State, which gives effect to the Union law referred to in point (a)."[73] However, this requirement alone has proved insufficient for ensuring effective environmental protection, as evidenced by industrial contaminations across Europe even within authorization regimes.[74] The 2024 ECD seems to ackoweldge the limits of administrative dependence and introduces additional normative requirements to expand the scope of unlawfulness. It states that an operator's conduct "shall be unlawful even where it is carried out under an authorisation issued by a competent authority of a Member State if such authorisation was obtained fraudulently or by corruption, extortion or coercion, or *if such authorisation is in manifest breach of relevant substantive legal requirements* (emph. added)."[75] The formula "the relevant substantive legal requirements" appears to be the true element of novelty in this provision, as it extends unlawfulness beyond mere compliance with regulatory provisions in a permit. Transposing this into national law presents interpretative hurdles regarding the definition of 'relevant' and whether the conduct or the authorisation must conform to these external

[73] Art. 3(1) ECD.

[74] Consider, for example, the industrial contamination associated with the Ilva steel plant in Italy. Similarly, there is increasing public concern regarding the environmental and health impacts of 'forever chemicals' known as PFAS. These instances demonstrate the limitations of administrative permits in striking a fair balance between competing economic, societal, health, and ecological interests. This failure often stems from significant knowledge asymmetry between public authorities and corporations. Regarding PFAS, it has been established that the US company DuPont and its subsidiary Chemours – operating in the Netherlands – possessed direct knowledge of the chemicals' impacts as early as the 1970s, whereas public awareness is only now beginning to emerge. PFAS are also causing growing alarm in Italy, particularly in the Veneto Region. See M. Menegatto, A. Zamperini, "Contamination of Perfluoroalkyl Substances and Environmental Fight for Safe and Health: The MammeNoPfas Movement as Epistemic Community", in *Social Sciences*, 13/2024, p. 509 ff.; L. Bisschop, Y. Hendlin, "How Criminology Can Support Environmental Health: The Case of PFAS", in *Environmental Health*, 2025, p. 59 ff. From a broader perspective, critical green criminological studies have explored the permit regime within the frame of state-corporate crimes. See, e.g., P. Gottschalk, *Corporate Control of White-Collar Crime: A Bottom-Up Approach to Executive Deviance*, Berlin, 2022, p. 148.

[75] Art. 3(1) ECD.

standards. Scholars such as Daniel Bertram and Michael Faure highlight this vagueness and propose various interpretative solutions, involving EU environmental law, human and fundamental rights, duties of care, disclosure obligations and other legally protected values and principles that are of relevance to MSs.[76]

Regarding the second criterion, the ECD requires specific thresholds of severity. Particularly, conducts in scope constitute qualified criminal offences "if such conduct causes: (a) the destruction of, or widespread and substantial damage which is either irreversible or long-lasting to, an ecosystem of considerable size or environmental value or a habitat within a protected site, or (b) widespread and substantial damage which is either irreversible or long-lasting to the quality of air, soil or water."[77]

Arguably, this severity requirement strengthens the autonomy of criminal law from administrative dependence, reflecting the attempt to criminalise ecocidal conducts.[78] According to Faure and Bertram, this severity requirement can integrate the formula *manifest breach of relevant substantive legal requirements*, making conduct unlawful if it reaches these severe impact thresholds regardless of permit compliance.[79] This interpretative solution appears to be grounded when one considers that

[76] D. Bertram, M. Faure, "Beyond the Permit: Unpacking Unlawfulness in the EU's Revised Environmental Crime Directive" in *Journal of Environmental Law*, 2025, p. 1 ff.

[77] Art. 3(3) ECD.

[78] Although this provision does not use the word "ecocide" explicitly, the introduction of the qualified offence stemmed especially from pressure on the part of the Greens in the European Parliament having in mind the notion of ecocide. See M. Faure, "The Creation of an Autonomous Environmental Crime through the New EU Environmental Crime Directive", in *Eucrim*, 2/2024, p. 153 ff. The inclusion of Article 3(3) had been strongly lobbied for by the Stop Ecocide International before the EU institutions, a transnational activist group seeking to codify 'ecocide' in criminal laws across various jurisdictions. See the website of Stop Ecocide International at https://www.stopecocide.earth. For a deeper discussion on national and international efforts to criminalize ecocide, see D. Bertram, "Ecocide à la Bruxelloise", in *Verfassungsblog*, 9 March 2024; D. Bertram, "Towards an International Crime of Ecocide", in *TOAEP Policy Brief Series*, 2024 available at https://www.toaep.org/pbs-pdf/157-bertram/

[79] Bertram, Faure, *op. cit.*, p. 18 who quotes the Legislative Proposal 36.475 by Member of Parliament Lammert van Raan concerning the criminalisation of ecocide, available at https://www.eerstekamer.nl/wetsvoorstel/36475_initiatiefvoorstel_teunissen.

most of the offences listed under Article 3(2) already establish their own specific severity requirements. For instance, the first offence covers any form of environmental contamination "which causes or is likely to cause the death of, or serious injury to, any person or substantial damage to the quality of air, soil or water, or substantial damage to an ecosystem, animals or plants". Excluding that the EU legislator merely aimed at repeating itself, one can read the ECD as establishing a triple layer of qualification for a conduct to be criminally relevant, namely: 1) whether the conduct is lawful based on EU or domestic law; 2) whether the authorisation is lawful based on *manifest breach of relevant substantive legal requirements*; and, 3) whether the conduct in scope of the ECD meets its specific severity thresholds.

If this interpretation finds consensus during the transposition into domestic law, the ECD could signify a historic shift towards an autonomous environmental criminal law, where a polluter's liability can override state-granted authorisations when actual ecocidal damage materialises.

3.3. *Remediation obligations*

The 2024 ECD goes beyond requiring the traditional and generic formula of effective, proportionate and dissuasive penalties by introducing a complex toolbox approach to sanctioning, which includes reparative duties for both legal and natural persons.[80] In this aspect, the new ECD represents a significant improvement over the 2008 ECD.[81] By specifying the typology and the quantum of sanctions, the EU legislator attempts harmonisation in an area traditionally considered the exclusive prerogative of national legislatures.[82]

In this fashion, the ECD emphasises that effective environmental protection requires both ex-ante deterrent measures and ex-post reme-

[80] M. Faure, K. Svatikova, "Criminal or administrative law to protect the environment? Evidence from Western Europe", in *Journal of Environmental Law*, 2/2012, p. 253 ff.

[81] G.M. Vagliasindi, "The EU Environmental Crime Directive", in A. Farmer, M. Faure, G.M. Vagliasindi (eds), *Environmental Crime in Europe*, Portland, 2020, p. 15 ff.

[82] A. di Martino, "Inter-Legality and Criminal Law", in J. Klabbers, G. Palombella (eds), *The Challenge of Inter-legality*, Cambridge, 2019, p. 231 ff.

diation, consistently with the polluter pays principle.[83] Articles 5 and 7 ECD require MSs to adopt measures ensuring that offenders are subject to accessory criminal and non-criminal penalties, including reparative obligations. These obligations discriminate between reversible and irreversible damage. In the former case, offenders are required to restore the environment to its previous condition. In the latter event, when restoration is not possible or the offender is unable to carry out restoration, they must pay compensation for the environmental damage.[84]

The ECD lacks an authoritative interpretation of the term 'restoration', leaving MSs the flexibility to define required remedial obligations concretely. This flexibility is coherent with both the nature of the instrument – a directive – and the criminal law context, an area traditionally falling under domestic law. However, it risks causing interpretative uncertainty during transposition into domestic law. Adding to this uncertainty, the ECD remains vague regarding the extent to which the ELD can be used as a reference tool for implementing its remedial duties.

In its Recitals, the ECD offers some interpretative guidance indicating that its reparative obligations are without prejudice to the ELD, thus suggesting a potential interplay between the two.[85] The regime of mitigating circumstances laid down in Art. 9 ECD offers further guidance, stating that the restoration of the environment to its previous condition constitutes a mitigating circumstance, except when such restoration is already an obligation under the ELD.[86] From these provisions, it is ar-

[83] Recital 39 ECD states that "It is necessary that Member States consider introducing penalties or measures that are an alternative to imprisonment in order to contribute to the restoration of the environment." The importance of remedial actions for the PPP was remarked by M. FAURE, "Effective, Proportional and Dissuasive Penalties in the Implementation of the Environmental Crime and Ship source Pollution Directives: Questions and Challenges", in *European Energy and Environmental Law Review*, 2010, p. 256 ff.

[84] Articles 5 and 7 require effective, proportionate and dissuasive criminal penalties for natural persons (art. 5) and effective, proportionate and dissuasive criminal or non-criminal penalties for legal persons. Both articles require MSs to fulfil: "(a) an obligation to: (i) restore the environment within a given period, if the damage is reversible, or (ii) pay compensation for the damage to the environment, if the damage is irreversible or the offender is not in a capacity to carry out such restoration." (Art. 5, para. 2 (a), Art. 7 para. 2 lett. (a)).

[85] Recital 32 ECD.

[86] Art. 9, lett. (a) ECD. However, this provision seems using restoration and

guable that the two regimes remain independent, allowing a potential overlap of remedial obligations for polluters held both criminally and administratively liable for the same conduct.[87]

This interpretative solution aligns with the ECD's overall shift from criminal law being merely ancillary to administrative law toward a more autonomous role for criminal sanctions. This autonomy could also be inferred from numerous provisions that expand the scope of criminal liability beyond the ELD administrative regime. For instance, the ECD requires that relevant environmental damage meets a s*ubstantial* threshold, which appears less specific and thus potentially wider than the *significant* standard set under Annex I of the ELD.[88] Additionally, when addressing soil quality, the ECD is more encompassing than the ELD, as it does not necessarily link damage to human health issues. Likewise, the ECD explicitly includes air quality in its definition of environmental damage, marking a level of environmental protection that extends beyond the ELD.

The substantive autonomy of the ECD seems to be confirmed even when it makes direct reference to other legislative instruments. For instance, the ECD refers to biodiversity damage in a manner consistent with the ELD, as emerges from its Article 3, para. 3, which refers to ecosystem and habitats within protected sites. Moreover, Article 2 ECD clarifies that 'habitat within protected sites' are those habitats and species in areas classified as special protection areas and special areas of conservation under the Birds and Habitats Directives;[89] 'ecosystem' refers to a dynamic complex of plant, animal, fungi and microorganism commu-

remediation as alternative options. In more detail, article 9 states "the offender restores the environment to its previous condition, where such restoration is not an obligation under Directive 2004/35/EC, or, before the start of a criminal investigation, takes steps to minimise the impact and extent of the damage or remediates the damage".

[87] This could be the case of the broad hypothesis of offences established under Article 3(2), lett. (a) and (b) that offer an 'umbrella' protection to the environment, encompassing cases also covered under the ELD.

[88] Art. 3, para. 6 ECD clarifies that *substantial* is based on several indicators, including the baseline condition of the affected environment, whether the damage is long-lasting, medium-term, or short-term, its extent and its reversibility.

[89] Respectively, under Article 4(1) or (2) of Directive 2009/147/EC, and Article 4(2) and (4) of Directive 92/43/EEC.

nities and their non-living environment, interacting as a functional unit, and includes habitat types, habitats of species and species populations.[90] It is reasonable and consistent with the *lex certa* principle to borrow technical terminology from other instruments without compromising the autonomous use of criminal law.

However, while the autonomous approach of the ECD is a welcome development – allowing flexibility to tackle various factual circumstances beyond the strict remits of an administrative approach – it does not offer clear guidance for fulfilling the vague reference to restorative obligations. When transposing the ECD into domestic law, this could lead to potential overlap and confusion with existing remedial solutions. The Italian legal order illustrates this risk, as it is already characterised by several overlapping remedial solutions reflecting poorly coordinated layers of normative reforms.[91] Examples of such incoherence include the overlap of cleaning-up orders and restoration orders. Whereas the former orders serve as first measures to limit the contamination of a site,[92] the duties to 'restore' include the *restitutio in integrum* of contaminated sites consistently with the ELD.[93] The Italian criminal law code currently refers to this latter regime, ensuring coherence between criminal law and

[90] Article 2, lett. (c) ECD.

[91] See in this regard A. DI LANDRO, *La funzione ripristinatoria nel diritto penale ambientale. La bonifica ed il ripristino ambientale. Uno studio de iure condito e de iure condendo*, Turin, 2020.

[92] Article 240, §1, lett. (p), d.lgs. 3 April 2006, no. 152 (Norme in materia ambientale) defines clean-up orders as "the sum of interventions aimed at either eliminating the sources of pollution and the polluting substances or at reducing the concentration of polluting substances present in soil, undersoil and in groundwater to a level even or lower to the allowed risk threshold concentration".

[93] In addition to clean-up orders, Article 340 ff, Title II, sixth part of d.lgs.no. 152/2016, cit., foresees a more pervasive remedial regime aimed at the reinstatement of the damaged environment, stemming from the domestic transposition of the ELD. It establishes that "Restoration, including 'natural restoration', means: in the case of protected waters, species and habitats, the return of damaged natural resources or services to baseline conditions; in the case of land damage, the elimination of any risk of harmful effects on human health and environmental integrity. In any case, restoration must consist in the requalification of the site and its ecosystem, through any action or combination of actions, including mitigation or interim measures, aimed at repairing, restoring or, where it is deemed permissible by the competent authority, replacing damaged natural resources or services."

administrative liability-based remedial regime.[94] This interpretation was made possible under the traditional formula of 'effective, proportionate and dissuasive penalties' adopted under the 2008 regime. The national legislator will now face the challenge of transposing the more detailed 'restoration' requirements of the 2024 ECD, ensuring coordination among legal frameworks while fulfilling the crucial shift towards a more autonomous criminal protection of the environment.

4. *Conceptual differences between liability-based remediation and ecological restoration*

The ambiguous use of the term 'restoration' within liability-based remedial obligations for environmental damage can lead to potential interpretative uncertainty when confronted with nature restoration obligations under the NRR. This uncertainty is compounded by the fact that the Court of Justice of the European Union (CJEU) has not yet provided clarification.[95] However, as shown in the previous sections, there is little ambiguity regarding the qualitative differences between these categories of obligations. In broad terms, liability regimes embody the objective of protection and conservation, whilst ecological restoration enshrines the idea of improvement through recovery and restoration processes.[96] In more detail, the need for ecological restoration indicates that liability-based approaches may not suffice to halt biodiversity loss. This may stem from the narrow scope of certain provisions; for instance, offences related to illegal, unreported, or unregulated fishing (IUUF) are not within the scope of the ECD, despite their proven impacts on marine

[94] Article 452-duodecies, para. 2 of penal code. For a complete account of the Italian regulation of environmental reparation in criminal law, see A. DI LANDRO, "Bonifiche: il labirinto della legislazione ambientale dove le responsabilità penali 'si perdono'. Criticità e prospettiva della riparazione delle offese a un bene giuridico collettivo", in *Diritto penale contemporaneo*, 2014; DI LANDRO, *La funzione ripristinatoria nel diritto penale ambientale*, cit.

[95] See broadly MENDES et al, *op. cit.*

[96] See, for instance, ELD Article 2(4), which provides the definition of favourable conservation status in respect of a natural habitat as "the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species."

biodiversity.[97] Alternatively, it could be due to particularly high thresholds of significance,[98] which in practice might prove extremely hard to reach because historical data concerning natural fluctuations might not be available to public authorities,[99] above all for sites outside Natura 2000.[100]

From a principled perspective, principles such as preventing environmental damage and paying for the costs of environmental pollution play an important role in environmental protection, but a lesser one in addressing the threats to nature's health from human-derived activities, such as climate change. Instead, ecological principles, such as the principle of adaptive management and the principle of non-regression better fit the goal of improving ecosystem health. Crucially, the NRR is concerned with continuous improvement by imposing positive obligations to prevent habitat and ecosystem deterioration, ensuring the long-term maintenance or attainment of good condition.[101] Non-deterioration obligations differ from protective obligations since they do not focus on avoiding or neutralizing damaging factors but rather on taking active measures to prevent any loss of ecological health where restoration has already been achieved. In essence, they safeguard prior efforts by requiring the avoidance of regressions, even if these do not constitute unlawful damage.[102]

These distinctions underscore a fundamental difference between the NRR and liability-based regimes: Ecological restoration acknowledges

[97] European Court of Auditors, *Special Report: EU Action to Combat Illegal Fishing - Control Systems in Place but Weakened by Uneven Checks and Sanctions by Member States*, 2024.

[98] Annex I of the ELD provides a list of measurable data, making clear, inter alia, that "negative variations that are smaller than natural fluctuations regarded as normal for the species or habitat in question" do not amount to significant damage.

[99] Van den Broek, *op. cit.*, p. 121-123.

[100] Chris Backes et al., Reikwijdte van de richtlijn milieuaansprakelijkheid (2009) UU LAW Omgevingsrecht, 11-22. For data concerning Natura 2000, see MacAlister Elliott and Partners Ltd et al., Study on the valuation and restoration of damage to natural resources for the purpose of environmental liability (2001) pp. 8-9.

[101] See, for instance, NRR Recital 37 and Article 4(11) and (12). On these obligations, see contribution by A. Betti in this collection.

[102] Bente de Leeuw and Chris Backes, 'The Non-Deterioration Obligation in the Nature Restoration Regulation - a Necessary and Proportionate Addition to the Habitats Directive or a Monstrosity with Disastrous Consequences for Society?' (2024) 21 *Journal for European Environmental & Planning Law* 22.

past harms but focuses on the future. Continuous improvement and non-deterioration obligations reflect a forward-looking commitment over time to halt biodiversity degradation and ameliorate overall ecosystem welfare. Conversely, remediation is a retrospective concept that looks at past events causally linked to the damage in scope. While establishing a nexus between unlawful conduct and environmental damage is intrinsic to criminal and administrative liability regimes,[103] ecological restoration is not grounded on unlawfulness.

As a corollary, the principle of proportionality informs only remedial liability-based actions, requiring that the burden of remediation upon the polluter does not exceed the severity of the damage caused in the past. For example, under the ELD regime, competent authorities may decide not to impose further remedial actions on polluters if their costs are *disproportionate* to the environmental benefits to be obtained.[104] The CJEU confirms this point, ruling that Article 16 of the ELD grants Member States the power to maintain or adopt more stringent provisions in relation to the prevention and remedying of environmental damage, provided that they are consistent with the principle of proportionality.[105] Regarding the ECD, the proportionality principle is foundational for criminal law and is enshrined in the traditional formula that criminal penalties must be effective, dissuasive and, indeed, proportionate.[106] Additionally, the proportionality test is rooted in the market-based dimension of the polluter pays principle aimed at ensuring a level playing field among economic operators: polluters pay only to the extent of their illicit advantage. This dimension is common to both the ELD and ECD, both grounded on the PPP, but not the NRR, which is primarily informed by ecological principles.

A second corollary concerns costs. Under the NRR, restoration costs are primarily borne by the State,[107] whereas liability regimes place the burden on responsible parties, such as operators under the ELD or

[103] As stated e.g. in Article 5, para. 5 ELD.

[104] Annex II, Article 1.3.3, lett. (b) ELD.

[105] Case C-129/16, *Túrkevei*, ECLI:EU:C:2017:547, paras: 61 and 66. See also, by analogy, C-69/15, *Nutrivet,* EU:C:2016:425, paragraph 51 and the case-law cited.

[106] ECD Articles 5 and 7; Recitals no. 4, 33, 47, and 53.

[107] Although see the role of private finance in supporting national restoration plans. See, e.g. John Garvey and others, 'Designing financial instruments for land-based eco-

natural or legal persons under the ECD. While ecological restoration can be costly – particularly for complex ecosystems such as maritime environments –[108] these costs are framed as investments in future social and environmental welfare rather than as compensation for past harm.[109] Specifically, the NRR clearly states that the benefits associated with restoring degraded ecosystems "far outweigh the costs of restoration",[110] and the rules on national restoration plans pay scant consideration to cost-related issues.[111] In contrast, and consistent with the PPP, the ELD adopts a different approach. Its Annex II indicates the cost of remedial measures as one of the criteria to guide the operator's choice of proper remedial actions, which comprise primary, complementary, and compensatory measures.[112] As there is no hierarchy between these criteria,[113] the operator can opt for a cheaper remedial solution even if this proves less effective in reinstating the damaged environment to its baseline condition.[114] So framed, the provisions in Annex II appear to disincentivise the polluter from shouldering the full reinstatement of a damaged site when cheaper alternatives are available.[115]

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[108] See e.g. Wenting Chen and others, *D7.5: Social Cost and Benefits Analysis for Marine Restoration and the Policy Relevance: Case Studies from Europe* (MERCES Deliverable D7.5, revised January 2021) https://www.merces-project.eu/sites/default/files/MERCES%20D7.5%20revision_Jan2021.pdf accessed 25 March 2026.

[109] See particularly Section 6 of the European Commission, 'Commission Staff Working Document: Impact Assessment' SWD (2022) 167 final, supporting the European Commission, 'Proposal for a Regulation of the European Parliament and of the Council on nature restoration' COM (2022) 304 final.

[110] NRR, Recital 14.

[111] Article 14, para. 16 (c) is the only provision concerning national restoration plans mentioning the issue of costs in terms of potential factors States might consider when drafting their plans concerning the Union's outermost regions.

[112] ELD, Annex II, para. 1.3.1.

[113] Van den Broek, *op. cit.*, 127.

[114] According to Annex II Paragraph 1.3.2, equivalent natural resources and/or services could be provided elsewhere at lower cost.

[115] Van den Broek, *op. cit.*, p. 127.

5. *Future research path: potential normative convergences?*

Despite their differences, these regimes should be seen as synergistically oriented towards greater ecological prosperity. Restoration may initially require human-led measures to remove or halt the major stressors undermining ecosystem health; however, once ignited, natural recovery can prove more effective – even from an economic perspective – than human efforts in absorbing and eliminating contaminants.[116] This is the underlying aim of the restoration continuum which is particularly meaningful for addressing societal forms of environmental degradation, such as 'historical pollution' resulting from decades of repeated minor industrial contamination that produces cumulative damage over time.[117] Nature restoration programmes can contribute to the health of contaminated sites more effectively than traditional liability-based remedial options, which often face legal and procedural hurdles linked to the difficulty of ascertaining liability for such contamination.[118]

From a legal perspective, it is important to explore potential normative convergences that can foster synergies beyond differences. The recent adoption of the NRR and the ECD invites reflection in this direction.

A starting point is the regime of aggravating circumstances established under the ECD for offences affecting areas protected under the Birds and Habitats Directives.[119] The absence of a direct reference to the

[116] J. ROHR et al, "Transforming Ecosystems: When, Where, and How to Restore Contaminated Sites", in *Integrated Environmental Assessment and Management*, 2/2015, p. 273 ff.

[117] The prolonged contamination in Taranto caused by the Ilva steel plant provides a meaningful example of environmental damages resulting from decades of repeated and steady forms of contaminations. For an encompassing overview of this case, as well as of similar ones, see C. RUGA RIVA, "Il caso Ilva: avvelenamento e disastri dolosi", in L. FORLANI, D CASTRONUOVO (eds.), *Casi di diritto penale dell'economia. II. Impresa e sicurezza (Porto Marghera; Eternit; Ilva; ThyssenKrupp)*, Bologna 2015, p. 149 ff. This is also the case of the PFAS chemicals (see *supra* note 75) that cause documented detrimental impacts on ecosystem and human health due to their resistance to degradation. See the first Italian judicial case, Corte d'Assise di Vicenza, 26 June 2025 no. 1.

[118] N. DE SADELEER, "Case note. Preliminary reference on environmental liability and the polluter pays principle: Case C-534/13, Fipa", in *Review of European Comparative & International Environmental Law*, 2015, pp. 232-237. On historical pollution, see F. CENTONZE, S. MANACORDA (eds), *Historical Pollution: Comparative Legal Responses to Environmental Crimes*, Cham, 2017.

[119] Article 8, lett. (h) ECD: "The offence was committed within an area classified

NRR can be explained on chronological grounds, since at the time of the drafting and adoption of the ECD, the NRR was still under discussion. By adopting an expansive interpretation of this provision, it is arguably possible to include areas under restoration pursuant to the NRR within the scope of criminal liability protection.

A more groundbreaking interplay involves using criminal law to support the enforcement of the NRR. This refers particularly to the ECD's innovative approach to the 'unlawfulness' of conduct when it breaches Union law or domestic normative tools implementing Union law; or, when such conduct is carried out under an authorisation "*in manifest breach of relevant substantive legal requirements*". Is it possible to tie compliance with the NRR framework to this unlawfulness clause? Regarding the first hypothesis – Union law or domestic provisions implementing Union law- it is highly plausible that conduct in contrast with NRR obligations is unlawful under Art. 3(1), as this interpretation aligns directly with the letter of this provision. Importantly, assessing the unlawfulness of conduct per se does not amount to establishing the criminal liability of the polluter. Criminal liability cannot arise directly from the NRR (or other EU environmental law), as this would be inconsistent with long-standing CJEU case law holding that an EU non-criminal legislative instrument cannot be used to determine or aggravate criminal liability.[120] A more complex scenario arises when an operator might be held criminally liable because their authorisation is "*in manifest breach of relevant substantive legal requirements*". According to Bertram and Faure, there is no reason to exclude that EU environmental law can substantiate the 'relevant substantive legal requirements' formula, provided that the provisions transposed into national legislation are sufficiently clear, precise and knowable to the permit holder.[121] The NRR seems to meet these requirements, potentially allowing for the criminal liability of polluters who operate

as a special protection area pursuant to Article 4(1) or (2) of Directive 2009/147/EC, or a site designated as a special area of conservation in accordance with Article 4(4) of Directive 92/43/EEC or a site listed as a site of Community importance in accordance with Article 4(2) of Directive 92/43/EEC".

[120] CJEU, Judgment of 8 October 1987, Case 80/86, *Kolpinghuis Nijmegen*; Judgment of 16 June 2005, Case C-105/03, *Pupino*.

[121] Bertram, Faure, *op. cit*., who emphasise these requirements to ensure consistency with the criminal law *lex certa* and culpability principles.

consistently with a permit that nonetheless breaches NRR obligations.[122] If this interpretation is grounded, it could lead to significant normative convergences, such as using the ECD's unlawfulness clause to bolster the enforcement of non-deterioration obligations for areas under restoration set forth under Article 4, par. 11 of the NRR.[123]

6. *Conclusion*

This analysis began by detailing the scope of the two primary legislative instruments for environmental remediation, the Environmental Liability Directive and the updated 2024 Environmental Crime Directive. These regimes, which form the backbone of the EU liability framework for unlawful environmental damage, are fundamentally rooted in the 'polluter pays' principle; they aim to ensure that economic operators internalise the costs of environmental damage rather than transferring them to society. While the ELD functions primarily as an administrative tool for remediation, the ECD also provides a criminal deterrent to signal that environmental harm is morally and legally unacceptable. Both systems are characterised by a retrospective approach, as they require a clear causal link between past conduct and resulting damage to trigger legal obligations. The purpose of this exegetical exercise was to enable a granular examination of the interplay between liability regimes, specifically the potential shift towards an autonomous use of criminal sanctions embodied by the ECD. Although this shift addresses the need for more

[122] Particularly, conflicts could arise between permits and national restoration plans implementing the NRR obligations. This could be the case, for instance, of a permit that derogate from restoration obligations outside the determined hypotheses set forth under Art. 4, para. 14. and 5, para. 11 NRR.

[123] This provision states: "Member States shall put in place measures which shall aim to ensure that the areas that are subject to restoration measures in accordance with paragraphs 1, 4 and 7 show a continuous improvement in the condition of the habitat types listed in Annex I until good condition is reached, and a continuous improvement of the quality of the habitats of the species referred to in paragraph 7, until the sufficient quality of those habitats is reached. Without prejudice to Directive 92/43/EEC, Member States shall put in place measures which shall aim to ensure that areas in which good condition has been reached, and in which the sufficient quality of the habitats of the species has been reached, do not significantly deteriorate".

effective environmental protection against the most severe forms of environmental damage, it also introduces interpretative uncertainty regarding the domestic transposition of criminal remedial obligations and their coherence with administrative remedies under the ELD. Furthermore, describing the liability framework allowed for an emphasis on the conceptual differences with ecological restoration, as recently introduced by the EU Nature Restoration Regulation. This latter instrument does not require proof of unlawfulness or a specific culprit to initiate action; instead, it focuses on the continuous improvement of ecosystems and the prevention of regression. The final substantive section stressed the need to view these instruments synergistically despite their differences, in line with the concept of the 'restoration continuum', where remediation and restoration work together to address past harms and actively ensure the long-term health of nature. This section, therefore, proposed research avenues concerning normative convergences between these instruments, particularly the recent ECD and the NRR, both adopted under the aegis of the European Green Deal. Following these legislative reforms, the impression is that the EU endorses the idea that future environmental well-being lies in the growing synergy between liability regimes and forward-looking ecological restoration. Exploring how to make these legal systems work symbiotically represents the challenge for the years ahead, upon which the possibility of effectively delivering the long-term health of nature depends.

ABSTRACT

European Green Deal – Restoration continuum
EU environmental liability – Environmental Liability Directive
Environmental Crime Directive – Environmental remediation
Unlawfulness clause – Ecological restoration
Non-deterioration obligations

This contribution examines the role of environmental remediation within the EU's evolving framework for environmental protection, focusing on the liability-based regimes governing unlawful environmental damage. Against the background of the European Green Deal and the Nature Restoration Regulation, it offers interpretative guidance on the legal distinction between environmental remediation and ecological restoration, two notions that often overlap in EU law without sufficient conceptual clarity. To this end, the analysis considers the administrative liability model established by the Environmental Liability Directive and the criminal law framework as revised by the 2024 Environmental Crime Directive, highlighting their key features and mutual interactions. It then contrasts these retrospective liability regimes, grounded in unlawfulness, causation and the identification of responsible actors, with the more forward-looking logic of ecological restoration, which is oriented towards ecosystem improvement and non-regression. In doing so, the article argues that remediation and restoration should not be conflated, but neither should they be treated as isolated legal projects. Rather, they should be understood as complementary objectives within a broader restoration continuum, opening future research paths on their possible normative convergence.

Franco Sicuro*

THE NATURE RESTORATION REGULATION AS A PARAMETER OF RENEWED PLANNING RATIONALITY

Sommario: 1. The Nature Restoration Regulation and the Constitutional Duty to Protect the Environment. – 2. The Contested "Nature" of the Nature Restoration Regulation. – 2.1. The Nature Restoration Regulation between Restoration Measures and Possible Derogations. – 2.1.1. Rewetting Obligations and Property Status. – 2.2. The (Limited) Restoration Measures for Urban Ecosystems. – 2.3. The Complex Coordination with National Defence Sites and Renewable Energy Production Areas – 3. National Restoration Plans and Monitoring Systems. – 4. The Nature Restoration Regulation as a Parameter for the Implementation of the Fundamental Principle of Environmental Protection. – 4.1. Enhancing the "Social Function" of Property through the Public Function of Planning. – 5. The Difficult Environmental Reorientation of the Economic Constitution. – 6. The Nature Restoration Regulation as an Instrument for Implementing the Constitutional Mandate to Protect the Environment.

1. *The European Nature Restoration Regulation and the Constitutional Duty to Protect the Environment*

The Nature Restoration Regulation (EU) 2024/1991[1] (NRR) constitutes the principal instrument for implementing the *EU Biodiversity*

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[1] 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, OJ L 2024/1991 of 29 July 2024.

Strategy for 2030[2] and is an essential component of the *European Green Deal*,[3] the most ambitious plan of socio-economic transformation ever undertaken at the European level.[4]

The urgency of protecting, conserving and enhancing the Union's natural capital, and of protecting the health and well-being of citizens from environmental-related risks and impacts,[5] has prompted the European Union to adopt a Regulation[6] in order to render binding the objectives of restoring degraded ecosystems through national restoration plans.[7] This Regulation "does not represent an absolute novelty in the history of European Union (EU) law", but "it is a development potentially capable of changing the legal apparatus of the EU, at both the conceptual and instrumental levels."[8]

[2] 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 Bringing nature back into our lives, COM(2020) 380 final of 20 May 2020.

[3] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM(2019) 640 final of 11 December 2019.

[4] In fact, the European Green Deal "is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use" (Commission COM(2019) 640 final, cit.). See, *inter alia*, D. Bevilacqua, E. Chiti, *Green Deal. Come costruire una nuova Europa*, Bologna, 2024.

[5] In this way, European Union aims to demonstrate its "global leadership in addressing ongoing environmental crisis." See, D. Hering et al., *Securing success for the Nature Restoration Law*, 382 (2023) *Science* 1248, p. 1248.

[6] This aspect is highlighted by M. Ferrara, *A prima lettura del regolamento UE sul ripristino della natura* (Reg. UE 2024/1991), in *Federalismi.it*, no. 24/2024, pp. 115-116.

[7] Accordingly, as noted by D. Bevilacqua, *Regolamento sul ripristino della natura*, in *RGA online*, no. 56, September 2024, p. 2, "also in this field (…) the effectiveness of European Green Deal policies ultimately depends on what Member States will do."

[8] E. Chiti, *Ecosystem restoration and EU Law: an introduction to the symposium*, in *European Law Open*, 3/2024, p. 176, who observes that the Nature Restoration Regulation "brings with itself the promise of a new understanding of the relationship between human beings and the multitude of ecosystems which we now name 'nature', well beyond the rationale of environmental law as social regulation consolidated since the 1980s. Moreover, it poses a number of uneasy regulatory issues, ranging from the

The Nature Restoration Regulation appears as "the most ambitious attempt to legislate for nature restoration to date"[9] and is embedded in a broader international legal framework aimed at implementing the *Sustainable Development Goals* of the United Nations' 2030 Agenda.[10] With the aim of setting an overarching objective for ecosystem restoration to foster economic and societal transformation, "EU Nature Conservation Law needs to introduce a holistic approach and broaden the natural world beyond the limited Annexes of the Wild Birds and Habitats Directives, in line with the principle of adaptive management."[11]

Such an objective presupposes a relativisation of human interests and a renewal of the "anthropological perspective" through which humanity relates to "nature".[12] From this ecological approach[13] innovative

difficulties to properly translate ecological proposition into legal rules and practices, particularly in a legal order which is overall committed to growth through economic freedoms, to the need envisage effective and sound implementing arrangements."

[9] E. Lees, O.W. Pedersen, *Restoring the Regulated: The EU's Nature Restoration Law*, in *Journal of Environmental Law*, 1/2025, p. 75.

[10] Primarily, with regard to objectives 14.2, 15.1, 15.2, and 15.3. On this aspect, relating to the anthropocentric or ecological approach to environmental issues, see S. Adelman, *The sustainable development goals, anthropocentrism and neoliberalism*, in D. French, L. Kotzé (eds.), *Sustainable Development Global Goals: Law, Theory and Implementation*, Cheltenham, 2018, pp. 15-40.

[11] N. Hoek, *A Critical Analysis of the Proposed EU Regulation on Nature Restoration: Have the Problems Been Resolved?*, in *European Energy and Environmental Law Review*, 2022, p. 323. With regard to the complex relationship between Nature Restoration Regulation and the Habitats Directive, see B.J. de Leeuw, C.W. Backes, *The Non-Deterioration Obligation in the Nature Restoration Regulation - a Necessary and Proportionate Addition to the Habitats Directive or a Monstrosity with Disastrous Consequences for Society?*, in *Journal for European Environmental & Planning Law*, 2024, pp. 22-26.

[12] In this regard, F. Viola, *Stato e natura*, Milano, 1995, p. 10, who emphasizes that "we can reject anthropocentrism, but not the anthropological perspective", simply "because we are human beings and our way of thinking about nature is inevitably 'human'."

[13] On the ecological approach, see P. Taylor, *An Ecological Approach to International Law: Responding to the Challenges of Climate Change*, Abingdon, 2008; K. Bosselmann, *Shifting the legal paradigm: earth-centered law and governance*, in P. Magalhães, W. Steffen, K. Bosselmann, K. Aragão, V. Soromenho-Marques (eds.), *The Safe Operating Space Treatry: A New Approach to Managing Our Use of the Earth System*, Newcastle upon Tyne, pp. 64-82; K. Bosselmann, P. Taylor (eds.), *Ecological Approaches to Environmental Law*, Cheltenham, 2017; D.R. Boyd, *The Rights of Nature: A Legal*

models of socio-ecological coexistence seem to emerge, ones that are capable of enhancing human creativity and intergenerational responsibility in the manifold forms of interaction with the surrounding environment.[14] This is the path through which it becomes possible to re-establish an "uninterrupted evolutionary *continuum*" between society and "natural history", understood as a "cumulative evolution towards ever different, increasingly differentiated and complex forms and relationships".[15]

The Nature Restoration Regulation does not explicitly articulate such an ecological-social perspective. It nevertheless appears to presuppose it, insofar as the renewed awareness[16] of the (socio-)environmental effects of land-use transformations is translated into a new normative model of intervention on natural factors structuring the "biotic community".[17] This is a community of which the human person is part, and which pro-

Revolution that Could Save the World, Toronto, 2017; J. Pickering, *Ecological reflexivity: characterising an elusive virtue for governance in the Anthropocene*, in *Environ. Pol.*, 2018, pp. 1-22; M. Davies, *EcoLaw: Legality, Life, and the Normativity of Nature*, Routledge, 2022.

[14] A call to juridicize "ecosystemic relationships" by complementing "the law of human relations with a new branch of the law of ecosystemic relations, having as its *Grundnorm* the protection of the planet's ecological integrity" comes from S. Bagni, *Dal diritto ambientale al diritto delle relazioni ecosistemiche*, in *Ircocervo*, 1/2025, pp. 45-47.

[15] M. Bookchin, *Per una società ecologica*, Milano, 2021, pp. 32-33. "As long as society is not restored to an undivided humanity capable of employing its collective wisdom, its cultural achievements, its technological innovations, its scientific knowledge, and its innate creativity for its own benefit and that of the natural world", concludes Bookchin, "all ecological problems will continue to have their roots in social problems" (p. 34). In a similar vein, M. Cecchetti, *Principi costituzionali per la tutela dell'ambiente*, Milano, 2000, 50, argues that law entails "a sort of necessary anthropocentrism, since, as a social science, it concerns itself with humans and therefore cannot fail to consider the environment except solely in relation to human beings and their behavior."

[16] Reflecting on the concept of the "Anthropocene", R. Bifulco, *Ambiente e cambiamento climatico nella Costituzione italiana*, in *Rivista AIC*, 3/2023, p. 133, emphasized that it is "now widely recognized that a modification of the planet's natural conditions is underway which, even if it does not immediately threaten human survival, gives little cause for optimism regarding the quality of life of future generations."

[17] According to the well-known definition provided by A. Leopold, *Almanacco di un mondo semplice*, Milano, 1997.

vides "ecosystem services"[18] indispensable for ensuring the quality of life of the citizen-worker.[19]

In this way, the implementation of the restoration measures established by the Nature Restoration Regulation requires the adoption of national plans capable of systematically integrating: the "rules" on the restoration of degraded ecosystems, functional to the long-term and sustained recovery of biodiverse and resilient ecosystems across the Member States' land and sea areas;[20] the Union's objective concerning climate change mitigation and adaptation; land degradation neutrality; and "food security" (Article 1(1) NRR)[21].

The Nature Restoration Regulation thus seeks to foster greater awareness of the "triple planetary crisis"[22] (climate change, biodiversity[23] and

[18] A complex notion, most recently specified in Directive (EU) 2025/2360 on soil monitoring and resilience: "the direct or indirect contributions of ecosystems to the environmental, economic, social, cultural, and other benefits that people derive from such ecosystems" (Article 3(2)).

[19] On a more general level, the need to adapt legal instruments to the emerging global challenge of safeguarding the biosphere has led some scholars to speak of an "*Earth System Law*", in an effort to trigger certain conceptual and normative changes required to eventually progress from international environmental law to a mature form of "*Earth System Law*." In this perspective, see L.J. Kotzé, R.E. Kim, *Earth system law: The juridical dimensions of earth system governance*, in *Earth System Governance*, 1(2019), p. 1 ff. On "*Earth System Governance*" see also F. Biermann, *'Earth System Governance' as a crosscutting theme of global change research*, in *Glob. Environ. Chang.*, 2007, pp. 326-337, and Id., *Earth System Governance: World Politics in the Anthropocene*, Cambridge, 2014.

[20] On the protection of sea areas, see Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy, OJ L 164 of 25 June 2008 (Marine Strategy Framework Directive).

[21] For a deeper analysis on the Nature Restoration Regulation and its possible impacts on the European legal systems, see R. Bifulco, *Il nuovo 'nomos della terra' europeo. Uno sguardo al regolamento UE sul ripristino della natura*, in *Diritto e clima*, no. 3/2025.

[22] The "triple planetary crisis" is highlighted by UNEP in its *Global Foresight Report on Planetary Health and Human Wellbeing*, published on 15 July 2024, available at: *https://wedocs.unep.org/items/6377804d-7311-45f0-8564-8965452e343a.*

[23] According to the definition provided by the Convention on Biological Diversity, signed in Rio de Janeiro on 5 June 1992 and ratified by Italy with Law no. 124 of 1994, "biological diversity" consists of the "*variability among living organisms of all origins, including, inter alia, terrestrial, marine, and other aquatic ecosystems, and the ecological*

ecosystem loss, and pollution and waste) caused by human activities,[24] promoting the development of restoration plans based on the "best available scientific evidence" (Article 14 NRR). It is, in fact, science[25] that carries forward a "new systemic vision of life" that cannot be reduced to Newtonian "laws of nature" but is instead organised into "living networks", within which "no organism can live in a state of complete isolation."[26]

After recalling the main and most innovative provisions of the Nature Restoration Regulation, the paper aims to emphasise the possible convergence, at the constitutional level (Articles 9, 11 and 117(1) of the Italian Constitution), between the content of the Nature Restoration Regulation and the systemic implications of the fundamental principle of environmental (and climate) protection enshrined in Article 9 of the Italian Constitution[27]. Since 2022 (Constitutional Law No. 1), the constitutional duty to protect environment must orient human activities – particularly

complexes of which they are part; this includes diversity within species and between species of ecosystems." Ontologically, humans must also be considered part of this biological diversity.

[24] On this aspect, see L. Rickards, *Metaphor and the Anthropocene: presenting humans as a geological force*, in *Geogr. Res.*, 2015, pp. 280-287. On the Anthropocene, see W. Steffen, P.J. Crutzen, J.R. McNeill, *The Anthropocene: are humans now overwhelming the great forces of nature?*, in *Ambio*, 2007, pp. 614-621.

[25] Under certain conditions, scientific evidence may serve as a useful criterion for determining the validity of a law. In this regard, see C. Casonato, *La scienza come parametro interposto di costituzionalità*, in *Rivista AIC*, 2/2016. On the relationship between science and politics in environmental matters see M. Cecchetti, *Diritto ambientale e conoscenze scientifiche tra valutazione del rischio e principio di precauzione*, in *Federalismi.it*, n. 24, 2022, pp. 20 et seq. The broader relationship between science and law has been extensively discussed in the literature. Among the many scholars who have addressed the topic, see at least L. Chieffi, *Ricerca scientifica e tutela della persona. Bioetica e garanzie costituzionali*, Napoli, 1993.

[26] F. Capra, P.L. Luisi, *Vita e natura. Una visione sistemica*, Sansepolcro, 2014.

[27] In fact, the new Article 9 of Italian Constitution should be understood as encompassing the duty to act in protection of climate balance. In this way, see R. Bifulco, *Ambiente e cambiamento climatico*, cit., p. 138, who emphasizes that, "although they cannot be directly identified (…), it is indisputable that there exists a relationship of the closest interdependence between environment and climate. (…) This implies that the climate – a particular climate – is decisive for the emergence of a specific environment, or more precisely, of a particular ecosystem."

economic ones (Article 41 of the Constitution[28]) – that transform the territory towards respect for the ecological equilibria within which human beings themselves are embedded (Article 9 of the Italian Constitution).

In this perspective the social dimension of climate and environmental issues emerges, with the necessity of incorporating the "best available scientific evidence" into transparent decision-making processes open to the dynamic contribution of environmental and scientific associations. This appears to be the only way to translate the "natural fact"[29] into political-normative data, subsequently historicised through the inter-constitutional interpretation carried out by jurisdictions.[30]

2. *The Contested "Nature" of the Nature Restoration Regulation*

The introduction of binding measures for the restoration of degraded ecosystems has encountered – also in Italy – strong opposition from sectoral interest groups, first and foremost those representing agriculture,[31] which are deeply entrenched within the political groups of the European Parliament and represented by several national governments (including

[28] According to D. Amirante, *Costituzionalismo ambientale. Atlante giuridico per l'Antropocene*, Bologna, 2022, p. 262, the amendment of Article 41 of the Italian Constitution clarifies "in a certain sense also the overall scope of the 2022 constitutional revision", allowing the Italian economic system to be "guided towards models based on the circular economy and the rationalization of energy demand" (pp. 261-262).

[29] For an interpretation of biodiversity as a "fact" external to the legal system, "which inevitably, one might say 'inexorably,' conditions its existence" and manifests "even in the form of human life", see M. Pierri, *La tutela della biodiversità come principio giuridico e limite extra-ordinamentale: presupposti linguistici ed etici e possibili conseguenze giuridiche*, in *Rivista Quadrimestrale di Diritto dell'Ambiente*, no. 1, 2025, p. 174 ff.

[30] On the technique of inter-constitutional interpretation, understood as a hermeneutic activity aimed at the optimal protection of fundamental rights and freedoms from the perspective of overcoming the limited national outlook, see A. Gusmai, *Il valore normativo dell'attività interpretativo-applicativa del giudice nello Stato (inter)costituzionale di diritto*, in *Rivista AIC*, no. 3, 2014.

[31] On this aspect, see A. Cliquet, A. Aragao, M. Mertens, H. Schoukens, K. Decleer, *The negotiation process of the EU Nature Restoration Law Proposals: bringing nature back in Europe against the backdrop of political turmoil?*, in *Restoration Ecology*, no. 5, 2024, p. 1 ff.

that of Italy) within the Council.[32] So as to not bring the already complex legislative process to a halt, the final text of the Nature Restoration Regulation therefore underwent a significant dilution of some of the most innovative provisions originally included in the draft submitted by the Commission in 2022.

This is evident, for example, in the voluntary nature of the rewetting of organic soils consisting in drained peatlands for farmers and landowners, as well as in the limited impact of the regulatory provisions concerning urban ecosystems, which are substantially detached from the quantitative targets (expressed in percentage terms) that instead apply across all other areas of intervention. Finally, mention should be made of the power conferred upon the Commission to temporarily suspend – up to a maximum of one year – the implementation of the Regulation in the event of "severe Union-wide consequences on the availability of land required to secure sufficient agricultural production for Union food consumption" (§ 88 NRR).

In any event, the final text of the Nature Restoration Regulation contributes to the incorporation into the EU legal order of scientific-normative elements capable of "regenerating", including from a biocentric perspective, a legal production that remains largely aligned with highly polluting productive interests.[33] It is precisely these elements that provide the most fertile ground for the reflections that follow.

2.1. *The Nature Restoration Regulation between Restoration Measures and Possible Derogations*

The objective of restoring "at least 20% of land areas and at least 20% of sea areas by 2030, and all ecosystems in need of restoration by 2050" (Article 1(2) NRR) is further specified in the two general provisions set out in Articles 4 and 5. The former concerns the restoration

[32] Like Hungary, Poland, the Netherlands, Finland, and Sweden, Italy cast a negative vote within the Council of the European Union against the adoption of the Nature Restoration Regulation, citing reasons that went well beyond mere formalities, particularly regarding the financing of restoration measures.

[33] See Regulation (EU) 2023/2418 of the European Parliament and of the Council of 18 October 2023 on establishing an instrument for the reinforcement of the European defence industry through common procurement (EDIRPA), OJ L of 26 October 2023.

of terrestrial, coastal and freshwater ecosystems; the latter addresses the restoration of marine ecosystems.

It is clear that the European legislator intends to act in defence of land and marine "habitat types" which are not in good condition through a proportional increase in the percentage of total surface area to be restored every ten years,[34] with priority given to Natura 2000 sites (Article 4(1); Article 5(1) NRR).[35]

At the same time, however, the Regulation allows Member States to introduce derogations from restoration measures in the presence of "very common and widespread habitats" covering more than 3% of their European territory (Article 4(2)), or where it is impossible fully to achieve the established objectives (Article 5(3)). In both cases, Member States are nonetheless required to indicate the compensatory measures envisaged for each significant deterioration and the additional area to be subject to restoration measures (Article 4(5); Article 5(3)).

The identification of the "most suitable areas for restoration measures" must be based on the "best available knowledge and the latest scientific evidence of the condition of habitat types" (Article 4(8)), as well as on the "latest technical and scientific progress in determining the condition of the habitat types" (Article 5(6)). This operation entails a more effective and transparent understanding of the network of ecosystem interaction (Article 4(9); Article 5(7)),[36] which is necessary in order

[34] At least 30% by 2030; at least 60% by 2040; at least 90% by 2050.

[35] The obligation of Member States to implement such restoration measures ceases only in certain, strictly defined circumstances provided for by the 2024 European Regulation itself. Specifically, outside Natura 2000 sites, restoration obligations do not apply in cases of *force majeure*, including natural disasters; unavoidable habitat transformations which are directly caused by climate change; a plan or project of overriding public interest for which no less damaging alternative solutions are available, to be determined on a case-by-case basis; actions or omissions by third countries for which the Member State concerned is not responsible (Art. 4(14); Art. 5(11)). Inside the Natura 2000 sites, however, the restoration measures shall not apply to deterioration caused by *force majeure*, including natural disasters; unavoidable habitat transformations which are directly caused by climate change; a plan or project authorized in accordance with the Article 6(4) of Directive 92/43/EEC (Art. 4(16); Art. 5(13).

[36] For this purpose, when drafting their national restoration plans, Member States may make use of existing monitoring and mapping reports and documents, such as those concerning the habitat types protected under the Habitat Directive (92/43/EEC) listed in Annex I of the Nature Restoration Regulation; data on marine ecosystems de-

to enhance ecological connectivity (Article 4(10)) and the ecological coherence of the adopted measures (Article 5(8)).[37]

In this way, the Regulation seeks to project – as faithfully as possible – ecological interactions into spatial and urban planning activities, thereby avoiding a misalignment between the interdependence and mutuality of natural ecosystems and the growth of human cities and activities. This rationale underpins the obligation to restore the natural connectivity of rivers and natural functions of related floodplains (Article 9), from which follows the duty incumbent upon Member States to remove artificial barriers that disrupt ecosystem networks.[38] In addition to setting the objective of increasing diversity of pollinator populations (Article 10(1)), the Regulation also requires Member States to implement measures aimed at enhancing biodiversity in forest[39] (Article 12) and agricultural ecosystems, "taking into account climate change, the social and economic needs of rural areas and the need to ensure the sustainable agricultural production in the Union" (Article 11(1)). The Nature Restoration Regulation further extends restoration objectives to both habitats and habitats of protected species located outside Natura 2000 sites, imposing – also

rived from the same Annex I and from other mappings carried out by EMODnet and the Copernicus Marine Service, as well as reports related to the implementation of the Marine Strategy Framework Directive (MSFD); inventories developed under the AMBER project for river barriers; monitoring systems for wild pollinators; EUROSTAT data providing the Farmland Bird Index and the Butterfly Index for grasslands; and the forest indicators voluntarily provided by Member States to Forest Europe. What is still missing, however, is a European monitoring system for organic carbon levels in soil.

[37] The interaction between law and ecology cannot be "a purely regulatory task. It is a wider and more profound issue, requiring reflection about the regulatory force of ecology, the prescriptive nature of many of its key propositions, the role played by law, which is not necessarily a purely instrumental one, and the ordering capacity of policy making. Any attempt to clarify the rationale of the EU ecological legislation should first of all structure and orientate the relationship between law and ecology." In this sense, E. Chiti, *Ecosystem restoration and EU Law*, cit. p. 178.

[38] Member States shall remove artificial barriers to the connectivity of surface waters, starting from obsolete ones, namely those that are no longer needed for renewable energy generation, inland navigation, water supply, flood protection or other use (art. 9(2)).

[39] On the loss of biodiversity causing by human activities in forests, see K. Bosselmann, *Losing the forest for the trees: environmental reductionism in the law*, in *Sustainability*, 2/2010, pp. 2424-2448.

in this case – restoration measures that are significantly more demanding than the already substantial duty of protection.[40]

In this respect, the Nature Restoration Regulation steers national spatial planning and thus contributes to the attribution of an environmental dimension to it, grounded in the social function (Article 42(2) Italian Constitution) of private property as shaped through public planning (Article 117 (3) Italian Constitution).[41]

2.1.1. Rewetting Obligations and Property Status

The Nature Restoration Regulation requires Member States to adopt measures for the restoration of drained peatlands. This provision directly concerns property rights, which enjoy strong protection at the European level and were a key compromise in the complex adoption process of Regulation (EU) 2024/1991. The issue is especially significant in relation to the potential reduction of productive agricultural land and the use of funding outside the framework of the common agricultural policy (CAP).[42]

[40] In this way, Article 11(2), of the Nature Restoration Regulation requires Member States to implement measures aimed to achieve an increasing trend at national level of at least two out of the three following indicators for agricultural ecosystems: *a)* grassland butterfly index; *b)* stock of organic carbon in cropland mineral soils; *c)* share of agricultural land with high-diversity landscape features. Specific measures are further provided regarding the national-level status of the Common Farmland Bird Index (Article 11(3)).

[41] The aim of "conferring full environmental dignity on the function of 'territorial governance' (currently, at the constitutional level, merely a 'sectoral' legislative competence)" is central to the work of A. Gusmai, *Il "governo del territorio". Premesse costituzionali allo studio dell'urbanistica*, Bari, 2024, especially pp. 358 et seq.

[42] As noted by D. Bevilacqua, *Regolamento sul ripristino*, cit., p. 3, among "the various elements that make up" the Green Deal – "industrial policy, circular economy, decarbonisation of strategic sectors, and social sustainability' – the component aimed at the protection of ecosystems displays a higher degree of intangibility and is grounded in an inevitably radical approach, one that posits the sustainability of ecosystems as such, irrespective of development-related considerations. This, in turn, has generated stronger resistance, which helps to explain both the difficulties encountered in the adoption of the new Regulation and its eventual approval only following a number of amendments (such as the removal of the target of reducing productive agricultural land by 10 per cent, the provision for the use of funding external to the Common Agricultural Policy (CAP), and the introduction of a reference to compliance with the principle of reciprocity for imported products)."

The rewetting of drained peatland under agricultural use may be reduced if it is likely to have "significant negative impacts on infrastructure, buildings, climate adaptation or other public interests and if such rewetting cannot take place on land other than agricultural land" (Article 14(4)). However, States' rewetting obligation does not imply an obligation for farmers and private landowners, for whom rewetting on agricultural land "remains voluntary, without prejudice to obligations stemming from national law" (Article 14(4)).

In this way, the implementation of the Nature Restoration Regulation must therefore be coordinated with measures adopted under the common agricultural policy[43] and the LIFE programme, both aimed at restoring biodiversity in agricultural land by 2030.[44] It is clear that the financing of highly polluting agricultural activities – no less than intensive fishing techniques[45] – may conflict with ecosystem restoration objectives, undermining biodiversity (pollinators being a paradigmatic example) and ultimately food security itself, which is threatened by the widespread use of pesticides and other pollutants associated with intensive agriculture and aquaculture activities.[46]

[43] 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 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.

[44] Indeed, the strategic plans of the common agricultural policy provide for potential funding mechanisms for activities aimed at the restoration and maintenance of hedgerows, tree lines, dry-stone walls, ditches, small wetlands, fallow land, and areas dedicated to the sowing of seed mixtures for pollinators. These actions are specifically intended to create suitable habitats for wildlife. In addition, there are further plan measures focused on financing activities for the restoration of peatlands, the creation of wet meadows, agroforestry systems, and the grassing of orchards.

[45] According to Regulation (EU) No. 1380/2013 of the European Parliament and of the Council, the common fisheries policy implements an ecosystem-based approach to fisheries management and seeks to ensure that aquaculture and fishing activities avoid the degradation of the marine environment (it should be recalled that the Union has exclusive competence in the conservation of marine biological resources).

[46] Not by chance, Vandana Shiva has identified biodiversity as "the quintessential indicator of sustainability." See, therefore, V. Shiva, *Campi di battaglia. Biodiversità e agricoltura industriale*, Milano, 2009, p. 28.

Measures previously adopted within the framework of the common agricultural policy[47] (and the common fisheries policy[48]) must therefore be interpreted in light of the restoration objectives subsequently laid down in the Nature Restoration Regulation. From this perspective, it may be argued that common agricultural and fisheries policies funds currently supporting highly polluting activities should be reallocated in favour of national restoration plans.[49] The restoration of degraded ecosystems indeed constitutes an indispensable condition for food security and citizens' well-being, both of which are compromised by activities that destroy carbon storage sites essential for counteracting anthropogenic climate change.[50]

[47] Launched in 1962, the EU's common agricultural policy (CAP) is a partnership between agriculture and society, and between Europe and its farmers. It aims to support them and improve agricultural productivity, ensuring a stable supply of affordable food, and safeguard European Union farmers to make a reasonable living. CAP help also tackle climate change and the sustainable management of natural resources, maintain rural areas and landscapes across the EU, and keep the rural economy alive by promoting in farming, agri-food industries and associated sectors. See Regulation (EU) No 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, OJ L 435 of 6 December 2021.

[48] See Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC, OJ L 354 of 28 December 2012.

[49] As noted in the *Recommendations for the Drafting of Ambitious National Nature Restoration Plans*, prepared by Gabrielle Aubert (Institute for European Environmental Policy), 2025, 31, and consulted in the translation provided by Lipu - BirdLife Italia, "there is considerable leeway to use the CAP and the CFP in support of restoration measures, rather than weakening them. Indeed, the agri-climatic-environmental measures under the CAP can be used to support the effective implementation of nature restoration measures and the recovery of pollinator populations, among other things. The CFP, through the EMFF, can enhance positive incentives for ecologically sustainable fishing measures that contribute to the restoration of marine habitats and species habitats. Both policies and their respective funds are indispensable for achieving the objectives of the National Restoration Plan (PNL)."

[50] As pointed out by M.E. Harris, *The normative values of the European Green Deal*, in *Eurojus*, no. 2/2024, p. 125, "Nature is not restored for nature's sake, in short,

The duty to preserve the natural carbon cycle – and thus the ecosystems that sustain it – can no longer be reduced to a merely programmatic political exhortation. Following the *KlimaSeniorinnen* judgment of the European Court of Human Rights, it has expressly become an interposed parameter of constitutionality under Article 117(1) of the Italian Constitution. In particular, the Strasbourg Court derived from Article 8 ECHR the existence of a "primary duty" of preventive action aimed at protecting future generations exposed to the effects of climate change,[51] outlining a duty of positive action of States. Degraded ecosystems and biodiversity would thus constitute a form of "inalienable" heritage, incapable of being assessed purely in economic terms and requiring protection from an intergenerational perspective. In this way, the stabilisation of the carbon cycle seems to acquire a normative dimension, compelling the law to "step back in the face of this disruptive force of nature, adapting to it and to its temporalities." The safety thresholds for alterations of the carbon cycle defined by Article 2 of the Paris Agreement would thus constitute an insurmountable limit to political discretion, unless one were prepared to overturn the so-called "remaining carbon budget", that is the "natural datum that ensures the integrity and richness of the heritage over time."[52]

but for our own." In line with this, L. Cassetti, *L'effettiva implementazione del Green Deal europeo e le aspettative sulla protezione della natura e degli ecosistemi al cospetto delle sfide globali su competitività e sicurezza*, in *Federalismi*.it, 13/2025, pp. 205-206, observes that "it is rather difficult to read any form of absolutization of nature's value into the provisions on the restoration of nature and ecosystems. Rather, these provisions clearly reflect a connection to a genuine 'insurance policy' designed to ensure the European Union's long-term sustainability and resilience, while simultaneously pursuing the primary objective of safeguarding environmental balances by restoring them when disrupted, in order to prevent future pandemics and epidemics (…)."

[51] On this aspect, see M. Carducci, *Il duplice "mandato" ambientale tra costituzionalizzazione della preservazione intergenerazionale, neminem laedere preventivo e fattore tempo. Una prima lettura della sentenza della Corte costituzionale n. 105 del 18 giugno 2024*, in *DPCE Online - Osservatorio sul costituzionalismo ambientale*, 25 June 2024, pp. 6-7.

[52] Thus, M. Carducci, *One Health, Planetary Health, Eco Health tra Costituzione italiana e dell'Ecuador*, in *Corti supreme e salute*, no. 3/2025, pp. 13-14, who concludes by noting that the residual "*Carbon Budget*" constitutes the concrete substance of One-Planetary-Eco Health. On the issue of the still absent quantification of the nation-

2.2. *The (Limited) Restoration Measures for Urban Ecosystems*

The European legislator has set the objective of halting the loss of urban green spaces and subsequently expanding them (Article 8(2)), with a view to protecting habitats capable of hosting both fauna coexisting with humans and migratory species, as well as slowing water runoff and mitigating summer temperatures.

These measures are scarcely capable of reducing the increasingly unsustainable ecological footprint of contemporary – particularly metropolitan – cities and are, in any event, far removed from the model of *Fitopolis* recently theorised by plant neurobiologist Stefano Mancuso:[53] cities conceived "as if they were plants", urban "organisms" that are diffused and integrated within the broader living community, capable of continuous regeneration in a "dynamic process of co-evolution" in which the circular and solidaristic rules governing ecosystems become the guiding parameters of urban planning activities.[54]

Nevertheless, the provisions of the Nature Restoration Regulation concerning urban ecosystems appear to highlight the duty of future urban planners to incorporate the ecological principles into the design of solidaristic and sustainable urban spaces. These principles, if adequately coordinated across different planning levels, are may allow for the construction of urban ecosystems not fragmented by the speculative logic of urban sprawl. This presupposes, however, a primary focus not on individual urban contexts, but on the broader environment within which human settlements and activities are embedded. Any discourse on the sustainability or restoration of urban ecosystems loses its meaning if applied solely at the level of individual cities. Its effectiveness must instead be assessed through a community-wide parameter, namely by consider-

al carbon budget, see S. Nespor, *Domande senza risposta: il National Carbon Budget*, in *RGA Online*, 1 October 2025.

[53] See S. Mancuso, *Fitopolis, la città vivente*, Roma-Bari, 2023.

[54] A utopian vision, that of *Fitopolis*, which, although hardly implementable through the planning mechanisms currently in force, helps to reveal – at least by contrast – the multiple contradictions permeating the planning processes of contemporary cities: processes that, ultimately, seem to have neglected the traditional implementative function of the *publica utilitas* originally entrusted to urban planning, thereby exposing urban communities to the increasingly deadly effects of anthropogenic climate change.

ing the degree of uniformity in the solutions adopted to address systemic problems such as wastewater management, solid waste production, air, soil and river pollution, equal access to essential goods and services, and the provision of urban green spaces.[55]

Indirectly connected to the objective of safeguarding urban ecosystems is Article 13, which provides for the planting of at least three billion additional trees by 2030 (Article 13(1)), with priority given to native tree species or, in very specific cases and conditions, "non-native species adapted to the local soil, climatic and ecological context and habitat conditions that play a role in fostering increased resilience to climate change" (Article 13(2)). These measures clearly seek "to increase ecological connectivity" and are "based on sustainable afforestation, reforestation and tree planting and the increase of urban green space" (Article 13(2)). However, this goal is included within a normative context in which the European Union has once again postponed the entry into force of the Regulation intended to combat deforestation (Regulation (EU) 2023/1115).[56]

2.3. *The Complex Coordination with National Defence Sites and Renewable Energy Production Areas*

The Nature Restoration Regulation further grants Member States the possibility of activating two generalized derogations from the obligation to restore degraded ecosystems.

The first, formally discretionary ("may exempt"), concerns the possible exclusion of areas used for activities solely dedicated to national defence, where restoration measures are "deemed to be incompatible with the continued military use of the areas" (Article 7(1)). In such cases, Member States may presume the existence of an "overriding public interest" (Article 7(2)), thereby exempting themselves from the require-

[55] On "regeneration" as a fundamental component of "territorial governance", see B.L. Boschetti, *Rigenerazione e legislazione regionale: verso un diritto (del governo del territorio) rigenerativo?*, in *Rivista Quadrimestrale di Diritto Ambientale*, no. 2, 2022, p. 83.

[56] Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forests degradation and repealing Regulation (EU) No 995/2010, OJ L 150 of 9 June 2023.

ment to demonstrate the absence of "less damaging alternative solutions", while remaining under an obligation – "as far as reasonable and practicable" – to adopt measures "aimed to mitigate the impact of those plans and projects on habitat types" (Article 7(3)).

This provision is of particular relevance, especially insofar as the European "shift in direction" from environmental protection to armament policies[57] may result in the need to develop defence infrastructure in natural ecosystems. This would, in fact, lay bare the tension between the public financing of the arms industry and the implementation of measures aimed at restoring degraded ecosystems. More fundamentally, it would also expose the inconsistency with the very constitutional *super-principle* safeguarding the environment as a condition of life (Article 9 of the Italian Constitution), a principle that must inevitably inform the interpretation of the pacifist commitment enshrined in Article 11 of the Italian Constitution. The effective implementation of obligations concerning the restoration of degraded ecosystems appears, indeed, highly problematic – if not virtually unattainable – within a European and international geopolitical context in which armed conflicts continue to exacerbate the effects of climate change, desertification, and food and water scarcity (including famines and epidemics), as well as the pervasive, albeit often silent, destruction of ecosystems and biodiversity. Rather than being directed towards the development of increasingly lethal weaponry, detrimental both to humanity and the environment, human creativity should therefore be channelled towards the development of innovative models of eco-social coexistence.[58] Within this perspective, the Nature Restoration Regulation undoubtedly represents an important – albeit still embryonic – step in an ongoing evolutionary process.[59]

[57] See A. Guazzarotti, *Fluidità del soggetto neoliberale e integrazione europea ai tempi del "Rearm Europe"*, in *Costituzionalismo.it*, 1/2025, p. 79 et seq.

[58] Indeed, as early as 2014, the Intergovernmental Panel on Climate Change (IPCC) emphasised that environmental challenges and the need to adapt to climate change necessarily entail a transformation not only of the available technical options, but also of the underlying social and institutional structures required to implement them. Reference may be made, in this regard, to the report *Agriculture, Forestry and Other Land Use*, in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge-New York, 2014.

[59] At this juncture, reference may be made to the "second principle of hope" artic-

The second "generalised" derogation from restoration obligations concerns the construction of renewable energy production facilities. This derogation is "absolute", insofar as such infrastructure is deemed to be in the "overriding public interest", thereby relieving Member States of the burden of demonstrating the absence of "less harmful alternative solutions" (Articles 4(14)-(15) and 5(11)-(12)), provided that an Environmental Impact Assessment is carried out in accordance with the conditions set out in Directive 2011/92/EU, or a Strategic Environmental Assessment in accordance with the conditions set out in Directive 2001/42/EC (Article 6(1)(a) and (b)).[60]

This reveals the cross-cutting scope of the European principle of "sustainable development,"[61] through which an attempt is made to integrate the various policies affecting land use (environmental, energy-related, etc.). Such "integration"[62], however, runs the risk of concealing – beneath the sustainability paradigm – the adoption of measures capable of irreversibly compromising ecosystems that are not "regenerable" through subsequent restoration actions. The growing land take associated with ground-mounted photovoltaic installations[63] suffices to reveal

ulated by E. Morin, *Svegliamoci!*, Milano-Udine, 2022, p. 72, grounded in the possibilities and creative capacities of the human mind. As Morin observes, human cognitive potential remains largely untapped; humanity is still, in many respects, in the prehistory of the human mind. Its possibilities are immeasurable – not only for the worse, but also for the better. If we have learned how to destroy the planet, we also possess the capacity to repair it.

[60] Article 6(2) further provides that "in duly justified and in specific circumstances", Member States may restrict "the application of paragraph 1 to certain parts of their territory as well as to certain types of technologies or to projects with certain technical characteristics in accordance with the priorities set in their integrated national energy and climate plans pursuant to Regulation (EU) 2018/1999."

[61] On this point, see, among many others, F. Fracchia, *Lo sviluppo sostenibile. La voce flebile dell'altro tra protezione dell'ambiente e tutela della specie umana*, Editoriale Scientifica, Napoli, 2010; and T. Groppi, *Sostenibilità e costituzioni. Lo Stato costituzionale alla prova del futuro*, in *Diritto Pubblico Comparato ed Europeo*, 2016, p. 43 et seq.

[62] On the principle of integration, see M. Montini, *The Principle of Integration*, in L. Kramer, E. Orlando (eds.), *Principles of Environmental Law*, Cheltenham, 2018, pp. 139-149.

[63] For further details, see the 2022 Report *Consumo di suolo, dinamiche territoriali e servizi ecosistemici* prepared by the National System for Environmental Protection (SNPA), which highlights the "unsustainable increase" in land consumption starting

the criticalities of certain interpretations of sustainable development that tend to separate landscape protection from environmental protection, notwithstanding their formal unification in the revised Article 9 of the Italian Constitution.

The identification of 'suitable areas' for the deployment of renewable energy installations cannot, in fact, be reduced to a merely economic-organizational issue, centred on the legitimate expectations of economic operators and on the obligation incumbent upon public authorities not to depart from the European principle of the maximum development of renewable energy sources; nor, still less, can it be confined within the fragmenting boundaries of the allocation of competences between the State and the Regions. Any discussion concerning the deployment of renewable energy installations should instead entail a broader reflection on the transformative scope of the revised Article 9 of the Constitution – a dimension that has been strikingly absent (at least thus far) from the reasoning through which the Italian Constitutional Court has addressed issues relating to the installation of renewable energy installations.[64]

in Italy in 2021: new artificial land cover affected 69.1 square kilometers, equivalent to nineteen hectares per day (the highest value of the last ten years), or 2.2 square meters of soil per second, with a *per capita* consumption of 363 square meters per inhabitant in 2021. Artificial land cover in Italy stands at 7.13%, compared to the European average of 4.2%. The highest values of consumed land were recorded in Lombardia (12.12%), Veneto (11.90%), and Campania (10.49%), while among the regions with the most significant increases is Apulia, with 499 hectares more than in 2020.

[64] Indeed, the Article 9 of the Constitution appears to be the 'great absentee' from the reasoning set out in Constitutional Court judgment no. 28 of 2025, whereby the Court invalidated Article 3 of Sardinia Regional Law no. 5 of 2024, entitled *'Urgent measures for the safeguarding of the landscape and environmental landscape assets'*. For present purposes, it is particularly relevant that, in paragraph 3.1 of the *considerato in diritto*, the Court observes that, although "the initiative of the Autonomous Region of Sardinia aimed at identifying the areas to be safeguarded (…) appears to correspond to the indications contained in Regulation (EU) of the European Parliament and of the Council of 24 June 2024 on nature restoration (…), nevertheless, by means of the contested Article 3, the Sardinian legislature introduced a generalised suspension of the granting of all authorisations for the construction of renewable energy production installations. The ratio of the challenged legislative intervention thus seems to coincide with the intention to "freeze", for at least eighteen months, the obligation to identify suitable areas by regional law (…), thereby also suspending pending authorisation procedures."

3. *National Restoration Plans and Monitoring Systems*

The obligations concerning the restoration of terrestrial and marine ecosystems will be further specified in the national restoration plans that Member States are required to prepare, following the quantification of the extent and quality of the habitats of the species that are present in the ecosystem covered by Article 2 (Article 14(2)).

Two features of these plans appear particularly significant. On the one hand, their dynamic character means that they are subject to constant review by EU Commission (Article 19), given their dependence on "changes or expected changes in environmental conditions due to climate change" and on the natural evolution of ecosystem interaction within which species populations can thrive (Article 14(1)). On the other hand, they have a systemic and organic nature, insofar as they are required to coordinate ecosystem restoration activities with climate change mitigation measures,[65] the implementation of the common agricultural policy and the common fisheries policy,[66] the execution of the National Energy and Climate Plans (NECPs), the protection of Natura 2000 sites,[67] river basin management plans,

[65] National adaptation strategies and plans to be adopted pursuant to 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 Regulation (EC) No 401/2009 and (EU) 2018/1999 (European Climate Law). The Regulation (EU) 2021/1119 sets out a binding objective of climate neutrality in the Union by 2050, and negative emissions thereafter. The Regulation (EU) 2021/1119 priorities are also to reduce predictable emission and, at the same time, enhance removals by natural risks.

[66] Given its relevance for the effectiveness of marine ecosystem restoration measures, the Nature Restoration Regulation devotes a specific article (Art. 18) to the coordination with the Common Fisheries Policy (CFP). In particular, (w)here the national restoration plans include measures that require submission of a joint recommendation through the regionalization procedure under Article 18 of the Regulation (EU) No 1380/2013, Member States preparing those national restoration plans shall (…) initiate in a timely manner consultations with other Member States having a direct management interest affected by these measures and the Advisory Councils under Article 18(2) of Regulation (EU) No 1380/2013 to enable timely agreement on and submission of any joint recommendations. For that purpose, they shall also include in the national restoration plan the estimated timing of the consultation and of the submission of the joint recommendations."

[67] … to be implemented through specific conservation measures and the Prioritized

marine strategic planning,[68] and air pollution control (Article 14(9)-(14)).[69]

The national restoration plan is therefore intended to encompass systemic measures aimed "to optimise the ecological, economic and social functions of ecosystems as well as their contribution to the sustainable development of the relevant regions and communities" (Article 14(16)(b)). The Regulation further promotes, "where possible, foster synergies with national restorations plans of other Member States," in particular for transboundary ecosystems or "where Member States share a marine region or subregion within the meaning of Directive 2008/56/EC" (Article 14(17)).

The Nature Restoration Regulation is projected towards 2050 and the effectiveness of the measures adopted will be assessed on "intermediate deadlines" (2032 and 2042) (Article 15(1)-(2)). It must also contain "the estimated financing needs for implementation of the restoration measures," including a description of support measures to stakeholders affected by restoration measures or other new obligations arising from the Regulation (Article 15(3)(u)). In this way, the Regulation envisages the possible use of public or private funding sources, including European funding or co-financing (Article 15(3)(u)), as well as "an indication of the subsidies which negatively affect meeting of the targets and the fulfilment of the obligations set out" in the Regulation (Article 15(3)(v)). However, the financing of national restoration plans nevertheless remains problematic. Biodiversity protection – long underfunded at the European level[70] – has in fact been restructured from the specific budgetary

Action Frameworks provided for by Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206 of 22 July 1992. See also Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20 of 26 January 2010.

[68] In particular, those measures, plans, and programs for river basin management and flood risk management provided for by the Water Framework Directive (2000/60/EC).

[69] Article 14(18) further provides that "Member States shall, where possible, foster synergies with the national restoration plans of other Member States, in particular for ecosystem that span across borders or where Member States share a of marine region or subregion within the meaning of Directive 2008/56/EC."

[70] In particular, according to a 2022 study by the European Commission, Directorate-General for Environment, the estimated financing gap for biodiversity amounts to

headings included in the forthcoming Multiannual Financial Framework (2028-2034) proposed by the Commission in July 2025.

Monitoring and reporting activities (Chapter IV) likewise have a dynamic structure, as evidenced by references to "the condition and trend in the condition of the habitat types, and the quality and the trend in the quality of the habitats of the species" (Article 20(1)(a)), as well as by the monitoring of the "extent and location" of the areas where habitats types of the species have "significantly deteriorated" or subject to "compensatory measures" (Article 20(1)(j)). The frequency of public monitoring activities varies depending on the specific subject under observation: every six years, for example, for organic carbon stocks in cultivated mineral soils and for the percentage of agricultural land with high biodiversity; annually, by contrast, for the pollinator index and the index of common farmland and forest birds (Article 20(6)).

Article 20(9) further establishes the duty of Member States to employ the best and most recent available technologies, leveraging the opportunities offered by artificial intelligence, advanced data analysis and processing, while at the same time preserving the wealth of data derived from "citizen science".

Every six years, Member States are required to report to the Commission – assisted by the European Environment Agency – on "the progress in implementing the national restoration plan" (Article 21(2)(a)), as well as to provide "information" concerning "significantly deteriorated" habitats and the effectiveness of the compensatory measures adopted (Article 21(2)(b)). These reports constitute the basis upon which the European Environment Agency will prepare, every three years, "a technical overview of the progress towards the achievement of the targets and fulfilment of the obligations set out" in the Regulation (Article 21(4)), and, every six years, a "technical report" on the overall implementation of the Regulation at Union level (Article 21(5)).

approximately €18.60 billion per year from 2021 to 2030. See, on this point, the study by M. Nesbit, M. Whiteoak, E. Underwood *et al.*, *Biodiversity financing and tracking - Final report*, Office of the European Union Publications, 2022, available at the following link: *https://data.europa.eu/doi/10.2779/950856*.

4. *The Nature Restoration Regulation as a Parameter for the Implementation of the Fundamental Principle of Environmental Protection*

The Nature Restoration Regulation presents a number of particularly significant features, in particular the systemic character of the measures aimed at protecting the environment and the climate, in their scientific grounding, and – no less importantly – the setting of a deadline for the implementation of restoration measures within and outside Natura 2000 sites.

To draw together the main strands of the argument advanced thus far, while the emergence of a form of "constitutionalism oriented towards the ontological primacy of nature"[71] still appears distant, the Nature Restoration Regulation nonetheless seems capable of introducing ecological considerations into economic and territorial planning, with the aim of ensuring the health of the environment also inhabited by human beings. The constitutional interplay between the public planning function (Articles 9 and 117(3) of the Constitution) and the Euro-national obligations to restore degraded ecosystems (Articles 11 and 117(1) of the Constitution), including agricultural ones, thus contributes to shaping a renewed model of planning rationality – or, in the economic sphere, of regulatory "programming" – which may be described as biocentric in orientation.

By engaging with the transformative potential of the fundamental constitutional principle of environmental protection (Article 9 of the Constitution), the provisions of the Nature Restoration Regulation appear capable of redefining, in ecological terms, the content of the "social function" of private property (Article 42(2) of the Constitution), understood as a constitutional criterion for the rationalisation of land-use and land-management practices (Article 44 of the Constitution). This environmental dimension of land governance – too often neglected or legally abstracted from the environment-as-territory – reveals itself as structurally central, given the plurality of ecosystem services it provides, including those relevant to climate change mitigation.[72]

[71] See Q. Camerlengo, *Natura e potere. Una rilettura dei processi di legittimazione politica*, Milano-Udine, 2020, who advocates the advent of a "*geocostitutionalism*," conceived as a philosophical framework that subordinates political authority to respect for nature, understood as a vital order of justice grounded in natural laws (p. 109).

[72] On ecosystem services, see H.A. Mooney, P.R. Ehrlich, *Ecosystem services: a*

Within the renewed constitutional framework introduced by Constitutional Law no. 1 of 2022, the reference to the "rationality" of land-management techniques enshrined in Article 44 of the Constitution can therefore only be interpreted in biological and social terms, as a normative criterion guiding public decision-making and presupposing a relationship of interdependence between human activities and the surrounding environment. In this respect, such rationality increasingly converges with the principle of sustainability. Planning thus emerges as the legal instrument through which rational and sustainable choices are articulated, capable of integrating ecological and social interests within an integrated and holistic approach, one that ultimately transcends the traditional conceptual separation between "environment" and "nature."

This renewed planning rationality now finds concrete expression in national plans for the restoration of degraded ecosystems, which are called upon to consider activities – first and foremost agricultural ones – not solely in economic or quantitative terms, but also in qualitative and ecological terms. Such an approach reflects the unity of the public interests connected to the territory and, consequently, the need for a constitutionally oriented mode of governance. From this perspective, the Nature Restoration Regulation may be regarded as a genuine parameter for the implementation of the fundamental constitutional principle of environmental protection (Article 9 of the Constitution), which in turn operates as an interpretative framework for urban planning (Articles 42, 44, and 117(3) of the Constitution) and for economic planning (Article 41 of the Constitution).

The new form of planning rationality – which may aptly be described as biocentric planning – is primarily directed at ensuring (also through the participation of environmental associations, local communities and stakeholders[73]) the ecological equilibria that guarantee the quality of

fragmentary history, in G.C. Daly (ed.), *Nature Services: Societal Dependence on Natural Ecosystem*, Washington DC, 1997, pp. 11-19.

[73] Hence the potential relevance of the so-called *contratti di fiume* (river contracts), recently highlighted – specifically with regard to the restoration of river basins mandated by the Nature Restoration Regulation – by C. Leone, *L'obbligo degli Stati membri di garantire la connettività fluviale alla luce delle più recenti riforme*, in *Federalismi.it*, no. 4, 2024, pp. 129 et seq. The river contracts are, in fact, voluntary instruments of negotiated and participatory planning, aimed at containing eco-landscape degradation

(human) life on Earth, elevating the duty to protect the environment to a parameter of constitutionality for the actions of public institutions.[74] This is no longer a merely instrumental rationality,[75] but it is a rationality oriented towards establishing a new form of interaction between humanity and nature; a rationality that is aware of the social issues connected to ecological questions and capable of incorporating a critical approach into the anthropological perspective through which legal systems define human relations with ecosystems and biodiversity.

What is at stake, therefore, is not a utopian aspiration to human disengagement from territorial transformation, but the rational development of an ecological-social plan of action grounded in the most recent scientific evidence and open to the dynamic contribution – unconstrained by requirements of residence or nationality, particularly in light of the relevance of transboundary ecosystems – of associations, action groups and stakeholders.[76]

and at rehabilitating river basins and sub-basins, and, in this perspective, involve actors operating within the territory (p. 145).

[74] Moreover, in the decision that defined the *Neubauer* case (Decision of the First Senate, 24 March 2021), the German Constitutional Court clarified that "the amount of time remaining is a key factor in determining how far freedom protected by fundamental rights will have to be restricted – or how far fundamental rights may be respected – when making the transition to a climate-neutral society and economy" (§ 121).

[75] Instrumental rationality aimed at optimising means in light of ends that have already been predefined by a political-administrative apparatus acting exclusively "from above." By contrast, "it is not the will of sovereign power, but rather the demand arising from society that constitutes the yardstick for administrative action. (…) It is precisely in the fields of healthcare and environmental protection that the de-formalisation of public law becomes particularly evident, since these are sectors in which a high degree of social cooperation is required both in the phase of problem identification and in that of problem-solving. What is needed is targeted acceptance, understanding, and agreement with social groups, whereas an imperative use of administrative power would prove both harmful and ineffective. What is required is the 'identification of society with the administration' and the end of the separation produced by sovereignty." Thus, F. Viola, *Stato e Natura*, cit., p. 66. On the notion of the "identification of society with the administration", see also G. Berti, *La responsabilità politica (Costituzione e Amministrazione)*, Padova, 1994, p. 402.

[76] From this perspective, A. Gusmai, *Il "governo del territorio"*, cit., pp. 319-320, emphasized the urgency of "providing the country" not only "with a new 'organic' law on 'territorial governance'", but also of "not neglecting the need for a core set of uniform rules and principles to apply across the entire national territory, aimed at preventing

4.1. *Enhancing the "Social Function" of Property through the Public Function of Planning*

It is in this socio-ecological perspective that one should interpret the general references to the "social function" of private property (Article 42(2) of the Italian Constitution); the "grounds of general interest" which, in the cases provided for by law and subject to compensation, justify the expropriation of private property (Article 42(3)); the "rational exploitation of land" and the definition of "equitable social relations" in light of which the law "imposes obligations and constraints on private landed property" (Article 44); as well as the "social utility"[77] and to health and the environment as limits and possible aims – through legislation – of public and private economic activities (Article 41(2)-(3)).[78]

The translation of a "shift (…) in the formulation of constitutional parameters"[79] into the national restoration plan requires the normative recovery of the transformative potential embedded in Articles 41 to 44 of the Italian Constitution. This entails overcoming long-standing productivist conceptions of private property rooted in the individualistic and possessive paradigm that has so profoundly shaped constitutional case-law on Articles 42 and 44 of the Italian Constitution. The effective implementation of restoration measures for degraded agricultural ecosystems – which constitute the very core of the socio-environmental

further fragmentation, this time arising from the very exercise of diversified democratic powers in the various local contexts."

[77] This expression is reinforced by the reference to "*purposes of general utility*" and to the "*character of overriding public interest*" contained in Article 43 of the Constitution, pursuant to which these "*purposes*" allow the law to "*originally reserve or transfer, through expropriation and subject to compensation, to the State, public entities, or communities of workers or users, certain enterprises or categories of enterprises, relating to essential public services or sources of energy or to situations of monopoly, which thus possess the character of overriding public interest*."

[78] Activities that ultimately foster that "*human biophysical disconnection*" which, in fact, risks being reproduced by environmental constitutionalism itself, insofar as it remains anchored in the constitutionalisation of the "*protection*" and "*repair*" of the environment, rather than in the constitutional "*subordination*" of legal sources to the laws of nature. Thus, M. Carducci, *Costituzionalismo ambientale e leggi della natura*, in *Federalismi.it*, no. 12/2025, p. 24, but *passim*.

[79] Constitutional Court, Judgment No. 105 of 2024, advisory opinion in legal matter No. 5.1.2.

function of property – cannot, indeed, be entrusted to the individual landowner alone.[80] Rather, consistently with the public function of territorial governance (Article 117(3) of the Constitution), such measures must be guided by the State in as coordinated a manner as possible at the national level, while simultaneously being embedded within the social problems connected to the growing infrastructuralisation of the natural ecosystems.

From this perspective, territorial planning, long regarded by the Constitutional Court as one of the limits that may be imposed upon private property, becomes the instrument through which the interdependence between the human person and the environment transformed by human activities is expressed at the normative level. The ecological-social function of private property must therefore rise to the status of a general organising principle of spatial and urban planning.

5. *The Difficult Environmental Reorientation of the Economic Constitution*

The incorporation of the protection of the environment into the constitutional text (Article 9 Italian Constitution) has inevitably brought to the surface the structural tensions that traverse the economic constitution of contemporary legal systems. These tensions are particularly evident within legal orders – such as that of Italy – in which the constitutional discipline of economic activity is characterised by an intrinsic ambivalence, oscillating between the recognition of private economic initiative and the imposition of limits and objectives grounded in social utility.

The environmental reorientation of the economic constitution encounters resistance that is not merely political or contingent, but systemic in nature. It calls into question consolidated models of economic rationality that have historically privileged short-term productivity and profit maximisation over the long-term preservation of the ecological conditions[81] that make economic activity itself possible. In this respect,

[80] Which would make the "social function (…) a defensive instrument of the property system." In this sense, see S. Rodotà, *Il terribile diritto. Studi sulla proprietà privata e i beni comuni*, Bologna, 2024, p. 364.

[81] As emphasized by M.A. La Torre, *La biodiversità come valore e come risorsa*, in S. Castignone, L. Lombardi Vallauri (eds.), *La questione animale, Trattato di Biodi-*

the constitutionalisation of environmental protection exposes the fragility of an economic paradigm that externalises environmental costs and treats natural resources as indefinitely available inputs.[82]

From this perspective, Article 41 of the Italian Constitution offers a normative framework capable of addressing these tensions. By explicitly subjecting private economic initiative to limits deriving from the protection of the environment, the Italian Constitution no longer merely tolerates environmental regulation as an external constraint upon economic freedom but incorporates it into the very definition of legitimate economic activity. Economic freedom thus becomes constitutionally conditional upon its compatibility with ecological equilibria.

This shift profoundly affects the traditional understanding of the relationship between market, State and environment. The protection of ecosystems is no longer confined to the realm of corrective or compensatory measures adopted *ex post* but becomes a constitutive element of economic programming and public intervention. The State is therefore called upon not simply to regulate markets, but to orient them towards environmentally sustainable trajectories, in accordance with the principle of intergenerational justice implicit in Article 9 of the Constitution.[83]

ritto directed by S. Rodotà and P. Zatti, Milano, 2012, p. 5, the "concept of 'ecological balance', which frequently recurs in environmentalist claims, if employed imagining a stationary condition that should be maintained or protected, appears misleading, since nature is always in a state of evolutionary dynamism; in fact, normality is defined more by disturbance than by conservation."

[82] As A. Gusmai, *La tutela costituzionale dell'ambiente tra valori (meta-positivi), interessi (mercificatori) e (assenza di) principi fondamentali*, in *Diritto Pubblico Europeo Rassegna On Line*, no. 1, 2015, p. 154, stated, the "capacity" of the fundamental principle of environmental protection "to impose substantial limits on economic and political power" implies that "the interpretative-application bodies (administrative officials and, above all, the judicial authorities) must strive to acquire and maintain a cultural pre-understanding of environmental issues that is seriously aligned with the broader design of social democracy as envisioned by the Constituent Fathers."

[83] S. Grassi, *La cultura dell'ambiente nell'evoluzione costituzionale*, in *Rivista AIC*, n. 3, 2023, pp. 220-221, refers to the "embarrassing silence that followed the approval of the reform (…) on what kind of environment we want, on which environmental values are to be affirmed and defended" and on "what the definition of the environment is, even from a dynamic perspective."

From this perspective, the Nature Restoration Regulation operates as a catalyst for the transformation of the economic constitution. By imposing binding restoration obligations and by requiring Member States to internalise the ecological costs of economic activities, the Regulation aims to challenge the traditional separation between environmental law and economic law. It instead promotes an integrated approach in which economic development is assessed in light of its capacity to preserve, restore and enhance natural capital.

However, the difficulty of this transformation should not be underestimated. The reorientation of the economic constitution implies a redistribution of costs and benefits that inevitably affects entrenched economic interests. It also requires the development of administrative and planning capacities capable of translating scientific evidence into legally binding decisions, often in contexts marked by uncertainty and conflict. The resistance encountered by the Nature Restoration Regulation during the legislative process is emblematic of these challenges.

Nevertheless, the constitutional embedding of environmental protection provides a normative anchor for overcoming such resistance. By elevating the protection of ecosystems to a fundamental constitutional value, the legal order acquires the tools necessary to subject economic choices to a more demanding standard. Economic policies and individual entrepreneurial decisions alike must now be assessed in terms of their contribution – or harm – to the preservation of the ecological foundations of social life.

In this light, the environmental reorientation of the economic constitution should not be interpreted as a limitation imposed upon economic rationality from the outside, but as an opportunity to redefine it. A constitutionally-oriented economic rationality is one that recognises the finiteness of natural resources, the systemic interdependence between human societies and ecosystems, and the responsibility of the present generation towards future ones (Articles 9 and 41 of the Italian Constitution). By reconnecting economic activity with the material conditions of life, the Nature Restoration Regulation represents a significant step in this direction.

6. *The Nature Restoration Regulation as an Instrument for Implementing the Constitutional Mandate to Protect the Environment*

The Nature Restoration Regulation represents a decisive step in the progressive construction of a European legal framework oriented towards the effective protection of the environment, encompassing biodiversity and ecosystems.[84] Beyond its specific regulatory content, the Regulation stands out for its capacity to translate scientific knowledge into binding legal obligations, thereby strengthening the normative force of environmental protection within the Union's legal order.

From a constitutional perspective, the Regulation operates as a parameter for the implementation of the environmental mandate enshrined in Article 9 of the Italian Constitution.[85] By imposing restoration objectives that require long-term planning, cross-sectoral coordination and continuous monitoring, the Nature Restoration Regulation contributes to redefining the relationship between law, science and politics. Environmental protection thus ceases to be a merely programmatic objective and becomes an operational constitutional principle, capable of guiding administrative action, legislative choices and judicial interpretation.[86]

The integration of restoration obligations into national legal systems further enhances the role of planning as a central instrument of environmental governance. Spatial and urban planning emerge as the

[84] One of the first studies aimed at emphasizing the unified character of the legal notion of environment is that of A. Postiglione, *Ambiente: suo significato giuridico unitario*, in *Riv. trim. dir. pubbl.*, 1985, p. 33 et seq.

[85] Indeed, as Flick has emphasised, we have moved from a purely anthropocentric conception (the environment as a function of humankind) towards an ecocentric conception of the relationship between humankind and the environment – a conception that has been both reflected and consolidated in the current wording of Article 9 of the Constitution. Thus, G.M. Flick, *L'articolo 9 della Costituzione oggi: dalla convivenza alla sopravvivenza*, in *Federalismi.it* – 12 July 2023, p. 9.

[86] It underscores the imperative of reinterpreting the constitutional framework revised in 2022 through the lens of the normative hierarchy, rather than merely valuational considerations. On this perspective, see A. Gusmai, *Valori "tiranni", bilanciamenti instabili e tutela ambientale dopo la sentenza Priolo*, in *Rivista Quadrimestrale di Diritto dell'Ambiente*, no. 2, 2024, p. 337 ff. This is done with the specific aim of removing environmental protection from the compromise logic of value balancing, which tends to functionally guarantee the substantive predominance of prevailing market interests.

privileged "space" in which the constitutional duty to protect the environment is concretely implemented, through the reconciliation of ecological requirements with social and economic needs. In this perspective, urban planning acquires a renewed constitutional dignity, functioning as the mechanism through which the public interest in ecosystem integrity is balanced against private interests in land use and economic exploitation.[87]

The Nature Restoration Regulation also contributes to reshaping the economic constitution, by internalising environmental limits into the definition of legitimate economic activity. The constitutionalisation of ecosystem protection challenges traditional models of economic development and calls for a reorientation of markets and production processes towards sustainability and resilience. This transformation is not without conflict, as it affects consolidated economic interests and requires significant institutional adaptation. Yet it is precisely the constitutional *status* of environmental protection that provides the normative justification for such a transformation.[88]

At the same time, the Regulation highlights the importance of participation, transparency and scientific accountability in environmental decision-making. By requiring Member States to base restoration measures on the best available scientific evidence and to involve stakeholders and civil society, the Nature Restoration Regulation promotes a more inclusive and reflexive model of governance. This model is particularly well suited to addressing the complex and transboundary nature of ecological challenges, which cannot be effectively managed within the confines of traditional sectoral or territorial boundaries.

[87] Indeed, "although universally accepted by all – businesses, institutions, governments, politicians, economists – the expression "sustainable development" has been transformed into a kind of ritual incantation to mask the even more lethal blows inflicted in the meantime on the planet's natural balances." In fact, "all indicators of environmental deterioration (…) have only worsened, evidently proving the irreconcilability between development always and in any case conceived as infinite economic growth and the finite world of terrestrial resources." Thus, P. Bevilacqua, *La Terra è finita. Breve storia dell'ambiente*, Roma-Bari, 2009, p. 151.

[88] These aspects have already been considered elsewhere. See, therefore, if desired, F. Sicuro, *La tutela dell'ambiente come limite delle attività economiche. Riflessioni sparse a margine della sentenza n. 105 del 2024*, in *Diritto Pubblico Europeo Rassegna online*, no. 1, 2025.

Ultimately, the Nature Restoration Regulation may be interpreted as an expression of an emerging constitutional paradigm in which the protection of the environment functions as a foundational value of the legal order. In this paradigm, the preservation and restoration of ecosystems are not ancillary to economic or social objectives, but constitute their necessary precondition. The constitutional mandate to protect the environment thus acquires a substantive and transformative meaning, orienting the legal system towards the long-term safeguarding of the ecological foundations of human life.

ABSTRACT

Nature Restoration Regulation
Environmental Protection – Territorial Planning
Social Function of Property – Ecosystem Restoration.

The paper examines Regulation (EU) 2024/1991 on Nature Restoration as a constitutional instrument for implementing the duty to protect the environment enshrined in Articles 9, 11 and 117(1) of the Italian Constitution. It argues that the Regulation's restoration obligations and national restoration plans promote a renewed, science-based model of planning rationality that integrates ecosystem restoration, climate action and territorial governance. By linking environmental protection to the social function of property and the constitutional regulation of economic activities, the Nature Restoration Regulation contributes to the ecological reinterpretation of urban planning and the economic constitution. The paper contends that ecosystem restoration should be understood not merely as an environmental policy objective, but as a constitutional requirement connected to intergenerational justice and the preservation of the ecological conditions necessary for human life.

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This volume brings together contributions from the international conference held at Roma Tre University in November 2025, part of the PRIN 2022 PNRR project "Restoring nature for children in Italy – RINASCI." It examines the legal challenges Member States face as they prepare to implement the Nature Restoration Regulation (EU) 2024/1991, given its ambitious targets and far-reaching impact on other areas of EU and national law. The authors draw upon EU law, national law and ecological science in analysing the many challenges – but also opportunities – this new legal regime offers. Essays address interpretive and practical questions that Member States must resolve in the short term – from public participation and state aid to the standard of diligence underlying non-deterioration duties, and the Regulation's uneasy fit with the Common Agricultural Policy and science. They also explore deeper structural questions about how the Regulation intersects with contract law, environmental liability, and constitutional principles governing land use planning and private property.

Together, the essays offer a rigorous, wide-ranging account of the legal issues to be faced in order to restore biodiversity in Europe and may be of interest to scholars of EU law, environmental law, civil law, and agricultural law.

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