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Valuing Nature

Implications for EU Governance

European Group on Ethics

in Science and New Technologies

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Valuing Nature: Implications for EU Governance
European Group on Ethics in Science and New Technologies

European Commission
Directorate-General for Research and Innovation
Unit 02 – Science for Policy, Advice and Ethics

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EUROPEAN COMMISSION

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The European Union should integrate multiple ways of valuing nature explicitly and consistently into policymaking, so that ecological, ethical, social, cultural, and economic considerations are made visible and can shape decisions. 39

Recommendation 2 40

Where scientific evidence identifies ecological boundaries, non-substitutability, or risks of irreversible harm, the European Union should treat these considerations as constraints in evaluation, impact assessment, and policymaking. 40

Recommendation 3 41

The European Union should establish a legally binding right to a clean, healthy and sustainable environment within the EU legal order. 41

Recommendation 4 41

The European Union and its Member States should consider developing or strengthening institutional mechanisms to facilitate the effective representation of ecological concerns and to ensure that the effects of decisions on non-human nature are adequately considered within governance and adjudication. Such pathways may take different forms and do not presuppose the recognition of legal personhood or rights of nature. 41

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The European Union should subject economic valuation of nature to explicit ethical and ecological conditions, while supporting economic approaches that help align socio-economic governance with wellbeing, resilience, ecological integrity, and multiple ways of valuing nature. 42

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The Opinion in Brief: Summary

This Opinion of the European Group on Ethics in Science and New Technologies (EGE) examines how nature is valued within human societies and how these value frameworks shape governance, law, and policymaking in the European Union. It analyses the normative foundations underlying environmental decision-making and argues that the ways in which nature is conceptualized fundamentally influence what is recognised as politically and legally relevant, how ecological harms are assessed, and how trade-offs between environmental and other societal objectives are justified.

The Opinion situates its analysis within the current European context, marked by geopolitical instability, economic pressure, industrial competition, and social strain. It warns that under such conditions ecological sustainability risks being deprioritised, despite being a precondition for resilience, prosperity, health, security, and democratic legitimacy. Against this backdrop, the EGE stresses that ecological sustainability must be understood not as a secondary policy objective but as a necessary condition for legitimate governance and collective well-being.

A central premise of the Opinion is that human societies are embedded within ecological systems rather than external to them. This ecological embeddedness challenges governance approaches that treat nature primarily as a substitutable stock of resources or ecosystem services. Instead, the Opinion highlights the need to recognise multiple, complementary ways of valuing nature. These perspectives reflect different dimensions of human–nature interdependence and collectively support more adequate responses to ecological limits, systemic risks, and non-substitutability.

On this basis, the Opinion reviews three key governance challenges: the normative assumptions underpinning environmental policymaking; the representation and possible legal standing of non-human nature; and the appropriate role of economic valuation tools. It argues that while economic valuation, pricing, and accounting instruments can support environmental governance by making ecological dependencies visible and improving accountability, they remain partial tools. Their use must therefore be carefully bounded to avoid reinforcing misleading assumptions of substitutability or normalising irreversible ecological loss. The Opinion further addresses structural gaps in the representation of ecological concerns within legal and institutional systems, particularly where harms are diffuse, cumulative, long-term, or affect non-human nature. It calls for improved mechanisms to ensure the effects of decisions on ecosystems and non-human living beings are more adequately considered within governance and adjudication.

More broadly, the EGE advocates for a plural and integrated approach to valuing nature in policymaking. Socio-economic systems in transition should not be assessed solely in terms of growth, efficiency, or competitiveness, but also in terms of their capacity to maintain ecological integrity, respect planetary boundaries, ensure intergenerational justice, and support democratic legitimacy. This requires strengthened research, institutional learning, and policy coherence, both within the EU and in its external relations. Finally, the Opinion recommends embedding a stronger and more legally effective right to a clean, healthy, and sustainable environment within the EU legal order, enhancing participatory governance, and ensuring that economic valuation tools are used only within explicit ethical and ecological constraints. It concludes that ecological sustainability must be treated as a foundational condition of legitimate governance, and that aligning EU law and policy with this principle is essential for a resilient, just, and future-oriented European project.

This Opinion is issued within the framework of the Ethics Advice Mechanism (EThAM), which provides independent ethical guidance to European institutions on issues where science, technology, and policymaking intersect.

Opening note and acknowledgements

In the context of the European Commission's efforts to address climate change and environmental degradation, Executive Vice-President Maroš Šefčovič requested from the European Group on Ethics in Science and New Technologies (EGE)1 a series of three Opinions providing ethical perspectives on different aspects of the transition.

Following the first Opinion on Solar Radiation Modification: Ethical Perspectives (December 2024) and the second Opinion on 'Towards a Just Green Transition: Addressing structural inequities', this third Opinion examines how human beings, communities, institutions, and legal systems value nature and translate that valuing into governance.

1. The scoping considerations provided by the Vice-President note that the questions raised by the triple planetary crisis – climate change, biodiversity loss and pollution – and the policy responses to these questions are deeply ethical. They concern the relationship between humans and the environment, our responsibility vis-à-vis nature on which life on Earth depends, and human action, today and in the future, to tackle one of the greatest challenges that humanity has faced.
2. Biodiversity, ecosystems, soils, water resources, and climatic stability are not external to human flourishing; they are among its fundamental conditions. Yet human activities are exerting unprecedented pressure on these systems, with impacts that are increasingly widespread, unequal, and, in some cases, irreversible. As a result, the question of how nature is valued extends beyond philosophical debate and becomes a matter of governance. The values attributed to nature influence policy decisions by determining which environmental concerns are recognized, which harms are considered acceptable, and which forms of protection are deemed necessary. Consequently, assumptions about the value of nature play a crucial role in shaping environmental governance at local, national, and global levels.
3. In its Opinion, the EGE provides policy recommendations and guidance for EU policymakers, aimed at ensuring that governance choices are both ethically sound and ecologically realistic, particularly in the context of the European Green Deal and EU's role in the global context. The Opinion underlines that EU law and policy already recognise the importance of nature in multiple ways, while the challenge is to translate these commitments more consistently into decision-making.
4. The authors thank everyone who has given input into this Opinion, be it in discussions or in writing, notably:

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1. Valuing nature: the need for a paradigm shift

1.1. Problem framing

Human societies are embedded within, and fundamentally dependent upon, the non-human natural systems that sustain life on Earth. Biodiversity, ecosystems, soils, waters, and climatic stability are not external to human flourishing, but among its conditions. Yet the scale, speed, and cumulative effects of human activity now exert profound pressure on these systems, with consequences that are increasingly systemic, unequal, and in some cases potentially irreversible. How nature is valued is therefore not only a philosophical question. It is also a question of governance at multiple levels, because assumptions about the value of nature shape what is taken into account in policymaking, which harms are treated as acceptable, and which forms of protection are regarded as justified.

This matters acutely in the present European context. The European Union is navigating a period marked by war on the continent, global geopolitical instability, economic uncertainty, high energy costs, and growing pressure to frame public priorities through competitiveness, resilience, security, and strategic autonomy. Recent Commission priorities illustrate this shift. The Competitiveness Compass places competitiveness at the centre of the Union's policy agenda, while the Clean Industrial Deal seeks to align decarbonisation with industrial strength and economic growth (European Commission, 2024; European Commission, 2025a; European Commission, 2025b).

This changed context does not make the question of how nature is valued less urgent. On the contrary, the triple planetary crisis of climate change, biodiversity loss, and pollution is inseparable from questions of security, prosperity, public health, democratic resilience, and Europe's long-term capacity to act. The challenge for EU governance is therefore not to choose between ecological responsibility and resilience, competitiveness, or security, but to define these aims in ways that remain compatible with ecological boundaries and the conditions of collective life (United Nations Environment Programme, n.d.). In this Opinion, ecological boundaries refer to biophysical limits within which human societies must operate if they are to avoid destabilising ecological systems. The term includes, but is not limited to, the planetary boundaries framework, and underlines that some ecological constraints should shape what can be justified in governance, rather than being treated merely as variables within trade-offs (see also the Glossary for definitions of these and other terms used throughout this Opinion).

The ethical and political risk is that ecological considerations may nevertheless be treated as secondary concerns, as co-benefits, or as long-term aspirations rather than as conditions of durable prosperity, security, and legitimacy. Such deprioritisation would be a serious mistake. Jobs, competitiveness, and financial stability also depend on functioning ecosystems, stable climate conditions, and resilient natural systems over time; ecological degradation therefore cannot be treated as external or secondary to them. Recent European Central Bank analysis similarly emphasises that nature degradation and biodiversity loss pose material risks for the euro area economy and financial system (European Central Bank, 2025). This reinforces the broader point: ecological sustainability is not external to Europe's future resilience, social cohesion, democratic stability, or public health; it is one of their underpinning conditions (Norton, 2016).

Recent scientific advice to the European Commission on One Health governance points in the same direction, arguing that human, animal, plant, and environmental health should be understood as part of a single connected system and that EU policymaking in the fields of health, food, agriculture, biodiversity, and environmental policy requires stronger cross-sectoral integration (European Commission: Directorate-General for Research and Innovation & Group of Chief Scientific Advisors, 2024). The European Green Deal itself was built on that premise, framing climate neutrality, environmental protection, and economic transformation as interconnected rather than separable policy domains (European Commission, 2019). The same applies to the European

Climate Law and to the Nature Restoration Regulation, which confirm that environmental protection is not a discretionary add-on but part of the Union's legal and strategic direction (Regulation (EU) 2024/1991).

Economic theories and models that treat environmental degradation merely as an externality, or that assume that losses of ecosystems, biodiversity, and other forms of natural capital can generally be offset by technological innovation, infrastructure, or other forms of human-made capital, are insufficient on their own to address systemic ecological risks and the governance failures that arise when ecological limits are ignored, deferred, or structurally displaced (Ayres, van den Bergh and Gowdy, 2001; Dietz and Neumayer, 2007; Becker, 2023; Farmer, 2024). This is not only a matter of faulty prediction. It is also a matter of normative orientation. If the terms of appraisal already presuppose that ecological losses are negotiable, compensable, or even necessary to reach other, supposedly more important goals, then governance will tend to reproduce precisely the conditions it claims to overcome. The problem is not only that ecological concerns are sometimes undervalued. It is also that prevailing decision frameworks often treat biodiversity loss, ecosystem degradation, and long-term ecological risk as if they were simply costs to be compared with economic gains, compensated elsewhere, or deferred into the future.

As noted, this Opinion starts from the premise that humans are not external to nature, but part of the ecological systems on which they depend. From that premise, approaches that treat nature primarily as a resource, stock, or service provider are a poor basis for public policy. They capture only part of what is at stake. A second, linked premise is that some ecological functions, relationships, and harms are not adequately substitutable: losses cannot always be compensated through restoration elsewhere, replaced by human-made capital, or reduced to equivalent monetary value. Approaches that treat nature primarily as a resource, stock, or service provider therefore risk reinforcing assumptions of substitutability, disposability, and offsetting that are increasingly incompatible with ecological realities and with the sustainable and just future that the European Union has repeatedly affirmed in its own commitments (Jacobs et al., 2016; IPBES, 2022; Christie et al., 2019).

What is needed, therefore, is not merely a stronger version of existing policy commitments, but a broader paradigm shift in how nature is valued and how that valuation is translated into governance. This is increasingly recognised in European policy analysis itself: the European Environment Agency has argued that responding adequately to current ecological crises requires more fundamental changes in how societies understand their relationship with nature, including a move away from the human–nature divide and towards greater respect for nature's inherent value (European Environment Agency, 2023).

At the same time, this Opinion does not assume that one conceptual language alone can or should do all the work. Decisions affecting nature are never merely technical, but neither are they solved by moral assertion alone. They require institutional forms capable of handling plural values, uncertainty, conflict, and long temporal horizons, including responsibilities to future generations (Armstrong, 2021). They also require a clearer recognition that ecological degradation is not only an environmental concern but a present threat to health, productivity, resilience, and development, as recent World Bank analysis has emphasised in relation to the condition of land, air, and water systems (Damania et al., 2025).

Against this background, the present Opinion adopts a bridging approach. It seeks both to engage critically with the assumptions embedded in prevailing policy tools and to identify ways in which existing institutions might be reoriented, complemented, or, where necessary, more fundamentally reimagined. This is especially important in a period of crisis and disruption. Crises reveal the fragility of inherited assumptions; they also create an opportunity to clarify public values, rethink what counts as economic success, and align public decision-making more consistently with ecological realities (European Environment Agency, 2025).

1.2. Current policy landscape and challenges

The European Union already possesses a substantial environmental acquis — its existing body of environmental law and policy — and has, over several decades, developed a broad set of legal, policy, and administrative instruments relating to biodiversity, pollution, climate mitigation, restoration, agriculture, energy, sustainable finance, and environmental assessment. These include, among others, the Birds and Habitats Directives and the Natura 2000 network, the Water Framework Directive, the Biodiversity Strategy for 2030, the Nature Restoration Regulation, the European Climate Law, the Fit for 55 package, elements of the Common Agricultural Policy, the EU Taxonomy framework, and an expanding range of reporting, accounting, and appraisal mechanisms shaped in part by the Union's Better Regulation framework (Council Directive 92/43/EEC; Directive 2000/60/EC; Directive 2009/147/EC; European Commission, 2020; European Commission, 2021; Regulation (EU) 2024/1991). This landscape is also shaped by the Kunming–Montreal Global Biodiversity Framework, which frames EU biodiversity commitments as part of the wider global effort to halt and reverse biodiversity loss by 2030 and to advance the longer-term goal of living in harmony with nature by 2050 (Convention on Biological Diversity, 2022). The issue, therefore, is not that the EU lacks policy pertaining to nature. It is that these instruments embody different and only partly compatible assumptions about what nature is, why and how it matters, and how it should enter decision-making.

In practice, EU law and policy already reflect more than one way of valuing nature. Some instruments emphasise utility, ecosystem services, and risk management. Others rely more heavily on ideas of stewardship, restoration, protection, or legal obligation. Still others point toward the intrinsic significance of species, habitats, or ecological integrity. This plurality is not a weakness in itself. Indeed, it may reflect the complexity of the goods at stake. The problem is that these different ways of valuing nature remain unevenly integrated, and decision-making frameworks often continue to privilege what can be most readily measured, monetised, or traded off. Under current political pressures, this preference for measurability may grow, particularly where ecological issues are reframed through the narrower lens of competitiveness, strategic resilience, or short-term affordability (Jacobs et al., 2016; IPBES, 2022; Christie et al., 2019).

This is one reason why the present request to the EGE matters at this juncture. It does not ask only for better environmental policy in the narrow sense. It asks which assumptions about the value of nature and the human–nature relationship should underpin policy decisions; how such assumptions are, and should be, integrated into policymaking, impact assessment, design, monitoring, and evaluation; what ethical issues arise around the attribution of rights and standing to non-human nature; and how economic valuations of nature and of environmentally-relevant human action should be assessed. Those questions indicate that the challenge is not merely one of regulatory implementation. It is conceptual, institutional, and ethical at once.

The current landscape also contains a more practical tension that runs through the whole Opinion. On the one hand, there are approaches that work within existing institutional systems and seek to improve them strategically — for example through better accounting methodologies, broader indicators, improved impact assessment, or more attentive treatment of environmental costs, including through instruments such as carbon pricing. On the other hand, there are more forward-looking or transformative approaches that seek to address structural limitations in current approaches to valuing nature — for example through stronger legal standing for nature, new representational mechanisms, ecological constraints in decision-making, or more profound shifts in what counts as public value and economic success. Both approaches can be helpful. Strategic approaches may produce short-term gains, enjoy increased institutional traction, and demonstrate political feasibility. More transformative approaches may broaden the horizon of what is imaginable and address structural blind spots that incremental reform alone cannot correct. The task is not to choose once and for all between them, but to assess more carefully when each is more appropriate, what each can achieve, and how they may complement one another.

The EU's current policy trajectory makes this especially salient. Recent Commission initiatives increasingly frame environmental action through growth, competitiveness, and industrial strategy. That shift is understandable, particularly given energy insecurity, geopolitical strain, and global subsidy competition. But it raises the stakes of the present Opinion. If nature is valued only in terms of its contribution to growth, competitiveness, or investment, environmental protection will remain vulnerable whenever short-term economic priorities seem to conflict with it. The EU would then risk treating nature as important in principle but secondary in practice. By contrast, if the EU makes clear that healthy ecosystems are a necessary condition for long-term resilience, prosperity, and public trust, it can help prevent environmental backsliding and provide clearer leadership in the global context (European Commission, 2024; European Commission, 2025a; European Commission, 2025b; European Environment Agency, 2025).

Integrating multiple ways of valuing nature need not constrain innovation or competitiveness. It can help direct investment, research, and industrial transformation towards pathways that are ecologically credible, socially legitimate, and resilient over time, while reducing risks of maladaptation, greenwashing, litigation, and stranded investments. For the same reason, emerging concepts such as a "nature-positive economy" need to be defined in ways that support ecological integrity, democratic accountability, and fair distribution, rather than simply relabelling existing growth or investment agendas.

For these commitments to have practical effect, procedural safeguards are also needed. Access to environmental information, public participation in decision-making, and access to justice shape whose concerns become visible in environmental governance and whose do not. These three procedural guarantees are commonly associated with the Aarhus framework: the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, known as the Aarhus Convention (United Nations Economic Commission for Europe (UNECE), 1998), and, within the EU, the Aarhus Regulation, which supports the implementation of the Convention in EU institutions and bodies (Regulation (EC) No 1367/2006, as amended by Regulation (EU) 2021/1767; European Commission, n.d.). The Aarhus framework is therefore not secondary to substantive environmental policy in the EU, but one of the institutional conditions under which ecological concerns can be publicly articulated, contested, and defended.

The protection of ecological concerns has a substantive rights dimension as well. Recent UN analysis of the right to a clean, healthy and sustainable environment has emphasised that a non-toxic environment is one of its core elements, and that pollution and toxic exposure are often concentrated in "sacrifice zones" affecting already vulnerable and marginalised communities (United Nations Human Rights Council, 2022). This underlines that environmental degradation is not only a matter of policy failure, but also a matter of rights protection.

1.3. Purpose of the Opinion

This Opinion seeks to contribute to a clearer understanding of how nature should be valued, represented, and governed under current ecological and political conditions. Its purpose is not merely to restate the importance of protecting nature, but to examine the assumptions, concepts, and instruments through which nature is already being valued and governed, and to assess whether they are adequate to present ecological and political realities. This is a particular responsibility and opportunity for the European Union, whose internal market, environmental acquis, research funding, external trade relations, and regulatory standards shape how nature is valued not only within Europe, but also across global value chains and international governance.

The Opinion does not prescribe a single correct way of valuing nature. Rather, it offers a framework for recognising, scrutinising, and institutionally handling different ways in which nature is valued, providing conceptual clarity, ethical orientation, and policy-relevant guidance at a moment when the terms of governance are themselves under pressure.

The analysis addresses three interconnected clusters of questions:

First, it considers which assumptions about the value of nature, biodiversity, ecosystems, and the human–nature relationship should underpin policy decisions, and how these assumptions are already reflected — often unevenly — in policy design, impact assessment, monitoring, and evaluation. This requires both conceptual analysis and attention to institutional practice.

Second, it examines the ethical and institutional questions raised by attributing rights and standing to non-human nature, including how such claims can be recognised in law, how they may be brought before administrative or judicial bodies, and how they can be assessed and enforced. This part of the analysis is concerned less with endorsing a single legal model than with understanding how different approaches may address the persistent underrepresentation of non-human nature in existing governance systems, while also considering how evolving rights-based approaches to environmental protection may strengthen the broader legal context in which such questions arise (Rodríguez-Garavito, 2023; Tourme-Jouannet 2024; Knox 2022).

Third, it offers an ethical appraisal of economic approaches to valuing nature and environmentally-relevant human action and situates these within broader questions about socio-economic systems and the transition to sustainability. Here the task is neither to reject economic tools wholesale nor to accept them uncritically, but to clarify where they are useful, where they are insufficient, and where they become inappropriate because they distort what is at stake.

The analysis begins with the conceptual foundations of the debate, including different ways of understanding value and the human relationship to nature (chapter 2). It then turns to the right to a clean, healthy and sustainable environment and to the rights, standing, and representation of non-human nature (chapter 3). Chapter 4 examines economic valuation in greater detail, assessing both its opportunities and its limits. Finally, in chapter 5, the Opinion considers how these conceptual and normative issues are reflected in policy practice within and beyond the European Union, and what kinds of governance action follow from them.

The contribution of the Opinion is therefore both interpretive and practical. It seeks to clarify how different ways of valuing nature should be reflected in institutions, procedures, and policy instruments. It aims to support a more critical use of existing policy instruments, while also widening the institutional imagination available to policymakers. In doing so, it responds not only to the need for conceptual clarification, but also to the need for governance approaches that are more ethically robust, more ecologically realistic, and more coherent across the EU's internal commitments and its role in the wider world.

2. Conceptual foundations and normative applications

2.1. Value, valuing, and policy relevance

Any serious discussion of the value of nature quickly encounters a terminological difficulty. "Value" and "valuing" are used in different ways across philosophy, economics, law, and public policy. "Value" refers not only to economic worth, but more broadly to the different ways in which nature may matter. "Valuing" expresses what people, institutions, and societies take to matter; how that significance is expressed; and how it informs judgment, feeling, and action (see also Glossary).

Values, in this practical sense, refer to the importance, worth, or usefulness attributed to something and to the criteria by which it is evaluated (ten Have & Patrão Neves, 2021). To value something is not only to judge it as good, significant, or worthy, but also to be disposed to respond to it. Valuing thus creates forms of attachment and concern: people are affected when what they value is damaged, threatened, or lost, but may also experience affirmation, meaning, or responsibility when it is protected, restored, or allowed to flourish. As Scheffler argues, valuing involves at least a belief that something is valuable, a susceptibility to context-dependent emotions regarding it, a

disposition to experience those emotions as appropriate, and a disposition to treat relevant considerations as reasons for action (Scheffler, 2010).

This emphasis on the practical aspect of values and valuing matters because public policy is not made in the abstract. Institutions do not govern through theories of value alone; they govern through practical ways of recognising, expressing, and prioritising what matters. These mechanisms make some considerations visible, marginalise others, and translate competing claims into procedures, indicators, and priorities.

For the purposes of this Opinion, our focus is on the multiple ways in which nature can be valued: how humans, communities, and institutions recognise, express, prioritise, or neglect nature's significance, and how these practices shape public reasoning and decision-making. This shift of emphasis from value to valuing does not aim to settle the ultimate source of nature's value. It turns attention instead to how different ways of valuing become institutionally visible, marginalised, or consequential in governance.

Nor does this focus on valuing mean that all ways of valuing nature are equally adequate for public policy. Valuing is a human and institutional practice: people, communities, and institutions recognise significance, express it in different terms, contest it, and translate it into governance. The task is thus not to identify one final account of nature's value, but to clarify which ways of valuing nature can support legitimate, sustainable, and ecologically realistic governance.

In this respect, how nature is valued is not peripheral to governance but part of its normative foundation. Assumptions about what nature is, how it matters, and how losses or gains should be described affect what is taken into account in policy, what kinds of damage are treated as acceptable, and which forms of protection appear justified. Conceptual clarification is therefore not a preliminary exercise detached from practice. It is itself part of the work of responsible governance.

The questions addressed here also belong to a wider emerging field of planetary ethics, concerned with how human responsibilities, institutions, and ways of valuing must be rethought in light of growing recognition of conditions of ecological interdependence, systemic risk, and planetary constraint. In this broader landscape, the narrower concept of planetary justice can be understood as one important strand, focused especially on questions of fairness and distribution, while planetary ethics reaches more widely across responsibilities, relationships, institutional forms, and ways of valuing under planetary conditions (Adelman, 2021; Hickey & Robeyns, 2020). This perspective is also reflected in recent work on planetary habitability and terrestrial community, which understands the Earth not as an external object of use or control, but as a shared living world (Mbembe, 2023).

2.2. The human–nature relationship

Questions about the value of nature are inseparable from assumptions about the relationship between humans and the natural world. Much environmental degradation has been enabled by a narrative in which humans appear as external users, managers, or beneficiaries of nature, while nature appears as a background resource, stock, or provider of services. That framing is normatively consequential. It encourages the treatment of ecological loss as an external cost, a negotiable trade-off, or damage that can be deferred, compensated for, or restored.

We argue that humans are not external to nature, but part of ecological systems on which they fundamentally depend. That premise can command support across different philosophical positions. Reasonable disagreement persists about anthropocentrism, biocentrism, ecocentrism, the moral standing of non-human life, and the deeper foundations of environmental ethics. Yet across these disagreements, one point is increasingly difficult to deny: the conditions of human health, security, and flourishing are inseparable from the integrity of the ecological systems within which human life unfolds (White, 1967; Næss, 1973; Plumwood, 1993).

That premise has both descriptive and normative significance. Descriptively, it reflects an understanding of ecosystems as complex, relational, and interdependent. Normatively, it challenges any framework that treats nature merely as an object of use. To say that human beings are embedded in ecological systems is not to deny that nature has instrumental importance for humans. It is to deny that instrumental importance exhausts the matter. Once ecological embeddedness is taken seriously, the human–nature relationship can no longer be captured adequately through a narrow vocabulary of extraction, utility, and substitution.

The move away from understanding humans as external to nature is reinforced by growing scientific and public recognition of morally relevant features of non-human life, including sentience, vulnerability to suffering, and forms of social and cognitive complexity that challenge older assumptions of human exceptionalism. The point is not that all non-human beings matter in exactly the same way, or for the same reasons, but that a credible ethical account of the human–nature relationship can no longer proceed as if morally relevant individuality stopped at the human boundary. Sentient non-human beings matter not only as parts of species, habitats, or systems, but also as vulnerable beings capable of flourishing and of being harmed (Cochrane, 2018; Korsgaard, 2018; John & Sebo, 2020).

This recognition is of direct relevance to policymaking. If humans are seen as external to nature, then ecological degradation appears as a side effect to be managed or offset. If, by contrast, humans are recognised as part of ecological systems, then environmental degradation appears as a threat to the very conditions of social, economic, and political life. Nature is no longer a sectoral concern or an afterthought in policymaking; it is part of the underlying conditions of resilience, prosperity, health, and security.

This also helps to reframe an issue that recurs throughout the Opinion: the tendency to present ecological protection as being in tension with human prosperity, especially with the interests of those who are already disadvantaged. While such tensions can be real, they are often not best understood as fixed or natural conflicts. Rather, they frequently arise from specific institutional arrangements, narrow valuation frameworks, short-term political incentives, or failures to account for ecological boundaries and social distribution together. What is often presented as an unavoidable trade-off between “nature” and “people” may therefore be better understood as a governance failure. Once the relation between humans and nature is understood in more integrated terms, the opposition between “protecting nature” and “protecting society” becomes less convincing.

A more adequate conceptual starting point therefore does not treat nature as either wholly external to humans or wholly reducible to human interests. It recognises interdependence while leaving open the further question of how non-human nature should be valued and represented in governance.

2.3. Instrumental, intrinsic, and relational ways of valuing nature

A central claim of this Opinion is that nature can be valued in different ways that are not mutually exclusive. This means not simply that different people happen to value nature differently, but that nature can matter in different ways at the same time. This insight has been emphasised in international science–policy work, most prominently by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in its assessment of the diverse values and valuation of nature (IPBES, 2022). The assessment responds to a practical governance problem: dominant approaches to valuation, especially those focused on instrumental and economic metrics, have often proven insufficient to capture the full range of ways in which nature matters for human societies and for the integrity of ecological systems. As a result, important considerations — including cultural meanings, relationships of care and stewardship, and forms of value not reducible to use or exchange — risk being marginalised in decision-making.

Distinctions between instrumental, intrinsic, and relational dimensions of value provide a useful framework for making such plurality visible without presupposing a single theory of value (Chan et al., 2016; IPBES, 2022; Pascual et al., 2023). At the same time, these categories are not intended as a rigid classification system. Rather, they are tools for making visible a broader plurality of ways in which nature matters, including in different forms of knowledge, responsibility, attachment, practice, and ways of life that may otherwise be marginalised by predominantly instrumental or economic framings.

“Instrumental value” refers to the value something has as a means to other ends. In environmental contexts, this includes familiar references to food, water, materials, ecosystem services, climate regulation, livelihoods, health, and economic benefit. Instrumental valuation is not inherently problematic. It captures many real and important dependencies, and public policy cannot dispense with it, since governments must often assess how ecological change affects human welfare, security, and social stability. However, it becomes problematic when instrumental value is treated as if it exhausts what matters. In such cases, ecological goods more easily appear interchangeable, and losses more easily appear compensable so long as benefits can be secured elsewhere. When instrumental valuation becomes dominant, it also encourages neglect of the fact that natural environments are complex systems of relations and interdependencies, not merely repositories of individually useful components (Plumwood, 1993; Sagoff, 2004).

Concerns about purely instrumental understandings of nature have a long history in environmental and bioethical thought, including bioethical, land-ethical, responsibility-based, and deep-ecological approaches (Jahr, 1927; Leopold, 1949; Carson, 1962; Potter, 1970; Næss, 1973; Jonas, 1984). Intrinsic value refers to value that does not depend on usefulness with respect to external ends. In environmental ethics, this idea has often been used to express the claim that non-human beings, species, ecosystems, or ecological processes may matter in their own right and not merely as means to human ends. The concept is philosophically contested: there are, for instance, different views about what intrinsic value is, whether such value exists, what kinds of entities could bear it, how it could be known or specified, and how it should guide practical judgment (Zimmerman & Bradley, 2025).

In this Opinion, the term “intrinsic value” is used in a policy-relevant sense, broadly aligned with the IPBES framework, to indicate ways of valuing nature that are not reducible to human use, preference, or economic benefit. It does not require agreement on a fully settled metaphysical theory of value. Its importance for governance lies in challenging assumptions of replaceability: if something is seen as valuable in itself, then its loss cannot simply be treated as acceptable because other gains are available elsewhere. The recognition of intrinsic value therefore supports a language of respect, precaution, and non-substitutability (Taylor, 1986; Rolston III, 1988).

“Relational value” refers to the value that arises and is experienced in and through meaningful relationships between people and the natural world. It includes practices and experiences of care, stewardship, belonging, attachment to place, identity, reciprocity, responsibility, and cultural continuity. This perspective helps explain why environmental loss may be experienced not only as material damage, but also as the erosion of social worlds, practices, and ways of life, and why environmental protection is often bound up with community, culture, and democratic belonging rather than only with aggregate welfare or resource management (Jacobs et al., 2016; Himes & Muraca, 2018; Christie et al., 2019).

Such relationships may also support wellbeing, social cohesion, stewardship, and ecological care. These benefits, however, do not make relational valuing merely instrumental: practices of care, attachment, responsibility, and coexistence with nature can matter in themselves, not only as means to other ends. At the same time, relational valuing has important justice and equity implications. Relationships with nature are shaped by histories, institutions, access to land and resources, distributions of benefit and harm, and forms of recognition or exclusion. Recognising them therefore requires attention not only to attachment, identity, and stewardship, but also to reciprocity, responsibility, and the conditions under which different communities can maintain meaningful and sustainable relations with nature.

These features of relational value are especially relevant for policymaking. Nature may matter as a source of identity and cultural continuity; as an object of care; as something for which stewardship is owed; as a site of learning; and as a condition for sustaining just and reciprocal relations between communities and the environments on which they depend. These aspects are often highly salient in concrete governance contexts, including land use, agriculture, restoration, and the protection of landscapes and habitats.

The growing recognition of sentience among many non-human animals also reinforces the limits of frameworks that treat non-human life merely as resource or background condition. It highlights that the moral significance of nature cannot be understood only at the level of species, ecosystems, or systems, since some non-human beings also matter as vulnerable beings capable of suffering and flourishing. This does not collapse distinctions between environmental ethics and animal ethics, but it does support a more differentiated account of what matters in decisions affecting the more-than-human world (Cochrane, 2018; Korsgaard, 2018; John & Sebo, 2020).

These three different ways of valuing nature should not be treated as mutually exclusive or as competing metaphysical camps. In practice, they often coexist. A forest may matter at once as a carbon sink, a habitat, a place of belonging, a source of livelihood, and a living system that is worthy of protection in itself. A river may be valued for drinking water, agriculture, spiritual significance, community identity, and ecological continuity. What matters for governance is not to force these ways of valuing into artificial separation, but to recognise that different dimensions of value may be simultaneously at stake.

This plurality, however, does not imply that every value must always be represented in the same way or carry the same weight in every decision. The relevant point is that no single way of valuing should automatically dominate by default, and that different policy contexts may require different evaluative approaches, including economic, ecological, legal, ethical, and deliberative forms of reasoning. The challenge is therefore not simply to affirm different ways of valuing nature rhetorically, but to consider what kinds of procedures, indicators, legal concepts, and forms of public reasoning are capable of handling such plurality without collapsing it immediately into one metric (Jacobs et al., 2018; IPBES, 2022).

Because different ways of valuing nature may, at times, conflict, institutions need to clarify how such conflicts are to be addressed. A plural approach should avoid two opposite mistakes: reducing conflicts to monetised comparison by default, and treating all considerations as if they were always open to unrestricted balancing. Some values differ in kind, not merely in degree, and attempts to represent them through a single metric may entail losses of meaning or distortions of the good at stake (Anderson, 1993). Where ecological boundaries, non-substitutability, or risks of irreversible harm are at stake, these features may need to limit the range of acceptable policy options, rather than be treated simply as factors to be weighed against competing interests. This does not amount to a universal hierarchy of values. Rather, it points toward a combination of procedural requirements — making values, trade-offs, exclusions, and justifications explicit — and substantive constraints in cases where ecological loss cannot responsibly be treated as substitutable, compensable, or reversible.

This is especially important because current policy frameworks often privilege values that are easiest to measure, monetise, or trade off. Instrumental valuations, particularly those that can be expressed in economic terms, tend to travel more easily into appraisal frameworks, cost calculations, and administrative routines. Relational and intrinsic valuations are less easily translated in those terms and therefore risk being sidelined, even where they are acknowledged in principle. In that sense, the plurality of ways in which nature is valued is not only a conceptual insight. It is also a diagnosis of structural imbalance in governance (Stevenson et al., 2021; Pascual et al., 2023).

2.4. Normative implications for governance

If nature can be valued in different ways, and if human societies are embedded in ecological systems, then governance cannot proceed as if all relevant considerations could be translated into one common scale of comparison. The problem is not that policymaking needs to compare competing claims or make difficult judgments. It is that prevailing decision frameworks often assume too readily that biodiversity loss, ecosystem degradation, long-term ecological risk, and the interests tied to them can be weighed against other policy gains, compensated elsewhere, or deferred into the future (Anderson, 1993; Sagoff, 2004; Jacobs et al., 2018; IPBES, 2022; Pascual et al., 2023).

This conclusion can be supported from more than one ethical direction. Consequentialist concern for welfare and the avoidance of suffering supports greater attention to ecological degradation where it harms human and non-human beings. Duty-based approaches support obligations of protection, restraint, and respect, especially where some harms should not simply be traded off against aggregate gains. Ethics of care highlight relations of dependence, vulnerability, and responsibility that approaches focused primarily on utility, exchange, or calculability tend to overlook. Responsibility-oriented approaches emphasise the long-term consequences of present action and the duties owed to future generations under conditions of uncertainty and systemic risk. Traditions of practical judgment and stewardship, in turn, highlight the qualities of character and institutional orientation needed for living well within ecological limits. These approaches do not converge on every question, but they reinforce a common point: environmental governance cannot be adequately guided by any single of value alone (Cochrane, 2018; Hursthouse, 1999; John & Sebo, 2020; Jonas, 1984; Korsgaard, 2018; Tronto, 1993).

What follows from this is not a single decision rule, but a differentiated normative grammar for governance. Different dimensions of value often coexist within the same ecological entity, relationship, or policy context. The analysis in this chapter supports five commitments that should orient policy design, legal development, and institutional appraisal throughout the rest of this Opinion:

(a) Ecological embeddedness. Human societies are part of ecological systems, and their prosperity, health, resilience, and security depend on the integrity of those systems. Nature is therefore not external to the social, economic, and political goods that governance seeks to secure.

(b) Different ways of valuing matter. Nature cannot be adequately understood through one way of valuing alone. Instrumental, relational, and intrinsic dimensions of value all provide potentially relevant reasons for action, even if they do not always carry the same weight in every context.

(c) Commensuration has limits. Not all values at stake in decisions affecting nature can be translated into one common metric. Some losses are not appropriately treated as substitutable, compensable, or exchangeable, especially where ecological integrity, irreversible harm, the suffering of sentient beings, or fundamental conditions of life are concerned.

(d) Ecological boundaries and thresholds matter normatively. Ecological systems are vulnerable to tipping points, cumulative degradation, and irreversible change. In some contexts, this means that ecological limits should function as constraints on what may be justified, rather than simply as factors within an optimisation exercise.

(e) How nature is valued shapes governance. It shapes what is made visible, whose claims are recognised, how trade-offs are constructed, and what kinds of reasons count as admissible in governance.

These commitments do not eliminate the need for judgment, but they can help structure it. Public institutions should be able to distinguish between what may appropriately be weighed against other considerations, what requires stronger protection, what calls for precaution, what requires stronger forms of representation, and what should shape the terms of decision-making from the outset. That distinction cannot be made by one metric alone. It depends on recognition and acceptance of

features such as non-substitutability, irreversibility, threshold sensitivity, cumulative harm, uncertainty, and the structural underrepresentation of affected claims.

Some ecological considerations may appropriately enter processes of appraisal and comparison, especially where the goods at stake are genuinely comparable, the harms are reversible or mitigable, and the decision concerns alternative ways of securing legitimate ends. In other cases, stronger protection is needed because what is at stake would be seriously misdescribed if treated as broadly substitutable or compensable. Precaution is required where uncertainty or the risk of irreversible harm makes ordinary optimisation unreliable. Stronger forms of representation are needed where affected claims are diffuse, future-oriented, or non-human and therefore unlikely to be adequately registered through ordinary claimant-based politics. And in some contexts, ecological limits should function as binding constraints, because non-substitutability, duties of protection, or the conditions of collective life rule out treating the issue simply as one factor among others in a balancing exercise.

In practical terms, these commitments can be summarised as follows: different ways of valuing nature should enter, shape, and, where necessary, constrain governance. They should inform the early identification of relevant values, affected interests, ecological risks, and potential conflicts; support multi-value approaches to assessment; shape the design and justification of policy options; and guide decisions about when ecological boundaries, non-substitutability, or risks of irreversible harm require precaution, redesign, restoration, or refusal rather than ordinary balancing.

Several implications for governance follow:

First, policy should not proceed as if one register of value were sufficient. Instrumental valuation will remain important, especially where governments must assess dependence, vulnerability, and environmental risk. But a policy framework organised only around utility, efficiency, or economic contribution is normatively deficient. It cannot adequately register values of care, stewardship, ecological integrity, respect for non-human life, or the moral relevance of sentient vulnerability. Nor can it adequately explain why some losses appear unacceptable even where compensatory gains are offered elsewhere (Anderson, 1993; Sagoff, 2004).

Second, the recognition that nature can be valued in different ways does not by itself transform governance. That plurality must be reflected in how decisions are structured. Different ways of valuing nature, and different features of the goods at stake, may call for different modes of policy treatment: some for indicators or accounting measures; some for deliberation and participation; some for legal duties, constraints, or stronger protection; and some for combinations of these. A governance system that acknowledges different ways of valuing nature only at the level of rhetoric, while continuing to rely almost exclusively on what can be most readily measured or monetised, remains normatively narrow (Jacobs et al., 2018; IPBES, 2022).

Third, a more differentiated account of value helps clarify the kind of governance action that may be required. The task is not simply to add more values to existing frameworks without changing their structure. It is to ask whether institutions, procedures, and policy tools are capable of recognising ecological embeddedness, handling multiple dimensions of value, and responding responsibly to non-substitutability, uncertainty, long-term dependence, and structural underrepresentation. In that sense, conceptual work is not separate from policy design. It is one of the conditions for better policy design.

This chapter therefore establishes the conceptual and normative foundation for the chapters that follow. Chapter 3 examines legal and institutional responses to the underrepresentation of non-human nature and future-oriented ecological concerns, including questions of standing, rights, and representation. Chapter 4 turns to economic valuation more directly, asking under what conditions such approaches can be used responsibly within socio-economic systems undergoing a transition to sustainability.

3. Rights, standing and representation in ecological governance

This chapter examines rights-based pathways through which ecological concerns are becoming more visible, defensible, and consequential in governance. It explores existing and emerging legal responses to the structural underrepresentation of nature, future-oriented ecological concerns, and affected communities in current legal and institutional frameworks.

3.1. The rise of rights-based protection for nature

Law reflects and protects different ways of valuing nature. Instrumental, intrinsic, and relational ways of valuing appear across legal frameworks: in environmental rules grounded in ecosystem services; in constitutional, statutory, or judicial attribution of rights, standing, or legal personality for natural entities; and in legal protections that acknowledge the cultural and relational significance of landscapes, ecosystems, and territories for specific communities. EU law and policy likewise reflect multiple ways of valuing nature.

Diverse ways of valuing nature can also be found in international law. For example, relational understandings of nature characterise the ways in which United Nations human rights treaty bodies have underscored the connections between Indigenous peoples, such as the Sámi, and the ecosystems in which they live, recognising that environmental degradation can undermine not only livelihoods but also cultural identity and ways of life (CESCR 2022; CERD 2020).

A further example from the wider European and Arctic context is the 2023 draft Constitution for Greenland, prepared by the Greenlandic Constitutional Commission (Lackenbauer 2026). The draft includes a proposed right to live in a clean and healthy environment protected on a sustainable basis and links sustainable development to the prevention of harm to fauna and the environment. As a draft text, it should be treated cautiously, but it illustrates that constitutional environmental-rights debates in Europe's wider legal and political neighbourhood where these debates intersect with Indigenous self-government and relations to land, fauna, and environment.

In relation to this, the concept and crime of ecocide is gaining momentum. Ecocide has been defined as "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts" (International Expert Panel for the Legal Definition of Ecocide, 2021). The idea has been discussed internationally since the 1970s and has recently gained renewed attention, including in Europe, where it is referred to in recital 21 of the European Environmental Crime Directive (Directive (EU) 2024/1203), and at the international level (Killean and Short 2025).

One dimension of law's engagement with ways of valuing nature is currently attracting considerable attention: the concept of Rights of Nature (RoN). In simple terms, RoN approaches seek to attribute rights, standing, or legal personality to natural entities such as rivers, ecosystems, or nature as a whole, thereby shifting their legal status from objects of protection to subjects within law.

In some contexts, RoN are closely linked to the human right to a clean, healthy and sustainable environment and to constitutional obligations to protect the environment, including for future generations, as reflected for example in the German Constitutional Court's Climate Ruling (2021). This right, often described simply as the right to a healthy environment, was the subject of a 2022 UN General Assembly Resolution adopted without opposition and supported by an overwhelming majority of UN Member States, including almost all Council of Europe member states (UNGA, 2022).

As articulated in the Resolution, the right has both procedural and substantive elements, including concern for biodiversity and healthy ecosystems for all people within its scope, and is recognised

in legal form in over 160 of the 193 UN states. The 2022 Resolution reflects an emerging trend towards recognising, respecting, and protecting this right, developed by courts especially in the African and Inter-American human rights systems, and reflected in instruments including the Arab Charter of Human Rights (2004), the Aarhus Convention (1998), and the Escazú Agreement (2018).

The Parliamentary Assembly of the Council of Europe has further addressed the connection between human interests in a healthy environment and the intrinsic value of nature, recommending in a 2021 Resolution that the Council "recognise, in time, the intrinsic value of Nature and ecosystems in the light of the interrelationship between human societies and Nature" (Council of Europe, Parliamentary Assembly, 2021).

At the same time, under universal international law, the right to a healthy environment remains grounded primarily in soft law. Its impact within the EU legal order therefore depends on the channels through which international human rights standards are recognised, interpreted, and incorporated in EU law.

Broadly understood, and as explicitly enunciated by the Council of Europe, the right to a healthy environment protects not only human interests in environmental quality, but also the ecosystems, biodiversity, and living conditions on which human life depends. In this respect, it overlaps with RoN approaches: both belong to a broader field of legal tools that seek to respond to ecological crisis and strengthen the protection of nature. Their emphasis, however, differs. The right to a healthy environment is usually grounded in human interests and therefore tends to express more anthropocentric, instrumental, and relational ways of valuing nature. RoN approaches, by contrast, tend to express a more ecocentric orientation and give stronger legal expression to intrinsic or non-instrumental ways of valuing nature.

This distinction should not be understood too categorically, however. While the right to a healthy environment is often grounded in human interests, it can also give legal expression to ecological, relational, and procedural concerns, for example by protecting ecosystems as conditions of health, cultural life, participation, and intergenerational justice. Conversely, RoN approaches are not justified only by appeals to intrinsic value. They may also be defended because they expand standing, strengthen ecological protection, recognise place-based or Indigenous relationships with nature, improve legal visibility, or respond to enforcement gaps. The relevant legal question is therefore not simply whether an approach is anthropocentric or ecocentric, but what kind of ecological concern it makes visible, who may invoke it, and with what institutional effect.

RoN can therefore be situated within a broader ecological reorientation of legal protection, including human rights law and practice. This reorientation remains the subject of ongoing discussion and debate (Tourme-Jouannet 2024; Knox 2022). In legal circles, one question is whether RoN should be understood as extending beyond human rights (MOTH n.d.). Recognition of RoN has also reignited debate about the legal protection of non-human subjects more generally. For instance, if corporations are considered rights-holders, as they are by the European Court of Human Rights, the question arises whether analogous forms of legal protection could be extended to nature. The force and limits of such analogies remain contested.

What is clear, however, is that national, regional, and international engagement with RoN has grown considerably in recent years. At the national level, notable developments include Ecuador's constitutional provision granting nature the right to exist, persist, regenerate, and be respected (2008), as well as Bolivia's Rights of Nature Law (2010). Other jurisdictions, such as India and Colombia, have recognised legal personhood or rights for specific natural entities through judicial decisions in different contexts (Surma 2022; Constitutional Court of Colombia, 2016), while New Zealand has granted legal recognition to Te Urewera (2014) and the Whanganui River (2017). As documented by the EcoJurisprudence and UN Harmony with Nature platforms, the landscape of RoN and ecocentric laws more generally continues to evolve.

Within the EU, this evolution includes Spain. In 2024, Spain's Constitutional Tribunal upheld Law 19/2022, which grants legal personality to the Mar Menor lagoon (Tribunal Constitucional

(Sentencia 142/2024 of 20.11.2024, Judgment upholding the constitutionality of Law 19/2022 on the legal personality of the Mar Menor lagoon and its basin). The Court characterised the law as the first Euro-Mediterranean instrument to give legal personhood to an ecosystem, emphasising that its novel ecocentric legal approach was required both by the complexity of the environmental issues at stake and by the ineffectiveness of existing international and national environmental laws.

Regional and international engagement with RoN has also been notable, with regional human rights courts commanding particular attention. The Inter-American Court of Human Rights is widely seen as a pioneer, with a series of landmark decisions rooted in the human right to a healthy environment, stretching from its Advisory Opinion 23/17, through decisions in *The Indigenous Communities of the Lhaka Honhat v Argentina* (2020) and *Community of La Oroya v Peru* (2023), to its most recent Advisory Opinion 32/25, which followed a request from the governments of Chile and Colombia for clarification of states' obligations in the context of the climate emergency.

Crucially, the Advisory Opinion adopts an expansive approach to the relationship between climate change, environmental protection, human rights, and the protection of nature. It recognises the global climate emergency as a legal fact calling for immediate, coordinated, and human-rights-based action, affirms individual, collective, and intergenerational dimensions of environmental protection, and sets out positive obligations for states in relation to corporate activity, emissions mitigation, and the protection of essential ecosystems. In doing so, it signals a significant shift towards more ecocentric reasoning within the Inter-American system.

Commenting on the Opinion, Christiana Figueres, former Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), called it "a before and after" in law's protection of the climate, commenting: "The road ahead remains steep. But [the] Opinion gives legal wings to countless efforts already under way — and to many more to come. We now walk forward not just with moral clarity, but with judicial affirmation… This is a day for the history books. And a day for renewed resolve." (Figueres 2025).

The Inter-American Court's 2025 Opinion, which presents detailed legal arguments for protecting RoN, is often discussed alongside another opinion of the same year: an Advisory Opinion of the International Court of Justice, which did not consider nature as a subject of rights, but did use ecocentric language, including in its references to the right to a healthy environment, which stems from the interdependence of human rights and environmental protection, noting also that states cannot fulfil their human rights obligations without ensuring environmental protection (ICJ 2025, para. 393).

The Inter-American Court's 2025 Advisory Opinion is not binding in Europe, but regional human rights courts may take account of significant developments in other human rights systems. To date, however, the European Court of Human Rights has taken a more cautious approach than its Inter-American counterpart. In *KlimaSeniorinnen*, the Court recognised that States have obligations to protect individuals from the adverse effects of climate change, but also emphasised that the European Convention does not provide general protection for the environment as such, and that claims must concern harmful effects on persons rather than general environmental deterioration (ECtHR, 2024). This contrast partly reflects differences in the legal instruments interpreted by each court, as well as differences in regional legal, political, and economic contexts. It is also one reason why the pending advisory proceedings before the African Court on Human and Peoples' Rights are widely anticipated, including for how they may interpret environmental protection, human rights, and climate obligations in light of African regional legal traditions and the specific impacts of the climate crisis on the continent.

More generally, these developments should be read together rather than as separate legal signals. The United Nations General Assembly's recognition of the right to a clean, healthy and sustainable environment provides an important global normative reference point. The Aarhus framework gives procedural substance to environmental protection through its emphasis on access to information, public participation, and access to justice. The International Court of Justice's 2025 Advisory Opinion further underlines the interdependence between environmental protection and the enjoyment of human rights. Taken together, these instruments and developments strengthen the

case for giving the right to a clean, healthy and sustainable environment more concrete legal and institutional effect within the EU legal order.

3.2. Arguments for and against the use of rights to expand legal protection to nature

Proponents of RoN argue that a legal shift is already underway, even if its form and effects differ across countries and regions. More broadly, they contend that reframing nature as a rights-holder can have symbolic, cultural, legal, and political effects, contributing to a broader shift toward ecocentrism. RoN are therefore presented not only as a legal technique, but also as a way of reshaping how law understands the relationship between humans and nature.

More specifically, proponents argue that much environmental law remains oriented towards preventing or remedying harm to humans, rather than protecting nature in its own right. RoN seek to address this limitation by giving legal expression to the intrinsic or non-instrumental significance of nature and by requiring justification for interventions that harm natural entities. Two arguments recur (Nash 1989). The first is that attributing rights to nature is necessary to protect its intrinsic value. The second is more instrumental: RoN are presented as a legal tool for responding to the triple planetary crisis of climate change, biodiversity loss, and pollution, as well as to the transgression of planetary boundaries, growing inequalities, and increasing conflict.

Put differently, proponents argue that RoN — whether established through constitutional law, legislation, judicial practice, a new protocol to the European Convention on Human Rights protecting the right to a healthy environment (Council of Europe 2021), or other means — can give nature a stronger legal and ethical status, guide legal interpretation, and serve an educational role for lawmakers and institutions (Boyd 2022). RoN proponents emphasise, for instance, that RoN require state interventions affecting nature to be justified and impose duties on the state to protect and maintain natural entities. They also argue that RoN may help address fragmentation in conventional environmental law and promote intergenerational equity by embedding ecological considerations into constitutional or other fundamental legal principles.

Proponents also argue that granting legal personhood, rights, or standing to nature can expand access to justice by allowing ecosystems or natural entities to be represented in court (Boyd 2017). At present, in most legal systems, nature itself cannot invoke legal protection; only human individuals, public authorities, or designated organisations can bring claims. Instruments such as the Aarhus Convention have improved access to justice for environmental organisations, but the protected interests often remain tied to procedural compliance and may not always provide effective pathways to challenge or prevent diffuse, cumulative, or future-oriented ecological harms. Relatedly, RoN proponents argue that within the EU, standing requirements have often been interpreted narrowly, requiring a direct and individual connection to harm that is difficult to establish in cases of ecological damage affecting collective interests. While EU law gives environmental organisations important rights to review compliance with environmental rules, including under the Environmental Impact Assessment and Industrial Emissions frameworks, these routes may remain limited in scope, procedure, or practical accessibility.

At the same time, many commentators remain cautious about RoN, and some are strongly opposed. Four recurring objections concern definitional uncertainty, standing and enforcement, institutional effectiveness, and the availability of alternative legal tools (for an overview, see Sachs 2023).

The first objection concerns definitional uncertainty. Which entities should receive rights: entire ecosystems, specific species, natural features, or nature as a whole? What should those rights entail in practice? Critics argue that ecosystem boundaries are often fluid and difficult to delineate, and that the identification of nature's "interests", such as interests in restoration or non-interference, remains human-constructed and open to interpretation. Some critics also question

whether human rights law can coherently encompass protection for non-human subjects (Weis and Mullins 2025).

Second, critics argue that expanding standing will not by itself ensure effective enforcement if institutional capacity, resources, and judicial willingness are lacking. They suggest that broader collective action rights for NGOs and affected communities, such as a constitutional complaint right for environmental associations, could achieve similar improvements in access to justice without attributing legal personhood to nature (Darpö 2021).

A more specific concern is that some RoN models may encourage forms of actio popularis, that is, the possibility of bringing a claim in defence of a public legal interest without needing to show individual harm. RoN do not necessarily require such a model, since they can also be implemented through representative, guardianship, or collective-action mechanisms. Nevertheless, broad *actio popularis* can raise concerns about judicial overload, reduced intensity of judicial scrutiny, and possible abuse, including the strategic use of litigation to obstruct or delay projects, pressure public authorities, or burden opponents with legal costs. Practical barriers such as litigation costs, the need for legal or technical assistance, and financial security requirements for injunctions may also limit effectiveness in practice.

Critics therefore argue that strengthening access to justice in environmental matters need not imply extending standing or relaxing evidentiary standards. On this more cautious view, reform should focus on reducing disproportionate administrative and financial barriers, supporting effective participation in enforcement processes, and ensuring that diffuse, cumulative, or hard-to-attribute ecological harms can be brought before competent bodies under ordinary legal and scientific standards of evidence.

Third, critics argue that the level of environmental protection depends more on political commitment, judicial independence, institutional capacity, and robust public participation than on the formal recognition of RoN. They point to evidence from countries with RoN, such as Ecuador and Bolivia, where enforcement outcomes have been mixed (Buser & Ott 2021). On this view, while some landmark cases have succeeded in granting legal protection to natural entities, many initiatives have faced economic pressures, weak enforcement, and judicial reluctance.

Critics make a related point with reference to jurisdictions such as Germany, where the state's duty to protect against climate and environmental risks is already well established in constitutional law. They emphasise that the practical effect of such duties is mediated through legislation and judicial interpretation. Courts typically afford legislatures broad discretion in fulfilling protective duties, thereby maintaining a separation between legislative and judicial roles. From this perspective, constitutional or legislative recognition of RoN would not necessarily alter this dynamic: the balancing of rights, and of rights and other interests, would remain primarily a legislative responsibility. Critics also point to cases in which courts, without relying on RoN, have used existing legal balancing mechanisms to advance environmental protection. The European Court of Human Rights, for example, has upheld substantial restrictions on property rights in the interest of environmental protection (*Depalle v. France* and *Brosset-Triboulet and Others v. France*, 2010). For RoN critics, such cases suggest that RoN may not add substantially to what can already be achieved through conventional environmental or human rights law.

Fourth and finally, critics argue that alternative legal measures could achieve similar or greater environmental protection. These include strengthening existing environmental legislation, improving access to justice for affected communities and environmental organisations, and establishing more rigorous enforcement mechanisms. Concrete examples include a general principle of non-regression in environmental law, specialised ecological ombudspersons, or an EU Ombudsman for Nature (Vordermayer-Riemer 2021; Shindo 2019; Wercinski 2025). RoN sceptics also argue that environmental standards — such as binding restoration obligations, prohibitions on environmental degradation, and adaptive management requirements — can provide concrete and enforceable protection without the complexities involved in attributing legal personhood to nature. The EU Nature Restoration Regulation exemplifies such an approach by setting ecological targets through conventional legal mechanisms.

3.3. Toward a plural rights-based strategy

Despite increasing implementation, RoN remains a contested concept. This is not unusual: contestation and experimentation are familiar features of international human rights law more generally (De Búrca 2021). As shown above, proponents argue that RoN can catalyse a broader cultural and legal transformation toward ecocentrism, strengthen environmental protection, and influence legal interpretation by requiring public justification for actions that harm nature. Critics, however, argue that RoN often respond to enforcement gaps that could also be addressed by strengthening existing legal standards, institutional capacities, and access to justice. On this view, the effectiveness of RoN depends less on legal recognition alone than on political will, institutional design, and enforcement mechanisms. Importantly, many proponents do not deny this. They too acknowledge that legal recognition is not a standalone solution, while maintaining that RoN should be taken seriously because of their legal, ethical, and symbolic significance, as well as their growing practical momentum.

This Opinion does not need to assume that rights of nature exist independently of human legal and political practice in order to take them seriously. Rights are articulated, specified, and institutionalised through public debate and justification, legal form, procedural safeguards, and mechanisms of representation and enforcement. In this sense, legal systems may attribute rights, standing, or representation to non-human nature under justified conditions. The relevant question is therefore not whether such rights are simply discovered or invented, but rather whether attributing them can be a justified and effective response to ecological interdependence, vulnerability, non-substitutability, and the structural underrepresentation of ecological concerns in existing governance systems.

This framing also helps identify a possible point of convergence between RoN approaches and human-rights-based environmental protection. The Inter-American Court's 2025 Advisory Opinion suggests that the exercise of human rights presupposes environmental protection, so that ecological protection becomes a genuine component of human rights protection and, by extension, of human dignity. This argument may help bridge the divide between more ecocentric and more human-rights-based approaches by supporting a plural rights-based strategy for ecological protection.

More generally, the underlying issue is whether ecological interests can be represented in a non-derivative way: that is, not only by showing how damage to nature affects human interests, property, health, or welfare, but also by enabling harms to ecosystems, species, ecological processes, or individual living beings to be raised as matters of concern in their own right. This does not require one specific legal model. It may be pursued through RoN frameworks, legal personhood, qualified representative standing for NGOs and other public-interest actors, ombudsperson-type mechanisms, ecological guardianship, or strengthened public-interest enforcement. Which of these pathways is most appropriate, and under what conditions, remains contested.

For the purposes of this Opinion, the central issue is therefore not whether the European Union should adopt one comprehensive RoN model. It is how legal and institutional frameworks can better accommodate and respond to ecological concerns that are otherwise weakly heard, including diffuse, cumulative, future-oriented, and non-human claims. This points towards a plural rights-based strategy. At minimum, such a strategy would give more concrete effect to the right to a clean, healthy and sustainable environment; strengthen procedural guarantees, access to justice, and public-interest enforcement; and explore carefully governed mechanisms for ecological representation where existing pathways remain insufficient.

The next chapters examine how far existing EU law and policy already reflect such plural ways of valuing and representing nature, where integration remains uneven, and what kinds of governance choices follow.

4. Ethical appraisal of economic valuation of nature

This Opinion argues that the way nature is valued shapes what becomes visible, what is prioritised, and what is protected or degraded. Economic valuation therefore requires particular scrutiny — not because it is the only way nature is valued in policymaking, but because it is the most institutionally powerful. It informs impact assessments, accounting systems, incentive structures, pricing instruments, and investment choices. In doing so, it helps to determine which harms can be compensated, which benefits appear commensurable, and which ecological losses are treated as acceptable costs of development. Economic valuation therefore matters not only because it informs decisions, but because it shapes the terms in which decisions are justified.

This chapter examines economic valuation as one of the main sites in which underlying assumptions about nature become operational in governance. It considers how economic valuation represents the human–nature relationship, how it frames perceptions of substitution and compensation, and how it influences what counts as rational public justification. Economic valuation can disclose ecological dependencies, reveal environmental costs that would otherwise remain external to decision-making, and correct the institutional invisibility of environmental harms. Its ethical standing, however, varies by context. In some settings, economic valuation is useful despite capturing only a subset of the different values attributed to nature, because it can make certain harms, dependencies, and trade-offs more visible within institutions that would otherwise neglect them. In other settings, it becomes inappropriate because it misrepresents the good at stake, treats the non-substitutable as substitutable, or normalises losses that should instead be approached through protection, constraint, or precaution. The question, then, is what place economic valuation should have within a framework that recognises the plurality of ways in which nature is valued and the embeddedness of human societies in ecological systems.

4.1. Economic valuation in environmental governance

Economic valuation has become an established feature of environmental governance in the European Union, but it appears in several distinct forms. It enters decision-making through several broad categories of instruments. These should be distinguished carefully, since they do not all raise the same ethical questions and do not perform the same institutional function.

The first category is appraisal. Cost-benefit analysis is used to compare policy options, projects, and regulatory choices by identifying and weighing expected costs and benefits across economic, social, and environmental dimensions. Its practical attraction lies in comparability. Where institutions must rank options, justify expenditure, or assess proportionality, cost-benefit analysis offers a common decision format. That format can be valuable. It can make decision-makers register environmental harms that might otherwise remain invisible, and it can discipline arbitrary or purely rhetorical decision-making. Yet it also embeds often unexamined assumptions about how different types of goods may be compared, what counts as a benefit or a cost, and which forms of uncertainty can be absorbed into calculation. In EU practice, this logic is closely tied to the Better Regulation framework and to the appraisal of major initiatives and projects (European Commission, 2021).

A second category is accounting. Natural capital accounting and ecosystem accounting do not normally rank options or set incentives. Their main function is informational. They seek to measure changes in ecosystem extent, condition, and the benefits that ecosystems provide over time, and to integrate these into broader systems of economic and statistical reporting. In the EU, this matters because it alters the informational architecture of governance. Nature ceases to appear merely as an uncounted background condition and enters reporting systems as a condition of long-term public wealth, social stability, and economic resilience. Such accounting can correct the blindness of conventional macroeconomic indicators to ecological degradation. It can also support better budgeting, planning, and long-term risk assessment. At EU level, this work is linked to natural

capital accounting and to ecosystem accounting under the SEEA framework, including the INCA platform (European Commission, n.d.-a).

A third category is ecosystem-service assessment. Here the central function is interpretive as much as calculative. Ecosystems are represented in terms of the benefits and functions they provide, including provisioning, regulating, and cultural services. This can be institutionally powerful because it makes ecological dependence visible in terms that policymakers can use. It is often precisely this translation that allows biodiversity, ecological restoration, soil protection, or freshwater integrity to enter decisions that would otherwise be framed narrowly in terms of sectoral output or short-term cost. In the EU context, the Mapping and Assessment of Ecosystems and their Services (MAES) process is an important example of this evaluative infrastructure: it has helped map ecosystems, assess their condition and services, and make ecosystem-service information available for policy assessment.

Yet ecosystem-service approaches also carry a risk. By foregrounding benefits and contributions, they may encourage a view in which nature appears primarily as a service provider rather than also as a living system, a set of relationships, or a condition of collective continuity. They may also obscure the political conditions under which decisions affecting nature are actually made: technically rigorous calculations of ecosystem services do not by themselves determine whether ecosystems will be protected where powerful actors stand to benefit from conversion, extraction, or development. Recent critical work on ecosystem services has therefore emphasised that the fragility of this approach lies not only in methodological limits, but also in its tendency to underestimate power relations, institutional incentives, and political economy (Suarez, 2026).

The concern, then, is practical as well as conceptual. Ecosystem-service approaches often fit easily into existing administrative and economic procedures because they translate ecological concerns into benefits, costs, risks, and service flows. This can make nature more visible in policymaking, but it can also reinforce narrow forms of reasoning if other ways in which nature matters are not given comparable institutional weight (Jacobs et al., 2016; Christie et al., 2021; Stevenson et al., 2021; Pascual et al., 2023).

A fourth category is incentives and market-like mechanisms. Payments for ecosystem services, agri-environmental support schemes, biodiversity credits, and nature credits belong here, although they differ substantially in design. These instruments do not simply describe value; they seek to alter behaviour by attaching economic rewards, obligations, or exchangeable units to ecological outcomes. Their attraction is understandable. They may mobilise funding, influence land-use decisions, and direct private or public resources towards conservation and restoration. In some contexts they may also achieve policy goals more quickly than prohibition alone. But their ethical implications are sharper than those of accounting and often sharper than those of appraisal. By creating standardised ecological units, they may encourage the assumption that ecological gains and losses are broadly comparable and, in some cases, exchangeable. In EU policy, comparable approaches appear in payments for ecosystem services and in recent Commission efforts to promote nature credits (European Commission, n.d.-b; European Commission, 2025).

A fifth category is environmental pricing. Instruments such as the EU Emissions Trading System and the Carbon Border Adjustment Mechanism do not value nature directly. They place a price on environmentally harmful actions, especially greenhouse gas emissions. Their primary purpose is not to monetise ecosystems but to attach a price to environmentally harmful activities so that costs otherwise ignored by markets are taken into account. This distinction matters. Pricing harm is not the same as pricing nature. In some contexts, it is more defensible because it targets damaging conduct rather than assigning a price to ecological entities or relationships themselves. It also shows that the ethical assessment of economic instruments cannot collapse into a simple opposition between pricing and non-pricing. What matters is what is being priced, for what purpose, and with what assumptions about limits, substitution, and responsibility. In EU law and policy, both the Emissions Trading System and CBAM are explicitly designed to attach an economic cost to carbon emissions or embedded emissions (European Commission, n.d.-c; European Commission, n.d.-d).

These distinctions matter ethically because different instruments are vulnerable to different kinds of distortion. Appraisal tools such as cost-benefit analysis raise the sharpest questions about commensurability and trade-off, because they compare heterogeneous goods within a common decision format. Accounting tools are often less problematic in that specific sense, but they raise concerns about false completeness when what is counted appears to exhaust what matters. Ecosystem-service approaches are especially vulnerable to narrowing nature to benefits and functions for humans, even where broader ecological concerns or relational significance is at stake. Incentive-based and market-like instruments raise stronger concerns about standardisation, exchangeability, and offsetting. Pricing instruments occupy a somewhat different position again, since they typically price harmful conduct rather than nature itself, but they still depend on assumptions about what should be priced, for what purpose, and within what limits.

These differences also matter institutionally. Some instruments primarily support decision-making through binding rules and regulatory standards; others shape behaviour through financial incentives and disincentives; others alter the informational basis of governance through indicators, disclosure, accounting, monitoring, or reporting frameworks; and others operate through coordination, participation, and networked forms of governance. Their ethical appraisal should therefore begin not from a blanket verdict for or against economic valuation, but by posing the question of what kind of governance work a given instrument is doing, what sort of simplification it entails, and whether that simplification remains proportional to the good being governed. Economic valuation is often justified because environmental harms are systematically undercounted, deferred, or externalised. In that sense, it can correct real policy failures. The ethical difficulty begins when a useful decision aid becomes a governing logic, or when a partial representation of value is treated as if it were complete.

4.2. Ethical limits: incompleteness, inappropriateness, and overreach

The central ethical concern about economic valuation is not comparison as such. Public decision-making often requires comparing options, impacts, and priorities. The deeper concern is that some forms of economic comparison rely on assumptions that are difficult to justify in relation to ecological goods and relationships. In particular, many economic valuation approaches assume that heterogeneous goods can be represented on a common scale, often monetary. That assumption of commensurability makes trade-offs calculable. It allows options to be ranked and harms to be balanced against gains. But the values at stake in environmental decision-making are often not simply different amounts of the same thing. They involve different ways of valuing nature. As we explored in chapter 3, instrumental, relational, and intrinsic ways of valuing do not collapse neatly into a single metric or evaluative framework (Anderson, 1993; Taylor, 1986; Rolston III, 1988; Pascual et al., 2023).

Economic valuation may be ethically incomplete without being ethically inappropriate. It is incomplete where it captures only part of what matters, but still functions as a useful input into decision-making. This may be the case, for example, where accounting systems make ecological degradation visible and quantifiable to institutions that would otherwise ignore it, or where pricing pollution helps correct incentives that reward environmentally harmful conduct. In such cases, valuation does not provide a full account of value, but it may still improve the quality of public reasoning by making certain harms, dependencies, and trade-offs more visible.

However, economic valuation becomes problematic when it misrepresents the nature of the good in question. This happens when assigning a monetary or standardised metric suggests that the object can be substituted, exchanged, or compensated for, even though this is precisely what is ethically or ecologically contested. Such misrepresentation is especially concerning in cases involving place-specific ecosystems, habitats facing irreversible loss, threshold-sensitive ecological processes, or forms of non-human life whose destruction cannot meaningfully be offset elsewhere. In these contexts, economic valuation does not merely provide a neutral measure; it

risks distorting what is at stake. The same concern arises when valuation frameworks fail to capture the moral significance of sentient non-human beings as individuals, including their vulnerability to suffering, injury, and death. In such cases, economic valuation frames the issue in the wrong terms: the ethical question is not only about losses in aggregate ecological value, but about harms inflicted on beings whose suffering and flourishing carry independent moral weight (Nussbaum, 2006; Korsgaard, 2018; Cochrane, 2018).

This helps clarify why some instruments are more troubling than others. Environmental pricing of harmful conduct may be incomplete, because it does not capture all morally relevant dimensions of harm, yet it can still be legitimate, especially when it internalises costs that would otherwise remain invisible. Ecosystem accounting may be incomplete in this sense, but useful, particularly where it changes the informational basis of governance. By contrast, offsetting or credit-based schemes may become inappropriate where they depend on broad substitutability across ecologically distinct losses and gains. Likewise, cost-benefit analysis may be helpful as one input among others, but it becomes inappropriate where it is treated as the sole or decisive test of justification in contexts marked by irreversibility, uncertainty, non-substitutability, or deep distributive asymmetry.

This is where the distinction between partial comparability and misclassification of what is at stake becomes particularly important. Some degree of commensuration is often unavoidable in governance. Budgets must be allocated, projects assessed, and policies compared. The problem is not that institutions compare unlike goods at all, but that one mode of comparison may become dominant and claim authority beyond its proper scope. A useful simplification becomes a problematic instance of misclassification when it is treated as sufficient to decide questions that also require judgment about what should not be traded away, what must be protected as a matter of constraint, or what should trigger precaution rather than exchange.

Offsetting and credit-based approaches are especially instructive here. Their practical attraction lies in flexibility and resource mobilisation. Their ethical risk lies in standardisation. Once ecological damage and ecological improvement are translated into commensurable units, the language of compensation can begin to displace the language of protection. This is especially troubling where systems are ecologically complex, place-based, or close to thresholds beyond which degradation may become abrupt, self-reinforcing, or difficult to reverse. In such contexts, the assumption of substitutability is not merely uncertain. It may be fundamentally misleading. The same concern becomes sharper where the objects affected are not only ecosystems or habitats in the abstract, but living beings whose suffering, death, or displacement cannot plausibly be captured through aggregate compensation elsewhere.

The same concern explains why cost-benefit analysis remains contested. The strongest criticism is not that it is too technical, but that it can narrow public reasoning by translating conflicting goods into one dominant comparative register. In environmental contexts, this matters because the relevant policy question is often not simply how much people would be willing to pay for protection or willing to accept in compensation, but whether such preferences are an appropriate way of valuing the good at stake in the first place. This concern has long been central to environmentalist criticism of price-based reasoning: where principles of protection, obligation, or ecological integrity are at issue, price may register one dimension of the problem while misdescribing the problem itself (Sagoff, 2004).

Multi-criteria analysis is important because it recognises that comparison need not take exclusively monetary form. It allows several dimensions to remain visible within one evaluative process, even though it too requires weighting and institutional judgment. For example, an assessment of a land-use or infrastructure project might consider expected economic benefits alongside biodiversity impacts, water quality, carbon emissions, landscape connectivity, public health, cultural significance, distributional effects, and impacts on future generations. For policymakers, the point is that structured decision-making need not rely on a single metric. It can compare options while keeping different kinds of ecological, social, and ethical considerations visible. At the same time, not every consideration should be treated as merely one input to be balanced against others. In

some cases, ecological thresholds, non-substitutability, or risks of irreversible harm should define the conditions under which options are considered, rather than simply count as factors within the final balance.

A further ethical concern arises at the level of motivation and public culture. Some economic framings assume that behaviour is best guided through incentives, prices, and preference satisfaction. Yet narrow assumptions of self-interest can be empirically and morally counterproductive. Where institutions rely too heavily on incentive-based logic, they may weaken rather than strengthen motivations of care, stewardship, responsibility, and solidarity. Environmental governance therefore cannot rely on pricing alone. It also depends on sustaining these relational and civic forms of commitment, which are not well captured by market logic (Sen, 1977; Bowles, 2016).

These concerns show that economic valuation should not be judged by a single standard. It can be useful where it functions as a subordinate decision-support tool, helps correct the invisibility or lack of recognition of environmental harms, and does not imply that the good at stake is broadly substitutable or compensable. It becomes problematic where it is treated as self-sufficient, where it forces qualitatively different values into one dominant comparative register, or where it normalises loss in contexts marked by irreversibility, ecological thresholds beyond which damage may become abrupt or difficult to reverse, sentient suffering, or the weak institutional representation of affected claims. The ethical issue is therefore not whether economic valuation should be used, but whether its use is proportional to the object governed and bounded by appropriate institutional safeguards.

4.3. Economic valuation, socio-economic systems, and the transition to sustainability

The ethical assessment of economic valuation cannot be separated from the wider socio-economic systems in which it operates. Valuation practices are never only local techniques. They are embedded in broader assumptions about economic growth, technological development, economic welfare, and the place of ecological systems in economic life.

One important distinction in the sustainability literature is that between weak and strong sustainability. Weak sustainability assumes a substantial degree of substitutability between natural capital and other forms of capital, whereas strong sustainability holds that at least some ecological systems and functions are not substitutable in this way and must therefore be maintained in their own right (Ayres, van den Bergh and Gowdy, 2001; Dietz and Neumayer, 2007). This distinction is not merely technical. It expresses rival normative views about responsibility to future generations, the meaning of development, and the status of ecological boundaries.

If natural systems are treated as broadly replaceable, then environmental degradation can appear acceptable so long as aggregate welfare is maintained or alternative forms of wealth are created. But if ecological integrity is itself a condition for future prosperity, health, and social stability, then economic systems must be judged partly in terms of whether they preserve those conditions. This has practical implications. It suggests that socio-economic systems should not be assessed solely by output growth, short-term efficiency, or competitiveness, but also by whether they remain within ecological boundaries, distribute burdens fairly, and sustain the conditions of collective life over time (Norton, 2016; Becker, 2023; Pascual et al., 2023).

The Opinion does not aim to resolve the wider debate between green growth, beyond-growth, post-growth, and degrowth. Its narrower point is that growth-centred metrics are ethically insufficient. Economic valuation may contribute to a shift to sustainability, but it cannot define its aims. Where environmental protection is framed only as a means to continued growth, there is a risk that the deeper drivers of ecological degradation remain untouched.

Taking the plurality of ways in which nature is valued seriously does not mean that all relevant considerations should simply be added to broader balancing frameworks. It means that socio-

economic governance must become more discriminating about what different ways of valuing nature require. Some may call for broader indicators and richer forms of appraisal. Others may justify stronger representation of weakly-heard claims, including future-oriented ecological concerns. Others again may support precaution or ecological constraints where non-substitutability, irreversibility, or systemic risk are at stake.

This point has practical significance for the EU. Current work on ecosystem accounts, sustainability indicators, and beyond-GDP approaches can widen the informational basis of governance. They can correct some of the blindness of conventional macroeconomic indicators to ecological dependence and degradation. But they do not resolve the question of what counts as success. A socio-economic system may measure environmental impacts more carefully and still remain governed by a narrow conception of progress. The crucial issue is whether ecological systems are treated as constraints and conditions of social life, or merely as variables to be better managed within an otherwise unchanged framework. EU work on natural capital accounting, Mapping and Assessment of Ecosystems and their Services, and broader better-regulation and evaluation tools makes that tension institutionally visible (European Commission, n.d.-a; European Commission, 2020; European Commission, 2021).

If the earlier distinction between incompleteness and inappropriateness is taken seriously, then socio-economic governance must do more than add environmental information to existing growth-centred systems. It must also identify contexts in which certain forms of valuation are insufficient and contexts in which they are misleading. This has operational consequences. Dashboard approaches and beyond-GDP measures should supplement economic reporting in a way that affects decision-making, rather than serving merely symbolic or cosmetic functions. Appraisal methods should be more systematically plural where non-substitutability, uncertainty, or irreversible harms are at issue. Sustainability constraints should in some cases function as binding prior conditions for decision-making rather than factors to be traded off. Pricing instruments should be assessed not only in terms of efficiency, but also in terms of distributive effects, institutional fit, and their relation to ecological thresholds.

4.4. Conditions for the responsible use of economic valuation

The preceding analysis suggests four implications for policymaking and governance.

First, economic valuation should be treated as partial and as subordinate to broader ethical and ecological considerations, not as exhaustive. It can illuminate certain dimensions of nature's importance and be useful where ecological dependencies and harms need to be made visible within existing decision-making systems. However, it cannot on its own determine how nature ought to be valued in public policy; it can do so only within a broader framework of ethical and ecological assumptions that should be made explicit. This reinforces the broader argument of this Opinion: policymaking should recognise the plurality of ways in which nature is valued, rather than relying on a single register of assessment.

Second, economic instruments should be assessed in light of the purposes they serve, the kinds of goods and relationships they affect, and the assumptions they make about substitutability, compensation, and what counts as value. Appraisal tools, accounting systems, incentive mechanisms, and environmental pricing instruments should not be evaluated as if they raised identical questions. Some uses of economic valuation are incomplete but legitimate, especially where they correct the undercounting or externalisation of environmental harm. Others become inappropriate where they misrepresent the good at stake, especially by implying substitutability, exchangeability, or compensation where ecological or ethical considerations rule this out. This also means that not all dimensions of value should be handled in the same way. Some can appropriately inform comparison and appraisal, while others require stronger forms of representation, protection, precaution, or constraint.

Third, economic valuation should be used only under explicit ethical and ecological conditions. Policymakers should be attentive to irreversibility, cumulative harms, tipping points, uncertainty,

and non-substitutability. Where such features are present, ecological damage should not be treated simply as one factor among others in a balancing exercise. In such contexts, ecological boundaries should function as constraints on what may be justified, not merely as variables within optimisation. This also supports greater use of plural appraisal methods, including multi-criteria approaches, where monetisation alone would narrow or distort what is at stake. It also implies that some ecological concerns should not merely enter broader balancing exercises, but should shape the limits within which such exercises can legitimately proceed.

Fourth, socio-economic systems in a transition to sustainability should be assessed not only in light of growth or productivity, but in light of whether they preserve the ecological conditions of collective life, support human and non-human flourishing, and distribute benefits and burdens justly over time. Economic valuation may continue to have a place within such systems, but only if it remains embedded in a broader public framework of justice, resilience, and ecological integrity. This has practical implications for the use of beyond-GDP indicators, plural dashboards, sustainability constraints, and the treatment of apparent trade-offs as questions of institutional design rather than unavoidable facts.

These implications provide a basis for action. They support more explicit recognition of diverse ways of valuing nature in appraisal and evaluation; clearer ethical and ecological conditions on the use of economic valuation; stronger treatment of ecological boundaries as constraints rather than merely negotiable trade-offs; better institutional representation of values and claims that are systematically weak within existing decision frameworks; and broader criteria for assessing socio-economic systems, including resilience, justice, and ecological integrity.

The following chapter examines how far existing policy instruments already reflect these requirements, where they remain institutionally weak, uneven, or displaced by narrower economic considerations, and what kinds of governance choices follow.

5. Valuing nature: policy integration and governance choices

The earlier chapters argued that there are multiple ways of valuing nature, that human societies are embedded in ecological systems, that legal and institutional frameworks need to respond more adequately to the ecological concerns that are weakly represented in existing decision-making processes, and that economic valuation should be used within clear ethical and ecological limits. This final chapter examines how far those considerations are already reflected in European Union policymaking. Its central claim is that diverse ways of valuing nature are not absent from EU law and policy, but are unevenly integrated. Some are institutionally well embedded; others remain weakly represented or are displaced when decision-making privileges what can be most readily measured, monetised, or traded off.

This chapter therefore considers, first, how diverse ways of valuing nature already enter EU policy; secondly, where integration remains uneven; and thirdly, what kinds of governance choices would better align policy frameworks with the considerations developed earlier in the Opinion.

5.1. How diverse ways of valuing nature already enter EU policy

European Union policy does not approach nature through a single dimension of value. Across environmental, agricultural, climate, financial, and planning instruments, nature is valued in multiple ways at once: as a condition of human welfare and economic activity, as part of shared landscapes and ways of life, and, at least in some contexts, as worthy of protection in its own right. The issue is therefore not that multiple ways of valuing nature are absent from EU policy. It is that

they are expressed unevenly, combined inconsistently, and translated into decision-making with varying degrees of force (Jacobs et al., 2016; IPBES, 2022; Pascual et al., 2023).

This plurality is visible across the EU environmental law and policy. The Birds and Habitats Directives, the Natura 2000 framework, the Water Framework Directive, the Biodiversity Strategy for 2030, and the Nature Restoration Regulation all embody more than one understanding of why nature matters (Council Directive 92/43/EEC, 1992; Directive 2000/60/EC, 2000; Directive 2009/147/EC, 2009; European Commission, 2020a; Regulation (EU) 2024/1991, 2024). Some provisions emphasise utility, resilience, risk reduction, or ecosystem services. Others are framed more in terms of protection, ecological restoration, stewardship, or ecological integrity. Still others imply that certain habitats, species, or ecological conditions deserve protection not merely because of the benefits they provide, but because of their significance as living systems and conditions of continuity.

In some areas, EU law already gives relatively strong expression to non-instrumental considerations. Species and habitat protection and restoration obligations can reflect the significance of ecological integrity beyond immediate human use or economic benefit. Relational ways of valuing nature, by contrast, are often less explicit. They may appear indirectly through focus on participation, landscape protection, cultural heritage, Indigenous rights, or attention to local livelihoods and stewardship, but they are less consistently named or operationalised as such. This matters because relational ways of valuing can also come into tension with other policy objectives, for example where mining, renewable-energy infrastructure, or land-use change affect communities whose ways of life are closely tied to particular landscapes and ecosystems.

Multiple ways of valuing nature are also visible in wider policy-making beyond conservation policy as narrowly construed. In the Circular Economy Action Plan, for example, valuing nature enters governance through concerns about resource use, material dependence, waste reduction, and long-term resilience (European Commission, 2020b). In the Regulation on Deforestation-free Products, ecological protection is extended into supply chains and external economic relations (Regulation (EU) 2023/1115). And in corporate sustainability reporting and due diligence frameworks, ecological impacts are made visible through obligations of disclosure, risk identification, and accountability (Directive (EU) 2022/2464; Directive (EU) 2024/1760). In this respect, EU law already contains a plurality of ways through which diverse dimensions of value are translated and operationalised, even if it does not always name them as such.

This can be seen particularly clearly in the coexistence of different policy logics. Ecosystem-service approaches and natural capital accounting make valuing nature visible as a condition of economic and social resilience. Restoration law and species protection regimes, by contrast, often proceed through obligations, standards, and duties that are not reducible to the language of economic optimisation. Participation requirements and landscape-related policies introduce yet another dimension, since they acknowledge that the value of nature is also mediated through attachment, stewardship, and shared environments. Recent scientific advice to the European Commission on One Health governance points in a similar direction, arguing that human, animal, plant, and environmental health should be understood as part of a single connected system and that EU policymaking requires stronger cross-sectoral integration (European Commission: Directorate-General for Research and Innovation & Group of Chief Scientific Advisors, 2024). What emerges is not a coherent philosophy of valuing nature embedded uniformly across EU governance, but a mixed policy landscape, extending from biodiversity and restoration policy to circular economy, supply-chain governance, and corporate accountability frameworks, in which instrumental, relational, and intrinsic ways of valuing nature coexist with varying degrees of institutional strength (Christie et al., 2019; Jacobs et al., 2016; IPBES, 2022).

The examples in this chapter illustrate how multiple ways of valuing nature enter decision-making, shape policy choices, and, in some cases, constrain what may be justified (see Boxes 1–4).

Box 1: Relational value, stewardship, and ecological limits: Sámi tourism

This example illustrates how relational ways of valuing can be articulated in practice and how they can shape and constrain economic activity. The Principles for Responsible and Ethically Sustainable Sámi Tourism (Visit Finland, n.d.) developed in Finland do not treat nature merely as a backdrop for economic activity or as a stock of resources to be consumed. They present Sámi culture, language, livelihoods, and natural environments as inseparable, and understand tourism as legitimate only where it respects that wider socio-ecological whole.

What makes the example especially instructive is that it combines several ways of valuing nature at once. Nature has instrumental significance, because tourism contributes to livelihoods and regional economies. It has relational significance, because landscapes, seasonal rhythms, and practices such as reindeer herding are bound up with identity, continuity, and stewardship. And it has a limiting force because certain areas or periods may be excluded from tourism activity altogether in order to safeguard ecological processes and respect the environment's carrying capacity.

The example shows that valuing nature more pluralistically does not mean rejecting economic activity altogether. It requires organising economic activity within ecological and cultural limits, rather than treating those limits as external obstacles to be negotiated away or rendered invisible in prevailing models and metrics. Similar issues arise in other contexts, including mining, energy infrastructure, and land-use planning, where ecological-transition policies may affect Indigenous or local communities whose relationships with land and nature are not adequately captured by economic or conservation metrics alone.

Recent analyses of EU environmental policy suggest that this mixed landscape is not static. While earlier environmental instruments often rely more directly on conservation, ecological integrity, and normative limits, later Green Deal and post-Green Deal frameworks increasingly embed environmental protection within broader economic, resilience, competitiveness, and strategic narratives. This does not mean that intrinsic or relational ways of valuing disappear. Rather, they are often retained while being subordinated to more instrumental forms of justification. In that sense, the issue is not simply whether multiple ways of valuing nature are present in EU policy, but how they are ordered, translated, and given institutional force across different domains and phases of policymaking (Schunz, 2022; Eckert & Kovalevska, 2021; Froese & Loft, 2025).

This mixed landscape matters for two reasons. First, it shows that the argument of this Opinion does not require importing wholly foreign categories into European policymaking. Multiple ways of valuing nature are already present in existing law and policy, albeit in different proportions and with different institutional effects. Secondly, it suggests that the central challenge is one of integration. The practical question is not whether the European Union must choose one approach to translating the value of nature into policy once and for all, but how it should structure decision-making where several ways of valuing nature are already in play.

That challenge has become more salient as the broader policy context has shifted. The European Green Deal gave environmental and climate objectives a more central place within the Union's overall strategy, but recent policy developments increasingly frame these concerns through competitiveness, resilience, industrial policy, and strategic autonomy (European Commission, 2019; European Commission, 2024; European Commission, 2025a; European Commission, 2025b). This shift does not erase ecological commitments, but it can affect how they are justified, prioritised, and institutionalised. As a result, the question is no longer only whether ways of valuing nature appear in policy, but under which terms and with what practical consequences when priorities collide (Schunz, 2022).

Box 2: Food ethics, public space, and the social conditions of valuing nature

This example illustrates how valuing nature also concerns the social norms and public infrastructures that shape everyday consumption, including food practices. Amsterdam's move to restrict fossil fuel and meat advertising in public spaces shows how ecological considerations can enter urban governance, public health policy, cultural regulation, and the acceptable use of shared civic environments (Euronews, 2025).

The significance of this example lies not only in the substance of the measure, but in the way it operates. It does not price environmental harm directly, nor does it rely on biodiversity regulation in the usual sense. Instead, it intervenes in the social normalisation of high-carbon and ecologically intensive consumption patterns and signals that public communication infrastructures should not reinforce behaviours that are incompatible with long-term ecological and social well-being.

The example is relevant not because it settles food ethics, but because it shows that governance can shape the conditions under which certain patterns of consumption are normalised, encouraged, or questioned. It therefore illustrates one of the central claims of this Opinion: valuing nature affects not only how ecosystems are protected, but also how public priorities, everyday practices, and shared civic spaces are organised.

5.2. How diverse ways of valuing nature already enter EU policy

If plural ways of valuing nature are already present in EU policy, the central question becomes why they remain so unevenly integrated in practice. "Uneven integration" does not mean that there is a neutral standpoint from which the successful integration of values into policy can simply be ranked. It refers to the institutional fact that some ways of valuing nature are more readily recognised, operationalised, and acted upon in policy processes than others.

A major part of the answer lies in institutional form. Decision-making frameworks tend to privilege values that travel easily into appraisal, comparison, budgeting, and administrative justification. What can be counted, monetised, standardised, or translated into existing policy routines usually gains institutional traction more easily than what is relational, place-specific, ethically non-substitutable, or difficult to express in common metrics (Jacobs et al., 2018; Stevenson et al., 2021; Pascual et al., 2023).

Economic and administrative tools are not inherently objectionable. As Chapter 4 argued, some are useful and, indeed, sometimes indispensable. They can reveal ecological dependence, correct the under-recognition of environmental harms, and improve accountability. But their institutional strength also has a selective effect. They shape what is visible in governance and how what is valued must be expressed in order to count. As a result, instrumental ways of valuing are often more consistently embedded in policy processes than relational or intrinsic ones, even where the latter are acknowledged in legal or strategic texts (IPBES, 2022; Stevenson et al., 2021).

This dynamic is especially visible in impact assessment, policy design, monitoring, and evaluation. It is here that assumptions about nature become operational. It is here that some ecological concerns are treated as constraints, while others are reduced to factors in a balancing exercise. And it is here that the difference between rhetorical commitment and institutional uptake becomes most visible. Existing frameworks often perform well where environmental issues can be rendered in terms of risk, efficiency, resilience, or economic dependency. They are less reliable where what is at stake is non-substitutability, long-term ecological degradation, place-based attachment, diffuse vulnerability, or the integrity of ecological systems that do not fit easily into standardised appraisal formats. This is also a question of power: which actors can translate their interests into institutionally recognised forms, and which ecological, local, Indigenous, or community-based

claims remain weakly represented (EGE, 2026; IPBES, 2026; Turnhout et al., 2015; Schunz, 2022; European Commission, 2021; IPBES, 2022; Jacobs et al., 2018; Suarez, 2026).

The EU's Better Regulation framework illustrates both the potential and the limits of current practice. On the one hand, it provides a structured setting in which environmental impacts can be made more visible and systematically assessed. On the other hand, the demand for comparability, evidence, and ease of translation into administrative frameworks can reinforce the tendency to privilege what is most easily quantified or expressed in common evaluative terms (European Commission, 2021a; Stevenson et al., 2021). The same is true of ecosystem accounting and related tools. They are often strategically valuable because they make nature visible to finance ministries, planning authorities, and evaluation systems. Yet they do not by themselves resolve questions of non-substitutability, ecological thresholds, moral standing, or the representation of long-term ecological concerns (Jacobs et al., 2018; Pascual et al., 2023).

The unevenness is not only methodological. It is also procedural and institutional. EU law contains important guarantees concerning access to information, participation, and access to justice, notably through the Aarhus framework (European Commission, n.d.). Yet these do not automatically ensure that ecological concerns are strongly represented in practice, especially where harms are cumulative, long-term, or not readily attributable to a clearly defined claimant. Some of the weaknesses at issue are therefore not only about how nature is valued, but also about whose claims can be voiced, through which procedures, and with what consequences when ecological and economic priorities conflict.

This point also helps situate the relation between this chapter and Chapter 3. Where ecological concerns remain structurally underrepresented, the issue is not only one of multiple ways of valuing, but also of standing, rights, and representation. In the European context, more established pathways such as the right to a healthy environment, stronger procedural guarantees, and wider access to justice may offer more immediate institutional traction, while more experimental approaches, including rights of nature or ecological guardianship, may still be valuable as sites of legal and institutional learning, even where their broader implementation remains unsettled (European Parliamentary Research Service, 2021).

The practical significance of this spectrum of legal approaches is that integration depends not only on better concepts and better metrics, but also on better institutional pathways through which ecological concerns can be invoked and defended. Article 37 of the Charter already requires a high level of environmental protection to be integrated into Union policies, but stops short of explicitly recognising an individual right to a healthy environment. This helps explain why the right is receiving growing attention in Europe, including in debates about an additional protocol to the European Convention on Human Rights, the interpretation of existing rights in climate and environmental litigation, and the possible strengthening of protection within the EU legal order.

Some apparent trade-offs are also produced by policy design itself. This is particularly important where budgetary and incentive structures organise the field within which choices are made.

Box 3: Biodiversity and agriculture under the CAP: when trade-offs are institutionally produced

The relationship between biodiversity protection and agricultural viability is often presented as if it were a straightforward trade-off between environmental ambition and economic necessity. Yet in practice, that tension is shaped by governance design. Where subsidy structures, payment criteria, and incentive systems reward intensity, output, or land use in ways that fail to account for ecological degradation, biodiversity protection can appear as a secondary burden or optional add-on rather than as part of the conditions of sustainable agriculture (European Commission, 2021b).

This makes the Common Agricultural Policy (CAP) especially relevant to the present discussion. The issue is not only whether nature is recognised as valuable in principle, but how funding and incentives structure what appears feasible, rational, or affordable in practice. If ecological stewardship is weakly rewarded while environmentally harmful forms of production remain comparatively advantaged, then what is described as a conflict between food production and biodiversity may in fact reflect a misaligned policy framework.

The example shows that uneven integration into policy of ways of valuing nature is not only a matter of concepts or indicators. It is also a matter of budgets, incentives, and institutional design. In that sense, some trade-offs are not discovered by governance but produced through it.

A central insight of the preceding analysis is that multiple ways of valuing nature need to have practical effects in governance. They must shape not only how ecological concerns are described, but also how policy options are assessed, justified, funded, and constrained.

5.3. From valuation to representation, appraisal, and institutional design

The uneven integration of multiple ways of valuing nature into policymaking cannot be addressed by better metrics alone. Addressing it also requires attention to institutional design: how decisions are structured, what counts as an admissible reason, when ecological limits should function as binding constraints, and who is able to invoke and defend concerns that are otherwise weakly represented. If more explicit recognition and more effective integration are to be achieved, they must affect not only how nature is described and valued, but also how policy choices are organised and justified (Jacobs et al., 2018; IPBES, 2022; Neuteleers and Hugé, 2021; Pascual et al., 2023). This challenge is sharpened by the wider policy context, in which ecological concerns are increasingly framed through competitiveness, resilience, and strategic autonomy, with consequences for which values become institutionally visible and which remain easier to marginalise (European Commission, 2024; European Commission, 2025a; European Commission, 2025b; Schunz, 2022).

The practical task is therefore to ensure that different ways of valuing nature enter, shape, and, where necessary, constrain decision-making at all points in the policy process. They should enter through early identification of the ecological, social, cultural, ethical, and economic considerations at stake. They should shape decisions through the design, comparison, and justification of policy options, using multiple forms of appraisal, including qualitative, deliberative, participatory, and multi-criteria approaches where appropriate. And they should constrain decisions where ecological boundaries, non-substitutability, cumulative degradation, or risks of irreversible harm make ordinary balancing inappropriate. The implications that follow show how this sequence can be translated into institutional design.

A first implication concerns appraisal. Policy frameworks should become more discriminating about what different ways of valuing nature require. Some concerns can appropriately enter quantitative comparison, including economic assessment of ecosystem contributions to welfare, resilience, or public wealth. Others call for qualitative assessment, stronger precaution, explicit ecological thresholds, or limits on substitution and compensation. The task is not to abandon structured decision-making, but to ensure that it does not force all relevant considerations into a single dominant register. This supports greater use of plural and context-sensitive appraisal methods, including multi-criteria approaches and forms of evaluation that make room for ecological integrity, place-specific vulnerability, and non-substitutability where monetisation would be reductive or misleading (Jacobs et al., 2018; European Commission, 2021; Pascual et al., 2023). What is needed is not merely recognition of multiple values, but structured plural appraisal: decision

procedures capable of combining quantitative, qualitative, deliberative, and participatory forms of assessment without collapsing them into a single metric.

A second implication is that ecological boundaries should be treated more consistently as conditions of decision-making, not merely as variables within optimisation. In some policy areas this logic of treating ecological considerations as constraints rather than merely as factors to be balanced is already visible, especially where EU law establishes non-deterioration requirements, ecological restoration obligations, or ecological standards that are not straightforwardly negotiable (Directive 2000/60/EC, 2000; Regulation (EU) 2024/1991, 2024). But this treatment remains uneven. A more coherent approach would require clearer articulation of when environmental harm may be weighed against other aims and when it should instead trigger redesign, restraint, or refusal. In this respect, better integration does not mean adding nature more fully to existing balancing exercises in every case. It also means identifying contexts in which ecological considerations should shape the terms within which balancing can legitimately occur rather than simply being translated into comparable inputs within a single evaluative frame (IPBES, 2022; Pascual et al., 2023).

This is particularly relevant in infrastructure, transport, energy, and regional-development planning, where ecological impacts are often treated as one factor among others in appraisal and cost–benefit analysis. A more consistent approach would require that certain ecological impacts — for example on protected habitats, ecosystem integrity, or cumulative environmental pressures — affect the admissibility and design of options from the outset, rather than being balanced or compensated after the fact. This does not eliminate the need for appraisal, but changes its role: from optimising within a fixed set of options to helping determine which options are acceptable in the first place.

Box 4: Water governance and non-deterioration: ecological standards as limits

Water governance provides a legally grounded example of how ecological concerns can function as strong constraints rather than merely as variables in a trade-off. Under the Water Framework Directive, waters are assessed against ecological standards that do not simply invite open-ended balancing with competing economic interests. The logic of non-deterioration and ecological status introduces a structure in which certain forms of degradation are not easily justified by reference to wider gains elsewhere.

This is important because it shows that European Union law already contains examples of environmental reasoning that move beyond the assumption that all harms can be compensated or traded off. The significance of water bodies is not expressed only through their utility for production, transport, or consumption. It is also reflected in obligations to protect ecological conditions as such.

For the purposes of this Opinion, the example is valuable not because it settles every question of implementation, but because it demonstrates that a more constraint-based approach is not alien to existing EU governance. It shows, in a concrete legal setting, how ecological limits can shape the terms of decision-making rather than merely enter it as one factor among others. This is consistent with emerging work in water ethics, which emphasises that water governance involves not only technical management, but also procedural justice, allocation priorities, conflict resolution, and institutional responsibility (CNECV, 2026).

A third implication concerns indicators, monitoring, and evaluation. If multiple ways of valuing nature are to have practical effect, they must be reflected in the informational architecture of governance. This does not imply that all dimensions of value can or should be quantified in the same way. But it does mean that monitoring systems should not rely only on metrics that capture economic utility or immediate policy performance. Ecological condition — including the state of ecosystems, biodiversity status, habitat quality, and key ecological functions — as well as

restoration outcomes, cumulative degradation, and long-term system resilience need to be made more visible within policy evaluation, even where they resist monetary expression. Where non-instrumental dimensions are not directly measurable, their limited visibility should itself become part of the evaluation context rather than a reason for exclusion (Jacobs et al., 2018; Neuteleers and Hugé, 2021; European Commission, 2021).

A related governance challenge concerns the mobilisation of private finance for biodiversity and ecosystem restoration. Instruments such as nature credits and emerging biodiversity or restoration markets are increasingly discussed as ways of attracting private investment into conservation and restoration activities. Such instruments may help address real financing gaps, especially where public funding is insufficient. Efforts to make restoration activities "investable" should not, however, be understood as requiring their full translation into financial assets. Alternative incentive structures — including regulatory standards, public co-financing, long-term stewardship contracts, and hybrid instruments — may in many cases be more appropriate. Mobilising private finance also requires attention to the legal and contractual duties under which financial-market participants operate, including fiduciary duties and investment mandates that may prioritise financial return unless ecological objectives, public-interest conditions, or long-term risk considerations are explicitly built into the relevant frameworks. At the same time, market-like instruments raise significant ethical and governance questions. They tend to rely on standardisation, quantification, comparability, and performance metrics, which may privilege certain ways of valuing nature while marginalising others. They may also imply forms of substitutability that are not ecologically or ethically appropriate. Their use therefore requires careful design, clear limits, and robust public oversight, especially where such instruments are presented as part of a broader nature-positive economic transition.

The emerging language of a "nature-positive economy" can play a constructive role in this context. It captures an important shift from treating nature protection primarily as a cost or constraint towards recognising ecological restoration, resilience, and integrity as conditions of long-term prosperity, wellbeing, and security. Properly understood, the concept can help align economic governance, public investment, private finance, and innovation with the ecological systems on which societies and economies depend. Yet the term requires ethical specification. It should not be reduced to a business case for nature, a label for investable restoration, or a competitiveness narrative detached from ecological limits. A nature-positive economy should therefore be understood as one whose institutions, incentives, investments, and accountability mechanisms are aligned with ecological boundaries, plural ways of valuing nature, democratic participation, and fair distribution.

A fourth implication concerns representation and participation. Many ecological impacts are diffuse, cumulative, and long-term. They often affect entities, systems, or future conditions that are not well represented by conventional claimant-based structures. Representation of ecological concerns therefore need not take one single form. Depending on the legal and institutional context, it may involve environmental civil society organisations, public-interest standing, ombudsperson-type bodies, guardianship models, advisory bodies, participatory mechanisms, or other arrangements designed to make diffuse, long-term, future-oriented, or non-human ecological concerns visible and defensible in decision-making.

Better integration of the multiple ways of valuing nature therefore depends not only on improved appraisal tools, but also on stronger institutional and procedural pathways through which ecological concerns can be articulated, defended, and taken into account. This includes access to information, participation in environmental decision-making, access to justice, and institutional mechanisms that give greater weight to long-term ecological concerns and weakly represented claims (European Commission, n.d.; IPBES, 2022). Deliberative and participatory forms of valuation are relevant here because they can bring to the fore dimensions of value that are otherwise invisible in administrative or market-based settings. This also builds on the EGE's earlier work on democracy in the digital age, which emphasised that democratic governance requires meaningful participation, public accountability, and institutional conditions that enable citizens to

shape decisions affecting collective life (European Group on Ethics in Science and New Technologies, 2023).

A related question concerns how governance measures take account of harm to individual living beings where these are morally relevant. This does not replace concern for biodiversity, ecological integrity, habitats, or nature as a whole. It adds a further dimension: some policies foreseeably affect non-human beings in ways that may involve suffering, injury, confinement, or death, and these harms may not be captured by system-level environmental metrics alone. Public attention to individual animals is often highly selective: exceptional or well-reported cases may generate intense concern, while routine harms to non-human beings remain less visible within environmental governance. Governance should therefore be able to recognise both systemic and individual forms of harm where they are relevant, including in sectors such as food systems, scientific research, entertainment, trade, land use, and other domains in which human institutions structure the conditions of non-human life (Cochrane, 2018; Korsgaard, 2018; John & Sebo, 2020).

A fifth implication concerns the relation between strategic and more transformative responses. Some improvements can be pursued within existing approaches to policy: broader indicators, diverse methods of appraisal, stronger implementation of procedural rights, and more careful use of economic valuation tools. Others require a more ambitious rethinking of what counts as public value, what should be treated as non-substitutable, and how ecological concerns should be institutionally represented. The relevant question is not which of these paths should be chosen once and for all. It is how they may be combined so that short-term institutional traction does not foreclose longer-term conceptual and political development. In this sense, policy integration is not merely a technical exercise. It is also part of a broader process of institutional learning about how ways of valuing nature should count in public reasoning and decision-making (Stevenson et al., 2021; Schunz, 2022).

On that basis, the central governance question for EU institutions, Member States, and relevant public authorities is not whether EU policy already recognises the multiple ways in which nature is valued, but whether that recognition is sufficiently explicit, coherent, and consequential in practice. The recommendations that follow build on this analysis. They focus in particular on explicit recognition of different ways of valuing nature in policymaking, consistent treatment of ecological boundaries as constraints, a strengthened rights-based and procedural approach to the protection and representation of ecological concerns, and the use of economic valuation tools within defined ethical and ecological limits.

6. Recommendations

The EGE,

recalling that human societies are embedded within, and dependent upon, ecological systems;

recognising that how nature is valued shapes what becomes visible in policymaking, which harms are treated as acceptable, and which forms of protection appear justified;

considering that EU law and policy already reflect multiple ways of valuing nature, but that these remain unevenly integrated in decision-making;

emphasising that different ways of valuing nature should enter governance through early identification and diverse forms of assessment, shape the design and justification of policy options,

and constrain decision-making where ecological boundaries, non-substitutability, cumulative degradation, or risks of irreversible harm make ordinary balancing inappropriate;

stressing that economic valuation can be useful but must remain subject to clear ethical and ecological conditions;

addresses the following recommendations to the European Union, its Member States, and relevant public authorities:

Recommendation 1

The European Union should integrate multiple ways of valuing nature explicitly and consistently into policymaking, so that ecological, ethical, social, cultural, and economic considerations are made visible and can shape decisions.

a) EU policies, legislation, and evaluations affecting biodiversity, ecosystems, land, water, food systems, human settlements, infrastructure, and economic activity should systematically take into account instrumental and non-instrumental ways of valuing nature, in line with the objectives of the European Union Biodiversity Strategy, the European Green Deal, the Nature Restoration Regulation, related EU acquis, and the assessments and conceptual frameworks of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. They should reflect these considerations across problem definition, policy design, impact assessment, implementation, monitoring, and evaluation.

b) Policymaking should identify at an early stage which ways of valuing nature are at stake; whose interests are affected and where responsibilities arise; and which forms of knowledge, practices, and ways of life, including scientific, local, traditional, and Indigenous knowledge systems, come to be recognised or marginalised. It should also identify which values risk being excluded because they are difficult to quantify, monetise, or incorporate into conventional cost-benefit analysis, economic indicators, market-based instruments, or standard administrative procedures.

c) Where different dimensions of value conflict, decision-making frameworks should not default to what is most easily measured, monetised, traded off, or incorporated into cost-benefit analysis. They should require explicit justification for which considerations are prioritised, on what grounds, and with what implications for ecological integrity, affected communities, individual living beings, and future generations, in line with the EU's commitments to sustainability, fundamental rights, and intergenerational justice.

d) The European Commission and Member States should develop multi-value assessment approaches that combine quantitative, qualitative, deliberative, and participatory forms of evaluation. These should be supported by common standards, indicators, and methodological guidance that can be applied consistently across sectors while remaining adaptable to national and regional contexts.

e) The outcomes of such assessments should be transparent and should carry practical weight in the selection, modification, rejection, or justification of policy options. Decision-makers should demonstrate how multiple ways of valuing nature have been considered; how uncertainty and cumulative impacts have been treated; and whether ecological considerations require stronger protection, precaution, or limits on substitution and compensation. Records should be publicly accessible in a timely and comprehensible manner and subject to appropriate review, oversight,

and procedural safeguards consistent with EU environmental acquis, fundamental rights obligations, and the Aarhus framework.

Recommendation 2

Where scientific evidence identifies ecological boundaries, non-substitutability, or risks of irreversible harm, the European Union should treat these considerations as constraints in evaluation, impact assessment, and policymaking.

a) The European Commission and Member States should revise and, where necessary, develop guidance for impact assessment, Better Regulation, evaluation, and related appraisal practices so that scientific evidence concerning ecological boundaries, critical thresholds, cumulative effects, irreversibility, and non-substitutability can constrain regulatory discretion and limit or exclude policy options, rather than being treated solely as one factor within cost-benefit balancing. This guidance should require greater transparency concerning uncertainty, irreversible risks, intergenerational impacts, and assumptions embedded in economic valuation models, and should be reflected, where relevant, across Better Regulation guidance, Strategic Environmental Assessment, Environmental Impact Assessment, nature, water, marine, and climate governance frameworks.

b) Efforts to accelerate environmental assessment procedures should preserve scientific rigour, meaningful public participation, and the capacity of appraisal frameworks to reflect multiple ways of valuing nature, rather than reducing assessment to narrowly defined economic priorities.

c) Such assessment should combine the best available scientific knowledge with multiple ways of valuing nature, so that decision-makers consider not only the scale, likelihood, and reversibility of ecological harm, but also the responsibilities, relationships, vulnerabilities, and long-term dependencies at stake. Significant impacts on biodiversity, ecosystem integrity, and ecological resilience should be assessed quantitatively where possible and qualitatively where monetisation would be misleading, inappropriate, or unable to capture the ecological complexity of harm. Appraisal methodologies should recognise that certain ecological functions and environmental assets cannot be adequately substituted, monetised, or offset and should incorporate, where relevant, restoration obligations, biodiversity net improvement objectives, climate adaptation resilience metrics, and carbon budget compatibility assessment.

d) Policy proposals and programmes with significant ecological consequences should state explicitly which impacts are being treated as compensable, which are not, and on what basis, including with regard to biodiversity, ecosystem integrity, ecological resilience, relevant harm to non-human beings, and the interests of future generations. Where serious or irreversible environmental harm cannot be excluded on the basis of available scientific evidence, the burden should shift toward demonstrating ecological safety and long-term sustainability before approval is granted, thereby operationalising precaution in a more substantive and enforceable manner across Union governance.

e) In sectors and decisions with potentially high and irreversible ecological consequences, the European Union should adopt legally binding environmental standards requiring public authorities to prioritise prevention, redesign, restoration, or, where necessary, refusal of authorisation where scientific assessment identifies ecological boundaries being exceeded, irreversible damage, cumulative degradation, or non-substitutable ecological loss. Such standards should reinforce obligations under the European Green Deal, the EU Nature Restoration Law, and the European Climate Law by establishing enforceable, science-based ecological thresholds, strengthening obligations of prevention and restoration, constraining administrative discretion when scientific assessment demonstrates a serious risk of irreversible environmental harm, and embedding the “Do No Significant Harm” principle more broadly within legislative appraisal and public decision-making processes.

Recommendation 3

The European Union should establish a legally binding right to a clean, healthy and sustainable environment within the EU legal order.

a) Given that the right remains grounded primarily in soft law under universal international law, the European Union should work towards explicit recognition of this right in primary EU law, including consideration of stronger protection within the Charter of Fundamental Rights of the European Union, so as to provide a more coherent basis for interpretation, policymaking, adjudication, and enforcement across Member States.

b) Pending such recognition, EU institutions and Member States should interpret and apply existing Treaty provisions, Article 37 of the Charter, secondary legislation, and related procedural guarantees in ways that strengthen both the substantive and procedural dimensions of environmental protection, including protection against pollution, ecosystem degradation, unequal exposure to environmental harms and risks, and unequal access to environmental protection and redress

c) The right should be operationalised through clear monitoring, benchmarks, indicators, and review mechanisms, so that it can guide policy and judicial action in relation to environmental quality, the prevention of environmental harm, ecosystem protection, exposure to toxic environments, and equitable access to environmental goods.

d) In giving effect to this right, the European Union should promote greater coherence across legislation, adjudication, enforcement, and external action. This should build on the United Nations General Assembly's 2022 recognition of the right to a clean, healthy and sustainable environment, the Aarhus framework, and recent developments in international law, including the International Court of Justice's 2025 Advisory Opinion on obligations of States in respect of climate change.

Recommendation 4

The European Union and its Member States should consider developing or strengthening institutional mechanisms to facilitate the effective representation of ecological concerns and to ensure that the effects of decisions on non-human nature are adequately considered within governance and adjudication. Such pathways may take different forms and do not presuppose the recognition of legal personhood or rights of nature.

a) The European Union should support the development and evaluation of institutional mechanisms for representation, including qualified representative models, ombudsperson-type bodies, and other arrangements capable of bringing ecological concerns and the respect for non-human nature more effectively into administrative and judicial processes.

b) EU institutions and Member States should strengthen access to justice and public-interest enforcement in environmental matters by addressing disproportionate administrative and financial barriers to environmental litigation and enabling more effective participation in enforcement processes, especially in cases involving diffuse, cumulative, or hard-to-attribute ecological harm. This could include limiting disproportionate court fees, expanding procedural standing in environmental litigation in line with the EU's obligations under Aarhus, broadening access to judicial and administrative review mechanisms for qualified environmental actors, and addressing

limitations arising from restrictive admissibility doctrines in EU case law. Such reform would help ensure that ecological harm can be effectively represented in judicial review, even where no individual human applicant is directly and uniquely affected.

c) In developing such mechanisms, policymakers should ensure clear mandates, accountability, legal certainty, ecological expertise, democratic legitimacy, compatibility with fundamental rights, and effective links to existing administrative and judicial procedures, including clarity as to who may invoke claims, through which legal forms they may be recognised, and how competent bodies should assess them.

d) Where policies, regulatory frameworks, or institutional practices foreseeably affect nature, policymakers and competent authorities should take into account harms to individual living beings, and not only impacts on ecosystems, habitats, or species. This should include attention to morally relevant characteristics and to forms of harm that may otherwise remain invisible in system-level assessments.

e) The European Union should support institutional learning on emerging rights-based strategies for the protection of nature, including ombudsperson-type mechanisms, future generations commissioners, environmental guardians, and other approaches. Such engagement should not be understood as endorsing any single model. It should facilitate the evidence-based evaluation of these approaches in light of core EU legal and policy considerations, including enforceability, institutional compatibility within the EU legal order, ecological integrity, democratic accountability, access to justice, and their adaptability across diverse Member State constitutional traditions and legal systems.

Recommendation 5

The European Union should subject economic valuation of nature to explicit ethical and ecological conditions, while supporting economic approaches that help align socio-economic governance with wellbeing, resilience, ecological integrity, and multiple ways of valuing nature.

a) The European Union should ensure that economic valuation approaches and market-based instruments, including those designed to mobilise private finance for biodiversity, conservation, or restoration, are used only where appropriate, scientifically justified and subject to transparency and accountability in appraisal, impact assessment, evaluation, funding allocation, state aid, public procurement, sustainable finance, and related governance processes. Such approaches may help to make ecological dependence, environmental harm, long-term risk, or financing gaps visible, but should not be treated as exhaustive or self-sufficient, or allowed to displace legally binding environmental standards, rights-based protections, scientific ecological thresholds, or duties of prevention, restoration, and non-deterioration established under Union environmental law.

b) Economic valuation should not be used in ways that obscure ecological boundaries, non-substitutable ecological harms, or relevant harms to non-human living beings, nor in ways that suggest that systemic or irreversible ecological loss can generally be offset by financial compensation, technological substitutes, or ecosystem restoration elsewhere.

c) EU institutions and Member States should assess economic success and policy performance using broader criteria than growth, productivity, or short-term cost-efficiency. Measures and indicators capturing wellbeing, ecological health, and fair distribution should carry practical weight in policy appraisal and evaluation and should not function only as supplementary reporting tools.

d) Efforts to simplify reporting, reduce administrative burdens, or cut costs should not undermine the reliable evidence base needed for environmental accountability, policy evaluation, and informed decision-making, including the development and use of scientifically robust indicators.

e) Concepts such as a “nature-positive economy” should be defined and operationalised in ways that recognise nature as a condition of prosperity, wellbeing, and long-term resilience, while avoiding greenwashing and remaining anchored in scientifically informed ecological boundaries, democratic accountability, and distributive fairness. They should mobilise investment and innovation only in ways that support ecological integrity and should not allow credits or offsets to justify avoidable ecological harm. Claims of “nature-positive” contribution should be subject to verifiable, comparable, and audit-ready indicators across relevant EU regulatory and financial frameworks, including the EU Taxonomy for Sustainable Activities and the Corporate Sustainability Reporting Directive.

Recommendation 6

The European Union should strengthen research, responsible innovation, and institutional learning on multiple approaches to valuing nature and governing human impacts on nature.

a) The European Commission should integrate multiple approaches to valuing nature and environmental ethics into the design and evaluation of FP10 and related EU research funding programmes in areas with significant implications for nature, including biodiversity, ecosystems, land and water use, agriculture and food systems, infrastructure, technologies, and nature-related transitions, so as to strengthen the evidence base for policymaking.

b) The European Commission should provide explicit guidance for applicants, evaluators, research ethics committees, and research managers on how to identify, assess and responsibly address the ecological, social, cultural, ethical, and economic dimensions of research and innovation affecting nature, including through transparent reflection, risk assessment, mitigation, and responsible research design.

c) EU research and innovation funding should support high-quality disciplinary research as well as interdisciplinary collaboration and methodological innovation bridging ecology, economics, law, ethics, and the social sciences and humanities. This should include the development and testing of qualitative, deliberative, participatory, and multi-criteria approaches, including methods for identifying, justifying, and applying priority rules where diverse ways of valuing conflict; critical reflection on the assumptions, limits, and policy implications of economic modelling used in climate, biodiversity, and sustainability policy advice; and meaningful involvement of affected communities.

d) The European Union should support the development of operational guidelines, training materials, and ethics support capacities that enable researchers, funders, institutions, and evaluators to identify and address environmental and climate-related impacts, risks, uncertainties, and trade-offs in research and innovation.

e) The European Union should support comparative research, pilot projects, living labs, and structured institutional learning on how different combinations of legal, procedural, economic, ethical, and deliberative approaches to valuing nature and governing human impacts perform across different policy and research settings. This should include the development of concrete, decision-relevant indicators and assessment tools that can be piloted, transparently reviewed, and improved over time.

Recommendation 7

The European Union and its Member States should strengthen shared responsibilities, ecological literacy, and civic capacities for the protection of nature.

a) The European Union and its Member States should distinguish and support the fulfilment of responsibilities at different levels, including individual responsibilities of care and respect for ecological boundaries, institutional responsibilities of public authorities to protect ecological conditions and prevent harm, and responsibilities of private actors whose activities significantly affect biodiversity, ecosystems, animal welfare, and ecological integrity.

b) The European Union and its Member States should support evidence-based education, lifelong learning, and public engagement that enable people, especially children and young people, to understand human embeddedness in and dependence on nature, the vulnerability of non-human animals to suffering and harm, as well as the importance of biodiversity and ecological boundaries.

c) Educational and civic initiatives should be grounded in the best available scientific evidence while also enabling direct experience, reflection, ethical deliberation, and relational engagement with local ecosystems, landscapes, animals, soils, waters, and other forms of life. They should be designed on the basis of non-discrimination and equal access, with targeted efforts to reach individuals and communities who have limited access to green and blue spaces.

d) EU and national education, youth, culture, research, and environmental programmes should promote ecological literacy, democratic agency, and practical capacities for sustainable ways of living, including reflection on the lifestyles and consumption practices that societies normalise and reproduce, while emphasising shared responsibility across individuals, public institutions, market actors, and private actors, and avoiding framings that place responsibility only on individual behaviour or obscure institutional, economic, and political drivers of ecological harm.

Recommendation 8

The European Union and its Member States should embed early, meaningful, and consequential participation in governance affecting nature.

a) EU institutions and Member States should ensure that access to environmental information, public participation in decision-making, and access to justice are embedded early and meaningfully across policy design, impact assessment, implementation, monitoring, and evaluation in areas affecting biodiversity, ecosystems, land, water, food systems, agriculture, energy, infrastructure, regional development, climate action and other ecologically significant goods and sectors. This should apply throughout policy design, Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) procedures, with full and early integration of the Aarhus Convention pillars.

b) Participation should move beyond ad hoc consultation towards institutionalised deliberative and impact-oriented processes that enable citizens, affected communities, and civil society organisations to shape agendas, deliberations, and outcomes. Such processes should be integrated into the early stages of policymaking and legislative design, while options remain open and effective influence is still possible. They should be supported by timely, accessible, and comprehensible environmental information and build on existing EU instruments, including European Citizens' Panels, the European Citizens' Initiative, and public consultations led by the European Commission. Participatory processes should include clear and transparent feedback

mechanisms enabling participants to understand how their contributions have influenced policy development and implementation.

c) Governance affecting nature should support civic agency and public accountability through transparency frameworks, civic education, digital participation tools, and a vibrant civic space in which civil society organisations can contribute meaningfully.

d) Participatory processes should include diverse forms of knowledge and pay particular attention to underrepresented perspectives, affected interests, and barriers to access. They should help ensure that ecological governance takes into account different ways of valuing and relating to nature, makes trade-offs explicit, and addresses how environmental benefits, burdens, responsibilities, and decision-making power are distributed. They should also avoid approaches that use participation to shift responsibility for ecological transition primarily onto end users, individual producers, or affected communities, rather than addressing institutional, economic, and political drivers of ecological harm.

e) The Commission and Member States should ensure that participation is not only formally available but actually accessible, including by conducting early and timely public consultation; providing environmental information in accessible and understandable multilingual, and, where appropriate, machine-readable formats consistent with EU digital governance and open-data policies; translating technical assessments into non-specialist language where possible; removing financial and procedural obstacles to public input; and accommodating vulnerable and underrepresented groups through targeted outreach, language support, and flexible consultation methods.

Recommendation 9

The European Union should ensure coherence between its internal commitments on nature and sustainability and its external action.

a) EU institutions should review trade, investment, development, agricultural, industrial, and raw-material policies, as well as simplification and regulatory-reform initiatives, to ensure that they do not undermine the Union's commitments on biodiversity, ecosystem protection, environmental justice, and the right to a clean, healthy and sustainable environment.

b) External action relating to nature, climate, trade, finance, and development should be guided by the principles enshrined in Articles 3 and 21 of the Treaty on European Union, including sustainable development, environmental protection, human rights, and international cooperation. It should ensure ecological integrity, fair distribution of burdens and benefits, respect for human rights and labour standards, reciprocal and equitable relationships with affected communities, and consistency with the Union's internal legal and policy commitments.

c) The European Union should strengthen monitoring and accountability mechanisms in its external action, including benchmarks, reporting, due diligence, traceability requirements, and review mechanisms with clear consequences. This should build, where relevant, on instruments such as the EU Deforestation Regulation and Trade and Sustainable Development chapters in EU free trade agreements, in order to assess whether external policies and trade partnerships reinforce or weaken the Union's environmental and ethical commitments.

d) Regulatory simplification or burden-reduction initiatives should be evidence-led, subject to robust impact assessment, and designed so as not to weaken environmental, sustainability-reporting, due-diligence, data-collection, auditing, or accountability protections. In particular, simplification should not reduce the availability, reliability, or comparability of data needed to identify environmental harm, assess sustainability claims, detect greenwashing, and support public and supervisory enforcement.

e) The European Union should ensure that the ways in which nature is valued in its internal policies are reflected consistently in its external economic relations, including trade, investment, corporate governance, due diligence, and critical raw-materials frameworks. Particular attention should be paid to avoiding the externalisation of environmental harm across global value chains, so that ecological impacts occurring outside the Union are not treated as less relevant or subject to weaker standards. Instruments such as the Carbon Border Adjustment Mechanism show how EU policy can seek to address externalisation risks; similar coherence should be pursued in relation to biodiversity, ecosystem integrity, and nature-related impacts.

ANNEX 1

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ANNEX 2

Glossary

Aarhus framework: The Aarhus framework refers to the legal and institutional arrangements built around the Aarhus Convention and its implementation in EU law. It concerns access to environmental information, public participation in environmental decision-making, and access to justice in environmental matters.

Anthropocene: The Anthropocene is a term used to describe the present period in which human activity has become a major force shaping the Earth's systems, including climate, biodiversity, land, water, and biogeochemical cycles. In this Opinion, the term is used to highlight the scale of human impact and the need to rethink governance under conditions of ecological instability and planetary constraint.

Anthropocentrism: Anthropocentrism is the view that human beings are the primary or exclusive centre of value and moral concern. In environmental debates, the term is often used to describe approaches that value nature mainly in terms of its significance for human interests, welfare, or purposes.

Biodiversity: Biodiversity refers to the variety and variability of life, including diversity within species, between species, and across ecosystems. In this Opinion, biodiversity is important not only as a condition of ecological resilience and human well-being, but also as part of the wider living world that may be valued in instrumental, relational, and intrinsic ways.

Commensurability: Commensurability is the condition in which different goods, values, or harms can be measured and compared on a common scale. In environmental governance, commensurability is often assumed in economic and administrative decision-making, especially where different considerations are translated into shared metrics.

Cost: Cost is the burden, loss, or sacrifice associated with a choice, action, or policy. In economic and policy contexts, costs are often expressed in monetary terms, but in this Opinion the term may also refer more broadly to ecological, social, or moral losses that cannot always be fully captured by prices.

Cost-benefit analysis: Cost-benefit analysis is an appraisal method that compares expected costs and benefits of a policy, project, or regulation, often using monetary values or a common metric. In this Opinion, cost-benefit analysis is treated as potentially useful but limited, especially where ecological harms are irreversible, non-substitutable, or not appropriately reducible to monetary comparison.

Ecological boundaries: Ecological boundaries are biophysical limits within which human societies must operate if they are to avoid destabilising ecological systems. In this Opinion, the term indicates that some ecological constraints should shape what can be justified in governance, rather than being treated merely as variables within trade-offs.

Ecological embeddedness: Ecological embeddedness is the condition of human societies as part of, and dependent upon, ecological systems. The term highlights that ecological integrity is not external to social, economic, and political life, but one of its conditions.

Ecological integrity: Ecological integrity refers to the wholeness, functioning, and resilience of ecological systems, including their structure, processes, and capacities for regeneration. The term is used to indicate that environmental protection concerns not only resources or outputs, but also the condition of living systems as such.

Economic valuation: Economic valuation refers to methods that express the value of nature, ecosystems, or ecological impacts in economic or monetary terms, for example through cost–

benefit analysis, natural capital accounting, willingness-to-pay studies, or ecosystem service valuation. Economic valuation can make certain dependencies, benefits, harms, and risks visible for decision-making, but it should not be treated as exhaustive of the multiple ways in which nature can be valued or as sufficient on its own for resolving ethical and ecological trade-offs.

Environment: Environment refers to the surrounding ecological, physical, and social conditions within which living beings exist and interact. In this Opinion, the term is often used in policy or legal contexts, whereas “nature” more often points to the non-human natural world and its living systems.

Environmental justice: Environmental justice refers to the fair distribution of environmental benefits, harms, risks, and responsibilities, as well as fair access to environmental protection, participation, and redress. In this Opinion, the term is used to highlight that environmental degradation often affects people and communities unequally, and that ecological governance should address both unequal exposure to environmental harms and unequal capacity to influence, challenge, or benefit from environmental decisions.

Governance failure: Governance failure is a failure of institutions, procedures, or decision frameworks to recognise relevant values, represent affected claims fairly, or respond adequately to ecological limits and long-term risks. In this Opinion, some conflicts often presented as unavoidable trade-offs between “nature” and “people” are better understood as governance failures.

Incommensurability / limited commensurability: Incommensurability, or limited commensurability, is the idea that not all values at stake in decisions affecting nature can be translated into a single common metric. Some goods may be compared, but others would be misdescribed if treated as substitutable, compensable, or exchangeable.

Instrumental value: Instrumental value is the value something has as a means to other ends. In environmental contexts, this refers to the value attributed to nature because it supports human ends, needs, preferences, or goals, for example by providing food, water, materials, and ecosystem services, contributing to climate regulation, and supporting livelihoods, health, or economic activity.

Intrinsic value: Intrinsic value is the value something has in itself, independently of its usefulness to others. In environmental ethics, this term is used to express the claim that non-human beings, species, ecosystems, or ecological processes may matter in their own right and not merely as means to human ends.

Legal standing: Legal standing is the ability to bring a claim before a court or competent body. In environmental matters, standing determines who may challenge decisions or omissions affecting nature, ecosystems, or environmental rights.

Multiple ways of valuing nature: The idea that nature can matter in different ways at the same time, including in instrumental, relational, and intrinsic ways. These ways of valuing are not mutually exclusive and are not always reducible to a single metric or framework of assessment. For example, a forest may matter at once as a carbon sink, a habitat, a place of belonging, a source of livelihood, and a living system worthy of protection in itself. In this Opinion, the term signals that no single way of valuing nature should dominate by default in governance, and that different policy contexts may require economic, ecological, legal, ethical, deliberative, or participatory forms of reasoning.

Natural capital accounting / ecosystem accounting: Natural capital accounting and ecosystem accounting are methods for recording the extent, condition, and contributions of ecosystems within statistical, economic, or policy reporting systems. They can make ecological dependence and degradation more visible, but they do not by themselves capture all ethical, relational, or non-instrumental ways in which nature matters.

Nature: In this Opinion, where “nature” is used without further qualification, it refers primarily to non-human nature: living systems, species, ecosystems, and ecological processes that are not reducible to human institutions or artefacts. The term does not imply that humans are external to nature; rather, it reflects the need to distinguish the non-human natural world as an object of valuation, protection, and governance.

Nature-positive economy: A nature-positive economy is an economic model or policy ambition that aims to halt and reverse nature loss and support ecological restoration, resilience, and integrity. In this Opinion, the term is used cautiously: it should be clearly defined, grounded in science and accountability, and should not be used to justify avoidable ecological harm through weak claims of compensation or offsetting.

Non-instrumental value: Value that is not reducible to usefulness as a means to human ends. In this Opinion, the term functions as an umbrella for ways of valuing nature that are not exhausted by instrumental perspectives. It includes both intrinsic and relational understandings of value, while recognising that relational ways of valuing may also generate instrumental benefits without being reducible to them.

Non-substitutability: Non-substitutability is the condition in which a good, relationship, or ecological function cannot appropriately be replaced by another without serious normative or ecological loss. The term is important where nature is valued not merely as a resource, but as irreplaceable, threshold-sensitive, or constitutive of collective life.

Normative: Normative refers to the standards, principles, or rules that guide judgment and action. In this Opinion, the term includes both ethical and legal dimensions, unless the context indicates otherwise, and is used to refer to questions about what ought to be valued, protected, justified, or required in governance.

Offsetting / credits: Offsetting and credit-based approaches seek to compensate for ecological damage in one place or context by producing, purchasing, or recognising ecological improvements elsewhere. In this Opinion, such approaches raise ethical concerns where they imply that ecological losses are generally substitutable, compensable, or reversible.

Planetary ethics: Planetary ethics is an emerging field of ethical reflection concerned with how human responsibilities, institutions, and ways of valuing must be rethought under conditions of ecological interdependence, systemic risk, and planetary constraint. It extends beyond distributive questions alone to include relationships, responsibilities, institutional forms, and modes of valuation.

Planetary justice: Planetary justice is one strand within wider planetary ethics that focuses especially on questions of fairness, distribution, inequality, responsibility, and burden-sharing under planetary conditions, including across regions, generations, and vulnerable groups.

Precaution: Precaution is a governance orientation according to which uncertainty should not be used as a reason to postpone action where there is a risk of serious or irreversible harm. In this Opinion, precaution is especially relevant in contexts of ecological thresholds, systemic risk, and long-term uncertainty.

Price: Price is the monetary amount assigned to a good, service, activity, or transaction. In this Opinion, price should not be confused with value, because something may have a price without its significance being exhausted by market valuation, and something may have value without being appropriately priced at all.

Relational value: Relational value is the value that arises in and through meaningful relationships between people and the non-human natural world. This includes care, stewardship, attachment to place, identity, reciprocity, responsibility, and cultural continuity. Relational values are often non-instrumental, but they are distinct from intrinsic values because they concern the significance of relationships rather than value independent of all relations.

Representation of ecological concerns: Representation of ecological concerns refers to the institutional and procedural means through which ecological claims, future-oriented concerns, or non-human entities are made visible and defensible within governance. This may include legal standing, participatory mechanisms, guardianship models, advisory bodies, or strengthened access to justice.

Rights of Nature / RoN: Rights of Nature approaches seek to recognise nature, ecosystems, or specific natural entities, such as rivers or forests, as rights-holders, legal persons, or subjects within law. In this Opinion, the term is used broadly to refer to legal strategies that aim to strengthen the representation and protection of non-human nature.

Sentient non-human beings: Sentient non-human beings are non-human animals capable of subjective experience, including the capacity to feel pain, suffering, distress, or other affective states. In this Opinion, the term is used to indicate that some non-human beings matter not only as parts of species, habitats, or ecosystems, but also as vulnerable individuals whose suffering and flourishing may carry independent moral relevance for governance.

Substitutability: Substitutability is the assumption that one good, function, or value can be replaced by another without significant normative or ecological loss. In environmental governance, this assumption is often built into offsetting, compensation, or some economic models, but may be inappropriate where ecological loss is irreversible or non-equivalent.

Thresholds / tipping points: Thresholds, or tipping points, are points at which incremental ecological change may trigger disproportionate, potentially irreversible shifts in the condition or functioning of ecosystems. These concepts matter because they challenge assumptions that environmental degradation is always gradual, predictable, or reversible.

Trade-off: A trade-off is a situation in which pursuing one objective or protecting one good may come at the expense of another. This Opinion stresses that not all apparent trade-offs are inevitable, because some are produced by narrow valuation frameworks, institutional design, or failures to recognise ecological embeddedness and ecological limits.

Value: Value is the significance, worth, or importance attributed to something. In this Opinion, “value” refers not only to economic worth, but more broadly to the different ways in which nature may matter ethically, socially, politically, ecologically, or economically.

Valuing: Valuing refers to the practical process through which significance is recognised, expressed, prioritised, or neglected in judgment, decision-making, and institutional design. In this Opinion, the term is used to emphasise that the value of nature is not only a theoretical question, but also a governance question: how nature is valued shapes what becomes visible, what is protected, what is treated as negligible, and how trade-offs are constructed.

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This Opinion by the European Group on Ethics in Science and New Technologies (EGE) examines how human beings, communities, institutions, and legal systems value nature and translate that valuing into governance.

Building on this analysis, the EGE provides policy recommendations and guidance for EU policymakers, aimed at ensuring that governance choices are both ethically sound and ecologically realistic, particularly in the context of the European Green Deal and EU's role in the global context.

The Opinion underlines that EU law and policy already recognise the importance of nature in multiple ways. The challenge is to translate these commitments more consistently into decision-making, especially under conditions of ecological interdependence, biodiversity loss, climate instability, systemic risk, and ecological limits.

Therefore, the EGE recommends: the integration of multiple ways of valuing nature in impact assessment and evaluation; the consideration of new legal and institutional mechanisms for addressing ecological concerns, including effects on non-human nature; meaningful participation; responsible use of economic valuation; support for research and institutional learning; and greater coherence between the EU's internal commitments and external action.

This opinion is published in the context of the Ethics Advice Mechanism (EThAM) which provides independent ethical advice and policy recommendations to European institutions on any topics where policymaking intersects with the development of science and technology.

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