

A paper tiger in the fog of governance: Norway's riddle in biodiversity matters

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Abstract

Effective biodiversity protection is generally associated with a strict rule of law and democratic participation in environmental decision making. Norway's exceptional ranking in terms of governance, however, has failed to be a predictor of effective biodiversity protection. Through a systematic review of the main regulatory frameworks relevant to protecting biodiversity in Norway, this article analyses the misconceptions, perverse incentives and institutional bottlenecks that lie at the centre of the problem. The analysis finds three overarching barriers that regulatory frameworks have created to the effective protection and promotion of biodiversity in Norway, namely, a governance system based on diffuse legal obligations and responsibilities, excessive trust in private operators and considerable discretion to local entities. Accordingly, this article proposes three enabling factors, and related reform suggestions, for mitigating such barriers and domesticating earth system governance in biodiversity matters.

1 | INTRODUCTION

Overall, direct pressures on biodiversity originate from key economic sectors, such as forestry, agriculture and fisheries.¹ Over the last 15 years, the Secretariat of the Convention on Biological Diversity has reinforced the need for integrating biodiversity conservation across economic sectors,² signalling a robust role for policies that effectively protect and promote biodiversity.

In this context, national regulatory frameworks have a pivotal role to play, as they can provide the legal certainty and enforcement capacity for implementing biodiversity targets. Remarking on the interlinkage between participatory processes and ecological integrity, effective biodiversity protection is associated with a strong rule of law and democratic participation in environmental decision making.³

Furthermore, national laws potentially hold a greater possibility for oversight roles by local communities and for considering evidence that is relevant and instrumental for adapting decision-making processes to local ecosystems, with the ultimate goal of preserving ecological integrity. However, national policies are also more prone to pressure from local interest groups and the logic of political cycles,⁴ thus becoming barriers to biodiversity protection and promotion.

At the international level, the United Nations (UN) Post-2020 Global Biodiversity Framework has only partly kindled the transformative design that the current biodiversity crisis requires,⁵ making the

¹MTJ Kok et al, 'Pathways for Agriculture and Forestry to Contribute to Terrestrial Biodiversity Conservation: A Global Scenario-Study' (2018) 221 *Biological Conservation* 137.

²'Mainstreaming Biodiversity into Sectoral and Cross-sectoral Strategies' (2007) <<https://www.cbd.int/doc/training/nbsap/b3-train-mainstream-en.pdf>>.

³S Dasgupta and E De Cian, 'The Influence of Institutions, Governance, and Public Opinion on the Environment: Synthesized Findings from Applied Econometrics Studies' (2018) 43 *Energy Research and Social Science* 77; O Rydén et al, 'Linking Democracy and Biodiversity Conservation: Empirical Evidence and Research Gaps' (2020) 49 *Ambio* 419.

⁴U Reber et al., 'Integrating Biodiversity: A Longitudinal and Cross-sectoral Analysis of Swiss Politics' (2022) 55 *Policy Sciences* 311.

⁵DR Boyd and S Keene, 'Human Rights-Based Approaches to Conserving Biodiversity: Equitable, Effective and Imperative. A Policy Brief from the UN Special Rapporteur on Human Rights and the Environment' (August 2021).

national level of analysis all the more critical. Therefore, a careful evaluation of biodiversity-protective legal frameworks is first needed on a jurisdiction-by-jurisdiction basis.

Accordingly, this article explores the extent to which the integration of biodiversity conservation and promotion in Norway's main regulatory frameworks works in terms of design and implementation. By focusing on regulatory frameworks, the analysis aims to provide long-overdue insights into the barriers that regulatory frameworks have created to the effective protection and promotion of biodiversity in Norway.

2 | CASE STUDY METHODS

The need for a case study was established due to the focus on the national level of biodiversity protection and promotion. Importantly, biodiversity policy varies widely in both design and implementation, thus requiring analyses that target the national level. Norway was selected as a relevant case study because of the author's knowledge of two of its official languages, *bokmål* and *nynorsk*, and extensive work concerning its legal culture.⁶ Further, Norway's biodiversity data are easily accessible and regularly updated. Moreover, due to its relative biodiversity decline, Norway's case apparently tests the tenet in which a strict rule of law and democratic participation are associated with biodiversity protection. Ordering, extracting and organising existing data may suggest that Norway is only a paper tiger in implementing biodiversity targets. In this regard, the original contribution of this article is to investigate and mitigate, through reform suggestions, the overarching barriers that regulatory frameworks have created to the effective protection and promotion of biodiversity in Norway.

This article systematically identifies and evaluates Norway's main regulatory frameworks relevant for biodiversity. Data were obtained through a mixed-methods approach. The chosen methodological approach is a qualitative case study, where two different data collection methods were employed in a multi-step workflow. First, data from quantitative analyses on governance and biodiversity indices were retrieved from open-access databases. The latter constitute authoritative sources of internationally recognised data. The retrieved sources were the following: the World Bank's Worldwide Governance Indicators Report, which covers six governance dimensions, as mentioned below: *Artsdatabanken* (in English, the Norwegian Biodiversity Information Centre), a national knowledge bank for biodiversity belonging to Norway's Climate and Environment Ministry, to retrieve information on the status of species and nature types in Norway,⁷ and the Environmental Performance Index (EPI), developed by Yale University and Columbia University to score the state of sustainability at the national scale using 40 performance indicators across

11 issue categories,⁸ to retrieve biodiversity-related data concerning Norway.

Second, database searches were complemented with (1) focus groups ($n = 3$) of six experts spanning academia, independent consulting services and civil society organisations,⁹ concerning (2) semi-structured interviews ($n = 3$) with Norway's umbrella organisation for biodiversity, Sabima¹⁰; and (3) a desktop review of scholarly work, non-governmental organisation documents, newspaper archives, reports and web browser searches. The retrieved data were collected to carry out a 'horizontal gap analysis' (Section 3.1), considering biologically relevant ecological issues.¹¹ Because biodiversity largely depends on the vertical dimension of effective policy and implementation,¹² by building on the retrieved data, the article proceeded with identifying and evaluating the main regulatory frameworks relevant to biodiversity protection and promotion through a 'vertical gap analysis'.¹³ New qualitative analyses were generated by combining data on biodiversity (horizontal gap analysis) with a systematic analysis of the main regulatory frameworks relevant to biodiversity protection and promotion (vertical gap analysis). This type of two-dimensional gap analysis has been recognised as an efficient tool for implementing biodiversity policy.¹⁴ Moreover, it responds to the combined needs of social-ecological systems, defined as 'complex adaptive systems where social and biophysical agents are interacting at multiple temporal and spatial scales'.¹⁵

Accordingly, from a theoretical viewpoint, Norwegian biodiversity laws and policy are here tested and analysed against normative elements that were derived from earth system law. Earth system law constitutes an innovative legal paradigm able to respond to the research question on Norway's biodiversity shortcomings because it

⁸MJ Wolf et al. '2022 Environmental Performance Index' (Yale Center for Environmental Law & Policy 2022) <<https://epi.yale.edu/>>.

⁹The expert group included Ole Kristian Fauchald, Siri Gløppen, Lars H. Gulbrandsen, Truls Gulowsen and Hans Morten Haugen. Field notes were taken during discussions in focus groups. Summaries of each focus group were created and circulated among members for comments after each focus group. Material is filed with the author and available upon request (in Norwegian). The empirical base offered by the focus groups was used in a simplified manner within a divulgative project on the rule of law for nature in Norway, which resulted in the report E Colombo and E Hoff-Elimari, 'En stemme for naturen: slik kan vi forbedre naturens rettsikkerhet i Norge' (Pan - Foreningen Grunnloven §112, Report 1/2022). The focus groups were held in Norwegian. They started with a discussion of the regulatory barriers to the protection of the natural environment in Norway in terms of substantive and procedural rules (9 August 2021). To further proceed in the focus groups, the expert group deemed crucial to include institutional rules in its scope of discussion and to review a gap analysis to be prepared by the author. In a second focus group, the author presented and received comments on the gap analysis, as well as on regulatory barriers to and enablers of biodiversity protection (7 October 2021). The third focus group drew conclusions on the author's presentation of regulatory barriers and enablers (6 December 2021). Eivind Hoff-Elimari served as director, convener and project manager.

¹⁰Interviews were carried out by email with the Norwegian Biodiversity Network (Sabima) <<https://www.sabima.no/om-sabima/foreningene/>>. Material is filed with author and available upon request (in Norwegian).

¹¹P. Angelstam et al. 'Two-Dimensional Gap Analysis: A Tool for Efficient Conservation Planning and Biodiversity Policy Implementation' (2003) 32 *Ambio* 527.

¹²*ibid* 527.

¹³Angelstam et al (n 11).

¹⁴*ibid*.

¹⁵M Janssen and E Ostrom, 'Governing Social-Ecological Systems' in L Tesfatsion and KL Judd (eds), *Handbook of Computational Economics* (Elsevier 2006) 1465, 1471; JH Holland, 'Complex Adaptive Systems' (1992) 121 *Daedalus* 17; M Janssen, 'Resilience and Adaptation in the Governance of Social-Ecological Systems' (2011) 5 *International Journal of the Commons* 340.

⁶E Colombo, 'Climate Change and the Individual: A Norwegian Perspective', in F Sindico and MM Mbengue (eds), *Comparative Climate Change Litigation: Beyond the Usual Suspects* (Springer 2021) 91.

⁷Artsdatabanken, 'Norsk rødliste for arter 2021' (Artsdatabanken 2021) <https://artsdatabanken.no/Files/41901/Norsk_r_dliste_for_arter_2021>.

purposefully aims to ground law in robust earth system science.¹⁶ It does so to remedy the inadequacies of current legal practice, such as a siloed approach to interconnected planetary social-ecological governance challenges, perverse incentives, environmental problem shifting and the current lack of appreciation for systems complexity and regime interaction.¹⁷ In the same vein as the earlier concept of earth system governance, earth system law reassesses and shapes existing legal practice and science by critically reconsidering the assumptions and operationalisations of pivotal normative concepts, such as justice, responsibility and agency.¹⁸ Similarly, earth system law probes into the inadequacies of regulatory responses to the current planetary crises.¹⁹

Such an earth system approach can offer meaningful assessment lenses in a context of decade-long worrisome trends concerning biodiversity in Norway.²⁰ Remarking on the social agents of social-ecological systems, notably institutions, social sciences can be used to identify institutional obstacles to implementing biodiversity policies.²¹ Policy success may be equally crucial to avoiding errors and increasing institutional capacity in the future. However, the focus on regulatory barriers springs from the urgency of the current geological epoch where human activity has been the dominant influence on the earth, the Anthropocene²² and the ‘Anthropocene gap’ by which the current, degrading state of the earth testifies to the inability of current law to ‘respond juridically to the earth system’s unique regulatory demands’, notably due to the earth’s highly complex system.²³ Further, operationalising earth system law in a national context offers novel perspectives on both existing legal regimes and the theory of earth system law, as scholarship has previously achieved in the field of international law.²⁴

Additionally, earth system law plays a functional role as a coding lens in the vertical gap analysis as it enables coding. To identify the ‘vertical’ reasons for the degrading state of biodiversity in Norway, this article systematically identifies and evaluates Norway’s main regulatory frameworks relevant for biodiversity as based on literature²⁵ and as supported by feedback offered by the described focus groups and semi-structured interviews. Data were treated through a standardised and reproducible workflow following the FAIR data

management principles.²⁶ Existing data permitted the identification of areas of ineffectiveness in Norway’s biodiversity protection and promotion.

As a final step in the workflow, findings were coded and systematised in a conceptual framework, which is one of the original contributions of the present article, as inspired by literature on earth system law. The conceptual framework is built on the analysis of (1) ontological, (2) normative and (3) structural challenges, which group the shortcomings engrained in Norway’s biodiversity rules, notably misconceptions related to power sharing as a type of challenge falling under (1), perverse incentives related to excessive trust in private operators, as a type of challenge falling under (2), and institutional bottlenecks, as a type of challenge falling under (3). The analytical dimensions of the conceptual framework—misconceptions, perverse incentives and institutional bottlenecks—are conceptual labels that were assigned in the coding phase to best manage and explain retrieved data²⁷ through a fluid and recursive thematic approach.²⁸ Reform suggestions were based on earth system law enablers—inclusivity, interdependencies and complexity—which have already been clarified as crucial to derive earth system-based regulatory implications for the Anthropocene.²⁹ Such enablers seem the most solid ones in earth system law scholarship³⁰ and allow for deriving policy implications that are consistent with the original conceptual framework, generating lessons learned for other jurisdictions. Conversely, managerial approaches to law risk creating contradictions within law, thus undermining law’s effectiveness in tackling earth system transformations.³¹ However, such enablers do not preclude the existence of other possible considerations to ‘respond juridically to the major implications induced by transgressions into a human-dominated planet’.³²

The term ‘framework’ is deliberately employed to identify a broad set of variables and their linkages.³³ This type of framework results from ordering, extracting and organising existing data and, on this basis, providing new knowledge to investigate and mitigate the overarching barriers that regulatory frameworks have created to the effective protection and promotion of biodiversity in Norway. Overall, the conceptual framework pertains to qualitative research, which aims to deeply understand a research subject rather than predict outcomes.³⁴

¹⁶LJ Kotzé, ‘Earth System Law for the Anthropocene: Rethinking Environmental Law Alongside the Earth System Metaphor’ (2020) 11 *Transnational Legal Theory* 75, 78.

¹⁷LJ Kotzé et al, ‘Earth System Law: Exploring New Frontiers in Legal Science’ (2022) 11 *Earth System Governance* 100126, 1.

¹⁸F Biermann, ‘Editorial to the Inaugural Issue of “Earth System Governance”’ (2019) 1 *Earth System Governance* 1; Kotzé et al (n 17); E Dirth et al, ‘What Do Researchers Mean When Talking about Justice? An Empirical Review of Justice Narratives in Global Change Research’ (2020) 6 *Earth System Governance* 1.

¹⁹L Mai and E Boulout, ‘Harnessing the Transformative Potential of Earth System Law: From Theory to Practice’ (2021) 7 *Earth System Governance* 1, 7.

²⁰Organisation for Economic Co-operation and Development (OECD), ‘Environmental Performance Reviews: Norway 2022’ (OECD 2022).

²¹Angelstam et al (n 11).

²²F Biermann, *Earth System Governance: World Politics in the Anthropocene* (MIT Press 2014); S Burch et al, ‘New Directions in Earth System Governance Research’ (2019) 1 *Earth System Governance* 100006; Kotzé et al (n 20) 1.

²³LJ Kotzé, ‘Earth System Law for the Anthropocene’ (2019) 11 *Sustainability* 6796.

²⁴H van Asselt, ‘Governing Fossil Fuel Production in the Age of Climate Disruption: Towards an International Law of “Leaving it in the Ground”’ (2021) 9 *Earth System Governance* 1.

²⁵HC Bugge, *Lærebok i miljøforvaltningsrett* (6th edn, Universitetsforlaget 2022); HC Bugge, *Environmental Law in Norway* (4th edn, Wolters Kluwer 2022).

²⁶MD Wilkinson et al, ‘The FAIR Guiding Principles for Scientific Data Management and Stewardship’ (2016) 3 *Scientific Data* 160018.

²⁷NK Gale et al, ‘Using the Framework Method for the Analysis of Qualitative Data in Multi-disciplinary Health Research’ (2013) 13 *BMC Medical Research Methodology* 117, 118.

²⁸V Braun and V Clarke, ‘Using Thematic Analysis in Psychology’ (2006) 3 *Qualitative Research in Psychology* 77; V Braun and V Clarke, ‘Reflecting on Reflexive Thematic Analysis’ (2019) 11 *Qualitative Research in Sport, Exercise and Health* 589.

²⁹Kotzé (n 23) 6; Kotzé et al (n 17) 3.

³⁰Kotzé (n 23) 6; Kotzé et al (n 17) 3; MC Petersmann, ‘Sympoietic Thinking and Earth System Law: The Earth, Its Subjects and the Law’ (2021) *Earth System Governance* 1, 6.

³¹Kotzé et al (n 17) 3.

³²Kotzé (n 23) 6.

³³JM Anderies et al, ‘A Framework to Analyze the Robustness of Social-ecological Systems from an Institutional Perspective’ (2004) 9 *Ecology and Society* 18, 19.

³⁴N Denzin and Y Lincoln, ‘Introduction: The Discipline and Practice of Qualitative Research’ in N Denzin and Y Lincoln (eds), *The Sage Handbook of Qualitative Research* (Sage 2011) 1. LE Tomaszewski et al, ‘Planning Qualitative Research: Design and Decision Making for New Researchers’ (2020) 19 *International Journal of Qualitative Methods* 1.

TABLE 1 Conceptual framework on earth system law's challenges and enablers, including the specification of regulatory challenges that emerged in Norway.

Challenges hindering earth system law	Types of challenges that emerged in Norway	Enablers of earth system law
<i>Ontological challenges</i>	Misconceptions related to power-sharing (power repartition and boundaries) among public authorities in biodiversity matters	Inclusivity
<i>Normative challenges</i>	Perverse incentives related to excessive trust in private operators on the part of public authorities	Interdependency
<i>Structural challenges</i>	Institutional bottlenecks related to fragmentation that is either horizontal (e.g. overly specialised and uncoordinated institutions) or vertical (e.g. exclusion of actors from contributing to addressing and accepting responsibility for planetary degradation)	Complexity

The obtained framework constitutes original research and differs from the analyses used in the previous steps of the workflow. Among such analyses, it is worth pinpointing the 2022 OECD Environmental Performance Review for Norway, the most comprehensive and updated source of qualitative and quantitative analyses on biodiversity.³⁵ The OECD debates the status and trends for land use and biodiversity management in Norway. By assessing policies and processes, it provides targeted recommendations to promote peer learning and progress towards environmental policy objectives. However, the OECD report differs from the present analysis due to its neutrality in terms of the theoretical approach employed, while the present analysis constructs its conceptual framework based on earth system law. Moreover, the topic of land use and biodiversity was chosen by Norway's Ministry of Climate and Environment to appear in the OECD report due to what the ministry perceived as the need for a critical policy assessment in the context of increased pressure on land and biodiversity.³⁶ By contrast, the context where the present analysis was carried out was exclusively academic. Furthermore, the OECD offers takeaways and recommendations that are policy-based and oriented towards peer learning. Conversely, the present analysis stems from a more legal approach that is oriented towards participative debate and concrete regulatory changes rather than peer learning (Table 1).

³⁵OECD (n 22).

³⁶ibid.

3 | RESULTS

3.1 | Introduction

In this section, the results of the gap analysis are presented. Because gap analyses have a plethora of meanings, I focus on the underlying reasons at the heart of why Norway is a paper tiger in biodiversity conservation and protection (see Section 1). In particular, the two-dimensional gap analysis consists of (1) a horizontal component, which aims to identify the most pressing biologically relevant ecological issues in an ecoregion, here Norway, and (2) a vertical component, which is used for gauging biodiversity policy shortcomings by identifying institutional obstacles while implementing policies.³⁷

3.2 | Horizontal gap analysis

Norway ranks in the highest percentile for all six dimensions of government that are assessed in the Worldwide Governance Indicators Report,³⁸ a well-known research dataset produced by the World Bank to measure voice and accountability, political stability and the absence of violence and terrorism, government effectiveness, regulatory quality, the rule of law and control of corruption.³⁹ Governance indicators are positively associated with effective biodiversity protection (Section 1). Norway's exceptional ranking in terms of governance, however, has failed to be a predictor of effective biodiversity protection. It has performed insufficiently pursuant to the global targets for biodiversity that the Conference of the Parties to the Convention on Biological Diversity set forth to achieve by 2020 (the Aichi biodiversity targets).

In particular, pursuant to Aichi biodiversity target 12, the extinction of known threatened species should have been prevented, and their conservation status improved and sustained by 2020.⁴⁰ However, according to Norway's biodiversity database *Artsdatabanken*, the share of threatened species in all categories evaluated—mammals, bird species, mosses and plants—has increased between 2015 and 2021, even more than in the previous timespan evaluated by the same institution, namely, 2010–2015.⁴¹ Further, while representative terrestrial areas and inland water should have been protected by at least 17% by 2020 (Aichi target 11), Norway has achieved a conservation target of 17.5% for terrestrial areas and 14% for inland water, which nonetheless fail to be ecologically representative, with wetlands and forests under-represented in such conservation areas.⁴² While the Aichi

³⁷Angelstam et al (n 11).

³⁸World Bank, 'Worldwide Governance Indicators' <<https://info.worldbank.org/governance/wgi/Home/Reports>>.

³⁹D Kaufmann et al, 'The Worldwide Governance Indicators: Methodology and Analytical Issues' (World Bank 2010); World Bank (n 38).

⁴⁰CBD 'Decision X/2, Strategic Plan for Biodiversity 2011–2020' UN Doc UNEP/CBD/COP/DEC/X/2 (29 October 2010).

⁴¹S Henriksen and O Hilmo, 'Norwegian Red List of Species 2015: Methods and Results' (Norwegian Biodiversity Information Centre 2015) 11; OECD (n 22).

⁴²DR Boyd, 'Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment on his Visit to Norway' UN Doc A/HRC/43/53/Add.2 (3 January 2020) 13; Miljødirektoratet, 'Årsrapport for Miljødirektoratet' (2021); OECD (n 22).

target for the conservation of coastal and marine areas was 10% (Aichi target 11), Norway has achieved a conservation target of approximately 3.5%,⁴³ which is well below the OECD average.⁴⁴

Notably, experts carried out an analysis of 242 jurisdictions to measure the Global Habitat Protection Index, which indicates how much a jurisdiction contributes to the global protection of select marine and coastal habitats within protected areas or other effective area-based conservation measures, thus shedding light on government efforts to ensure marine and coastal habitat conservation. Globally, Norway was ranked at the lowest level in the analysis, followed by Papua New Guinea, Nigeria and Iraq.⁴⁵ In terms of Aichi target 15, setting forth the commitment to restore at least 15% of degraded ecosystems contributing to carbon stocks, more than one-third of all wetlands in Norway were found to be degraded,⁴⁶ with all wetland indicators declining between 1990 and 2017.⁴⁷

At a more general level, Norway's environmental performance has been ranked by the Environmental Performance Index (EPI), which provides a quantitative basis for the state of sustainability at the national level in 180 countries.⁴⁸ In 2022, Norway ranks 16th on the indicator concerning fisheries, which measures fish stock status, marine trophic index and fish caught by trawling and dredging.⁴⁹ The country is 36th on the indicator concerning ecosystem vitality, measuring how countries are preserving, protecting and enhancing ecosystems and the services they provide,⁵⁰ and it ranks 38th on the indicator concerning the proportion of suitable habitats for a country's species that remain intact, evaluating the state of tree cover loss, grassland loss and wetland loss.⁵¹ Norway is 70th on the indicator concerning climate change policy objectives, notably mitigation policy,⁵² and it ranks 71st on the index concerning species protection, which measures how a country's terrestrial protected areas overlap with the ranges of its vertebrate, invertebrate and plant species.⁵³

Overall, Norway's EPI ranking has shifted from 9 to 20 in just over two years,⁵⁴ suggesting its metaphorical status as a paper tiger. To clarify, Norway is, in principle, well poised to conserve and promote ecosystems due to its high ranking on the rule of law and other governance indicators. However, its biodiversity protection and promotion are, in practice, less effective than expected. The underlying reasons at the heart of why Norway is a paper tiger in biodiversity conservation and protection have yet to be assessed; they are explored from a legal perspective in the remaining sections of this article.

3.3 | Vertical gap analysis

The present gap analysis considers biologically relevant ecological issues, as the degrading state of biodiversity in Norway was previously revealed (Section 3.2). Such issues are analysed in relation to the role of Norway's institutions, notably their design and implementation of regulatory frameworks (Section 2). In the following, three main institutional factors are identified as causing regulatory shortcomings: misconceptions, perverse incentives and institutional bottlenecks.

3.3.1 | Misconceptions

Misconceptions belong to one of the three research lenses identified through earth system law scholarship, namely ontological challenges, which probe how humans participate in social-ecological systems with more-than-human worlds.⁵⁵ Ontological challenges are posed by assumptions and the beliefs that support them.⁵⁶ Within ontological challenges, misconceptions are false assumptions that risk derailing biodiversity policy, notably under the consideration that nature is a commodity created for human exploitation.⁵⁷ In relation to perverse incentives (Section 3.3.2), misconceptions are more substantial than procedural as they relate to either implied or explicit approaches to the non-human that are embedded in regulatory frameworks. In relation to institutional bottlenecks (Section 3.3.3), misconceptions are less entwined with institutional roles and functions and more related to policy design. Overall, the following analysis finds that Norway's biodiversity governance is based on misconceptions related to a system of diffuse legal obligations and responsibilities. Diffusing legal obligations and responsibilities does not constitute a problematic factor per se. Yet, in Norway, the main misconception rests with power sharing, which is ineffective in terms of biodiversity conservation and promotion (Section 2). As explained below, unclear and incoherent rules are disconnecting prioritised species and habitat types, as well as zone protection from actual habitat protection. Even when existing regulatory frameworks empower governmental authorities to protect biodiversity, the government often abdicates such a role, thus engendering enforcement problems and substantially delinking the biophysical and social components of social-ecological systems.

The main legal framework relevant to protecting biodiversity in Norway is the Nature Diversity Act (NDA), enacted in 2009. The NDA is intended 'to protect biological, geological and landscape diversity and ecological processes through conservation and sustainable use, and in such a way that the environment provides a basis for human activity, culture, health, and well-being, now and in the future, including a basis for Sami culture'.⁵⁸ One of the implications of this

⁴³Miljødirektoratet (n 42).

⁴⁴OECD (n 22).

⁴⁵JA Kumagai et al, 'Habitat Protection Indexes - New Monitoring Measures for the Conservation of Coastal and Marine Habitats' (2022) 9 *Scientific Data* 203.

⁴⁶Sabima, 'Myr' (2021) <<https://www.sabima.no/trua-natur/myr/>>.

⁴⁷Klima- og miljødepartementet, 'Naturstrategi for våtmark' (2021) 36.

⁴⁸Wolf et al (n 8).

⁴⁹EPI, 'Fisheries' (2022) <<https://epi.yale.edu/epi-results/2022/component/fsh>>.

⁵⁰EPI, 'Ecosystem Vitality' (2022) <<https://epi.yale.edu/epi-results/2022/component/eco>>.

⁵¹EPI, 'Ecosystem Services' (2022) <<https://epi.yale.edu/epi-results/2022/component/ecs>>.

⁵²EPI, 'Climate Change' (2022) <<https://epi.yale.edu/epi-results/2022/component/cch>>.

⁵³EPI, 'Species Protection Index' (2022) <<https://epi.yale.edu/epi-results/2022/component/spi>>.

⁵⁴Wolf et al (n 8). ZA Wendling et al, 'Environmental Performance Index' (Yale Center for Environmental Law & Policy, 2020); Miljødirektoratet (n 42).

⁵⁵Mai and Boulot (n 21) 7.

⁵⁶K O'Brien, 'Global Environmental Change II: From Adaptation to Deliberate Transformation' (2012) 36 *Progress in Human Geography* 667.

⁵⁷Boyd and Keene (n 5) 4.

⁵⁸Nature Diversity Act, Act of 19 June 2009 No. 100 Relating to the Management of Biological, Geological and Landscape Diversity <<https://www.regjeringen.no/en/dokumenter/nature-diversity-act/id570549/>> (NDA) Section 1.

provision is that biodiversity should be promoted across policy sectors for the achievement of cross-cutting results, including for the preservation of indigenous cultures. Importantly, the NDA clarifies that the King of Norway is the highest authority, endowed with the faculty to delegate authority on biodiversity to municipalities.⁵⁹ However, neither the NDA nor other more general acts explicitly specify the competences attributed to existing levels of governance, notably counties, municipalities and the central government,⁶⁰ generating confusion about who is responsible for biodiversity promotion and conservation.

Power sharing has been incrementally established in limited competence areas, but listed power repartition and power boundaries are still lacking, entailing coordination problems. Notably, power sharing is ineffective in terms of biodiversity conservation and promotion and has proved incoherent with the findings on the interconnectedness of the earth system. Although the Norwegian government is by law competent to establish a list of prioritised species,⁶¹ counties are tasked with protecting the prioritised species identified by the government, while municipalities are given the faculty, rather than the legal duty, to select habitat types, also beyond government determinations.⁶² Still, through the integrated management of land, water and living resources that promote conservation and sustainable use in an equitable way, which is known as the ecosystem approach,⁶³ prioritised species should be protected in synergy with the conservation and promotion of their habitats. Further, the management of national parks, protected landscapes and nature reserves has been delegated to either municipalities or, for larger areas, to 48 management boards.⁶⁴ Legal experts in biodiversity have deemed this management solution a delegation experiment whereby local involvement in protected areas is strengthened through the establishment of local, politically appointed management boards with significant decision-making authority.⁶⁵ Nevertheless, the reform was found more responsive to local interests than national nature-related values when compared with the previous centralised management.⁶⁶

Beyond the aforementioned coordination problems, a second regulatory shortcoming that springs from the described set of diffuse obligations and responsibilities is the 'cosmetic' protected zone approach. In fact, the central policy for protecting threatened species' habitats revolves around protected area status at the national level, rather than biodiversity mainstreaming across government levels, which would be more effective.⁶⁷ Protected areas are especially needed in coastal areas and the South, but since 2015, the government's stance has been that the number of protected areas was

sufficient.⁶⁸ A further problem with protected zones is not only their quantity but also their adequacy. In practice, most protected areas fail to warrant quality coverage, allowing for substantial resource harvesting.⁶⁹ They are identified in coordination with county governors and municipalities, but identification does not ensure protection as local governments may possess informal veto power.⁷⁰ Moreover, the NDA fails to enshrine enforced requirements on coverage quality or restrictions on resource harvesting, such as commercial fishing.⁷¹ More recently, a dispensation was issued to build and operate a new four-lane motorway through the Lågen-delta wildlife reserve in Lillehammer without a local development plan, any investigation into alternatives to the developer's proposed project, or a finalised pollution permit.⁷² Under the Pollution Control Act, the pollution permit can be withdrawn,⁷³ but it cannot be challenged if it is not final. When finalised, it can be challenged before administrative authorities, possibly leading to a case before courts, or as outright challenges in civil courts, but an administrative appeal is mandatory when the relevant public body specifies so making the relevant review system contingent on discretion.⁷⁴

Another issue concerning conservation, as per the NDA, rests in Norway's protection of only 0.9% of its exclusive economic zone (EEZ), compared with 21% in OECD countries.⁷⁵ In fact, national and local economic interests in the use of marine resources have severely limited the scope and impact of the NDA's most important instruments to protect biodiversity—the rules on protected areas, selected habitat types and prioritised species—which only applies on land and within territorial waters,⁷⁶ meaning that only 12% of ocean areas under Norway's jurisdiction fall within the scope of the law.⁷⁷ Furthermore, the NDA fails to require the conservation of large, contiguous protected zones of ecological connectivity, which are more effective at protecting biodiversity and threatened species,⁷⁸ across clearly defined levels of government. Contrary to best practices, Norway's protected areas are small, a notable concern for the most vulnerable habitat types.⁷⁹ Further, in Northern and Western Norway, protected areas are often isolated, notably wetlands.⁸⁰

⁶⁸ibid.

⁶⁹Colombo and Hoff-Elimari (n 9).

⁷⁰OECD (n 22); Miljødirektoratet, 'Opprettelse av verneområder etter naturmangfoldloven' (2016) 19ff.

⁷¹NDA (n 58) Sections 33 and 48; Forskrift om vern av Tauterryggen marine verneområde, Frosta og Leksvik kommuner, Nord-Trøndelag 2013. FOR-2013-06-21-693 II 2013 hefte 3: Section 4; Forskrift om fredning av Lågendeltaet naturreservat, Lillehammer kommune, Oppland 1990. FOR-1990-10-12-827 II 1990 315, Chapter 4.

⁷²Statsforvalteren i Innlandet, 'Oversendelse av klagesak - Ny E6 Roterud - Storhove - anleggsvirksomhet og veianlegg, 2021/12852' (2021).

⁷³Pollution Control Act, Act of 13 March 1981 No. 6 Relating to the Protection Against Pollution and Concerning Waste, Section 18.

⁷⁴Public Administration Act, Act of 10 February 1967 Relating to Procedure in Cases Concerning the Public Administration, Section 27(b); Colombo (n 6) 99, 102–103.

⁷⁵OECD (n 22).

⁷⁶NDA (n 58) Section 2.

⁷⁷ØR Gudmundsdottir Jonassen, 'Bevaring av marine områder i Norge. En studie av hvordan det norske rammeverket for bevaring av marine områder gjennomføres i praksis' (Master's Thesis, Norwegian Arctic University 2022) 1.

⁷⁸OECD (n 22); NDA (n 58) Chapter V.

⁷⁹OECD (n 22).

⁸⁰ibid.

⁵⁹ibid Section 62.

⁶⁰LA Hafting Kvestad and E Colombo, 'Il sistema di governo nel Regno di Norvegia: istituzioni regionali e istituzioni locali' (2021) 5 *Le Regioni* 1111, 1143; OECD (n 22).

⁶¹NDA (n 58) Section 23.

⁶²ibid Section 53; see O Andersen et al, 'Naturmangfoldlovens virkninger i kommunene. En gjennomgang av kommunale erfaringer med loven' (Norsk institutt for naturforskning 2013) 13.

⁶³CBD, 'Ecosystem Approach' (23 August 2021) <<https://www.cbd.int/ecosystem/>>.

⁶⁴OECD (n 22).

⁶⁵OK Fauchald and LH Gulbrandsen, 'The Norwegian Reform of Protected Area Management: A Grand Experiment with Delegation of Authority?' (2012) 17 *Local Environment* 203.

⁶⁶OECD (n 22).

⁶⁷ibid.

Thus, Norway's emphasis on biodiversity conservation, rather than conservation qualified by connectivity and area size as well as promotion, has not helped Norway achieve the Aichi biodiversity targets. As confirmation, the Norwegian Environmental Agency recently found deficiencies in area protection in all regions of Norway.⁸¹

A third regulatory shortcoming of Norway's legal framework for biodiversity is that the described set of diffuse obligations lacks an effective enforcement apparatus. Apparently, enforcement issues stray away from misconceptions, which follow from ontological—more substantial and less procedural—considerations of how humans participate in social-ecological systems with more-than-human worlds. However, it was previously found that the main ontological challenge posed by Norway's regulatory frameworks on biodiversity lies in a system of diffuse legal obligations and responsibilities. Such a system of diffuse obligations and responsibility does not constitute a problematic factor per se. Yet, in the context of Norway, even when existing regulatory frameworks empower governmental authorities to protect biodiversity, the government often abdicates such a role, thus engendering enforcement problems and substantially delinking the biophysical and social components of social-ecological systems. To review, pursuant to the NDA, the central government must consider protecting important habitat types and priority species. Nonetheless, when habitat protection alone is deemed insufficient, and the empirical basis suggests that a species has no viable stock, the government is only under the legal duty to evaluate whether the species should be prioritised; it is not obliged to adopt or implement measures to protect it through priority status.⁸² To date, only 13 of over 2000 threatened species enjoy the status of prioritised species under the NDA.⁸³

Moreover, pursuant to the NDA (Section 10), threats to ecosystems must be investigated, particularly regarding the overall burden to which the relevant ecosystem is exposed. Ocean-based salmon farming, also called aquaculture, is known for its adverse effects on ecosystems and biodiversity, including the spread of disease and genetic mixing from escaped farmed salmon. Accordingly, in 2017, the Norwegian Parliament enacted the so-called traffic light system, which divides coastline areas into 13 zones, each of which is given either red, yellow or green status, as a basis for adjusting the farming capacity in the individual area as based on environmental indicators. However, the Parliament only included the environmental indicator of wild salmon, while other salmonid species should also have been included under an ecosystem approach, notably sea trout and char.⁸⁴ Parliament's neglect of ecosystem considerations was found at loggerheads with the NDA,⁸⁵ but its actions are not challengeable in court,⁸⁶ nor does the NDA prevail over successive law enactments ranking as laws. In addition, the Ministry of Trade and Fisheries adopts the final classification of areas as red, yellow or green. Over the years, however, it

has exercised its administrative leeway to systematically prioritise industry over nature by conferring a green light when independent experts would recommend a yellow light or a yellow light when independent experts would recommend a red light.⁸⁷

Further, the NDA (Section 13) sets the framework for quality norms for biological, geological and landscape diversity, for example, the distribution or abundance of a species or the range or ecological status of a habitat type. Nevertheless, quality norms have only been set for wild salmon and wild reindeer using the NDA,⁸⁸ which lacks an enforceable obligation on the government to update and enlarge quality norms. By way of example, there exist no quality norms to protect the mountain fox, although the latter is a prioritised species of particular vulnerability.⁸⁹ Such a confusing situation is paradigmatic of dire inconsistencies also in Norway's wolf protection policies,⁹⁰ which are set directly by the Parliament. The Parliament has created wolf zones and set a minimum and a maximum number of wolves as the viable population, a target that was not determined by biologists, but rather by politicians.⁹¹ In the wolf zones, local authorities can allow wolf killing; outside the zones, predator committees, which are appointed by the Ministry of Climate and the Environment, can decide whether or not to have the wolves be killed.⁹² The approach is at loggerheads with the requirements set by international law,⁹³ to which Norway is bound.⁹⁴ Not even Norway's Supreme Court has established balancing principles concerning wolf 'management', instead endorsing the current prioritisation of human-centred interests.⁹⁵ Overall, populations of the Scandinavian wolf are so tiny that the Norwegian Ministry of the Environment has red-listed them.⁹⁶

Similarly, more than one-third of the wetlands in Norway have been destroyed, particularly through forestry and agriculture, with all indicators steadily declining since 1990.⁹⁷ Though the protection of species and habitats is sketchy, a more fundamental problem lies in the fact that the legal framework for planning and building fails to link up to the NDA's norms, thus missing the opportunity to set legal duties on how to plan and build in areas where protected species and habitats would be affected.⁹⁸ Notwithstanding the Parliament's calls

⁸¹Fauchald (n 84). See, by contrast, the modality of establishing traffic lights, as determined by independent expert groups for protecting wild reindeers: Miljødirektoratet, 'Seks av ti nasjonale villreinområder i dårlig stand' (25 April 2022).

⁸²Colombo and Hoff-Elimari (n 9) 56; Kvalitetsnorm for villrein (Rangifer tarandus) (2020), FOR-2020-06-23-1298; Kvalitetsnorm for ville bestander av atlantisk laks (Salmo salar) (2013), FOR-2013-09-20-1109.

⁸³NINA, 'Fjellrevfakta' <<https://www.nina.no/Naturmangfold/Fjellrev/Fjellrevfakta>>.

⁸⁴E Colombo, 'Law&Ethics: Deep Ecology, Climate Change, and Norway's Wolf Policy' 67 *Scandinavian Studies in Law* 273; Bugge, *Environmental Law in Norway* (n 25) 239ff.

⁸⁵Colombo (n 90).

⁸⁶Regulation of 18 February 2005 No. 242 on the management of predators with amendments, Section 8; NDA (n 58) Section 18.

⁸⁷Bern Convention on the Conservation of European Wildlife and Natural Habitats (adopted 19 September 1979, entered into force 6 June 1982) OJ L38/3, arts 2, 6 and 9.

⁸⁸A Trouwborst et al, 'Norway's Wolf Policy and the Bern Convention on European Wildlife: Avoiding the "Manifestly Absurd"' (2017) 20 *Journal of International Wildlife Law and Policy* 155.

⁸⁹Høyesterett HR-2021-662-A <<https://www.domstol.no/globalassets/upload/hret/avgjorelser/2021/mars-2021/hr-2021-662-a.pdf>>.

⁹⁰Miljødirektoratet, 'Rødlist 2021' (2021) <<https://miljostatus.miljodirektoratet.no/tema/arter/truede-arter/>>.

⁹¹Klima- og miljødepartementet (n 47) 36.

⁹²S Stokstad et al, 'Bedre samordning mellom plan- og bygningsloven og sektorlovgivningen' (Norsk institutt for by- og regionforskning 2020) 40.

⁸¹ibid; Miljødirektoratet, 'Forslag til plan for supplerende vern – Miljødirektoratets anbefalinger' (2017) 28.

⁸²NDA (n 58) Section 23; Boyd (n 42).

⁸³Boyd (n 42) 18.

⁸⁴OK Fauchald, 'Miljøprinsipper og strategiske beslutninger - reform av norsk lakseoppdrett' (2020) 154 *Tidsskrift for rettsvitenskap* 264.

⁸⁵ibid.

⁸⁶Colombo (n 6) 96.

on the government to enact a successful quality norm for wetland protections,⁹⁹ there exists no legal government duty to adopt such needed measures. A further source of concern is the government's lack of enforcement of court decisions in environmental matters. For instance, enforcement is lacking concerning a 2021 decision where Norway's Supreme Court declared that Norway's public authorities had breached the United Nations' International Covenant on Civil and Political Rights,¹⁰⁰ notably the protection of the right to culture for the Sámi indigenous peoples, who are traditional protectors of biodiversity.¹⁰¹

Overall, the described misconceptions on nature conservation and promotion go against the assumptions of earth system science and have led to faulty policy design and implementation. They also constitute cultural barriers that are entwined with Norway's legal culture. In particular, such barriers link up to the ideal of decentralisation, which remains unachieved due to the lack of clarity regarding power-distribution mechanisms across levels of governance¹⁰²; the existing bias towards conservation over mainstreaming, short of carefully evaluating whether conservation is sufficient in terms of coverage and quality¹⁰³; the sustainable use approach, by which the government should avoid activity bans in conservation areas under the unsubstantiated assumption that 100% sustainable use is not incompatible with biodiversity conservation targets¹⁰⁴; the local veto powers on the establishment of protected areas alongside the paradoxical concentration of biodiversity conservation decisions in the national government, short of enforcement mechanisms¹⁰⁵; and the switch from mixed communities of human and non-humans to wolf policies that prioritise humans by reference to overriding public interests that are not clearly stated nor evidenced.¹⁰⁶

3.3.2 | Perverse incentives

Perverse incentives can be found in one of the three research lenses identified through earth system law scholarship: normative challenges, which probe issues of agency, power and justice in order to reveal political aims, priorities, timescales and balancing principles in social-ecological systems.¹⁰⁷ According to the CBD, perverse incentives are a policy or practice that encourages resource uses leading to the degradation of biological diversity, inducing behaviour that is

often unanticipated and unsustainable.¹⁰⁸ In relation to misconceptions (Section 3.3.1), perverse incentives are more entwined with ineffective procedures embedded in legal frameworks and less concerned with how humans participate in social-ecological systems with more-than-human worlds. In relation to institutional bottlenecks (Section 3.3.3), perverse incentives are more entwined with normative, rather than structural, challenges, such as those related to the role of private operators in biodiversity conservation and promotion. Overall, the following analysis finds that Norway's biodiversity governance is articulated through perverse incentives that are related to excessive trust in private operators on the part of public authorities. In the context of Norway's existing legal frameworks, such incentives delink the biophysical and social components of social-ecological systems due to several regulatory shortcomings.

The first regulatory shortcoming associated with perverse incentives concerns the ability of environmental impact assessments (EIAs) to offer sufficient and adequate evidence for authorities to make administrative decisions. The EIA principle is enshrined in Section 112 of Norway's Constitution, while more detailed rules on EIAs are set in the Planning and Building Act (PBA) and EIA Regulation, which implement the European Union's EIA Directive and Strategic Environmental Assessment (SEA) Directive.¹⁰⁹ While SEAs are carried out by municipalities within Master Plans, EIAs are needed within local development plans, whereas a non-mandatory regional plan is carried out by the county council.¹¹⁰

In Norway, developers are tasked with arranging the EIA concerning their development proposal, but there is no required certification process for firms that produce EIAs.¹¹¹ Moreover, existing legal frameworks fail to require a specific methodology or competence. According to a recent evaluation of EIAs in Norway, 33% of biodiversity assessors have proved to have overly low competence on several species.¹¹² Excessive trust in private operators seems to have unfolded as a perverse incentive since the absence of certification and quality requirements is the leading cause of a trend where EIAs are steered by the interests connected to the development proposal.¹¹³ On their end, municipalities can benefit from inadequate biodiversity mapping in EIAs: absent knowledge on existing biodiversity richness, local authorities are better able to issue permits for commercial activities that generate taxable income at the local level.¹¹⁴

⁹⁹Stortinget, Vedtak 675 (23 April 2016) <<https://www.stortinget.no/no/Saker-og-publikasjoner/Vedtak/Vedtak/Sak/?p=64248>>.

¹⁰⁰International Covenant on Civil and Political Rights 1966 (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171 art 27.

¹⁰¹Høyesterett, HR-2021-1975-S <<https://www.domstol.no/globalassets/upload/hret/decisions-in-english-translation/hr-2021-1975-s.pdf>>; KM Derås, 'To høyesterettsdommer, men svært ulik politisk oppfølging. På tide å ta ansvar, statsminister Støre?' (Sagat, 10 October 2022).

¹⁰²Hafting Kvestad and Colombo (n 60).

¹⁰³OECD (n 22).

¹⁰⁴E Fjeld, 'Slik motarbeider Norge vern av havet' (NRK, 18 March 2022) <<https://www.nrk.no/norge/slik-motarbeider-norge-vern-av-havet-1.15891945>>.

¹⁰⁵Boyd (n 42).

¹⁰⁶Colombo (n 90).

¹⁰⁷Mai and Boulot (n 21) 4.

¹⁰⁸Secretariat of the CBD, 'Incentive Measures: Further Analysis of the Design and Implementation of Incentive Measures. Paper prepared for the Fifth Meeting of the Conference of the Parties to the Convention on Biological Diversity' UN Doc UNEP/CBD/COP/5/15 (24 February 2000). A. Prakash, 'Repurposing Perverse Incentives for Land Restoration' (United Nations Convention to Combat Desertification 2021) <<https://www.unccd.int/sites/default/files/2022-03/UNCCD%20GLO%20WP%20incentives.pdf>> 3.

¹⁰⁹Planning and Building Act, Act of 27 June 2008 No. 71 relating to Planning and the Processing of Building Applications <<https://www.regjeringen.no/en/dokumenter/planning-building-act/id570450/>> (PBA).

¹¹⁰Colombo (n 6) 93.

¹¹¹OECD (n 22).

¹¹²KL Skog et al, 'Evaluering av konsekvensutredninger etter kapittel 5 i forskrift om konsekvensutredninger' (Multiconsult 2021) 39.

¹¹³K Granås Bardal and M Brynildsen Reinar, 'Sprikende resultater fra prosjektanalyser: En gjennomgang av åtte statlige investeringsprosjekter' (Nordlandsforskning 2018) 60.

¹¹⁴Colombo and Hoff-Elimari (n 9) 61.

Related to this, Norwegian practice is characterised by a low degree of transparency on cost–benefit analyses included in EIAs.¹¹⁵ Problematically, independent reviews of existing EIAs have established that the benefits of measures in socio-economic analyses are often inflated so that projects appear to be more economically profitable than can reasonably be expected,¹¹⁶ justifying the deterioration of biodiversity without offering a clear rationale. Inflated benefits against all economic theory, notably the discounting of future earnings to present values, were put forward in cost–benefit analyses for opening new areas for drilling in the Southeast Barents Sea, which Norway's Supreme Court decided not to scrutinise, allowing for broad government discretion.¹¹⁷

A second regulatory shortcoming associated with perverse incentives concerns the implementation of the law concerning the European Economic Area (EEA) Agreement, to which Norway has been a party since 1992,¹¹⁸ in a way that is not in keeping with EEA law itself. For instance, sidelining the actual requirements of EEA has occurred through the endorsement of decisions that are not based on EIAs in situations where the latter is mandatory. With the approval of Norway's Supreme Court, this practice has unfolded even when the interests of indigenous peoples, who are traditional biodiversity defenders and planetary health enablers, are substantively affected.¹¹⁹ Another instance of inadequate implementation and practice concerning EEA law rests with the at-sea dumping of mine tailings, which Norway is among the few countries to permit globally. Norway's Institute of Marine Research (NIVA) has advised against dumping mining waste in fjords, with the practice facing strong opposition from local communities, environmental organisations¹²⁰ and commercial industries, as happened in other protected fjords.¹²¹ Nevertheless, the central government is still issuing permits for mine dumping because several provisions of the Mining Waste Directive, which is part of EEA law,¹²² are not adequately implemented, or not

transposed at all, into Norwegian law, according to recent preliminary findings by the monitoring body of EEA law, the EFTA Surveillance Authority (ESA).¹²³

For example, Norway's Pollution Regulation does not require the preparation of a waste plan in all permit applications: waste management plans shall only be submitted if waste will be stored for more than three years, which is not in compliance with the Mining Waste Directive.¹²⁴ Even when a waste management plan is required, Norway's Waste Regulation does not transpose the minimum requirements set by the Mineral Waste Directive.¹²⁵ To justify mining waste dumping in 'national salmon fjords', which are protected due to their Atlantic salmon population, the Norwegian government maintained that the amount of waste was limited and posed little to no risk of pollution, thus attempting to waive European requirements, pursuant to Article 2(3), second paragraph of the Mining Waste Directive. However, the government's assertions were not accepted by the ESA because they failed to be substantiated by relevant impact assessments. In fact, Norway's Waste Regulation¹²⁶ does not waive a thorough assessment of the type and quantity of waste, which is at loggerheads with Article 2(3), second paragraph, and Article 4 of the Mining Waste Directive.¹²⁷ Another source of concern related to mining and the inadequate enforcement of EEA law lies with the most recent government decision to open the Norwegian continental shelf to deep-sea mining, specifically in the areas circumscribing a nature reserve in the Arctic, short of a full-fledged EIA.¹²⁸

A third regulatory shortcoming associated with perverse incentives concerns forestry matters, particularly Norway's grounding of forest protection on a voluntary process. Such a regulatory approach prioritises conflict reduction over forest protection. For instance, to arrange the protection of forests that are important for biodiversity, public authorities have to wait for forest owners to offer specific areas up to protection under compensation, which is negotiated through the Forest Owners' Association.¹²⁹ Consequently, even when species are threatened, public authorities can do very little until the forest owner offers an area that would increase biodiversity protection. Similarly, outside of conservation areas, the Forestry Act's Sustainability Regulations should ensure sustainable forestry, yet they have proved very weak.¹³⁰ By relying significantly on the international scheme PEFC (Programme for the Endorsement of Forest Certification), the system is *de jure* privatised, and sustainability cannot be thoroughly checked.¹³¹ As a counterweight, the Norwegian

¹¹⁵Granås Bardal and Brynildsen Reinart (n 113) 60.

¹¹⁶*Ibid.*

¹¹⁷M Greaker and KE Rosendahl, 'Petroleumsvirksomhet i Barentshavet sørøst – om klima, økonomi og sysselsetting' (2017) <<https://www.greenpeace.org/static/planet4-norway-stateless/2019/04/4382112a-4382112a-rapport-for-greenpeace-og-nu-petroleumsvirksomhet-i-barentshavet-sorost.pdf>>; Høyesterett, HR-2020-2472-P <<https://www.regjeringen.no/contentassets/4a0732c2360c4f7ca197ce19986f8f0f/dom-hoyesterett.pdf>>; M Greaker et al, 'Nåverdi av en oljeutbygging er selvsagt ikke bare et spørsmål om pedagogikk' (DN, 1 March 2021).

¹¹⁸Agreement on the European Economic Area (adopted 2 May 1992, entered into force 1 January 1994) <<https://www.efta.int/Legal-Text/EEA-Agreement-1327>>.

¹¹⁹Høyesterett HR-2017-2247-A (Reinøy) <<https://www.domstol.no/globalassets/upload/hret/avgjorelser/2017/avgjorelser-november-2017/saknr-2017-426.pdf>>.

¹²⁰NIVA, 'Ny kunnskap fra gamle sjødeponier' (2021) <<https://www.niva.no/nyheter/ny-kunnskap-fra-gamle-sjodeponier>>.

¹²¹B Simpson, 'Can Norway Balance Its Green Energy Goals with Indigenous Concerns?' (National Geographic, 20 February 2022).

¹²²Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC [2006] OJ L102/15, incorporated into Annex XX of the EEA Agreement at point 32fe by Decision of the EEA Joint Committee No 18/2009, [2009] OJ L73/57; see also Forskrift om gjenvinning og behandling av avfall (avfallsforskriften), FOR-2004-06-01-930, I 2004 hefte 8. See the acts invoked by the Norwegian government to claim the correct, albeit admittedly scattered, transposition of the Directive in ESA, 'Complaint against Norway in the Area of Management of Waste from Extractive Industries' (6 October 2021) <https://www.eftasurv.int/cms/sites/default/files/documents/gopro/Pre-Article%2031%20letter%20-%20Management%20of%20waste%20from%20extractive%20industries_12%20april_endelig%20versjon.pdf> f, fn 10.

¹²³ESA (n 122); Directive 2006/21/EC (n 122) arts 2(2), 3, 5(2) and (4), 7(1) and (4), 8(1), 11(3), 12(6), 14(1) and (3), and 17(1).

¹²⁴ESA (n 122) 12; Avfallsforskriften (n 122) Section 30-12.

¹²⁵ESA (n 122) 12; Directive 2006/21/EC (n 122) art 5(2)-(3).

¹²⁶Avfallsforskriften (n 122) Section 17-2e.

¹²⁷ESA (n 122) 12.

¹²⁸Olje- og Energi-departementet, 'Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel. Del av åpningsprosessen etter Lov om mineralvirksomhet på kontinentalsokkelen (havbunnsmineralloven)' (27 October 2022) <<https://www.regjeringen.no/contentassets/dbf5144d0fbc42b5a4db5fc7eb4fa312/horingsdokument-konsekvensutredning-for-mineralvirksomhet-pa-norsk-kontinentalsokkel.pdf>>.

¹²⁹OECD (n 22).

¹³⁰Forskrift om berekraftig skogbruk FOR-2006-06-07-593, I 2006 hefte 8.

¹³¹O Mathismoen and JT Espedal, 'Norske naturskoger forsvinner i høyt tempo' (Aftenposten, 21 May 2023).

government developed the so-called MIS method (the Environmental Registration in Forests) to monitor forestry's biodiversity. Independent biologists, however, found out that MIS only captured 14% of the total area that was important for biological diversity in the forestry sector.¹³² Even when the industry is found to have breached PEFC rules, the police believe it has no power to prosecute it.¹³³

Overall, perverse incentives constitute feedback barriers as they can reduce the interest of economic agents in sustainability, feeding unsustainable behaviours.¹³⁴

3.3.3 | Institutional bottlenecks

Institutional bottlenecks can be identified in one of the three research lenses identified through earth system law scholarship: structural challenges, which pertain to fragmentation that is either horizontal, for instance, institutions that are overly specialised and barely coordinated, or vertical, for example, the exclusion of actors from addressing and being responsible for planetary degradation.¹³⁵ In relation to misconceptions (Section 3.3.1), institutional bottlenecks are more entwined with the structural problems of legal frameworks, such as fragmentation. In relation to perverse incentives (Section 3.3.3), institutional bottlenecks are more connected to the roles and functions of institutions, rather than on ineffective procedures embedded in regulatory frameworks. The following analysis finds that Norway's biodiversity governance suffers from institutional bottlenecks that are related to siloed approaches among government bodies, excessive discretion for local authorities and relatively low access to justice before the courts by those that are in principle widely entitled to it, as shown below. As for the overarching barriers previously identified, such institutional bottlenecks delink the biophysical and social components of social-ecological systems due to several regulatory shortcomings.

A first regulatory shortcoming associated with institutional bottlenecks lies in the specialty principle pertaining to Norwegian administrative law, according to which a government body does not have the competence to place decisive weight on considerations that fall under the competence of other administrative bodies.¹³⁶ The principle had a foothold in the past, while it is in principle rejected in its strict form in both theory and case law.¹³⁷ However, it remains uncertain when government bodies not only can but have the duty to include considerations other than those at the core of their own sectoral legislation.¹³⁸ Further, the growing complexity and specialisation of contemporary law have caused confusion and disagreements among government bodies, notably concerning balancing principles in

planning and permitting processes.¹³⁹ For inertia, the lack of clarity on the possibility and extent to which government bodies outside of the Environment Ministry can and should consider environmental interests encourages a siloed approach to environmental problems at the central level, which has spillover effects at the local level.¹⁴⁰

A second regulatory shortcoming associated with institutional bottlenecks is the excessive discretion of local authorities, notably in their planning and permitting processes, as also recognised by ESA.¹⁴¹ The main legal framework outlining planning and permitting processes is the 2008 PBA.¹⁴² Section 1 of the PBA contains an important rule for the protection of nature, namely, a building ban in the 100-m belt along the sea (the beach zone) and along waterways. It is possible to obtain an exemption, also called a dispensation, from the rule at the competent municipality only if the dispensation does not significantly defeat the purpose of the building ban, namely, to preserve the beach zone as a natural outdoor area accessible to all. In short, the dispensation can only be granted if the advantages of granting a dispensation clearly outweigh the disadvantages.¹⁴³ Notwithstanding the stringent stipulation, municipalities enjoy wide discretion, and approximately 90% of applicants have successfully obtained a dispensation in beach zones.¹⁴⁴ According to Norway's Parliamentary Ombud, the liberal use of dispensations in several municipalities has amounted to a clear breach of the PBA.¹⁴⁵

Remarking on the institutional bottlenecks created by excessive discretion, the confusing legal framework regarding the permitting process for ocean-based salmon farming must be noted. Natural reserves constitute the highest protection status under the NDA.¹⁴⁶ Accordingly, the possibility for municipalities to issue permits to the aquaculture industry in nature reserves is excluded in principle, but some of the regulations devoted to key biodiversity ecosystems allow for dispensations if aquaculture activities do not defeat the specified conservation objectives.¹⁴⁷ Unfortunately, municipalities have granted access to aquaculture, and, in some instances, the government has modified the conservation regulation concerning marine areas that are key for biodiversity, even in Ramsar sites, by carving out existing aquaculture zones and ensuring de facto permanent dispensation from the conservation regulation.¹⁴⁸ Paradoxically, for municipalities

¹³⁹ibid.

¹⁴⁰PG Almklov et al, 'Organizational Culture and Societal Safety: Collaborating across Boundaries' (2017) *Safety Science* <<http://hdl.handle.net/11250/2485371>>; T Uusinoka and S Antonsen, 'Breaking the Silence Between Silos-Exploring Collaborative Governance in Climate Change Adaptation' (Norwegian University of Science and Technology 2019) 68.

¹⁴¹ESA (n 122) 15.

¹⁴²PBA (n 109); OECD (n 22).

¹⁴³PBA (n 109) Section 19-2.

¹⁴⁴Statistisk sentralbyrå, 'Tabell 1' (2019) <<https://www.ssb.no/natur-og-miljo/areal/statistikk/byggeaktivitet-i-strandsonen>>.

¹⁴⁵Sivilombudsmannen, 'Sivilombudsmannens undersøkelser av dispensasjoner i strandsonen: temarapport om dispensasjonsvedtak i strandsonen i Lindesnes, Kragerø og Askøy kommuner' (2021).

¹⁴⁶NDA (n 58) Section 37.

¹⁴⁷ibid. Forskrift om vern for Froan naturreservat og landskapsvernområde med tilhørende dyrelivsfredning, innenfor Frøyene, Frøya kommune, Sør-Trøndelag, 1979, FOR-1979-12-14-1, II 1979 s 533, Chapter V.

¹⁴⁸Forskrift om endring i forskrift om vern for Froan naturreservat og landskapsvernområde med tilhørende dyrelivsfredning, innenfor Frøyene, Frøya kommune, Sør-Trøndelag, 2017, FOR-2017-09-01-1330 nr 2017-0597; Ramsar Site Information Service (9 July 2018) <<https://rsis.ramsar.org/ris/809>>.

¹³²T Blindheim et al, 'Sviktende kunnskapsgrunnlag i skog' (Stiftelsen BioFokus 2019).

¹³³E Norheim Johansen et al, 'Skogbruket bryter egne miljøregler – beholder det grønne sertifikatet' (NRK, 1 February 2023).

¹³⁴H Wiesmath, *Implementing the Circular Economy for Sustainable Development* (Elsevier 2021) 93.

¹³⁵Mai and Boulot (n 21) 4.

¹³⁶T Eckhoff and E Smith, *Forvaltningsrett* (Universitetsforlaget 2022) 406ff.

¹³⁷N Winge, *Kampen om arealene* (Universitetsforlaget 2013) 37–51; Høyesterett, Rt. 1993 p. 528 (1993, Lunner Pukkverk); Høyesterett, Rt. 1996 p. 78 (1996, Bjørlo).

¹³⁸Stokstad et al (n 98) 28.

that instead wish to impose environmental conditions upon aquaculture activities in areas under their jurisdiction, it remains uncertain whether they can do so under the PBA.¹⁴⁹

Excessive direction for local authorities also unfolds in relation to the inadequate requirements concerning the management of municipal areas devoted to agricultural, nature, outdoor, and reindeer husbandry purposes, which are instrumental to biodiversity. Pursuant to the PBA,¹⁵⁰ municipalities should identify municipal areas devoted to agricultural, nature, outdoor and reindeer husbandry purposes, so-called LNFR areas, which permits only scattered dwellings.¹⁵¹ Importantly, LNFR areas make up 87% of the total planned area in local development plans.¹⁵² In practice, the LNFR qualification only protects areas from building activities, while the PBA fails to set forth biodiversity conservation and promotion requirements. In fact, Section 3-1 of the PBA mandates that planning authorities include nature, environment and climate considerations in their decision-making process, but it fails to set any legal duty on competent authorities to explicitly prioritise ecological interests. The promotion and conservation of biodiversity in LNFR areas thus depend on the financial means and political will of municipalities. At the national level, funds to map biodiversity in municipal plans are few and far between and are usually based on pilot projects that are yet to be mainstreamed to support the preparation of municipal sub-plans for natural diversity.¹⁵³ Overall, excessive discretion can be likened to misconceptions (Section 3.3.1), but its shortcomings are more entwined with the structural problems of legal frameworks, such as fragmentation, rather than power sharing.

A third regulatory shortcoming associated with institutional bottlenecks concerns extremely high costs and existing obstacles to accessing environmental justice in Norway.¹⁵⁴ It costs an average of over NOK 100,000 to bring a case to court, and judges are mainly generalists without specialist knowledge of nature and biodiversity, leading them to focus more on procedural rules rather than on the interpretation of substantive rules for biodiversity protection and promotion.¹⁵⁵ The trend of increasing court and lawyers' fees has made civil justice expensive for the ordinary citizen.¹⁵⁶ This situation was found at loggerheads with Article 9 of the Aarhus Convention,¹⁵⁷ which is one of the most influential regional instruments to secure environmental access rights in Europe.

In the absence of a specialised environment court or quasi-judicial body, the most accessible avenue for claimants is to file an

administrative appeal to the government body that has made the decision and/or to the superior body within the same department or ministry. Such a limited track, however, has its downsides. Importantly, administrative bodies are required to follow the same guiding documents prepared by their superior government body, which reduces the possibility of an impartial interpretation of extant law when dealing with complaints, in contrast to the Aarhus Convention's requirements.¹⁵⁸

Overall, the described institutional bottlenecks for nature conservation and promotion constitute structural barriers that are entwined with the entrenched pragmatism in Norway's legal culture, endorsing general and flexible, rather than detailed and stringent, norms that allow for the concrete balancing and assessing of all interests at play.¹⁵⁹ As revealed by this section, such norm openness fail to offer legal certainty for the protection and promotion of biodiversity.

4 | DISCUSSION

This section discusses the results of the employed two-dimensional gap analysis concerning the main regulatory frameworks relevant to protecting Norway's biodiversity. Policy implications are understood as recommendations on what needs to change and how. To derive policy implications that are consistent with the chosen theoretical framework (Section 2), this section focuses on the ability of legal provisions to prioritise biodiversity considerations, to offer procedural mechanisms to ensure such prioritisation and to secure the accountability of responsible actors that should be involved in biodiversity prioritisation. Such a threefold focus coheres with and aims to at least mitigate each of the overarching barriers identified in the gap analysis, notably misconceptions, perverse incentives and institutional bottlenecks (Section 3.3). Moreover, the chosen focus allows for articulating policy implications in line with earth system law.

To review, earth system law was proposed as an alternative paradigm to support and catalyse more adequate legal responses to social-ecological crises in the Anthropocene.¹⁶⁰ Kotzé puts forward three overarching considerations to meet the paradigmatic dimensions of earth system law: inclusivity, which overcomes the fallacy of human exceptionalism and nature instrumentality¹⁶¹; interdependencies, revealing the spatial, temporal, inter/intra-species and functionally interdependent relationships arising from the earth system¹⁶²; and the complexity of earth system transformations, which should help

¹⁴⁹KB Stokke and K Broch Hauge, 'Mellom kommunal planlegging og sektorstyring for akvakultur' (2019) 51 Plan 24, 27.

¹⁵⁰PBA (n 109) Section 11-7.

¹⁵¹OECD (n 22).

¹⁵²ibid.

¹⁵³Miljødirektoratet, 'Årsrapport for Miljødirektoratet' (2021).

¹⁵⁴The International Commission of Jurists (ICJ) – Norway, 'Ikke uoverkommelig dyrt?' (2020) <https://issuu.com/deninternasjonalejuristkommisjon-norge/docs/icj-rapport_print>.

¹⁵⁵Colombo and Hoff-Elimari (n 9) 74.

¹⁵⁶I Backer, 'Goals of Civil Justice in Norway: Readiness for a Pragmatic Reform' in A Uzelač (ed), *Goals of Civil Justice and Civil Procedure in Contemporary Judicial Systems* (Springer 2014) 105.

¹⁵⁷Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2162 UNTS 447; see ICJ – Norway (n 154); Boyd (n 42) para 27; Colombo and Hoff-Elimari (n 9).

¹⁵⁸SM Stordalen Blindheim, 'Kontroll av enkeltvedtak med betydning for miljø: i hvilken grad overholder norske kontrollinstanser kravene i Århuskonvensjonen' (Master's Thesis, NMBU SPELL OUT 2018) 27.

¹⁵⁹J Øyrehagen Sunde, *The Legal Cultural Dependency of the Norwegian Legal method - and Its Future* (Mohr Siebeck 2014); J Øyrehagen Sunde, 'Managing the Unmanageable: An Essay Concerning Legal Culture as an Analytical Tool' in S Koch et al (eds), *Comparing Legal Cultures* (Fagbokforlaget 2017) 23.

¹⁶⁰RE Kim and L Kotzé, 'Planetary Boundaries at the Intersection of Earth System Law, Science and Governance: A State-of-the-Art Review' (2020) 30 *Review of European, Comparative and International Environmental Law* 3; Mai and Boulot (n 21).

¹⁶¹Kotzé (n 23) 6.

¹⁶²ibid 7.

institutions embrace the unpredictability and non-linearity of the Anthropocene.¹⁶³

Our previous analysis demonstrates that Norway is only well poised to conserve and promote ecosystems in principle due to its high ranking on the rule of law and other governance indicators. Nonetheless, its biodiversity-relevant regulatory frameworks may be less effective in practice than expected, classifying Norway as a paper tiger. The need is for Norwegian policymakers to domesticate earth system governance, meaning the internalisation and operationalisation of inclusivity, interdependencies and complexity at the national level. To this end, this section conceives three distinct enablers of earth system law that are derived from existing literature.

First, inclusivity is meant to overcome the fallacy of human exceptionalism and nature instrumentality. Inclusivity can address the first overarching barrier identified, namely, misconceptions related to power sharing (power repartition and power boundaries) among public authorities in biodiversity matters. In terms of the policy implications derivable through the consideration of inclusivity in earth system law, Norway should increase the ability of legal provisions to prioritise biodiversity considerations. First, an amendment to the NDA is long overdue in terms of power sharing, where the protection of prioritised species and habitat types¹⁶⁴ and the establishment of quality norms¹⁶⁵ should occur through a structural embedding of the processes that are needed for such ends. Such a structural embedding would facilitate legislators' ability to enact amendments whenever prompted by best evidential science. In this sense, a policy option would be to task the Norwegian Institute for Nature Research (NINA), Norway's leading institution for applied ecological research, with list review proposals and related public comments periods, which the government would be under the legal duty to accept and implement unless it can prove that the best evidential science would not warrant such inclusion. To counter NINA's proposals, cost-benefit analyses would not be accepted, particularly in light of the lack of methodological soundness of such analyses (see Section 3.3) and the risk of their sidelining of ecological interests.¹⁶⁶ While the ultimate legal duty for creating and managing such lists should rest with the Ministry of the Environment, as mentioned, list review decisions should be taken in the aftermath of participatory processes, such as public comment periods open to local authorities and the general public. Further, the NDA should be edited so that prioritised species and habitat types should also be routinely considered when enacting quality norms, which is not the case at present.

Inclusivity as an enabler of earth system law would also help undo the present exclusion of most EEZ from biodiversity protection and the practice of allowing activities in wildlife reserves, even in the absence of a full-fledged EIA. Beyond such substantive rules, to procedurally cope with the power-sharing misconceptions previously investigated (Section 3.3.1), the central government can effectively

instruct counties and municipalities on strict criteria for exempting certain activities in protected areas, including the hitherto politically prioritised commercial activity of aquaculture. To prioritise biodiversity considerations, exemptions should be based on credible and unbiased EIAs, with the absolute prohibition on exempting activities in wildlife reserves. In this regard, government instructions should occur through government regulations rather than nonbinding circulars from superior administrative bodies (*rundskriv* in Norwegian), which often characterises instruction methods radiating from the central to the local government.¹⁶⁷

To ensure the inclusivity of more-than-human life forms, Parliament should earmark resources to train and support municipalities in mapping biodiversity and encourage multi-jurisdictional and multi-level governance biodiversity conservation and promotion.¹⁶⁸ Through the coordinated efforts of the Ministry of the Environment with local affairs and tourism, municipalities can be better endowed with the finances and legal obligation to map and promote biodiversity within their jurisdiction. Conversely, municipalities' income system is presently based on residents' income and assets, hence productive activities over well-managed agricultural, nature, outdoor and reindeer husbandry areas. Such a system does not prioritise biodiversity considerations as it incentivises income-generating activities: in fact, if municipalities find significant biodiversity, it may be more difficult for them to permit income-generating, albeit destructive, activities. Inclusivity should also entail effective mechanisms to enforce diffuse legal obligations through multi-level governance, which are presently lacking (see Section 3.3), and would contribute to resolving biodiversity disconnects. Accordingly, operationalising inclusivity through earth system law would enable the entwinements of 'inter- and intra-generational, inter- and intra-species relations' and the non-linearity leading to a view of life that is 'made together' ('sympoietic') by humans and non-humans, enabling life on Earth.¹⁶⁹

Second, interdependencies can help cope with the second overarching barrier previously identified: perverse incentives related to excessive trust in private operators on the part of public authorities. Regarding the policy implications derivable through considerations of interdependencies in earth system law, Parliament should be called on to amend the PBA to include a certification requirement for private firms to carry out EIAs and incorporate expert knowledge into biodiversity matters. As a procedural guarantee, EIAs should assess a minimum of three alternatives, including the no-action alternative.¹⁷⁰ Remarking on cost-benefit considerations for building and planning, relevant case law, including at the level of Norway's Supreme Court, has not clarified the methodology and assumptions necessary to carry out cost-benefit analyses, making biodiversity values easy to overlook as dead weight when balanced against the economic effects of a particular project.¹⁷¹ In this sense, an expert committee should be

¹⁶³RJ Five Bergström, 'Legal Research in Norway' (NYU GlobalLex, 2020) <<https://www.nyulawglobal.org/globalex/Norway1.html>>.

¹⁶⁴F Biermann, 'Planetary Boundaries and Earth System Governance: Exploring the Links' (2012) 81 *Ecological Economics* 4; Kotzé and Kim (n 160).

¹⁶⁵Petersmann (n 37) 5-6.

¹⁶⁶1969 National Environmental Policy Act (NEPA), 42 U.S.C. § 4321-4347 (2012).

¹⁶⁷Høyesterett HR-2020-2472-P (n 117).

¹⁶³ibid 8.

¹⁶⁴NDA (n 58) Sections 23 and 52.

¹⁶⁵ibid Section 13.

¹⁶⁶JF Mercure et al, 'Risk-Opportunity Analysis for Transformative Policy Design and Appraisal' (2021) 70 *Global Environmental Change* 1.

summoned to determine how the PBA should be edited in order to capture a more exact value for nature, not only through the current approach to evaluating ecosystem services, which generally lacks an evaluation of incremental change and resilience.

Further, for each project, nature-related financial risk should also be evaluated in line with landmark reports and best international practices.¹⁷² Related to EIAs to preserve and prioritise biodiversity, the Norwegian Parliament should issue an outright prohibition on mining waste dumping in the fjords by amending the Pollution Regulation and the Waste Regulation, in line with international science-based recommendations.¹⁷³ As a final point, interdependencies would entail a close look at the forestry sector, and the central government should support the amendment of both the Forestry Act and the Forestry Act's Sustainability Regulations to enforce the respect of private actors with planetary boundaries. Particularly, the government should NINA or other independent bodies of experts to monitor and certify forestry areas before hogging.

Overall, the reform suggestions that are achievable by operationalising the concept of interdependencies in earth system law starkly differs from the results that have so far been reached by the concept of sustainable development. In relation to interdependences, within sustainable development, particularly promising was the principle of integration, by which environmental protection shall be integrated in the development process.¹⁷⁴ However, short of an earth system approach, the integration principle has been mistakenly seen within sustainable development's three-pillar structure, entailing a balance between the economic, social and environmental pillars, as notably the state of forestry matters in Norway showcases. Conversely, a more earth system-compliant view is that integration should not offer a balance, but rather an ecological baseline guaranteeing at least the preservation and functioning of ecosystems, but this approach is far from being mainstream.¹⁷⁵ Third, the complexity of earth system transformations should help institutions embrace the unpredictability and non-linearity of the Anthropocene. Complexity can help cope with the third overarching barrier previously identified: institutional bottlenecks related to horizontal and vertical fragmentation, thus securing the accountability of all actors for biodiversity prioritisation. Compared to the rest of the Nordic countries, Norway's legislation is

characterised more by open powers for public authorities.¹⁷⁶ The discretion entailed in such flexibility, however, can prove a double-edged sword for biodiversity matters, especially in the circumstances identified in Section 3.3.3: spillover effects of the specialty principle in administrative law, excessive discretion for local authorities in planning and permitting activities and minimal access to justice to regular courts, which is not compensated by access to administrative justice.

In terms of the policy implications derivable through the consideration of complexity in earth system law, in light of recommendations at doctrinal and UN levels, Parliament should evaluate the establishment of an independent quasi-judicial body for environmental matters, including climate and biodiversity,¹⁷⁷ as well as a reduction of court fees, notably when lawsuits concern diffuse interests, such as in biodiversity matters, notably by amending the Dispute Act. Guaranteeing access to justice in compliance with the Aarhus Convention is the first step to ensuring accountability from the local and central government and private parties. In this sense, more defined legal boundaries should be set to administrative discretion in order to ensure the respect of planetary boundaries, notably in the PBA, and clarify that municipalities not only can but must impose environmental conditions upon aquaculture activities in areas under their jurisdiction. Discretion should thus be based on the proven assumption that public authorities make evidence-based decisions. Excessive discretion for local authorities notably unfolds for municipalities in relation to the absence of a legal duty to identify biodiversity promotion activities in agricultural, nature, outdoor and reindeer husbandry areas, which the PBA presently protects only from building activities.

More generally, a problem related to complexity emerges from the specialty principle in Norway's administrative law, which currently encourages a siloed approach to environmental problems by relegating environmental considerations to ministries and public authorities that have environmental issues as the backbone of their competence (e.g. the Ministry of the Environment). By preventing environmental considerations in non-strictly environmental matters, the specialty principle embodies mistaken legal concepts that cannot possibly cope with the earth system in the Anthropocene, which is non-linear, interconnected and unpredictable. Accordingly, the refutation of such a principle should come, preferably, from the highest judicial body in the country, namely, Norway's Supreme Court. Alternatively, a governmental regulation could be made binding upon public authorities at the central and local levels. Overall, earth system law considerations have enabled analyses of Norway's regulatory frameworks on biodiversity beyond international environmental law's 'segmented' approach, which is built around 'relative Holocene stability, equilibrium, predictability, harmony, continuity, and linearity'.¹⁷⁸ Establishing the original framework of this study in earth system law has provided

¹⁷²P Dasgupta, *The Economics of Biodiversity: The Dasgupta Review* (HM Treasury, February 2021); G Rudgley et al, 'Handbook for Nature-Related Financial Risks: Key Concepts and a Framework for Identification' (Cambridge Institute for Sustainability Leadership 2021); De Nederlandsche Bank, 'Indebted to Nature: Exploring Biodiversity Risks for the Dutch Financial Sector' (June 2020); Banque de France, 'A Silent Spring for the Financial System? Exploring Biodiversity-related Financial Risks in France' (August 2021); European Central Bank, 'Guide on Climate-related and Environmental Risks – Supervisory Expectations Relating to Risk Management and Disclosure' (November 2020).

¹⁷³IUCN, 'Protecting Coastal and Marine Environments from Mining Waste', WCC-2016-Res-053-EN (2016) <https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2016_RES_053_EN.pdf>.

¹⁷⁴Rio Declaration on Environment and Development in 'Report of the United Nations Conference on Environment and Development' UN Doc A/CONF.151/26 (vol I) (12 August 1992) Principle 4.

¹⁷⁵DA Kysar, 'Sustainable Development and Private Global Governance' (2005) 83 *Texas Law Review* 2109, 2145; E Holden et al, 'Sustainable Development: Our Common Future Revisited' (2014) 26 *Global Environmental Change* 130, 131.

¹⁷⁶OK Fauchald, 'Er det behov for miljøombud?' in H Tegner Anker and B Egelund Olsen (eds), *Miljørettlige emner: Festschrift til Ellen Margrethe Basse* (Jurist- og Økonomforbundet Forlag 2008) 218.

¹⁷⁷Fauchald (n 176) 218; Boyd (n 42). Colombo and Hoff-Elimari (n 9) 74.

¹⁷⁸Kotzé (n 23) 8. See also Kotzé and Kim (n 160); Petersmann (n 37) 6.

a unique perspective in a more systematic type of legal science than international environmental law would have allowed as earth system law's novelty lies in its 'systems-oriented ontology'.¹⁷⁹

Finally, all earth system law considerations (i.e. inclusivity, interdependencies and complexity) have allowed for a decolonised ideal of justice and agency,¹⁸⁰ where indigenous peoples and the general public should be acknowledged in decision-making processes, starting with the inclusion of public comment periods prior to amending the NDA, PBA and Forestry Act. It should be acknowledged, however, that allowing for public participation in such an amendment process does not ensure that public comments are aligned with earth system science. In fact, there could be tensions between the input of the public and indigenous peoples and earth system boundaries, and that is where high politics is most vital. Further, beyond decision-making processes, the enforcement of court decisions that benefit biodiversity should be monitored by the Parliament, for instance, through the Control and Constitutional Committee, which is the only committee among the Norwegian Parliament's 12 permanent committees initiating matters on its own.

Overall, as previous work suggests, Norway can be viewed as an 'extreme case' for understanding sustainability-related paradoxes and enabling new theorising.¹⁸¹ By discussing the policy implications of the gap analysis conducted previously, this section applied and operationalised three enablers of earth system law to clearly articulate regulatory improvement proposals for biodiversity conservation and promotion in Norway.

5 | CONCLUSION

The analysis has shown that regulatory shortcomings have fundamentally sapped effective biodiversity protection in Norway, thus delinking the biophysical and social components of social-ecological systems.

The innovative approach of this article lies in its case study, employing a two-dimensional gap analysis that links biologically relevant ecological issues (horizontal dimension) with institutions, notably regulatory frameworks (vertical dimension). The analysis aimed to explain the overarching barriers that regulatory frameworks have created to effectively protecting and promoting biodiversity in Norway. To discuss the main results in terms of policy implications, three encompassing considerations of earth system law were applied and operationalised in a conceptual framework as enablers of regulation that can better protect and promote biodiversity across policies and sectors. The resulting framework is useful for scholars from diverse disciplines and jurisdictions as a method for investigating and mitigating regulatory barriers to biodiversity conservation and promotion.

Nevertheless, the proposed framework just scratches the surface of this issue, which deserves significant future research effort from across jurisdictions.

Overall, Norway's regulatory frameworks articulate the vision of a nation that is, in principle, environmentally responsible within and beyond its jurisdiction.¹⁸² They aim to protect ecosystems while buttressing an economy based mainly on the use of natural resources, notably through aquaculture and forestry. A series of misconceptions, perverse incentives and institutional bottlenecks, however, have reduced the ability of Norway's legal norms to safeguard biodiversity. The situation has generated the riddle of a country ranking extremely high in terms of governance indicators while sliding as a laggard in environmental performance. By systematically reviewing the main regulatory frameworks that are relevant for protecting and promoting biodiversity in Norway, this article highlighted overarching barriers that can be mitigated by applying Norwegian law consistently with existing regulatory frameworks to which Norway is bound, such as the Aarhus and Bern Conventions, and proposing reforms to Norwegian law, in light of earth system law considerations.

Overall, the results of this study can inform the analyses of researchers and policymakers dealing with similar questions in other jurisdictions. In particular, comparative law can offer a heuristic toolkit to examine the root causes to biodiversity degradation, and possible responses, across jurisdictions. Future research could explore avenues for legal frameworks to incorporate not only earth system law considerations but also earth system governance indicators in the protection and promotion of biodiversity, notably through a case study methodology that can be replicated across jurisdictions. Such an approach would infuse earth system law with a higher degree of effectiveness as case studies are essential for the systematic production of exemplars, hence for the effectiveness of the applied disciplines.¹⁸³ In terms of effectiveness, through similar case studies on the ability of legal provisions to prioritise biodiversity considerations, earth system law can further mature into a juridical paradigm linked to earth system governance that articulates complex solutions of practical relevance across jurisdictions. Notwithstanding, challenges lie ahead in finding the political will for the radical transformations that earth system governance and earth system law entail, and to achieve the protection and promotion of biodiversity in practice.

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¹⁷⁹Kotzé (n 16) 94. Petersmann (n 37) 4.

¹⁸⁰See previously Mai and Boulot (n 21) 11.

¹⁸¹Rivas Hermann et al, 'Socio-technical Imaginaries of a Circular Economy in Governmental Discourse and among Science, Technology, and Innovation Actors: A Norwegian Case Study' (2022) 183 *Technological Forecasting and Social Change* 121903, 2–4. On extreme cases, see B Flyvbjerg, 'Five Misunderstandings About Case-Study Research' (2006) 12 *Qualitative Inquiry* 219.

¹⁸²OECD (n 22).

¹⁸³Flyvbjerg (n 181), referring to TS Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press 1996 [originally published 1962]).

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Data available on request from the authors.

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