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Marguerite O'Connell Birth of a naturalist?

Nature-related risks and biodiversity
loss: legal implications for the ECB

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Abstract

Recent literature has emphasised that the degradation of nature can have significant implications for central banks in delivering on their mandates. While the primary and most effective actors to address the nature crisis are governments and legislators, central banks will also need to take into account the nature crisis, along with the policies developed and adopted by governments and legislators to address it. This paper offers a first legal assessment of the implications of the nature crisis for the ECB. The paper considers, first, the relevance of nature degradation to the primary objective of maintaining price stability, noting that continued macroeconomic research and assessment will be crucial to ensuring that the ECB properly considers nature-related risk in its monetary policy. Second, the paper outlines that, at the current juncture, it is more difficult to establish that ECB action to address nature-related risks is necessary to pursue the ECB's secondary objective. Unlike climate action, it is less clear that the prevention of nature degradation constitutes "a general economic policy in the Union". However, this finding does not release the ECB from its other Treaty-based obligations to consider environmental protection in the exercise of its mandate. First, insofar as the protection of nature directly contributes to climate crisis mitigation and adaptation, it can be considered an aspect of that general economic policy in the Union, which the ECB must support under its secondary objective. Second, Articles 7 and 11 TFEU oblige the ECB to ensure consistency with, and to integrate environmental protection requirements – including those relating to nature and biodiversity – into its policies and activities, and to refrain from making decisions that counter these requirements. The paper highlights that as further data become available through the "ecosystem" of Union policies and legislation on nature, it may become easier for the ECB to identify configurations of its monetary policy instrument set that can support the ECB's compliance with Articles 7 and 11 TFEU in a manner that is "equally conducive and not prejudicial to price stability". Third, the prevention of nature degradation may develop into a general economic policy in the Union over time with the adoption of further Union measures to protect nature, including through the implementation of recent international agreements on biodiversity. Finally, the paper offers an overview of how nature degradation and biodiversity loss are already integrated in ECB supervisory policy as a risk component which banks are expected to consider.

Executive summary

Recent literature has outlined that the degradation of nature can have significant implications for central banks in delivering on their mandates. The macroeconomic implications of nature-related risks could have a direct impact on price stability and on monetary policy. Moreover, failure to account for, mitigate, and adapt to the implications of nature degradation is a source of risk relevant for financial stability and the work of prudential supervisors. Thus, while the primary and most effective actors to address the nature crisis are governments and legislators, central banks and supervisors will need to take into account the nature crisis in pursuing their mandates, along with the policies developed and adopted by governments and legislators to address it.

This paper offers a first legal assessment of the implications of the nature crisis from the perspective of the ECB. The paper begins by recalling recent developments in international law and policy on nature.

The paper outlines that measures to take into account nature-related risks could fall within the scope of the ECB's primary objective of maintaining price stability. Continued macroeconomic research and assessment of nature-related risks, including their potential impact on price stability will be crucial to ensuring that the ECB properly considers nature-related risk in its monetary policy. Moreover, an integrated approach to climate and nature-related risks will be needed to fully capture the cascading effects of nature degradation and climate change on the real economy and financial stability.

Second, the paper outlines that, at the current juncture, it is more difficult to establish that ECB action to address nature-related risks is necessary to pursue the ECB's secondary objective. It is not yet clear that the prevention of nature degradation constitutes general economic policy in the Union per se. By contrast to the Union's existing climate-related legislation and policies, the Union's existing "ecosystem" of policies and legislation relating to nature preservation and protection of biodiversity is not – at present – framed in terms of the Union's economy.

However, this does not release the ECB from its other Treaty-based obligations to consider environmental protection requirements in the exercise of its mandate. For instance, insofar as the protection of nature directly contributes to climate crisis mitigation and adaptation, it can be considered an aspect of the Union's general economic policy in the field of climate, which the ECB must support under its secondary objective. Moreover, the ECB should carefully monitor further EU law developments in the wake of the Kunming-Montreal Global Biodiversity Framework (GBF), agreed in December 2022, along with other international and EU law developments, as these developments may potentially evidence the establishment of a general economic policy on nature.

Articles 7 and 11 TFEU oblige the ECB to ensure consistency with, and to integrate environmental protection requirements – including those relating to nature and biodiversity – into its policies and activities. Looking at these “transversal” provisions, this paper argues that provided two configurations of the ECB’s monetary policy instrument set are equally conducive and not prejudicial to price stability, the ECB will be justified in choosing the configuration that supports the ECB’s compliance with Articles 7 and 11 TFEU. This means that the ECB should: (1) consider how it can integrate nature and biodiversity considerations into its policies and activities; (2) refrain from making decisions that counter the Union’s nature and biodiversity policy; and (3) positively consider nature and biodiversity in the design of its own policies and activities. The paper highlights that as further data becomes available, through the implementation of the ecosystem of Union policies and legislation on nature, it may become easier for the ECB to identify how best to ensure its compliance with Articles 7 and 11 TFEU.

Finally, the paper offers an overview of how nature degradation and biodiversity loss are already integrated in ECB supervisory policy. The ECB, in its capacity as banking supervisor, already treats nature degradation and biodiversity loss as a component of physical risk, one of the two main drivers of climate related and environmental risk.

1 Introduction

Nature, along with its vital contribution to human society, is deteriorating at an unprecedented rate.¹ The 2019 Report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) noted that around one million species already face extinction due to habitat loss, urban expansion, agriculture and climate change, many within decades, unless action is taken to reduce the intensity of drivers of biodiversity loss. The five direct drivers of nature degradation are unsustainable land and sea use, leading to habitat destruction and degradation; direct exploitation and overexploitation of animals, plants and other organisms; climate change; pollution; and invasion of alien species. In Europe, there has been a continuous strong decline of biodiversity, despite efforts by Member States.² This has led António Guterres, Secretary General of the UN to state that “humanity has become a weapon of mass extinction”.³

The decline in nature is closely intertwined with the climate crisis (the climate-nature nexus). On the one hand, the climate crisis is one of the main drivers of biodiversity loss. On the other, the destruction of ecosystems is contributing to greenhouse gas emissions (GHGs) and reducing nature-based climate adaptation capabilities.⁴ For these reasons, the International Panel on Climate Change (IPCC) has emphasised that safeguarding biodiversity and ecosystems is fundamental to climate resilient development, in the light of the threats posed by climate change to nature and its roles in adaptation and mitigation.⁵

By way of example, an important link between biodiversity and climate change is in the dominant role that forests and oceans play as carbon sinks.⁶ Well-functioning terrestrial and marine ecosystems can take up and store large amounts of carbon, reducing carbon dioxide levels in the atmosphere. However, climate change alters these ecosystems, causing species losses and ecosystem service decline. This means that loss of biodiversity not only disrupts ecosystem services,

¹ Díaz, S. et al. (eds.) (2019), [Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#), IPBES secretariat, Bonn, Germany.

² Fischer, M. et al. (eds.) (2018), [Regional assessment report on biodiversity and ecosystem services for Europe and Central Asia of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#), IPBES secretariat, Bonn, Germany; European Environmental Agency (2020), “[State of nature in the EU, Results from reporting under the nature directives 2013-2018](#)”, *EEA Reports*, No 10, Luxembourg, October.

³ Guterres, A. (2022), “[Secretary-General's remarks at the UN Biodiversity Conference – COP15](#)”, speech, Canada, December.

⁴ Network of Central Banks and Supervisors for Greening the Financial System (2022), [Statement on Nature-Related Financial Risks](#), Paris, March.

⁵ International Panel on Climate Change (2022), “[Summary for Policymakers](#)”, in IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, pp. 3-33.

⁶ Almeida, E. et al. (2021), “[Biodiversity and financial stability: building the case for action: Study Group interim report](#)”, *NGFS Occasional Papers*, Paris, October.

but also triggers a series of cascading effects such as reduced capacity for atmospheric carbon dioxide uptake, which in turn amplifies climate change effects.⁷

Nature-related risks arise because the decline in nature and loss of biodiversity undermines the ability of nature to provide ecosystem services on which human society and economies rely.⁸ Ecosystem services are the benefits to humans provided by the natural environment and ecosystems.⁹ These include provisioning services, such as food, raw materials and fresh water; and maintenance and regulating services, such as climate, water and air quality regulation, pollination, and pest and disease control. These provisioning services also include cultural services and recreation in nature, including tourism, and support mental and physical health as well as spiritual and religious values. All these ecosystem provisioning services are enabled by supporting ecosystem services, such as nutrient cycling and soil formation. Therefore, the loss of ecosystem services may have far-reaching consequences for the economy, and thus for central banks. For example, the disappearance of the animal pollination ecosystem service can result both in more volatile food prices, with macroeconomic implications, and also in a higher risk profile for the financial sector through investments in – or lending to – the agriculture sector and the food production and processing industry.¹⁰

Like climate-related risks, nature-related risks may affect companies and financial institutions via two main channels: physical risks and transition risks.¹¹ Physical risks can stem from the degradation of nature and loss of ecosystem services,¹² while transition risk can stem from a misalignment of economic actors with actions aimed at protecting, restoring, and/or reducing negative

⁷ Ceglar, A. et al. (2023), [The impact of the euro area economy and banks on biodiversity](#), *Occasional Paper Series*, No 335, ECB, Frankfurt am Main, December. Pörtner, H.-O. et al. (2023), [“Overcoming the coupled climate and biodiversity crises and their societal impacts”](#), *Science*, Vol. 380, No 6642 notes: “Many locations best for protecting biodiversity and nature’s contributions to people are coincident with currently high carbon storage and high capacity for ongoing sequestration. Terrestrial examples include intact tropical rainforest, wetlands, peatlands, grasslands, and savannahs. In the ocean, healthy mangrove forests, salt marshes, kelp forests, and seagrass meadows are important, but so are undisturbed sediments, as well as deep water and newly colonized polar blue carbon habitats emerging from ice melt.”

Almeida, E. et al. (2021) point out that this is particularly evident in respect of the Amazon: there, land use change and deforestation can be a significant source of carbon emissions and can undermine the ability of ecosystems to provide resilience against climate impacts. This is further exacerbated by the fact that the ability of tropical forests to act as carbon sinks is weakening as trees die and dry out from drought and higher temperatures, risking the transformation of forests from carbon sink to carbon source.

⁸ Almeida, E. et al. (2022), [“Central banking and supervision in the biosphere: an agenda for action on biodiversity loss, financial risk and system stability - Final Report of the NGFS-INSPIRE Study Group on Biodiversity and Financial Stability”](#), *NGFS Occasional Papers*, Paris, March.

⁹ Ibid.

¹⁰ Van Toor, J.V. et al. (2020), [Indebted to nature: Exploring biodiversity risks for the Dutch financial sector](#), De Nederlandsche Bank, Amsterdam, June.

¹¹ Boldrini, S. et al. (2023), [“Living in a world of disappearing nature: physical risk and the implications for financial stability”](#), *Occasional Paper Series*, No 333, ECB, Frankfurt am Main, November.

¹² Physical risks may be chronic (e.g. gradual decline of species diversity of pollinators resulting in reduced crop yields, deforestation, or water scarcity) or acute (e.g. increased probability of new pandemics).

impacts on nature.¹³ Litigation (or liability) risk, and reputational risk are two subcategories of both physical and transition risks.¹⁴

Physical and transition risks can affect the economy at micro, sectoral/regional and macro levels, impacting households, firms and sovereigns alike. They can translate into various forms of financial risks, such as credit, market, liquidity and operational risks.¹⁵ These risks can take the form of reduced valuation of financial assets and increased default probabilities, reflecting the deterioration in the financial performance of affected companies. Equally, financial institutions not only face material risks from environmental issues such as biodiversity loss,¹⁶ but also contribute to the accumulation of these risks through the activities they finance.¹⁷

Several sectors of the European economy, in particular agriculture, real estate and construction, and the healthcare sector, are heavily dependent on nature, and thus exposed to associated risks.¹⁸ This can be particularly relevant for financial institutions, local or national financial institutions, which have a history of lending to specific sectors (like agriculture) and may have exposure concentrated in nature-related risk within the EU. In addition, the geographic diversity of financial institutions' exposure implies that most EU financial institutions face potential exposure to nature-related risks outside the EU.¹⁹

Against this backdrop, there has been increasing recognition that nature-related risks can also have significant implications for central banks in delivering on their mandates. Reports produced by academics,²⁰ the European Commission,²¹ the Organisation for Economic Co-operation and Development (OECD)²² and by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS)²³ have emphasised that nature-related risks could have significant macroeconomic implications. These macroeconomic implications could in turn have a direct impact on price stability and on monetary policy.

¹³ Network of Central Banks and Supervisors for Greening the Financial System (2023a), [Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors](#), Paris, September.

¹⁴ Ibid. See also OECD (2023b).

¹⁵ Network of Central Banks and Supervisors for Greening the Financial System (2022).

¹⁶ Boldrini, S. et al. (2023).

¹⁷ Ceglar, A. et al. (2023).

¹⁸ European Commission (2024).

¹⁹ Ibid.

²⁰ Dasgupta, P. (2021), [The Economics of Biodiversity: The Dasgupta Review](#), London, HM Treasury.

²¹ Cziesielski, M. et al. (2024), [Study for a methodological framework and assessment of potential financial risks associated with biodiversity loss and ecosystem degradation: Final report](#), European Commission, Brussels, March.

²² OECD (2023a), [A supervisory framework for assessing nature-related financial risks: Identifying and navigating biodiversity risks](#), *OECD Business and Finance Policy Papers*, No 33, Paris, September; OECD (2023b), [Assessing biodiversity-related financial risks: Navigating the landscape of existing approaches](#), *OECD Environment Policy Papers*, No 36, Paris, April.

²³ Network of Central Banks and Supervisors for Greening the Financial System (2022); Almeida, E. et al. (2022). Since its foundation in 2017, the NGFS has grown from eight to 127 members, encompassing central banks and supervisors from five continents. The purpose of the NGFS is to help strengthen the global response that is required to meet the goals of the Paris Agreement and to enhance the role the financial system plays in managing risks and mobilising capital for green and low-carbon investment in the broader context of environmentally sustainable development.

Moreover, failure to account for, mitigate and adapt to these implications is a source of risk relevant for financial stability and the work of prudential supervisors. Reports by the NGFS and by staff of central banks and supervisors have highlighted significant risks to the financial sector arising from the loss of biodiversity and the degradation of nature.²⁴ The ECB's Banking Supervision has also emphasised that environmental degradation, such as air, water and land pollution, water stress, biodiversity loss and deforestation can drive financial risk. The ECB has required supervised entities to evaluate all environmental risk-related information beyond purely climate risks to ensure that their risk management is all-encompassing.²⁵

It is clear that governments and legislators are the primary and most effective actors to address the nature crisis. It is therefore essential, in view of the need to ensure democratic legitimacy and accountability, that governments and legislators take the leading role in this field.²⁶ Nevertheless, central banks and supervisors will have to take into account the implications of the nature crisis for their mandates, along with the policies developed and adopted by governments and legislators, and, where necessary, take appropriate action.

This paper seeks to offer a first legal assessment of the implications of the nature crisis for the ECB, in fulfilling its mandate. First, the paper briefly sets out the key international developments relevant to identifying and addressing the decline in nature (section 2). It then identifies key legal considerations in respect of the ECB's mandate (section 3). Thereafter, the paper explores whether measures to take into account nature-related risk could fall within the ECB's mandate (section 4). To that end, the paper outlines the current ecosystem of international law and EU policies and legislation in the field of nature and biodiversity. In addition, the paper considers whether various Treaty principles would require the ECB to consider nature-related risk in the pursuit of its objectives and the carrying out of its tasks. The paper outlines the scope for action by the ECB, which must be driven by further empirical assessment, benefiting from the increased availability of data in the wake of the development of the EU's sustainable finance agenda. Thereafter, the paper outlines the implications of nature-related risks for the ECB's Banking Supervision, outlining how nature-related risk is already integrated in the ECB's supervisory policy (section 5), before concluding (section 6).

²⁴ Ibid. See also Van Toor, J.V. et al. (2020); Dasgupta (2021); EIOPA (2023), [EIOPA staff paper on nature-related risks and impacts for insurance](#), Frankfurt am Main, March; Svartzman, R. et al. (2021), ["A 'Silent Spring' for the Financial System? Exploring Biodiversity-Related Financial Risks in France"](#), *Working Paper Series*, No 826, Banque de France, August; Elderson F. (2023), ["The economy and banks need nature to survive"](#), *The ECB Blog*, European Central Bank, Frankfurt am Main, June.

²⁵ See Section 5. ECB (2020), [Guide on climate-related and environmental risks - Supervisory expectations relating to risk management and disclosure](#), Frankfurt am Main, November; ECB (2022a), [Good practices for climate-related and environmental risk management – observations from the 2022 thematic review](#), Frankfurt am Main, November; Elderson F. (2022), ["Natura finis magistra – acknowledging nature-related risks to make finance thrive"](#), speech at De Nederlandsche Bank/Official Monetary and Financial Institutions Forum conference, Amsterdam, September.

²⁶ Thiele, A. (2023), ["Proportionality in German Constitutional Law"](#), in [Treading softly: How central banks are addressing current global challenges - ECB Legal Conference 2023](#), ECB, Frankfurt am Main, December, pp. 28-38.

2 International law and policy on nature: recent developments

International agreements that seek to protect nature and biodiversity have been in place for several decades. The international law framework has developed from reactive and ad hoc agreements addressing threats to specific species and habitats, to a more proactive and holistic approach.²⁷ Starting in the 1970s, notable examples include the “big four”: the Ramsar Wetlands Convention,²⁸ the World Heritage Convention,²⁹ the Convention on International Trade in Endangered Species³⁰ and the Bonn Migratory Species Convention.³¹

The 1992 Convention on Biological Diversity³² is one of the main international agreements in the field of biodiversity. The Convention, which has been signed by 196 parties, is an international treaty with three main objectives: the conservation of biodiversity, the sustainable use of the components of biodiversity and the equitable sharing of the benefits derived from the use of genetic resources. One of the main obligations under the Convention is to require Parties to prepare and implement National Biodiversity Strategies and Action Plans (NBSAPs) (Article 6). The Convention is supplemented by the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit-Sharing.

The EU and its Member States are parties to the 1992 Convention on Biological Diversity.³³ Thus, the Convention constitutes a mixed agreement under EU law. Such mixed agreements have the same status in the European legal order “as purely Community agreements in so far as the provisions fall within the scope of Community competence”.³⁴ Therefore, the EU has submitted NBSAPs to the Convention.³⁵ Moreover, in May 2020 the European Commission set out its Biodiversity Strategy for 2030.³⁶ Mixed agreements concluded by the EU are binding upon all EU institutions – including the ECB – pursuant to Article 216(2) of the Treaty on the Functioning of the European Union (TFEU). That said, in view of the ECB’s specific mandate under the Union Treaties, the justiciability of obligations under the

²⁷ Trouwborst, A. (2009), “International Nature Conservation Law and the Adaptation of Biodiversity to Climate Change: A Mismatch”, *Journal of Environmental Law*, Vol. 21, pp. 419-442.

²⁸ Convention on Wetlands of International Importance Especially as Waterfowl Habitat (adopted 2 February 1971).

²⁹ UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 16 November 1972).

³⁰ Convention on International Trade in Endangered Species of Wild Fauna and Flora (adopted 3 March 1973).

³¹ Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 June 1979).

³² Convention on Biological Diversity (adopted 5 June 1992).

³³ Council Decision of 25 October 1993 concerning the conclusion of the Convention on Biological Diversity (OJ L 309, 13.12.1993, p. 1).

³⁴ Case C-239/03, *Commission v French Republic*, EU:C:2004:598, paragraphs 25-26.

³⁵ European Commission (2014), [Fifth Report of the European Union to the Convention on Biological Diversity](#), Brussels, June; European Commission (2019), [Sixth Report of the European Union to the Convention on Biological Diversity](#), Brussels, April.

³⁶ European Commission (2020), [EU Biodiversity Strategy for 2030: Bringing nature back into our lives](#), Communication, Brussels, May.

1992 Convention on Biological Diversity vis-à-vis the ECB may not be straightforward.

Within the framework of the 1992 Convention on Biological Diversity, at the COP15³⁷ on 19 December 2022, the EU and 195 countries, including all EU Member States, reached agreement on the Kunming-Montreal Global Biodiversity Framework (GBF).³⁸ The Kunming-Montreal GBF has been dubbed the “Paris Agreement for nature”. It comprises 23 targets to protect nature by 2030 and four long-term goals for 2050, aiming to protect and restore nature for current and future generations, ensure its sustainable use as well as spur investments for a green global economy. Specifically, key global targets include: (1) to restore 30% of degraded ecosystems globally (on land and sea) by 2030; (2) to conserve and manage 30% of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, by 2030; (3) to stop the extinction of known species, and by 2050 reduce tenfold the extinction risk and rate of all species; and (4) to reduce risk from pesticides by at least 50% by 2030.

However, unlike the 1992 Convention on Biological Diversity, the Kunming-Montreal GBF is not a binding international agreement.³⁹ It is neither an amendment (Article 29) nor a protocol (Article 34) to the Convention. Rather, it is a “strategic plan” for the implementation of the Convention that must be implemented by the parties through domestic and international action.⁴⁰ For instance, before the next COP in 2024, all countries must prepare updated NBSAPs as well as National Biodiversity Finance Strategies. The next COPs will consider whether the cumulative impact of the national actions is sufficient to reach the global goals and targets for 2030 and 2050. That said, the legal relevance of the Kunming-Montreal GBF should not be underestimated, both in terms of setting out how the commitments under the 1992 Convention on Biological Diversity should be interpreted, and in terms of offering an additional point of reference for rights-based litigation in the field of climate and nature.⁴¹

Some authors have already identified potential indirect impacts on central banks and supervisors, as governments at national and EU level seek to

³⁷ The meetings of the Parties to the Convention are referred to as Conferences of the Parties (COP) (which are separate to the COP held in the context of the Paris Agreement, and hence have different numbering). The most recent one (COP 15) was held in 2021/2022 in Kunming, China and Montréal, Canada.

³⁸ Kunming-Montreal Global Biodiversity Framework (GBF) (agreed 18 December 2022).

³⁹ See recital 8, Section B.4 and Section C.17 of the GBF. See also Hemingway Jaynes, C. (2022), “[High stakes biodiversity summit ends with agreement to protect 30% of nature by 2030](#)”, World Economic Forum, December; Greenfield, P. and Weston, P. (2022), “[COP15: historic deal struck to halt biodiversity loss by 2030](#)”, *The Guardian*, December; Halper, J. and Grieve, D. (2023), “[COP15: The Global Biodiversity Framework](#)”, *Cadwalader Climate*, January.

⁴⁰ European Commission (2022), [COP15: historic global deal for nature and people](#), Press Release, Brussels, December.

⁴¹ Ekardt, F. et al. (2023), “[Legally binding and ambitious biodiversity protection under the CBD, the global biodiversity framework, and human rights law](#)”, *Environmental Sciences Europe*, Vol. 35, p. 80. For an overview of rights-based nature-related litigation, see Rodríguez-Garavito, C. and Boyd, D. (2023), “[A Rights Turn in Biodiversity Litigation?](#)”, *Transnational Environmental Law*, Vol. 12, No 3, pp. 498-536.

implement the Kunming-Montreal GBFs goals and targets.⁴² They suggest that targets under the GBF on protected areas, on aligning policy and financial flows with biodiversity goals, and on shifting investment away from nature-harming activities (Targets 2, 14 and 18) are likely to create transition risks for firms, and consequently also for financial institutions. Likewise, those authors suggest the GBF's target on the need to address the nexus between climate and biodiversity (Target 8) will need to be reflected in financial policymaking, where the current focus is (almost) solely on climate. Moreover, the GBF target on enabling businesses and financial institutions to monitor, assess and report their dependencies and impacts on nature (Target 15) could lead to the development of new or revised frameworks to measure, report, understand and act in line with exposures to nature-related risks. Finally, the GBF target to mobilise financing towards the implementation of national biodiversity strategies and action plans (Target 19) could catalyse the development of innovative financial instruments. This target could enable central banks to consider whether they can scale up finance into sectors that protect nature – or scale down finance into sectors of the economy that harm nature.

The NGFS has developed a new conceptual framework to guide action by central banks and supervisors in respect of nature-related financial risks.⁴³

This framework aims to draw attention to the considerations that are most likely to be material from a microprudential, macroprudential or macroeconomic perspective, and therefore could affect financial stability or price stability. To that end, it seeks to establish a shared understanding of the meaning of nature-related financial risks, in a manner similar to the definition of climate-related risks. It thus offers the following definition:

“Nature-related financial risk refers to the risks of negative effects on economies, individual financial institutions and financial systems that result from:

- (i) the degradation of nature, including its biodiversity, and the loss of ecosystem services that flow from it (i.e., physical risks); or
- (ii) the misalignment of economic actors with actions aimed at protecting, restoring, and/or reducing negative impacts on nature (i.e., transition risks).”

There is clear recognition by international bodies such as the NGFS and the OECD⁴⁴ of the need for further empirical assessment of the impact of the decline in nature on price and financial stability by central banks and supervisors.

This assessment needs to be complemented by legal assessment of how action to monitor, take into account or even address such impact could fall within the mandate of central banks. This paper seeks to offer a first such legal assessment.

⁴² Almeida, E. and Dikau, S. (2023), “COP15 marked a decisive moment for central banks and supervisors to address nature risks in the Anthropocene epoch”, *Commentary*, LSE Grantham Research Institute, London, January.

⁴³ Network of Central Banks and Supervisors for Greening the Financial System (2023a).

⁴⁴ OECD (2023a).

3 The ECB's mandate: a refresher

The ECB needs to ensure that its actions fall within the limits of its competences, which – when it comes to monetary policy – are laid down in the “objectives” and “tasks” set out in Article 127 TFEU, as well as by the instruments provided for in EU law. Thus, in the first place, actions will fall within the ECB's mandate where these are necessary to pursue the ECB's primary objective to maintain price stability under Article 127(1) TFEU.⁴⁵ This includes measures that directly pursue the price stability objective, and also, under certain conditions, measures which make an indirect contribution to the primary objective by fostering the preconditions which are necessary to achieve its price stability objective.⁴⁶ In addition, monetary policy must be conducted in a manner that ensures its overall proportionality, including by way of addressing financial risks to the Eurosystem's balance sheet.⁴⁷

Without prejudice to the objective of price stability, the ECB's secondary objective obliges the ECB to support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union, as laid down in Article 3 of the Treaty on European Union. These include “the sustainable development of Europe” and “a high level of protection and improvement of the quality of the environment”. In the context of the climate crisis, measures adopted under policies such as the EU's Green Deal or Sustainable Finance Strategy can readily demonstrate the existence of such a “general economic policy in the Union”. For instance, the recitals to the European Climate Law⁴⁸ emphasise that achieving climate neutrality should require a contribution from all economic sectors. Thus, as the European Climate Law affects every conceivable aspect of economic policy in the Union, it is clear that it forms part of the general economic policies in the Union, which the ECB is required to support.

⁴⁵ Zilioli, C. and Ioannidis, M. (2022), “Climate change and the mandate of the ECB: Potential and limits of monetary contribution to European green policies”, *Common Market Law Review*, Vol. 59, No 2, pp. 363-394; Ramos Muñoz, D. et al. (2023a) “Central Banks and Climate Change (Part 1). Does Climate Change Fit in Central Banks' Mandates?”, *Business and Financial Law Review*, Vol. 6, No 2, pp. 213-259; Ramos Muñoz, D. et al. (2023b), “Central Banks and Climate Change (Part 2). Can Central Banks Intervene Now? And How? Arguments of ‘Opportunity’ and ‘Suitability’”, *Business and Financial Law Review*, Vol. 6, No 2, pp. 260-320.

⁴⁶ Ioannidis, M. et al. (2021), “The mandate of the ECB: Legal considerations in the ECB's monetary policy strategy review”, *Occasional Paper Series*, No 276, ECB, Frankfurt am Main, September; Zilioli, C. and Ioannidis, M. (2022).

⁴⁷ O'Connell, M. and Várhelyi, G., in Aubrechtová, J. et al. (2023), “Enhancing Climate Resilience of Monetary Policy Implementation in the Euro Area”, *Occasional Paper Series*, No 318, ECB Frankfurt am Main, March; Workstream on climate change (2021), “Climate change and monetary policy in the euro area”, *Occasional Paper Series*, No 271, ECB, Frankfurt am Main, September; Zilioli, C. and Ioannidis, M. (2022).

⁴⁸ Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (‘European Climate Law’) (OJ L 243, 9.7.2021, p. 1).

In addition, several “horizontal” or “transversal” provisions must also be taken into account by the ECB in its policies and activities.⁴⁹ Article 11 TFEU states that “environmental protection requirements must be integrated into the definition and implementation of the Union’s policies and activities, in particular with a view to promoting sustainable development”. This provision thus also requires the ECB to integrate environmental protection requirements into the definition and implementation of the Union’s monetary policy. Article 7 TFEU likewise applies to the ECB, insofar as it requires the Union to ensure “consistency” between its policies and activities, taking all of the Union’s objectives into account and in accordance with the principle of conferral of powers.

The ECB also needs to observe the general principles of EU law. In particular, the ECB needs to observe the principles of proportionality, institutional balance and equal treatment – as well as the specific provisions of primary law applicable to the ECB, namely the open market economy principle and the prohibition on monetary financing.

The ECB has already considered how the climate crisis might impact its mandate, having conducted a comprehensive assessment in the context of its 2020 to 2021 Monetary Policy Strategy Review.⁵⁰ In its strategy statement, the ECB recognised the profound implications that climate change has for price stability through its impact on the economy and the financial system. The ECB committed fully to taking into account the implications of climate change and the carbon transition for monetary policy and central banking.⁵¹ Specifically with respect to the ECB’s secondary objective, the ECB clarified that – provided that two configurations of the instrument set are equally conducive and not prejudicial to price stability – it will choose the configuration that best supports the general economic policies of the Union.⁵² To that end, in July 2021, the ECB published its decision to adopt a comprehensive action plan to further incorporate climate change considerations into its monetary policy framework.⁵³ The action plan covered a number of areas, such as: developing its macroeconomic modelling and analyses; developing experimental statistical indicators; and enhancing risk assessment capabilities to allow the ECB to conduct climate stress tests on the Eurosystem balance sheet.

More recently, on 30 January 2024, the ECB published its climate and nature plan 2024-2025.⁵⁴ This plan builds on the 2021 action plan, and includes advancing work on nature loss and degradation, to further explore the impact of nature-related

⁴⁹ Calliess, C. and Tuncel, E. (2023), “The Role of Article 11 TFEU in the Greening of the ECB’s Monetary Policy”, *German Law Journal*, Vol. 24, No 5, pp. 796-824; Solana, J. (2019), “The Power of the Eurosystem to Promote Environmental Protection”, *European Business Law Review*, Vol. 30, pp. 547-576.

⁵⁰ Ioannidis, M. et al. (2021); Workstream on climate change (2021).

⁵¹ ECB (2021a), [The ECB’s monetary policy strategy statement](#), Frankfurt am Main, July.

⁵² ECB (2021b), [An overview of the ECB’s monetary policy strategy](#), Frankfurt am Main, July. This was reiterated by the ECB in the context of its operational framework review in 2024: ECB (2024a), [Changes to the operational framework for implementing monetary policy](#), Press Release, Frankfurt am Main, March.

⁵³ ECB (2021c), [ECB presents action plan to include climate change considerations in its monetary policy strategy](#), Press Release, Frankfurt am Main, July.

⁵⁴ ECB (2024b), [ECB steps up climate work with focus on green transition, climate and nature-related risks](#), Press Release, Frankfurt am Main, January.

risks on the economy to deepen the understanding of the possible implications for monetary policy and the financial system.

Box 1

Case study: Tilting of the corporate sector purchase programme

In July 2022, the ECB announced specific new measures under its Climate Action Plan, including adapting the asset purchase programmes by “tilting” purchases under the Corporate Sector Purchase Programme (CSPP) towards issuers with a better climate performance.⁵⁵ When the CSPP was first designed in 2016, the Eurosystem was required to conduct its purchases of corporate bonds in accordance with a “market benchmark”. However, due to the way the corporate bond market functions, this market benchmark resulted in the Eurosystem being directly exposed to carbon-intensive sectors (utilities, mining and materials) that are subject to transition and physical risks.⁵⁶

Thus, the ECB decided to tilt CSPP reinvestments to increase the share of assets from issuers deemed to have a better climate performance, compared to those deemed to have a poorer climate performance. On 9 September 2022, the ECB adopted the relevant decision on CSPP tilting.⁵⁷ This decision provides a useful case study on the key legal elements that were examined by the ECB and demonstrates how the ECB has weighed up considerations in respect of the scope of its mandate.

First, the ECB considered that tilting would be necessary to protect its balance sheet from climate-related financial risk. The ECB explained that addressing this risk would be necessary to ensure the continued proportionality of the CSPP, and thereby the pursuit of the primary objective of price stability. The ECB outlined that given that carbon intensive issuers are more vulnerable to physical and transition risks, large holdings of bonds from such companies pose higher financial risks to the Eurosystem’s balance sheet, and thus to the ability of the Eurosystem to implement its monetary policy.

Second, in addition to supporting the primary objective, tilting the CSPP would also support the ECB’s secondary objective and be equally conducive and not prejudicial to price stability. It explained that tilting its corporate bond reinvestments towards “greener” companies could ensure that the ECB supports the general economic policies in the Union, with a view to contributing to the achievement of the objectives of the Union, which include a high level of protection and improvement of the quality of the environment. These general economic policies include the Union’s policies on climate neutrality. In other words, corporate bond purchases (or rather, reinvestments) would support the objectives set out in the European Climate Law.

More generally, the ECB noted that this measure would ensure that the CSPP complies fully with several key Treaty principles. First, the ECB outlined two arguments in respect of the principle of proportionality. It argued that the measure would further support the proportionality of the CSPP itself, by ensuring the CSPP does not go beyond what is necessary to achieve its

⁵⁵ ECB (2022b), [ECB takes further steps to incorporate climate change into its monetary policy operations](#), Press Release, Frankfurt am Main, July.

⁵⁶ Workstream on climate change (2021); ECB (2021c).

⁵⁷ Decision (EU) 2022/1613 of the European Central Bank of 9 September 2022 amending Decision (EU) 2016/948 on the implementation of the corporate sector purchase programme (ECB/2016/16) (ECB/2022/29) (OJ L 241, 19.9.2022, p. 13).

objective. In addition, it argued that the tilting methodology is itself designed to be proportionate. The methodology considers three objective categories of metrics related directly to emissions and thus, climate-related financial risk and climate neutrality: first, an issuer's past carbon emissions; second, forward-looking climate metrics, such as whether issuers have in place ambitious and credible decarbonisation targets; and third, the quality and completeness of issuers' climate disclosures. Second, the ECB noted that in incorporating climate change considerations into the CSPP, the ECB would take into account (and thereby properly price-in) climate-related financial risks, regulatory and legal developments, and the current availability and quality of data, while also maintaining the broad scope of the purchase programmes in line with the obligation to act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources.

The ECB also considered that the measure would ensure compliance with the obligations of the Eurosystem under Articles 7 and 11 TFEU. The ECB reasoned that CSPP tilting ensures environmental protection requirements are integrated into the definition and implementation monetary policy. It also ensures compliance with Article 7 TFEU, which sets out the principle of consistency across Union measures.

4 Nature and the ECB's mandate

4.1 Nature and the primary objective of maintaining price stability

Measures to take into account nature-related risks could fall within the scope of the ECB's primary objective of maintaining price stability. This will be particularly relevant where it is established that the macroeconomic implications of nature degradation have a direct impact on price stability and on monetary policy.

As noted above, evidence of the relationship between nature degradation and price stability is emerging. The NGFS has emphasised that nature-related risks could have significant macroeconomic implications.⁵⁸ The OECD has pointed out that sustained decreases in the supply of commodities and higher prices may lead to macroeconomic inflationary pressures.⁵⁹ The European Commission has likewise noted that nature-related risk drivers can impact factors such as inflation, labour productivity and the overall economy through macroeconomic transmission channels.⁶⁰ Research by ECB staff also suggests that if nature degradation continues, economic activities dependent on ecosystem services will be affected by issues such as supply chain disruptions, which will impact prices and ultimately exacerbate inflation.⁶¹ This has already been observed in respect of climate change, where ECB staff have found that higher temperatures over recent decades have played an increasingly non-negligible role in driving price developments, including into the medium term.⁶² In addition to this direct evidence, the Dasgupta Review⁶³ highlighted that nature's worth to society is not currently reflected in market prices, or in macroeconomic analysis and management, insofar as GDP, as a measure of economic activity, does not take into account the depreciation of assets, including the natural environment.

Research identifying the economic and financial risks of nature degradation, and the feedback between the economy and the financial sector, is already advancing at a rapid pace. Publications by De Nederlandsche Bank and Banque de France staff respectively have flagged the exposure of banks and the financial sector to nature.⁶⁴ Moreover, in terms of physical risk, ECB staff research has found that, in the euro area, approximately 72% of non-financial corporations (NFCs) (corresponding to around 3 million individual NFCs) are highly dependent on at least

⁵⁸ Network of Central Banks and Supervisors for Greening the Financial System (2022); Almeida, E. et al. (2022).

⁵⁹ OECD (2023a).

⁶⁰ Cziesielski, M. et al. (2024).

⁶¹ Elderson, F. (2023).

⁶² Faccia, D. et al. (2021), "Feeling the heat: extreme temperatures and price stability", *Working Paper Series*, No 2626, ECB, Frankfurt am Main, December; and Kotz, M. et al. (2023), "The impact of global warming on inflation: averages, seasonality and extremes", *Working Paper Series*, No 2821, ECB, Frankfurt am Main, May.

⁶³ Dasgupta, P. (2021).

⁶⁴ Van Toor, J.V. et al. (2020); and Svartzman, R. et al. (2021).

one ecosystem service. Degradation of the relevant ecosystem would translate into critical economic problems for such NFCs. That research also found that almost 75% of corporate bank loans in the euro area are granted to NFCs with a high dependency on at least one ecosystem service.⁶⁵ Nature degradation will also impact the insurance sector: research by staff of the European Insurance and Occupational Pensions Authority (EIOPA) has explored the impact of nature-related risks on insurers.⁶⁶

The NGFS-INSPIRE Study Group on Biodiversity and Financial Stability has called for further research on the topic.⁶⁷ It recommended that central banks recognise biodiversity loss as a potential source of economic and financial risk and commit to developing a response strategy. On that basis, as noted above, the NGFS has published a conceptual framework, which aims to help central banks and supervisors consider the relevant elements of nature-related financial risks and to develop policies and actions in respect of it.⁶⁸

Macroeconomic research and assessment will be crucial to ensuring that the ECB can properly understand the impact of the nature crisis on its primary mandate, and to adjust its monetary policy instruments as needed. Engaging in such macroeconomic research and assessment clearly falls within the ECB's mandate.⁶⁹ In the context of the climate crisis, adapting macroeconomic assessments and undertaking macroeconomic modelling and scenario analysis were key measures outlined under the ECB's Climate Action Plan,⁷⁰ and are reflected in the ECB's Climate and Nature Plan for 2024-2025.⁷¹

Moreover, an integrated approach to climate and nature-related risks will be needed to fully capture the cascading effects of nature degradation and climate change on the real economy and financial stability.⁷² As noted above, research undertaken by ECB staff already suggests that climate change poses risks to price stability by having an upward impact on inflation, altering its seasonality and amplifying the impacts caused by extremes.⁷³ Incorporating considerations of nature into such assessment will be critical to establishing whether the ECB needs to adapt its monetary policy to address the compounding effects and risks posed by nature degradation to price stability.

⁶⁵ Boldrini, S. et al. (2023).

⁶⁶ EIOPA (2023).

⁶⁷ Almeida, E. et al. (2022).

⁶⁸ Network of Central Banks and Supervisors for Greening the Financial System (2023a).

⁶⁹ Ramos Muñoz, D. et al. (2023a).

⁷⁰ See e.g. Emambakhsh, T. et al. (2023), "The Road to Paris: Stress Testing the Transition Towards a Net-Zero Economy", *Occasional Paper Series*, No 328, ECB, Frankfurt am Main, September.

⁷¹ ECB (2024b).

⁷² Network of Central Banks and Supervisors for Greening the Financial System (2023a).

⁷³ Kotz, M. et al. (2023).

4.2 Nature and the secondary objective of supporting the general economic policies in the Union

It is clear from the above that the ECB may undertake measures that take into account nature-related risks where these are necessary to directly pursue the primary objective or are instrumental to pursuing price stability.⁷⁴ The first sentence of Article 127(1) TFEU offers a clear competence for action.

A more challenging question is that of whether action to take into account the nature crisis is also necessary to pursue the ECB's secondary objective. The indirect character of the ECB's contribution to the objectives of the Union means that the concretisation of those Union objectives, through the selection of specific Union policies and measures, and the ways to realise them, is a matter for the political institutions responsible for the general economic policies in the Union. Deferring to those policies, the ECB enjoys, in principle, discretion to identify, select and prioritise the general economic policies in the Union it should support, in accordance with the second sentence of Article 127(1) TFEU, as long as it can justify its stance, in accordance with the following factors derived from primary law.⁷⁵

First, the ECB must consider whether the protection of biodiversity constitutes a “general economic policy in the Union”. This phrase covers all Union and Member State policies that have a general economic dimension, i.e. including policies that predominantly have an impact on the economy in the broader sense. Such economic policies also cover regulatory policies – including those connected to the internal market.⁷⁶

By contrast to efforts to reduce greenhouse gas emissions, it is less clear whether Union law in the field of nature and biodiversity constitutes a general economic policy in the Union, at the current juncture (see Boxes 2 and 3). The wide variety, or ecosystem, of legislation, some of which has been in place for several decades, has not tended to focus on the economic or financial benefits of nature and biodiversity – although the EU Biodiversity Strategy for 2030 has placed stronger emphasis on this issue.⁷⁷

Second, the ECB must take into account those economic policies given priority by other competent institutions (i.e. the European Parliament, Council, and European Council), in particular if this is evidenced through the adoption of legal acts and the assumption of international obligations. Thus, in the event that the protection of nature and biodiversity were to be more clearly established and identified as “economic” in nature, then it might be open to the ECB to identify the protection of biodiversity as a “general economic policy in the Union” through the fact that the Union's legislation and international commitments in the field would signal a prioritisation by the other competent Union institutions.

⁷⁴ Smits, R. (2022), *Elaborating A Climate-Friendly Legal Perspective For The ECB*, *Social Sciences Research Network*, Amsterdam, September.

⁷⁵ Ioannidis, M. et al. (2021).

⁷⁶ Ibid.

⁷⁷ European Commission (2020).

Third, the potential impact of the policy on the ECB’s primary objective or the proximity of the policy to the primary objective and the ECB’s main field of expertise could be a criterion for prioritising the support of certain “general economic policies”. On that aspect, the work ongoing to investigate the link between biodiversity loss and nature-related risks on the one hand and euro area economy and the financial sector on the other hand will be crucial for the ECB to establish a potential supporting role in pursuit of its secondary objective.

Finally, policies which are more precise and unconditional than others and leave less discretion to the ECB in terms of the support to be provided are more amenable to justify the ECB’s supportive role based on the secondary objective. On this point, it might be argued that some existing legislation, in particular under the EU’s Sustainable Finance Strategy (see Box 3), already makes a link between broader environmental objectives, including supporting biodiversity, and the financial sector. However, it remains an open question whether such legislation currently envisages, with a sufficiently high degree of precision, the manner in which the financial sector can contribute to supporting biodiversity or addressing nature-related risk.

Box 2

The proposed Regulation on nature restoration: evidence of an emerging general economic policy on nature in the Union?

The proposed Regulation on nature restoration⁷⁸ is the key recent flagship initiative under the EU Biodiversity Strategy 2030. The Commission published its proposal on 22 June 2022. The proposal lays down rules to contribute to: (1) the continuous, long-term and sustained recovery of biodiverse and resilient nature across the Union’s land and sea areas through the restoration of ecosystems; (2) achieving the Union’s overarching objectives concerning climate change mitigation and climate change adaptation; and (3) meeting the Union’s international commitments. It establishes a framework within which Member States must put in place effective and area-based restoration measures which together shall cover, by 2030, at least 20% of the Union’s land and sea areas and, by 2050, all ecosystems in need of restoration. It imposes targets in respect of restoration of terrestrial, coastal and freshwater ecosystems; of marine, urban, agricultural and forest ecosystems; of the natural connectivity of rivers and natural functions of the related floodplains; and of pollinator populations.

To achieve those objectives, the proposal obliges Member States to prepare and submit national restoration plans to the Commission, identifying the measures that are necessary to meet the targets and obligations. The Commission has the power to review the plans, to address observations to the Member States, and request updated plans with supplementary measures, where the Commission considers the progress made by the Member States to implement the plans is insufficient. The proposal also requires Member States to ensure that members of the public have appropriate access to justice in respect of nature restoration plans.

⁷⁸ [Proposal for a Regulation of the European Parliament and of the Council on nature restoration](#), COM(2022) 304 final. The Council and Parliament announced that they had reached agreement on the proposal on 9 November 2023 (see [Press Release](#)). As of 15 April 2024, the proposal is pending adoption.

The European Parliament and the Council reached their final compromise agreement on the Regulation on nature restoration on 9 November 2023. The final compromise text agreed by the institutions⁷⁹ has modified the ambition of the Commission’s proposal, placing a stronger emphasis on finding a balance between the protection of nature on the one hand, and managing food security and the socio-economic effects of the Regulation on the other. The final compromise also requires Member States to give priority, until 2030, to restoration measures in areas that are located in Natura 2000 sites – which are already subject to restoration and protection under Union law.

It is not clear that the proposed Regulation on nature restoration, if adopted in its present form, will offer sufficient evidence of the emergence of a general economic policy in the Union in the field of nature protection. The proposed Regulation on nature restoration does not have the same broad scope as the European Climate Law, in that it does not purport to cover “all relevant Union legislation and policies” and is not addressed to “relevant Union institutions”. Rather, the obligations under the Regulation are targeted at Member States. In addition, while like the European Climate Law⁸⁰, the recitals to the proposed Regulation on nature restoration do emphasise the link between biodiversity and the economy and economic transformation, the wording used is less forceful, and does not emphasise the contribution that will have to be made by all economic sectors.⁸¹ That said, the proposed Regulation on nature restoration seeks to put in place binding goals and targets for Member States, and its ambition will likely need to be further developed to implement the Kunming-Montreal GBF.

Moreover, the proposed Regulation on nature restoration will be crucial to support the objectives of the European Climate Law.⁸² Ecosystems and the natural environment, which are the object of the proposed Regulation on nature restoration, are a significant factor for climate regulation.⁸³

Taking into account these factors, it is more difficult at the current juncture to establish that ECB action in the field of nature is necessary to pursue the ECB’s secondary objective, beyond the relevance of nature and biodiversity to climate mitigation and adaptation. It is – at this stage – less clear that the prevention of nature-related risks and protection of biodiversity constitute a general

⁷⁹ Council of the European Union (2023), [Proposal for a Regulation of the European Parliament and of the Council on nature restoration](#), 15907/23, November.

⁸⁰ Recital 7 of the European Climate Law states: “Climate action should be an opportunity for all sectors of the economy in the Union to help secure industry leadership in global innovation.” Recital 10 states: “Achieving climate neutrality should require a contribution from all economic sectors for which emissions or removals of greenhouse gases are regulated in Union law.” Recital 25 states: “The transition to climate neutrality requires changes across the entire policy spectrum and a collective effort of all sectors of the economy and society, as highlighted in the European Green Deal.”

⁸¹ Recital 7 of the proposed Regulation on nature restoration states: “The EU Biodiversity Strategy for 2030 aims to ensure that Europe’s biodiversity will be put on the path to recovery by 2030 for the benefits of people, the planet, the climate and our economy”. Recital 12a states: “The European Green Deal will lead to a progressive and profound transformation of the economy of the Union and its Member States, which in turn will have a strong bearing on the Union’s external action. Recital 13 states: “It is appropriate to set an overarching objective for ecosystem restoration to foster economic and societal transformation, the creation of high-quality jobs and sustainable growth. [...] Those services contribute to a broad range of socio-economic benefits, depending on the economic, social, cultural, regional and local characteristics.”

⁸² Recital 16 of the proposed Regulation on nature restoration states: “The restoration of ecosystems can make an important contribution to maintaining, managing and enhancing natural sinks and to increasing biodiversity while fighting climate change. [The European Climate Law] also requires relevant Union institutions and the Member States to ensure continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. [...]”

⁸³ See recital 15 of the proposed Regulation on nature restoration. See also footnotes 5 to 7 on the climate-nature nexus.

economic policy in the Union per se. By contrast to the Union's existing climate-related legislation and policies, existing legislation relating to nature preservation and protection of biodiversity is not – at present – as clearly framed as impacting the Union's economy.

However, this conclusion does not mean that no legal obligations apply to the ECB in respect of nature. First, this conclusion on the ECB's secondary objective does not release the ECB from its other Treaty-based obligations to consider environmental protection requirements, including where it is established that nature degradation directly impacts the pursuit of its primary objective, where it impacts the Eurosystem's risk management, or in view of the requirements under Articles 7 and 11 TFEU, as outlined in section 4.3 below. Second, insofar as the protection of biodiversity directly contributes to climate crisis mitigation and adaptation, it can be considered an aspect of that general economic policy in the Union, which the ECB must support. Thus, the ECB should not treat climate mitigation and adaptation in isolation from nature-related risks due to the nature-climate nexus. Finally, the ECB should carefully monitor further EU law developments in the wake of the Kunming-Montreal GBF, agreed in December 2022. Such developments may potentially evidence the establishment of a general economic policy.

Box 3

The “ecosystem” of EU policies and legislation in the field of nature

Measures to protect nature and biodiversity have been part of the legal framework of the EU and Member States for several decades. Thus, unlike the climate crisis, where significant new legislation was introduced in recent years to proscribe or support the reduction of greenhouse gas emissions, nature and biodiversity have already been a feature of the legal framework – particularly administrative law in the fields of planning, development, building regulation and waste management – for several decades. At EU level, the 1980s saw the “normative phase” of environmental protection within the European legal order, whereby the objectives of environmental protection were codified in primary law Union through the Single European Act.⁸⁴

A key example is the EU's Environmental Impact Assessment (EIA) Directive,⁸⁵ which has been in place since 1985. The Directive requires Member States to adopt all measures necessary to ensure that projects which are likely to have significant effects on the environment are subject to a requirement for development consent and an assessment regarding their effects. To that end, the EIA must identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect effects of a project on human beings, fauna and flora; soil, water, air, climate and the landscape; and material assets and the cultural heritage. Other key examples of relevant EU legislation to protect nature and the environment are the Habitats Directive,⁸⁶ the Birds

⁸⁴ Sikora, A. (2020a), *Constitutionalisation of Environmental Protection in EU Law*, Europa Law Publishing, Zutphen, p. 45.

⁸⁵ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification) (OJ L 26, 28.1.2012, p. 1).

⁸⁶ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Directive,⁸⁷ the Nitrates Directive⁸⁸ and the Environmental Crime Directive.⁸⁹ The latter has recently been significantly updated to enhance penalties for criminal conduct with catastrophic results comparable to “ecocide”.⁹⁰

The EU Biodiversity Strategy for 2030, published by the European Commission in 2020, provided an overview of the range of recent and expected legislative and non-legislative initiatives in the field.⁹¹ The key flagship initiative under that strategy – the proposed Regulation on nature restoration – is outlined in Box 2 above. The following sections outline further legislative developments that may be relevant for the ECB, particularly through their direct and indirect impact on the financial sector or financial institutions.

The EU’s Sustainable Finance Strategy

Nature and biodiversity aspects have already been incorporated into legislation implementing the Sustainable Finance Strategy.⁹² While the inclusion of nature aspects did not garner the same amount of attention as climate change, the Commission anticipated the relevance of broader environmental considerations for sustainable finance and the financial sector.⁹³ Thus, it is not expected that a new wave of financial services legislation will be necessary to ensure that the nature crisis is adequately addressed. Rather, it can be expected that existing recent legislation can be applied, adapted or expanded to encompass broader environmental considerations.

First, the Taxonomy Regulation⁹⁴ targets not only climate mitigation and adaptation, but also four further environmental objectives relevant to nature. These are the protection and restoration of biodiversity and ecosystems; the sustainable use and protection of water and marine resources; pollution and prevention control; and the transition to a circular economy. The Taxonomy Regulation is an important market transparency tool that can be used by companies to facilitate their access to finance for the green transition, and by the financial sector to support the building of sustainable finance portfolios and measure the degree of sustainability of investments. On 27 June

⁸⁷ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Codified version) (OJ L 20, 26.1.2010, p. 7).

⁸⁸ Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31.12.1991, p. 1).

⁸⁹ Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28).

⁹⁰ Directive (EU) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC (OJ L, 2024/1203, 30.4.2024, ELI: <http://data.europa.eu/eli/dir/2024/1203/oj>).

⁹¹ European Commission (2020).

⁹² European Commission (2018), [Action Plan: Financing Sustainable Growth](#), Communication, Brussels, March; European Commission (2021), [The EU Taxonomy, Corporate Sustainability Reporting, Sustainability Preferences and Fiduciary Duties: Directing finance towards the European Green Deal](#), Communication, Brussels, April; European Commission (2023a), [A sustainable finance framework that works on the ground](#), Communication, Strasbourg, June.

⁹³ The European Commission (2018) explained that “sustainable finance” generally refers to the process of taking due account of environmental and social considerations in investment decision-making, leading to increased investments in longer-term and sustainable activities: “More specifically, environmental considerations refer to climate change mitigation and adaptation, as well as the environment more broadly (e.g. covering air and water pollution, resource depletion, and biodiversity loss) and related risks (e.g. natural disasters).”

⁹⁴ Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment (OJ L 198, 22.6.2020, p. 13).

2023, the Commission adopted the Taxonomy Environmental Delegated Act⁹⁵ to establish the technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to these further environmental objectives. The relevant economic activities include, for example, conservation, including restoration of habitats, ecosystems and species; treatment of hazardous waste; and remediation of legally non-conforming landfills and abandoned or illegal waste dumps.

Second, the Sustainable Finance Disclosure Regulation⁹⁶ (SFDR) defines “sustainable investments” with reference to the impact on biodiversity and nature. The SFDR lays down sustainability disclosure obligations for financial markets participants and financial advisers vis-à-vis end-investors. In particular, the SFDR is relevant to financial products that promote environmental or social characteristics or have sustainable investment as their objective. “Sustainable investment” is defined as “an investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy”.

Third, the Corporate Sustainability Reporting Directive⁹⁷ (CSRD) includes disclosure requirements related to nature. The requirements under the CSRD will start to apply to the first set of addresses in respect of the 2024 financial year, for reports published in 2025. The CSRD sets out that the European sustainability reporting standards (ESRS) will specify the information undertakings must disclose in respect of, inter alia, water and marine resources, pollution, biodiversity and ecosystems. The Commission has adopted a delegated act⁹⁸ to implement these standards, which specify the content and, where relevant, the structure to be used to present that information. Thus, for example, ESRS E4 concerns “biodiversity and ecosystems”, and will require undertakings to disclose various details, to enable an understanding of how the undertaking affects biodiversity and ecosystems, in terms of material positive and negative, actual and potential impacts, including the extent to which the undertaking contributes to the drivers of biodiversity and ecosystem loss and degradation. This also includes the undertaking’s plans and capacity to adapt its strategy and business model in line with respecting planetary boundaries related to biosphere integrity and land system change; the vision of the Kunming-Montreal GBF and its relevant goals and targets; relevant aspects of the EU Biodiversity Strategy for 2030; the Birds Directive and

⁹⁵ Commission Delegated Regulation (EU) 2023/2486 of 27 June 2023 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to the sustainable use and protection of water and marine resources, to the transition to a circular economy, to pollution prevention and control, or to the protection and restoration of biodiversity and ecosystems and for determining whether that economic activity causes no significant harm to any of the other environmental objectives and amending Commission Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities (OJ L, 2023/2486, 21.11.2023, ELI: http://data.europa.eu/eli/reg_del/2023/2486/oj).

⁹⁶ Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector (OJ L 317, 9.12.2019, p. 1).

⁹⁷ Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting (OJ L 322, 16.12.2022, p. 15).
See in particular Article 29b(2), point (a), of Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC (OJ L 182, 29.6.2013, p. 19).

⁹⁸ Commission Delegated Regulation (EU) 2023/2772 of 31 July 2023 supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards (OJ L, 2023/2772, 22.12.2023, ELI: http://data.europa.eu/eli/reg_del/2023/2772/oj).

Habitats Directive, and the EU Marine Strategy Framework Directive. However, these reporting requirements are not mandatory in all cases – reporting of some data points is voluntary,⁹⁹ while other data points are subject to a self-assessment by the relevant undertaking as to the “materiality”¹⁰⁰ of the data point.¹⁰¹

Corporate Sustainability Due Diligence Directive

The Corporate Sustainability Due Diligence Directive¹⁰² (CSDDD) is also likely to have implications for the financial sector. The CSDDD sets out that companies falling within its scope – which include regulated financial institutions – must integrate due diligence into all their relevant policies and risk management systems; and must identify, assess, prevent, mitigate, halt, and remediate actual or potential adverse environmental impacts arising from their own operations, or those of their subsidiaries, and where related to their chain of activities, those of their business partners. In addition to the due diligence requirements, companies must also adopt and put into effect a transition plan for climate change mitigation which aims to ensure, through best efforts, that the business model and strategy of the company are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5 °C.

The direct application of the due diligence requirements of the CSDDD to regulated financial services is more limited than was originally envisaged in the Commission proposal. The Commission proposal envisaged that in the case of regulated financial undertakings, including credit institutions, the term “value chain” would include the activities of clients receiving loan, credit and other financial services.¹⁰³ Under the final agreed text of the CSDDD, the due diligence obligations on regulated financial undertakings apply only to the activities of their upstream business partners.¹⁰⁴ Further expansion of these obligations will be a matter for future consideration by the Union legislators: within two years, the Commission must submit a report to the European Parliament and to the Council on the necessity to lay down additional sustainability due diligence requirements tailored to regulated financial undertakings with respect to the provision of financial services and investment activities.

⁹⁹ Ibid., Annex I, Section 1.3, which specifies the distinction between “shall disclose” and “may disclose”, a key example pertains to disclosure Requirement E4-1. Paragraph 15 states: “The undertaking may disclose its transition plan to improve and, ultimately, achieve alignment of its business model and strategy with the vision of the Kunming-Montreal Global Biodiversity Framework and its relevant goals and targets, the EU Biodiversity Strategy for 2030, and with respecting planetary boundaries related to biosphere integrity and land-system change.”

¹⁰⁰ Ibid., Annex I, Section 3.4 and 3.5. A sustainability matter is “material” when it meets the criteria defined for impact materiality or financial materiality, or both, i.e. one or both of the two dimensions of “double materiality”.

¹⁰¹ Ibid., Annex I, Section 1 specifies that the ESRS do not require undertakings to disclose any information on environmental, social and governance topics covered by ESRS when the undertaking has assessed the topic in question as “non-material”. See European Commission (2023b), [Questions and Answers on the Adoption of European Sustainability Reporting Standards](#), Brussels, July; and Iozzelli, L. and del Carmen Sandoval Velasco, M. (2023) “Mandatory or Voluntary? The hybrid nature of sustainability disclosure in the EU’s Corporate Sustainability Reporting Directive (CSRD)”, *RSC Policy Paper*, No 8, Fiesole.

¹⁰² [Proposal for a Directive on Corporate Sustainability Due Diligence](#), COM(2022) 71 final. See Council of the European Union (2024), [Proposal for a Directive on Corporate Sustainability Due Diligence - Letter to the Chair of the JURI Committee of the European Parliament](#), 6145/24, March.

¹⁰³ Article 3, point (g), of the Commission proposal.

¹⁰⁴ Article 3(1), point (g), of the final text defines these as activities of a company’s upstream business partners related to the production of goods or the provision of services by the company, including the design, extraction, sourcing, manufacture, transport, storage and supply of raw materials, products or parts of the products and development of the product or the service.

“Adverse environmental impacts” under the CSDDD are defined as those impacts that result from the breach of certain prohibitions and obligations pursuant to a list of international environmental conventions – including the Convention on Biological Diversity.¹⁰⁵ Other examples include violations of the prohibition on importing or exporting, without a permit, any specimen included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); the prohibition of the manufacture of mercury-added products pursuant to the Minamata Convention on Mercury; and the prohibition of the production and consumption of specific substances that deplete the ozone layer after their phase-out pursuant to the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on substances that deplete the Ozone Layer.

National supervisory authorities appointed by Member States will be responsible for supervising these new rules and may impose fines in case of non-compliance. In addition, natural or legal persons must have the opportunity to take legal action for damages that could have been avoided with appropriate due diligence measures. This includes where the company intentionally or negligently caused environmental degradation impacting the rights of persons or communities.

It should be noted that existing national corporate due diligence requirements are already having an impact on the financial sector.¹⁰⁶ For example, two separate legal actions have been initiated against French banks under corporate due diligence legislation in France, based on alleged failure to comply with due diligence obligations in respect of the financing of fossil fuel projects¹⁰⁷ and in respect of projects allegedly linked to deforestation in the Amazon and the violation of the rights of indigenous communities.¹⁰⁸

Deforestation Regulation

The Deforestation Regulation¹⁰⁹ **is a further key piece of legislation in the field of nature, which may impact the economy and financial system.** The Regulation aims to mitigate deforestation not only in the EU but on a global scale, by defining deforestation-prone commodities and stipulating rules for their placing and making available on the Union market as well as their export from the EU. In the context of negotiations on the proposal, the European Parliament’s Environmental Committee suggested that regulated financial institutions should be included within its scope. While this suggestion was not taken up in the final text, it is indicative both of how the financial sector can be impacted by legislation on biodiversity and of how its activities are considered as relevant for the maintenance or restoration of biodiversity. Looking ahead, the Regulation obliges the Commission to prepare an impact assessment by 30 June 2025, which must evaluate, inter alia, the role of financial institutions in preventing financial flows that contribute

¹⁰⁵ In particular, the annex refers to the violation of the obligation to take the necessary measures related to the use of biological resources in order to avoid or minimise adverse impacts on biological diversity, in line with Article 10(b) of the Convention.

¹⁰⁶ Network of Central Banks and Supervisors for Greening the Financial System (2023b), *Climate-related litigation: recent trends and developments*, Paris, September.

¹⁰⁷ Sabin Centre for Climate Change Law (2023a), *Comissão Pastoral da Terra and Notre Affaire à Tous v. BNP Paribas*, *Climate Change Litigation Database*, February.

¹⁰⁸ Sabin Centre for Climate Change Law (2023b), *Notre Affaire à Tous, Les Amis de la Terre, and Oxfam France v. BNP Paribas*, *Climate Change Litigation Database*, February.

¹⁰⁹ Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010 (OJ L 150, 9.6.2023, p. 206).

directly or indirectly to deforestation and forest degradation and assess the need to provide for any specific obligations for financial institutions in Union legal acts in that regard.

Aarhus Regulation

The Aarhus Regulation¹¹⁰ implements an international agreement – “the Aarhus Convention” – by establishing the requirements for access to information, public participation, and access to justice in environmental matters where those are of relevance to Union institutions and bodies. The most recent amendment of the Aarhus Regulation has expanded the definition of “administrative act” to mean “any non-legislative act adopted by a Union institution or body, which has legally binding and external effects and contains provisions that may contravene environmental law”. The amendment makes clear that the scope of the Aarhus Regulation encompasses not only acts adopted under environmental law, but also applies more broadly to administrative acts adopted in the implementation of policies other than Union policy on the environment.¹¹¹ It is also interesting to note that in the recent case of *EIB v ClientEarth*,¹¹² the CJEU held that an European Investment Bank (EIB) resolution approving the financing of a biomass power generation plant was subject to the provisions of the Aarhus Regulation regarding requests for internal review. ClientEarth based its request for internal review, inter alia, on the grounds that the EIB had made a manifest error of assessment in considering that the project would contribute to the EU’s environmental policies and be in line with the EIB’s priority for renewable energy loans and combating climate change. The CJEU held, inter alia, that both the EIB’s Statement of Environmental and Social Principles and Standards and the EIB’s climate strategy fall within the concept of “environmental law” within the meaning of the Aarhus Regulation, and, therefore, that the resolution was adopted “under environmental law” within the meaning of the Aarhus Regulation, and thus subject to the provisions on internal review.

4.3 Nature and the transversal principles for the Union: Articles 7 and 11 TFEU

The Treaties contain certain “horizontal” or “transversal” provisions that need to be considered by the Union in all its policies and activities.¹¹³ Two of these transversal principles that are of particular relevance to the ECB in carrying out the Union’s monetary policy are contained in Articles 7 and 11 TFEU.

First, Article 7 TFEU sets out a “consistency clause”. It states: “The Union shall ensure consistency between its policies and activities, taking all of its objectives into account and in accordance with the principle of conferral of powers.” This has been interpreted to mean that Union institutions are required, on the one hand, to refrain

¹¹⁰ Regulation (EC) No 1367/2006 of the European Parliament and of the Council of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (OJ L 264, 25.9.2006, p. 13).

¹¹¹ Regulation (EU) 2021/1767 of the European Parliament and of the Council of 6 October 2021 amending Regulation (EC) No 1367/2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (OJ L 356, 8.10.2021, p. 1), recital 10.

¹¹² Joined Cases C-212/21 P and C-223/21 P, *EIB v ClientEarth*, EU:C:2023:546.

¹¹³ See e.g. Title II “Provisions having general application”, as well as in the Charter of Fundamental Rights of the European Union.

from making decisions that counter policies promoted by other institutions and, on the other hand, to positively consider such policies in the design of their own policies.¹¹⁴ As regards the ECB, this implies that the ECB must prefer a course of action that is consistent with Union policy over one that is less consistent, assuming the measures are equally effective to pursue its objectives.¹¹⁵

Second, Article 11 TFEU sets out a “principle of integration” of environmental protection requirements into Union policies and activities. It states:

“Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development.”¹¹⁶ The CJEU has noted that Article 11 TFEU is “a provision which emphasises the fundamental nature of [the objective of environmental protection] and its extension across the range of [Union] policies and activities”.¹¹⁷ The meaning of the term “environmental protection requirements” is considered to encompass Articles 191 to 193 TFEU, which include the objectives of EU environmental policy set out in Article 191(1) TFEU, the principles of EU environmental policy set out in Article 191(2) TFEU, and aspects of Article 191(3) TFEU.¹¹⁸ Thus, environmental protection requirements encompass the ecosystem of EU legislation to protection nature outlined in Box 3.

Article 11 TFEU can be understood as an obligation on Union institutions “to take due account of ecological interests in policy areas outside that of environmental protection stricto sensu”.¹¹⁹ In other words, it is designed, first to

“enable” institutions to take into account environmental considerations¹²⁰ (substantive dimension).¹²¹ Furthermore, it is designed as a “legal imperative” to

ensure that environmental considerations are properly considered¹²² and that an adequate statement of reasons is provided¹²³ (procedural dimension).¹²⁴

Compliance with this principle is clearly justiciable:¹²⁵ for example, in Case T-229/04 *Sweden v Commission* the General Court annulled a Commission directive on the

¹¹⁴ Ioannidis, M. et al. (2021).

¹¹⁵ Zilioli, C. and Ioannidis, M. (2022).

¹¹⁶ Article 37 of the Charter of Fundamental Rights of the European Union also provides: “A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development”. On the relationship between Article 3(3) and Article 11 TFEU, and Article 37 of the Charter, see Sikora, A. (2020a).

¹¹⁷ Case C-176/03, *Commission v Council*, EU:C:2005:542, paragraph 42.

¹¹⁸ Sikora, A. (2020a), p. 149; Zilioli, C. and Ioannidis, M. (2022), p. 378.

¹¹⁹ Case C-161/04, *Austria v Parliament and Council*, Opinion of Advocate General Geelhoed, EU:C:2006:66, paragraph 59.

¹²⁰ Jans, J. (2011), “Stop the Integration Principle?” *Fordham International Law Journal*, Vol. 33, No 5, pp. 1533-1547.

¹²¹ Solana, J. (2019), p. 559.

¹²² Calliess, C. and Tuncel, E. (2023), p. 9; Solana, J. (2019); Ramos Muñoz, D. et al. (2023a), pp. 240-241.

¹²³ Solana, J. (2019); Kingston, S. (2023), “Environmental protection and prudential risk supervision: legal reflections”, in [Treading softly: How central banks are addressing current global challenges – ECB Legal Conference 2023](#), ECB, Frankfurt am Main, December, pp. 60-71, 67.

¹²⁴ Solana, J. (2019), pp. 559-560.

¹²⁵ Solana, J. (2019), p. 560. Zilioli, C. and Ioannidis, M. (2022), p. 380.

basis the Commission failed to actively engage with scientific studies in the context of its authorisation of a controversial chemical (paraquat).¹²⁶

In addition, it has also been argued that Article 11 TFEU encompasses a duty for Union institutions to consider the precautionary principle.¹²⁷ In the context of climate and nature, some authors suggest that a precautionary policy towards environment-related risk can be seen as a natural extension of macroprudential policy,¹²⁸ “which is by design precautionary”.¹²⁹ While there is no single definition of the precautionary principle, it can be understood that “Where there is scientific uncertainty as to the existence or extent of risks [...], the Community institutions may, by reason of the precautionary principle, take protective measures without having to wait until the reality and seriousness of those risks becomes fully apparent”.¹³⁰ While the Treaties refer to the precautionary principle specifically in the context of environmental policy, its scope of application has not been limited to the environment: it has been applied in respect of human, animal and plant health, including food safety.¹³¹ Indeed, case law indicates that the precautionary principle “can be defined as a general principle of [Union] law requiring the competent authorities to take appropriate measures to prevent specific potential risks to public health, safety and the environment, by giving precedence to the requirements related to the protection of those interests over economic interests”.¹³² For example, most recently, in the context of State aid law, the CJEU signalled that, by virtue of Article 11 TFEU, the precautionary principle could, among other principles, be relevant to preclude the grant of State aid for the construction or operation of a nuclear power plant (though this conclusion had no impact on the operative part of the judgment under appeal).¹³³

¹²⁶ Case T-229/04, *Sweden v Commission*, EU:T:2007:217, paragraphs 102-110.

¹²⁷ Calliess, C. and Tuncel, E. (2023).

¹²⁸ Kedward, K. et al. (2022), “Developing a precautionary approach to financial policy – from climate to biodiversity”, *INSPIRE Sustainable Central Banking Toolbox Policy Briefing Paper*, No 2, April.

¹²⁹ Grunewald, S. (2020), “Climate Change as a Systemic Risk – Are Macroprudential Authorities up to the Task?”, *European Banking Institute Working Paper Series*, No 62, Frankfurt am Main, April; Chenet, H. et al. (2019), “Climate-related financial policy in a world of radical uncertainty: Towards a precautionary approach”, *UCL Institute for Innovation and Public Purpose Working Paper*, No 13, London.

¹³⁰ Case T-13/99, *Pfizer Animal Health SA v Council*, EU:T:2002:209, paragraph 139. European Commission (2010), *Communication from the Commission on the precautionary principle*, Communication, Brussels, February, states: “In those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environmental, human, animal or plant health may be inconsistent with the high level of protection chosen for the Community.” See also De Smedt, K. and Vos, E. (2022), “The Application of the Precautionary Principle in the EU”, in Mieg, H.A. (eds.), *The Responsibility of Science. Studies in History and Philosophy of Science*, Vol. 57, Springer, pp 163-186, 172.

¹³¹ *Ibid.* Szajkowska, A. (2010), “The impact of the definition of the precautionary principle in EU Food Law”, *Common Market Law Review*, Vol. 47, pp. 173-196, 175.

¹³² Joined cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00 and T-141/00, *Artogodan GmbH and Others v Commission*, EU:T:2002:283, paragraphs 183-184; Szajkowska, A. (2010), p. 175; De Smedt, K. and Vos, E. (2022), p. 172.

¹³³ Case C-594/18 P, *Austria v Commission*, EU:C:2020:742, paragraph 46. Delarue, J. and Bechtel, S.D. (2021) “Access to justice in State aid: how recent legal developments are opening ways to challenge Commission State aid decisions that may breach EU environmental law”, *ERA Forum*, Vol. 22, pp. 253-268; Sikora, A. (2020b) “Applicability of the EU State Aid and Environmental Rules in the Nuclear Energy Sector: Annotation on the Judgment of the Court of Justice (Grand Chamber) of 22 September 2020 in Case C-594/18 P Republic of Austria v Commission.” *European State Aid Law Quarterly*, Vol. 19, No 4, pp. 515-520; Kasper, S. (2022), “State Aid for New Nuclear Power Plants under the Plethora of EU Environmental Regulations”, *European State Aid Law Quarterly*, Vol. 21, No 3, pp. 251-265.

Article 11 TFEU imposes an obligation on the ECB to “take into account” environmental protection requirements in the definition and implementation of the Union’s monetary policy.¹³⁴ This obligation does not alter the hierarchy of

objectives of the ECB, where the Treaty explicitly provides for the primacy (“without prejudice”) of price stability over other objectives of the Union.¹³⁵ However, in circumstances where there is no conflict with price stability, environmental factors should be integrated by the ECB into the pursuit of the primary objective.¹³⁶

Appropriate consideration of Article 11 TFEU may, for instance, be relevant to demonstrating the proportionality of the ECB’s monetary policy measure, i.e. that it is suitable to attain the monetary policy aim pursued, and does not go beyond what is necessary to attain those objectives.¹³⁷

In terms of justiciability, while the ECB enjoys a broad discretion to define and implement the Union’s monetary policy, the CJEU will review the ECB’s compliance with certain procedural safeguards, which it considers to be “of fundamental importance”. As noted in the *Gauweiler* and *Weiss* cases, the Court would review whether the ECB complies with the obligation to examine carefully and impartially all the relevant elements of the situation in question and to give an

adequate statement of the reasons for its decisions.¹³⁸ This could include whether the ECB has carefully and impartially examined the integration of environmental protection requirements, within the meaning of Article 11 TFEU.¹³⁹

Thus, looking at these “transversal” provisions, it can be argued that provided two configurations of the ECB’s monetary policy instrument set are equally conducive and not prejudicial to price stability, the ECB will be justified in choosing the configuration that supports the ECB’s compliance with Articles 7 and 11 TFEU. In other words, it should choose the configuration that does not

counter the Union’s nature and biodiversity policies (and is not inconsistent with the EU’s environmental law), and where possible integrates and positively considers nature and biodiversity within the design of that instrument set. This means that the ECB should: (1) consider how it can integrate nature and biodiversity considerations into its policies and activities; (2) refrain from making decisions that counter the Union’s nature and biodiversity policy; and (3) positively consider nature and biodiversity in the design of its own policies and activities.¹⁴⁰

However, acting upon these obligations may prove challenging in practice, at least in the near future. Unlike the European Climate Law and the EU Sustainable

¹³⁴ Calliess, C. and Tuncel, E. (2023); Solana, J. (2019); Ioannidis, M. et al. (2021); Zilioli, C. and Ioannidis, M. (2022); Ramos Muñoz, D. et al. (2023a); Fischer, Y. (2019), “Global Warming: Does the ECB mandate legally authorise a ‘green monetary policy’?”, in Beekhoven van den Boezem, F., Jansen, C. and Schuijling, B. (eds.), *Sustainability and Financial Markets*, Wolters Kluwer, Deventer. Case C-161/04, *Austria v Parliament and Council*, Opinion of Advocate General Geelhoed, EU:C:2006:66, paragraphs 57 to 61.

¹³⁵ Zilioli, C. and Ioannidis, M. (2022); p. 378; Ioannidis, M. et al. (2021); Calliess, C. and Tuncel, E. (2023).

¹³⁶ Calliess, C. and Tuncel, E. (2023).

¹³⁷ Solana, J. (2019), p. 562.

¹³⁸ Case C-62/14, *Gauweiler*, EU:C:2015:400, paragraph 69; Case C-493/17, *Weiss*, EU:C:2018:1000, paragraph 30.

¹³⁹ Solana, J. (2019), p. 563; Zilioli, C. and Ioannidis, M. (2022), p. 380.

¹⁴⁰ See also Smits, R. (2022).

Finance Strategy – which look at measurable aspects, such as GHGs and GHG intensity, targets in the field of biodiversity or the preservation of nature, and its impact on economic actors are diverse, and not yet as readily quantifiable. Thus, further investigation will be warranted. Such efforts can be guided by the recommendations of the NGFS Study Group on nature-related risks, along with the further output of the NGFS Task Force on Biodiversity Loss and Nature-related Risks. Guidance can also be taken from the work of ECB's Banking Supervision on addressing climate and environmental risks.¹⁴¹

Most importantly, as further data becomes available, it may become easier for the ECB to identify the links between nature preservation and degradation, and its policies and activities. Mirroring the ECB's Climate Action Plan, the ECB may become better placed to identify financial institutions and corporates which either cause or are heavily exposed to nature-related risks, and thus reduce exposures to those entities under its monetary policy operations. The enhanced availability of data can be expected through the sustainability reporting standards under the CSRD, the SFDR and the Taxonomy Regulation, as outlined in Box 3, along with developments at international level, such as the Recommendations of the Task Force on Nature-Related Financial Disclosures.¹⁴²

The NGFS conceptual framework¹⁴³ offers important guidance, insofar as it offers a framework to help central banks and supervisors identify and assess nature-related financial risks. It recommends a principle-based risk assessment framework consisting of three phases. The first phase is to identify sources of physical and transition risk that are potentially material from a microprudential, macroprudential or macroeconomic risk perspective. The second phase is to assess economic risks. In respect of the second phase, it will be important to develop modelling infrastructures to properly capture natural capital in economic modelling. Relevant research is already advancing as regards integrated climate and nature scenarios for undertaking forward-looking assessments.¹⁴⁴ The third phase is to assess risk to, from and within the financial system.

Moreover, it may already be possible to sketch out some general suggestions for central bank action to take into account nature-related risks. First, the Banque de France has engaged with a data provider, whose Corporate Biodiversity Footprint (CBF) methodology is being applied to the equity and corporate bond components of the Banque de France's own funds and pension liabilities portfolios.¹⁴⁵ Likewise, staff at De Nederlandsche Bank have conducted an exploratory case study of nature-related financial risks in their own account

¹⁴¹ ECB (2020); ECB (2022a).

¹⁴² Task Force on Nature-related Disclosures (2023), [Recommendations of the Taskforce on Nature-related Financial Disclosures](#), September.

¹⁴³ Network of Central Banks and Supervisors for Greening the Financial System (2023a).

¹⁴⁴ Ceglar, A. et al. (2024), "[Climate-nature scenario development for financial risk assessment](#)", *NatureFinance*, February; Ranger, N. et al. (2023), "[The Green Scorpion: the Macro-Criticality of Nature for Finance – Foundations for scenario-based analysis of complex and cascading physical nature-related risks](#)", *Oxford Environmental Change Institute*, United Kingdom, December; Prodani, J. et al. (2023), "[The economic and financial stability repercussions of nature degradation for the Netherlands: Exploring scenarios with transition shocks](#)", *DNB Occasional Studies*, Vol. 21.2, Amsterdam, December.

¹⁴⁵ Banque de France (2022), [Responsible Investment Report 2022](#), Paris, Box 7.

investments.¹⁴⁶ While these portfolios do not pertain to the implementation of monetary policy, such action is indicative of the types of methodological framework that can be developed and applied to identify the relevance of nature to central bank activities, and the potential actions that can be taken to address both nature-related financial risk, and the central bank's impact on nature. For instance, to improve its biodiversity impact, in 2022 the Banque de France invested in a fund dedicated to financing solutions to preserve marine biodiversity and is planning to explore opportunities for preserving natural capital and terrestrial ecosystems. Second, in respect of financial stability, ECB staff has already developed a preliminary sensitivity analysis framework for the expected losses of banks' credit portfolios due to biodiversity losses, finding that expected losses under a scenario of sustainability are substantially smaller compared with other less climate and nature-supportive scenarios.¹⁴⁷ Third, other suggestions include addressing nature-related considerations in existing or forthcoming measures to incorporate climate considerations into monetary policy,¹⁴⁸ such as including a "nature factor" in the metrics for CSPP tilting, or changes to the collateral framework to limit the share of assets issued by entities with a high carbon (or nature) footprint that can be pledged as collateral by individual counterparties when borrowing from the Eurosystem.¹⁴⁹ Other ideas might be to consider "nature-related" targeted longer term refinancing operations (TLTROs),¹⁵⁰ similar to the concept of "green" TLTROs proposed in the context of the climate.¹⁵¹ For example, outside the euro area, the Magyar Nemzeti Bank (MNB) has begun incorporating green aspects into its monetary policy toolkit, such as through its Green Mortgage Bond Purchase Programme.¹⁵²

¹⁴⁶ Tiems, T. et al. (2024), [Nature-related financial risks in our own account investments: An exploratory case study and deep dive in electric utilities](#), *DNB Analyse*, Amsterdam, March.

¹⁴⁷ See Boldrini, S. et al. (2023).

¹⁴⁸ Knijp, G. et al. (2024), [Finding a way with nature: How central banks and supervisors can start acting on nature-related risks](#), Sustainable Finance Lab Policy Paper, Utrecht, January.

¹⁴⁹ ECB (2022b).

¹⁵⁰ Knijp, G. et al. (2024).

¹⁵¹ The ECB has noted two key points in respect of the potential for green TLTROs. First, investigation of the data, which is necessary for the implementation of refinancing operations with a green target, is still under way. Second, in the current environment of high inflationary pressures, conducting TLTRO programmes would conflict with the ECB's primary objective to maintain price stability. See Lagarde, C. (2023), [Letter to MEPs Hahn, Urtesan and Andresen](#), QZ-039, Frankfurt am Main, March.

¹⁵² Magyar Nemzeti Bank (2021), [Sustainability and Central Bank Policy - Green Aspects of the Magyar Nemzeti Bank's Monetary Policy Toolkit](#), Budapest, July. This coincided with an amendment to the Law on the Magyar Nemzeti Bank (MNB) in 2021, which explicitly provided that, without prejudice to its primary objective of achieving and maintaining price stability, the MNB is to support, as a secondary objective, the government's policy related to environmental sustainability. The ECB welcomed that amendment to the Law on the MNB and understood it to be a clarification of the MNB's existing secondary objective, and fully compatible with the Treaties, noting not only the ESCB's secondary objective, but also Article 11 TFEU, and Article 37 of the Charter of Fundamental Rights of the European Union. See Opinion CON/2021/12. All ECB opinions are published on EUR-Lex.

5 Implications for the ECB's banking supervision

Work on environmental risks is already advancing in the context of the ECB's banking supervision. The ECB, in its capacity as banking supervisor, already treats nature degradation and biodiversity loss as a component of physical risk, one of the two main drivers of climate related and environmental risk.¹⁵³

In 2020 the ECB published its guide on supervisory expectations for the risk management of climate-related and environmental (C&E) risks.¹⁵⁴ In that guide, the ECB's banking supervision explicitly recognised that environmental factors related to the loss of ecosystem services, such as water stress, biodiversity loss and resource scarcity have also been shown to drive financial risk. The ECB therefore signalled its expectation that banks should evaluate all environmental risk-related information beyond purely climate risks to ensure that their risk management is all encompassing. The ECB's banking supervision has also noted that banks' management bodies should have appropriate understanding of climate-related and environmental risk, and this will be taken into account in the context of "fit and proper" assessments, especially as regards the collective suitability of the management body.¹⁵⁵ The ECB explained that the management body is best placed to ensure that climate-related and environmental risks are taken into account when developing the bank's overall business strategy, business objectives and risk-management framework and to exercise effective oversight of climate-related and environmental risks.¹⁵⁶

From a legal perspective, the need for a sound, effective and comprehensive management and disclosure of climate-related environmental risks is required by the current prudential framework. Section 2.4 of the guide makes reference to a number of relevant provisions under the Capital Requirements Directive¹⁵⁷ (CRD) and the Capital Requirements Regulation¹⁵⁸ (CRR). In particular, Article 73 CRD requires institutions to have in place sound, effective and comprehensive strategies and processes to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that they consider adequate to cover the nature and level of the risks to which they are or might be exposed. Moreover, Article 74 CRD

¹⁵³ Brinkman, D. (2023), "Climate-related risks and banking supervision: From climate change risk mitigation to double materiality", *Maastricht Journal of European and Comparative Law*, Vol. 30 No 4, pp. 396-413.

¹⁵⁴ ECB (2020).

¹⁵⁵ ECB (2021d), [Guide to fit and proper assessments](#), Frankfurt am Main, December.

¹⁵⁶ *Ibid.*, p. 41.

¹⁵⁷ Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338).

¹⁵⁸ Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).

requires institutions to have robust governance arrangements in place, with a view to ensuring sound and effective risk management.

As a follow up to the guide, the topic was also assessed as part of the ECB's 2022 thematic review on climate-related and environmental risks,¹⁵⁹ and through a compilation of good practices arising from the ECB's observations from the thematic review.¹⁶⁰ In early 2021 institutions were requested to perform a self-assessment of their current practices against the expectations set out in the guide and to inform the ECB of their implementation plans to advance the management of climate-related and environmental risks. In 2022 the ECB launched the thematic review, which involved conducting deep dives into banks' climate-related and environmental risk strategies, as well as their governance and risk management frameworks and processes. The ECB identified a set of good practices originating from a range of institutions across various business models and sizes to meet the supervisory expectations set out in the guide, including environmental risks. The ECB observed that many banks have made an initial assessment¹⁶¹ of their environmental risk exposures but signalled that all banks must ultimately comply with all supervisory expectations on C&E risks by the end of 2024 at the latest, in addition to complying with a number of interim deadlines.¹⁶² A number of banks have already been assessed as having failed to perform an adequate materiality assessment, and have received binding supervisory decisions, with the potential to have periodic penalty payments imposed upon them if they fail to meet the requirements to which they are subject.¹⁶³

Therefore, nature degradation and biodiversity loss are already integrated in ECB supervisory policy as a risk component that banks are expected to take into account. Moreover, forthcoming amendments to the CRR and CRD are likely to further strengthen consideration of climate and environmental risks in prudential risks. In particular, these amendments will make it easier for the supervisor to impose capital requirements for environmental, social and governance (ESG) risks, along with imposing a requirement on banks to have a transition plan in place for taking up, managing, monitoring and mitigating the risk resulting from ESG factors in the current, short, medium and long term.¹⁶⁴

¹⁵⁹ ECB (2022c), [Walking the talk: Banks gearing up to manage risks from climate change and environmental degradation – results of the 2022 thematic review on climate-related and environmental risks](#), Frankfurt am Main, November.

¹⁶⁰ ECB (2022a).

¹⁶¹ The approach involves banks mapping out physical and transition risk drivers and typically starts by excluding some activities to avoid financing those that have an excessive environmental impact. Banks also integrate these risks into their due diligence processes to collect information and gain a better understanding of how their clients might be affected. In addition to these qualitative approaches, several institutions are quantifying the risks and impacts through the use of biodiversity footprinting exercises and the development of approaches for biodiversity scores.

¹⁶² ECB (2022c).

¹⁶³ Elderson, F. (2024), "[Making banks resilient to climate and environmental risks – good practices to overcome the remaining stumbling blocks](#)", Speech at the 331st European Banking Federation Executive Committee meeting, Frankfurt am Main, March.

¹⁶⁴ Brinkman, D. (2023).

6 Conclusion

Recent literature has outlined that the degradation of nature can have significant implications for central banks in delivering on their mandates. While the primary and most effective actors to address the nature crisis are governments and legislators, central banks will also need to take into account the nature crisis, along with the policies developed and adopted by governments and legislators to address it. The macroeconomic implications of nature-related risks could have a direct impact on price stability and on monetary policy, while failure to account for, mitigate and adapt to such implications is a source of risk relevant for financial stability and the work of prudential supervisors.

This paper has sought to offer a first legal assessment of the implications of the nature crisis for the ECB. The paper began by recalling recent developments in international law and policy on nature, and the clear recognition of the need for further empirical assessment of the impact of the decline in nature on price and financial stability by central banks and supervisors.

The paper first outlined that measures to take into account nature-related risks could fall within the scope of the ECB's primary objective of maintaining price stability. Continued macroeconomic research and assessment will be crucial to ensuring that the ECB properly considers nature-related risk in its monetary policy. Moreover, an integrated approach to climate and nature-related risks will be needed to fully capture the cascading effects of nature degradation and climate change on the real economy and financial stability.

Second, at the current juncture, it is more difficult to establish that ECB action to directly address nature-related risks is necessary to pursue the ECB's secondary objective. It is less clear that the prevention of nature degradation constitutes a general economic policy in the Union per se. By contrast to the Union's existing climate-related legislation and policies, the Union's existing ecosystem of policies and legislation relating to nature preservation and protection of biodiversity is not – at present – framed as impacting the Union's economy.

However, this will not release the ECB from its other Treaty-based obligations to consider environmental protection requirements. For instance, insofar as the protection of nature directly contributes to climate crisis mitigation and adaptation, it can be considered as an aspect of that general economic policy in the Union, which the ECB must support under its secondary objective. Moreover, the ECB should carefully monitor further EU law developments in the wake of the Kunming-Montreal GBF, agreed in December 2022, as such developments may potentially evidence the establishment of a general economic policy.

In particular, Articles 7 and 11 TFEU oblige the ECB to ensure consistency with environmental protection requirements – including those relating to nature and biodiversity – and to integrate those requirements into its policies and activities. Looking at these “transversal” provisions, the paper argued that

provided two configurations of the ECB's monetary policy instrument set are equally conducive and not prejudicial to price stability, the ECB will be justified in choosing the configuration that supports the ECB's compliance with Articles 7 and 11 TFEU. This means that the ECB should (1) consider how it can integrate nature and biodiversity considerations into its policies and activities; (2) refrain from making decisions that counter the Union's nature and biodiversity policy; and (3) positively consider nature and biodiversity in the design of its own policies and activities. The paper highlights that as further data becomes available through the ecosystem of EU policies and legislation on nature, it may become easier for the ECB to identify how best to ensure its compliance with Articles 7 and 11 TFEU.

Finally, the paper offered an overview of how nature degradation and biodiversity loss are already integrated in ECB supervisory policy. The ECB, in its capacity as banking supervisor, already treats nature degradation and biodiversity loss as a component of physical risk, one of the two main drivers of climate-related and environmental risk.

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