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Environmental law of the European Union and its mechanisms for sustainability policies from a European perspective**

ABSTRACT: EU environmental law has a long tradition. During the last decade, however, EU environmental law developed into a cornerstone of EU policy. The European Green Deal aims to promote the combined policy objectives of sustainable development and protection of the environment for current and future generations. Within this policy framework, and based on a comprehensive legal framework, the EU has established mechanisms to address a wide range of environmental issues, including air and water quality, waste management, biodiversity conservation, and climate change mitigation. From a legal perspective, EU environmental law is characterized by its integration into all areas of EU policy and its binding nature on the Member States. The Treaty on the Functioning of the European Union (TFEU) already enshrines environmental protection as one of the EU's objectives and mandates the integration of environmental considerations into all policy areas, ensuring a coherent and holistic approach to sustainability. Key mechanisms for sustainable policies within EU environmental law include directives, regulations, and decisions, that set forth common standards and objectives for Member States to achieve. These legal instruments provide a framework for harmonizing environmental policies across the EU while allowing for flexibility to accommodate national circumstances and priorities. In summary, the environmental law of

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the European Union embodies a comprehensive and integrated approach to sustainability, combining customized legal instruments, institutional mechanisms, and policy frameworks to promote environmental protection, economic prosperity, and social well-being across the EU.

KEYWORDS: European Union, environment, European Green Deal, climate change, biodiversity, sustainable development, subsidiarity principle, precautionary principle, polluter pays principle, horizontal actions, environmental action programmes, environmental impact assessment, United Nations Environment Programme, UN Sustainable Development Goals.

1. Development of the European Union's climate and environmental law

1.1. International Foundations

The objectives of climate and environmental protection at the European level are not fundamentally new. However, when the European Economic Community (EEC) was founded in 1957 as an intergovernmental agreement between the six founding states with the aim of strengthening economic prosperity after two world wars, it entailed neither an environmental policy nor an environmental administration or an environmental law.¹ The development towards an environmental law of the EU has developed rapidly since the 1970s.

Today, the protection of the environment and the fight against climate change are one of the core objectives of the EU Commission as well as central and important areas of European environmental policy within the framework of the European Green Deal (EGD) with various political and legal aspects.² The EGD is a response to the challenges of global warming, climate change, and the imminent loss of one million of the world's eight million species.³ With its ambitious targets, the EU could influence global

¹ Jordan, Gravey and Adelle, 2021, p. 1.

² For political and legal aspects of the Green Deal see Bloomfield and Steward, 2020, pp. 770-779; Dobbs, Gravey and Petetin, 2012, pp. 316-326; Dupont and Torney, 2021, pp. 312-315.

³ EU Commission, Communication from the Commission: The European Green Deal, Brussels 11.12.2019, COM(2019) 640 final, p. 1.

negotiations on climate change.⁴ The Green Deal, however, is not the first important step towards the EU's climate and environmental legislation.⁵ The first United Nations Conference on the Human Environment, the so-called Environmental Conference, in Stockholm in 1972 was the first world conference to make the environment a major issue and it was the beginning of international global environmental policy.⁶ It is interesting to note that the conference was called "Human Environment", so the protection of the environment was seen in the context of nature for mankind and the protection of nature was not an objective in its own right. This Conference, however, marked the beginning of international global environmental policy: It highlighted the interconnectedness of environmental issues and emphasized the need for collective action to address challenges such as pollution, biodiversity loss, and resource depletion.⁷ The Environmental Conference resulted in the Stockholm Declaration, which laid the groundwork for international environmental law, set forth principles for sustainable development, and led to the establishment of the United Nations Environment Programme (UNEP),⁸ which serves as the leading global environmental authority. For Europe, it was also the global policy foundation for developing European environmental policy.⁹ The foundations of European environmental policy were laid at a meeting of the European Council in Paris in the same year in 1972, at which the "heads of state or of government" declared that a European Community environmental policy was necessary to complement economic policy and called for an action program.¹⁰

⁴ For the role of the EU already before the Green Deal see Bäckstrand and Elgström, 2013, pp. 1369-1386.

⁵ For the development of the EU environmental policy in the past five decades see Knill and Liefferink, 2021, pp. 13-32.

⁶ See for the 1972 United Nations Conference on the Human Environment the documents on United Nations Conference on the Human Environment, [Online]. Available at: <https://www.un.org/en/conferences/environment/stockholm1972>.

⁷ For further details on the Stockholm Conference and the outcomes see Kennet, 1972, pp. 33-45.

⁸ UN Environment Programme (UNEP), <https://www.unep.org/>.

⁹ For the background and the documents see United Nations Conference on the Human Environment, <https://www.un.org/en/conferences/environment/stockholm1972>.

¹⁰ CVCE, 1972.

1.2. European Foundations

On July 1, 1987, the Single European Act (SEA)¹¹ entered into force, affecting a series of amendments to the EEC Treaty providing a constitutional base to the Community's environmental policy by introducing a new title "Environment" that defines its objectives.¹² The SEA was the first legal basis for a common environmental policy at European level. The aims were in particular to preserve the quality of the environment, protect human health, and rationalize the use of natural resources. Environmental protection became increasingly important at European level through the subsequent treaties.¹³

The Maastricht Treaty¹⁴ of July 29, 1992, made environmental policy an official policy area of the EU.¹⁵ The Treaty of Amsterdam¹⁶ of October 2, 1997, established the obligation to integrate environmental protection into EU measures in all policy areas in order to promote sustainable development.¹⁷ In summary, the EU began further developing an environmental policy in the 1990s that already comprised a climate policy.¹⁸ The EU built up a broad portfolio of mitigation policy measures and governance tools on this basis, such as legally binding targets to reduce greenhouse gas emissions as well as policy measures addressing emissions trading, renewable energy and energy efficiency.¹⁹ In this regard, the EU Commission has pointed out that the 'EU has steadily decreased its

¹¹ For the background see for example Meltzer, 1990, pp. 579-613; Vandermersch, 2003, pp. 407-429.

¹² Single European Act, OJ L 169/1, 29.6.1987.

¹³ For an overview of the development of the European environmental policy see Boons, 1993, pp. 84-109; Jugde, 1993, pp. 1-12; Hildebrand, 1993, pp. 13-44; van der Straaten, 1993, pp. 65-83; Weale and Williams, 1993, pp. 45-64.

¹⁴ Treaty on European Union, OJ 191/1, 29.07.1992 (Maastricht Treaty).

¹⁵ See also Jordan and Jeppsen, 2000, pp. 64-74; Verhoeve, Bennett and Wilkinson, 1992, pp. 1-47.

¹⁶ Treaty of Amsterdam amending the Treaty on European Union, the Treaties establishing the European Communities and certain related acts, OJ C 340/1, 10.11.1997.

¹⁷ For the European Environmental Policy after the Amsterdam Treaty see Bär and Kraemer, 1998, pp. 315-330.

¹⁸ Dupont et al., 2023, p. 1.

¹⁹ Dupont et al., 2023, p.1. For the EU policy on greenhouse gas emissions see Christiansen and Wettstad, 2003, pp. 3-18; Gulbrandsen and Christensen, 2014, pp. 503-528; Howes, 2010, pp. 117-152; Oberthür and Pallemmaerts, 2010, pp. 27-64.

greenhouse gas emissions since 1990, reaching a total –32.5 % in 2022.²⁰ The fight against climate change is also not new, as it has not only been an important EU policy area since the Green Deal.²¹ In fact, combating climate change and promoting sustainable development in the context of relations with third countries was already a subject of the Treaty of Lisbon of December 13, 2007,²² which provided the EU with a new legal framework and instruments to tackle future challenges, including environmental and climate challenges, by amending two main treaties of the EU: the Treaty on European Union (TEU)²³ and the Treaty establishing the European Community (EC), with the former being renamed later as the Treaty on the Functioning of the European Union (TFEU).²⁴ Specific targets for protecting the environment and combating climate change were already set out there.²⁵

1.3. Importance of the Legal Personality of the EU

It is significant in this context that the Treaty of Lisbon gave the EU legal personality for the first time: Art. 47 of the Treaty of Lisbon “explicitly recognizes” the “legal personality of the European Union, making it an independent entity in its own right.” This legal personality of the EU is of immense importance because it enables the EU to conclude international agreements as a union on the basis of its “own” legal personality.²⁶ As a consequence, this in turn led to the EU's function at global level in the area

²⁰ EU Commission, Progress made in cutting emissions, Available at: https://climate.ec.europa.eu/eu-action/climate-strategies-targets/progress-made-cutting-emissions_en (Accessed: 9 August 2024).

²¹ For the background of the EU policy against climate change see EU Parliament, EU measures against climate change. Available at: <https://www.europarl.europa.eu/topics/en/article/20180703STO07129/eu-measures-against-climate-change> (Accessed: 9 August 2024). See also Cifuentes-Faura, 2022, pp. 1333-1340; da Graça Carvalho, 2012, pp. 19-22.

²² Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, OJ C 306/1, 17.12.2007.

²³ Consolidated Version of the Treaty on European Union, OJ C 326/13, 16.10.2012.

²⁴ Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union - Consolidated version of the Treaty on the Functioning of the European Union - Protocols - Annexes - Declarations annexed to the Final Act of the Intergovernmental Conference which adopted the Treaty of Lisbon, OJ C 326/ 26.10.2012.

²⁵ Vedder, 2010, pp. 285-299. For the background also see Benson and Jordan, 2010, pp. 468-474; de Botselier, 2017, pp. 4-28; de Sadeleer, 2023, pp. 21-33.

²⁶ See de Zwan, 2009, pp. 75-113; Rosas, 2011, pp. 1304-1343.

of global environmental protection also gaining in importance. In addition, this further strengthened the EU's pioneering role in global environmental protection with effects not only on the individual policy areas of the Green Deal, but also on the fight against climate change in particular. It is precisely here that the Union has a pioneering and leading role to play with Regulation 2021/1119 on establishing the framework for achieving climate neutrality of 30 June 2021 – the so-called “European Climate Law”.²⁷ As the EU Commission points out, the “European Climate Law writes into law the goal set out in the European Green Deal for Europe’s economy and society to become climate-neutral by 2050”.²⁸ Against this backdrop, the European Commission introduced the European Green Deal (EGD) in 2019 as a central component of its strategy for economic growth.²⁹ In its Communication on the EGD, the EU Commission points out, that in response to these challenges, the EGD is a ‘new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.’³⁰ Furthermore, the EGD ‘aims to protect, conserve and enhance the EU’s natural capital, and protect health and well-being of citizens from environment-related risks and impacts’, whereas ‘this transition must be just and inclusive’.³¹ In addition to combating climate change, the Union is confronted with other complex environmental problems. Examples include the loss of biodiversity, environmental pollution, and the depletion of natural resources, such as water and raw

²⁷ 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 243/1, 09.07.2021.

²⁸ European Commission - European Climate Law. Available at: https://climate.ec.europa.eu/eu-action/european-climate-law_en (Accessed: 15 September 2024). For the European Climate Law see also Schlacke, Köster and Thierjung, 2021, pp. 620-626; Stangl and Mauger, 2021, pp. 44-205. For the EU’s obligation for emission reduction for EU Member States see Peters and Athanasiadou, 2020, pp. 201-211.

²⁹ EU Commission, The European Green Deal: Striving to be the first climate-neutral continent, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en.

³⁰ EU Commission, Communication from the Commission, The European Green Deal, Brussels, 11.12.2019, COM(2019) 640 final, p. 1.

³¹ EU Commission, Communication from the Commission, The European Green Deal, Brussels, 11.12.2019, COM(2019) 640 final, p. 1.

materials. As a core part of the EGD, the EU developed a Biodiversity Strategy for 2030 which contains specific commitments and actions to protect nature and reverse the degradation of ecosystems.³² The EU Commission points out, that the Biodiversity Strategy is the ‘EU’s contribution for the upcoming international negotiations on the global post-2020 biodiversity framework’ and will ‘also support a green recovery following the Covid-19 pandemic’.³³

Before the EU mechanisms for sustainable policies and the various instruments for its implementation will be analyzed, the basic principles of environmental law shall be presented in a short overview below.

2. Principles of European Environmental Policy

2.1. Legal Framework of the European Environmental Policy in the Primary Law

2.1.1. EU Charter of Fundamental Rights (CFR)

The Union's environmental policy is enshrined in primary and secondary law of the EU. Article 37 of the EU Charter of Fundamental Rights (CFR)³⁴ states that 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 principles of sustainable development.’ This article lays down the duties of public authorities in relation to environmental integration in policymaking and implementation but does not establish any individually justiciable right to environmental protection, or to an environment of any particular quality.³⁵

³² European Commission - Biodiversity Strategy for 2030. Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en (Accessed: 8 September 2024).

³³ European Commission - Biodiversity Strategy for 2030. Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en (Accessed: 8 September 2024).

³⁴ Charter of Fundamental Rights of the European Union (CFR), OJ C 326/391, 26.10.2012.

³⁵ Morgera and Marin-Duran, 2021. For the importance and function of Art. 37 CFR for the EU environmental law see also Bogojević, 2017, pp. 8-10; Hectors, 2008, p. 165.

2.1.2 Treaty of the Functioning of the European Union (TFEU)

A) Article 11 TFEU

The environmental law in the EU is based on a shared competence between the EU and the Member States according to Article 4(2)(e) of the TFEU³⁶ Pursuant to Article 11 TFEU 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’.³⁷ Thus, Article 11 TFEU has an important function in relation to strategic assessments of individual measures and policies also in the context of mechanisms for sustainable policies. This applies in particular to the new green policy of the EU. The EGD sets a ‘new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases 2025 and where economic growth is decoupled from resource use.’³⁸ It follows from Article 11 TFEU that in terms of the EGD its strategic key components are substantiated and made binding within the 8th Environmental Action Programme (EAP) of the EU that will guide EU environmental policy until the end of the decade.³⁹ Building on the EGD, the action programme aims according to the EU Commission ‘to speed up the transition to a climate-neutral, resource-efficient economy, recognising that human wellbeing and prosperity depend on healthy ecosystems’ and ‘sets out priority objectives for 2030 and the conditions needed to achieve these.’⁴⁰

B) Article 191 to 193 TFEU

The environmental policy objectives of the EU can be found in Title XX ‘Environment’, in particular in the Articles 191 to 193 TFEU. Based on

³⁶ Consolidated version of the Treaty on the Functioning of the European Union, OJ C 326/47, 26.10.2012.

³⁷ For the environmental integration obligation of Article 11 TFEU see for example Calliess, 2023; Klamert, 2019; Nowag, 2018; Nowag, 2016; Sjäfell, 2014; Voigt, 2014.

³⁸ EU Commission, The European Green Deal, COM(2019), 640 final, p. 2.

³⁹ European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

⁴⁰ European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

these provisions, the EU is competent to act in various areas of environmental policy, such as air and water pollution, waste management, and climate change. The EU is the primary legislator in most areas of environmental policy, particularly concerning transboundary issues, such as climate change, biodiversity, air and water pollution, industrial pollution, waste, and chemicals.⁴¹

Article 191 TFEU comprises the main provisions of EU environmental law and provides the objectives of EU environmental policy: the preservation, protection, and improvement of the quality of the environment, the protection of human health, the rational utilization of natural resources, and the promotion of international measures to deal with environmental problems.⁴² According to Article 191(1) TFEU the ‘Union policy on the environment shall contribute to pursuit of the following objectives: preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilization of natural resources’ and ‘promoting measures at international level to deal with regional and worldwide environmental problems, and in particular combating climate change.’

Article 191(2) TFEU sets out four main environmental principles for the environmental policy within the scope of EU law. According to this provision, the policy of the EU on the environment ‘shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union.’ Thus, the three fundamental principles of EU environmental law are: the precautionary principle, the principles for preventive actions and the polluter pays principle. According to this provision, the EU environmental policy ‘shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay’.

These provisions authorize the EU to take action in principle in all areas of environmental policy, including air and water pollution, waste disposal, and climate protection. The principles have influenced a wide range of EU secondary law. However, they are directed at policies and measures at the EU level. Thus, Article 192(2) TFEU cannot be relied on neither by individuals to exclude the application of national legislation in the context of environmental policy for which there is no EU legislation

⁴¹ See van Zeven, 2022.

⁴² For Article 191 TFEU see for example Garben, 2019.

adopted nor can competent environmental authorities rely on this provision if there is no national legal provision as a basis for environmental policy or measures.

2.1.3. Principle of Subsidiarity

The scope for action in the EU is, however, limited by the principle of subsidiarity and the requirement for unanimity in the Council in the fields of fiscal matters, town and country planning, land use, quantitative water resource management, choice of energy sources, and structure of energy supply.⁴³ As environmental policy does not fall in the exclusive competence of the EU, the principle of subsidiarity applies – not to allocate powers but rather to regulate the use of powers.⁴⁴ The principle of subsidiarity laid down in Article 5(3) of the Treaty on European Union (TEU)⁴⁵ governs the exercise of the EU's competences in areas in which the EU does not have exclusive competence, whereas the principle of subsidiarity seeks to safeguard the ability of the Member States to take decisions and action and authorises intervention by the Union when the objectives of an action cannot be sufficiently achieved by the Member States, but can better be achieved at Union level.⁴⁶

The principle of subsidiarity lays down two conditions for new EU legislation: subsidiarity and proportionality. The principle requires a justification for an EU measure and also requires that the intensity of the measure must be appropriate in relation to the objective.⁴⁷ While the principle of subsidiarity appears to be a good approach to the division of competences between the EU and its Member States, there is a risk of inconsistencies in environmental policy and its application.⁴⁸ This could also be relevant to the EU mechanisms for sustainable policies. Before

⁴³ For the requirement for unanimity in the Council in the context of environmental policy see Jordan, 2000; Andersen and Nordvig Rasmussen, 1998.

⁴⁴ See de Sadeleer, 2012.

⁴⁵ Consolidated version of the Treaty on European Union, OJ C 326/13, 26.10.2012.

⁴⁶ European Parliament: The principle of Subsidiarity. Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/7/the-principle-of-subsidiarity> (Accessed: 14 September 2024).

⁴⁷ Shaw, Nadin and Seaton, 2000. For the history of application of the principle of subsidiarity see Jeppesen, 2000; Jordan and Jeppesen, 2000.

⁴⁸ Flynn, 2000.

analysing these EU mechanisms in more detail, the four main environmental principles of Article 191(2) TFEU, as described above, are explained below.

2.2. Principles of the EU Environmental Law

2.2.1. Importance of these Principles

EU environmental policy is based on the four central principles set out in Art. 191(2) TFEU. These are the principles of precaution, prevention, elimination of environmental damage at source and the polluter pays principle. Compared to the principle of prevention, the source principle and the polluter pays principle, the precautionary principle has shown significant effects and an important influence on the EU environmental law, particularly in the secondary law and the statements rendered by the EU institutions.⁴⁹

2.2.2. Principles of precaution and prevention

The precautionary principle, as one of the central principles of the EU environment and set out in Art. 191 TFEU, follows the approach of risk avoidance. However, this principle is not defined in the TFEU or any other EU Treaty. According to this principle, a policy or measure may not be implemented if it could lead to damage to the environment or human health, and there is not yet a scientific consensus regarding the risks or hazard potential of the policy or measure. The principle is thus an instrument of risk regulation if the "whether" and "how" of the risk is still unknown or not sufficiently scientifically proven.

The precautionary principle was first set out in the EU Commission's Communication on the Precautionary Principle⁵⁰ adopted in 2000, which defined the concept and envisaged how it would be applied.⁵¹ The principle

⁴⁹ For an overview on these principles and their importance see Proelss, 2016.

⁵⁰ EU Commission, Communication from the Commission on the precautionary principle (Communication on the precautionary principle), Brussels, 02.02.2000, COM(2000), 1 final. Available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2000:0001:FIN:en:PDF> (Accessed: 14 September 2024).

⁵¹ EU, EUR-Lex, Glossary, Precautionary Principle- Available at: <https://eur-lex.europa.eu/EN/legal-content/glossary/precautionary-principle.html> (Accessed: 14 September 2024).

has significantly influenced how the EU should deal with different uncertainties and environmental risks by observing the principle of proportionality when implementing precautionary measures.⁵² The importance of the precautionary principle is highlighted by the Communication according to which the principle should apply ‘to the dilemma of balancing the freedom and rights of individuals, industry, and organizations with the need to reduce the risk of adverse effects to the environment, human, animal or plant health’.⁵³ The influence of the precautionary principle, although mentioned in the context of the environmental policy goes far beyond the protection of the environment. The precautionary principle has now become a general guiding principle that enables decision-makers to take precautionary measures, even when there is scientific uncertainty about the impact of new technologies or products on the environment and health.⁵⁴ The precautionary principle has developed not only as an important principle in the regulation of chemical substances,⁵⁵ but also in food law.⁵⁶ However, the principle is also particularly important in the regulation of new technologies – such as genetic engineering⁵⁷ or nanotechnology.⁵⁸

Although the precautionary principle has emerged as a fundamental and general principle of precaution, it is not generally applicable, but only if certain conditions are met. This applies in particular to the existence of a risk. The precautionary principle is an approach to risk management, where, if a given policy or action might cause harm to the public or the environment and if there is still no scientific agreement on the issue, the policy or action in question should not be carried out.⁵⁹ According to the Communication on the precautionary principle this principle “should be considered within a structured approach to the analysis of risk which

⁵² See Proelss, 2016.

⁵³ EU Commission, Communication on the precautionary principle, p. 2.

⁵⁴ See also de Smedt, 2022.

⁵⁵ For chemical substances see for example Alaranta, and Miettinen, 2022; Bor-Rasmussen et al., 2021; Müller-Herold, Morosini and Schucht, 2005.

⁵⁶ For food law see for example Purnhagen, 2015; Recuerda, 2008; Szajkowska, 2012.

⁵⁷ For genetic engineering see Dederer, 2016; Seitz, 2021.

⁵⁸ For nanotechnology see for example Coria, Kristiansson and Gustavsson, 2022; Dimitrijević, 2011; Haum et al., 2004; Heselhaus, 2009; Saldívar-Tanaka and Hansen, 2021.

⁵⁹ EU, EUR-Lex, Glossary, Precautionary Principle- Available at: <https://eur-lex.europa.eu/EN/legal-content/glossary/precautionary-principle.html> (Accessed: 14 September 2024).

comprises three elements: risk assessment, risk management, risk communication.⁶⁰ The precautionary principle is particularly relevant to the management of risk.”⁶¹ Thus, the precautionary principle can only be invoked if there is a potential risk. Since the precautionary principle is a risk management tool, a policy or action needs to be reviewed when more scientific information becomes available.⁶² As a consequence, the policy or measure can be reconsidered as soon as further scientific information is available.

2.2.3. Polluter pays principle

The polluter pays principle (PPP) as comprised in Article 191(2) TFEU states that those who cause environmental pollution should be responsible for measures to prevent, reduce, and eliminate it and should pay for the costs incurred by society as a result of the pollution.⁶³ Thus, the PPP requires polluters to bear the environmental and social costs of their actions. The EU Commission summarises that the PPP is ‘a simple idea at the core of EU environmental policy’ that ‘those responsible for environmental damage should pay to cover the cost’.⁶⁴ As such, this principle applies to the prevention of pollution, remediation, liability, e.g. criminal, civil, and environmental liability, and the costs imposed on society of pollution.⁶⁵

The PPP is implemented by the Environmental Liability Directive,⁶⁶ which entered into force in 2007 and aims to prevent or remedy

⁶⁰ EU Commission, Communication on the precautionary principle, p. 2. For the three criteria see also Garnett and Parson, 2017.

⁶¹ EU Commission, Communication on the precautionary principle, p. 2.

⁶² EU, EUR-Lex, Glossary, Precautionary Principle- Available at: <https://eur-lex.europa.eu/EN/legal-content/glossary/precautionary-principle.html> (Accessed: 14 September 2024).

⁶³ For the polluter pays principle (PPP) see for example Bleeker, 2010; de Sadeleer, 2009; Nash, 2009.

⁶⁴ European Commission - Ensuring that polluters pay. Available at: https://environment.ec.europa.eu/economy-and-finance/ensuring-polluters-pay_en (Accessed: 14 September 2024).

⁶⁵ European Commission - Ensuring that polluters pay. Available at: https://environment.ec.europa.eu/economy-and-finance/ensuring-polluters-pay_en (Accessed: 14 September 2024).

⁶⁶ Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (Environmental Law Directive), OJ L 143/56, 30.04.2004.

environmental damage to protected species, natural habitats, water, and soil. This Directive established a comprehensive EU-wide liability regime for environmental damage based on the PPP.⁶⁷ As a consequence, operators of certain economic activities, such as the transport of hazardous substances or activities that lead to the discharge of wastewater into water bodies, must take precautionary measures in the event of an immediate threat to the environment. If damage has already occurred, operators are obliged to take appropriate measures to remedy the damage and bear the costs. The Environmental Liability Directive now also covers a wide range of areas, such as the management of mineral waste, the operation of geological storage sites and the safety of offshore oil and gas activities.

2.3. Environmental Protection in Secondary Law

2.3.1. General Relationship

The EU environmental law based on Articles 191 to 193 TFEU is shaped through the numerous directives and regulations that have been adopted based on the EU's shared environmental competence pursuant to Article 4(2)(e) TFEU as described above. In general, environmental protection has a special status as an objective of general interest – both at the EU level and for the Member States. This objective is therefore pursued at both the Member State and EU level. Thus, the national regulations of the Member States might influence the environmental regulations of the EU, while conversely, the EU particularly provides for environmental protection regulations at the EU level, as just mentioned.

As a result, regulatory approaches and regulatory models for environmental protection that have proved successful at the national level serve as a model for regulations at the Union level. Against the background of the ecological, environmental, political and economic diversity between the Member States, EU environmental law is mostly adopted through directives, whereas Articles 36, 114(4)–(5), and 193 TFEU stress the possibility for potentially stricter environmental regulation at the Member

⁶⁷ European Commission - Environmental liability. Available at: https://environment.ec.europa.eu/law-and-governance/compliance-assurance/environmental-liability_en (Accessed: 15 September 2024).

State level, if supported by national circumstances and/or new scientific insights.⁶⁸

In addition, the principle of subsidiarity, as mentioned above, plays an important role. These regulations in the EU secondary law – in particular European liability law and regulations especially regarding the EGD – in turn limit the regulatory options of the Member States by having a "blocking effect". Due to the primacy of Union law, secondary environmental law has an overriding effect on national environmental law, which limits the sovereignty of the Member States in the areas of environmental protection regulated in this way. However, this overriding effect is in turn limited by the possibility for Member States to reinforce protection, as set out in Art. 193 and Art. 114 (4) to (7) TFEU. The regulations at the EU level might thus develop a minimum standard in specific parts of EU environmental policy. Within the framework of the harmonisation of certain environmental standards, the Member States therefore have scope for action and innovation that is in line with the principle of subsidiarity.

2.3.2. EU Environmental Law as a Minimum Standard

A) Harmonisation Through Minimum EU Standards

Against the background of the harmonisation of certain environmental standards at the EU level, EU environmental law has a harmonising effect on the national law of the Member States. The minimum standard for the EU environmental law is established, as already briefly mentioned, in Article 193 TFEU. Accordingly, the safeguard measures at the Union level 'shall not prevent any Member State from maintaining or introducing more stringent safeguard measures. The measures in question must be compatible with the Treaties. They shall be notified to the Commission.' On this basis, a comprehensive body of secondary European environmental law has developed as already briefly described. However, the protective measures taken in accordance with Art. 192 TFEU do not prevent the individual EU Member States from maintaining or adopting more stringent protective measures. The EU Commission has for example issued a Recommendation providing for minimum criteria for environmental inspections in the Member States.⁶⁹

⁶⁸ See van Zeven, 2022.

⁶⁹ Recommendation 2001/331/EC of the European Parliament and of the Council of 4 April 2001 providing for minimum criteria for environmental inspections in the Member States,

B) Internal Market and Economic Goals

The possibilities of Member States on their national level to take progressive actions are also limited by the requirement to prevent obstacles to the internal market which leads to the fact that EU environmental goals are often connected with EU economic goals.⁷⁰ This connection is also a fundamental principle in the EGD, which is highlighted already in the second paragraph of the Communication of the EU Commission to the ECG:

It is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.⁷¹

Thus, the link of EU environmental policy is linked with economic objectives in the EU, as evidenced by the EGD, as the EU strives to be a global leader on issues, such as the circular and green economy while maintaining a competitive social market economy.⁷²

C) Primacy of EU Law and the Role of the EU Courts

A harmonized application of EU environmental law is achieved through various instruments, in particular the binding nature of implementing legislation, i.e. by adopting regulations and implementing directives concerning legal positions and obligations on the one hand, and by the interpretation and application of implementing legislation, which must be interpreted “in the light of EU law”, i.e. in conformity with EU law, on the other hand.

A consistent application of EU environmental law is based on the direct effect of EU legislation in the light of the primacy of EU law, the consistent interpretation of EU environmental law by the European Courts

OJ L 118, 27.04.2001. [Online]. Available at: <https://eur-lex.europa.eu/EN/legal-content/summary/environmental-inspections-minimum-criteria.html> (Accessed: 15 September 2024).

⁷⁰ See van Zeven, 2022.

⁷¹ Communication on the precautionary principle, p. 2.

⁷² van Zeven, 2022.

and the instrument of state liability.⁷³ As a result of the interpretation in conformity with EU law and in particular, due to the high need for concretization of a large number of regulations and directives of secondary law, the EU case law of the Court of Justice and the General Court was and is becoming increasingly important.⁷⁴ The main instruments for referrals to the ECJ are referrals by national courts under Art. 267 TFEU, which are by far the most important, and infringement proceedings under Art. 258 TFEU. This is partly reinforced by national law. For example, under German law, a breach of the obligation to refer may constitute a violation of Art. 101 of the German Constitution (German *Grundgesetz*), and a deprivation of the right of the statutory judge.⁷⁵

3. Mechanisms of Climate and Environmental Law at the EU Level

3.1. Implementation at Member State Levels and Enforcement

The mechanisms of climate and environmental law for pursuing a sustainable policy at the European level are diverse and the implementation at the national level of the Member States is often not sufficient. The EU Commission points out that, whereas the EU has ‘made broad progress on adoption to climate change, in particular through the ongoing implementation of the EU Adaptation Strategy’, the ‘progress has been uneven across areas’.⁷⁶ As the EU Commission explains, the

assessment of progress on adaption at the national level shows that Member States need to take significantly more action to adapt to climate change – for instance, on governance, funding, risk assessments, nature-based solutions, as well as monitoring,

⁷³ For the importance of judicial protection in the context of EU environmental law see Hadjiyianni, 2021; Krämer, 2015; Squintani, 2019.

⁷⁴ A detailed analysis of the case law of the Court of Justice and the General Court is not possible in the context of this paper. For an overview on the case law of the EU Courts in environmental law cases see Eliantonio, 2023; Krommendijk and Sanderink, 2023; Lavrysen, 2023; Pouikli, Tsoukala and Tsakalogianni, 2024; Passer and Pazderová, 2023. For the role of the case law of the European Court of Human Rights (ECHR) see for example Kobylarz, 2023.

⁷⁵ For details of the obligation for example Schröder, 2011; Thomale, 2016.

⁷⁶ European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

reporting and evaluation in order to reduce their social and economic vulnerabilities to the intensifying climate-related risks.⁷⁷

The EU has established various mechanisms for the implementation of climate and environmental protection goals to address the challenges of climate change and environmental degradation. These mechanisms include a wide range of legal instruments, institutions and policy measures to promote sustainability, reduce greenhouse gas emissions and protect natural ecosystems as already described above. As the EU has put in place environmental rules, the Member States are responsible for fully and correctly implementing EU rules, which require environmental compliance with oversight responsibilities and adjudication power to a very wide set of public authorities as the EU Commission mentioned.⁷⁸ The EU Commission ensures that all Member States apply EU environmental law correctly and initiates infringement proceedings if this is not the case. The EU Commission points out that this is a major task with over 200 pieces of environmental legislation to be monitored in 27 Member States.⁷⁹ Against this background, the EU Commission focuses its enforcement policy on the most important violations of EU law that affect the interests of EU citizens and companies, as well as on cases with a strategic or structural dimension.⁸⁰ For a harmonized approach, the EU has developed several mechanisms for climate and environmental law as well as for sustainability.⁸¹ Those mechanisms and instruments shall be illustrated and analysed below.

⁷⁷ European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

⁷⁸ European Commission - Environmental compliance assurance. Available at: https://environment.ec.europa.eu/law-and-governance/compliance-assurance_en (Accessed: 15 September 2024).

⁷⁹ European Commission - Legal Enforcement. Available at: https://environment.ec.europa.eu/law-and-governance/legal-enforcement_en (Accessed: 16 September 2024).

⁸⁰ European Commission - Legal Enforcement. Available at: https://environment.ec.europa.eu/law-and-governance/legal-enforcement_en (Accessed: 16 September 2024).

⁸¹ For an introduction see Damro, Hardie and MacKenzie, 2008.

3.2. Environmental Action Programmes

The environmental policy of the EU has essentially evolved from a group of measures aimed at creating strategies for sustainable development, based on the fact that the economy, social inclusion and environmental protection are interdependent.⁸² One of the instruments of the environmental policy of the EU are multinational Environmental Action Programmes (EAPs), which are based on the principles of prevention and precaution. They are the most important documents defining the environmental policies within the EU.⁸³ The Commission has been adopting multi-annual EAPs since 1973, in which upcoming legislative proposals and objectives of EU environmental policy are set out.⁸⁴ Their implementation, over the previous 50 years, represented a ‘significant advance in raising eco-friendly awareness and suggesting solutions for environmental problems in the EU.’⁸⁵

EAPs are a useful instrument for environmental protection, as they provide a comprehensive framework for setting environmental priorities, defining targets and coordinating action at both the EU and national levels of the Member States. The programmes are aimed at setting goals that will be achieved in the context of the environmental protection objectives of the EU.⁸⁶ Since EAPs set out clear priorities for environmental protection based on scientific evidence, stakeholder consultations and policy assessments, they identify the key challenges and areas where action at the EU level is most needed, and help to focus resources and actions where they can have the greatest impact. They usually cover several years and enable long-term planning for the implementation of strategies and measures. This enables Member States and stakeholders to tackle complex environmental problems, such as climate change mitigation, biodiversity conservation and pollution reduction.

Since EAPs facilitate coordination and cooperation between the Member States, regions and different stakeholders they establish also harmonising strategies to promote synergies, leading to more effective and efficient environmental management. While EAPs also contain mechanisms for monitoring progress and evaluating the effectiveness of strategies and

⁸² See Popeangă, 2013.

⁸³ See Pindaru et al., 2023.

⁸⁴ For the history of EAPS as instruments to support the sustainable development strategy of the EU since 1972 see Halmaghi, 2016; Uluirmak, 2016.

⁸⁵ Pindaru et al., 2023.

⁸⁶ Halmaghi, 2016.

measures, they are an important tool for regular reporting on environmental indicators that enable political decision-makers to assess the impact of measures and, if necessary, make adjustments in order to achieve environmental goals.

In addition, EAPs provide a legal framework for the concept and implementation of environmental policy and ensure that EU Member States comply with their environmental obligations. In order to achieve those objectives, they may contain binding targets, directives and regulations that set minimum standards for environmental protection, all already mentioned above, and provide a basis for enforcement measures. Finally, EAPs often provide for public consultation, so that citizens, NGOs and other stakeholders can contribute to the decision-making process, which promotes transparency and thus public confidence in environmental policies and measures.

The latest EAP is the 8th Environmental Action Programme of the EU which entered into force in May 2022.⁸⁷ This Programme, as already mentioned above, is the EU's common agenda for the environmental policy of the EU until the end of 2030. It includes an “obligation for the Commission to present a monitoring framework, based on a limited number of headline indicators” that should include ‘systematic indicators that address interlinkages between environment-social and environmental-economic policy considerations.’⁸⁸ The 8th EAP defines objectives for environmental policy as measures to prevent, reduce or end adverse effects on nature and natural resources while recognizing that environmental policy objectives must be aligned with reducing greenhouse gas emissions which is the main goal of the EU’s climate policy.⁸⁹ The climate policy of the EU is regulated by the European Climate Law.⁹⁰ The 8th EAP, which is aligned

⁸⁷ For the 8th EAP see Pindaru et al., 2023; Tosun, 2023.

⁸⁸ EU Commission, 8th Environment Action Programme: EU sets out to measure progress on Green Deal environment and climate goals, Press release, 26.07.2022. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4667 (Accessed: 16 September 2024).

⁸⁹ See European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

⁹⁰ 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 243/1, 09.07.2021. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1119> (Accessed: 11 September 2024).

with the EGD, provides for a renewed commitment to the 2050 vision of ensuring the well-being of all people while respecting the limits set by the planet.

The 8th Environmental Action Programme of the EU supports the environmental and climate targets from the Green Deal in terms of six priority goals:⁹¹

- Achieving the targets for reducing greenhouse gas emissions by 2030 and achieving climate neutrality by 2050.
- Improving adaptability, strengthening resilience and reducing vulnerability to climate change.
- Progress towards a regenerative growth model, decoupling economic growth from resource use and environmental degradation and accelerating the transition to a circular economy.
- Pursuing a zero-pollution strategy for air, water and soil, and protecting the health and well-being of Europeans.
- Protecting, preserving and restoring biodiversity and enhancing natural capital, particularly in terms of air, water, soil, forests, freshwater, wetlands and marine ecosystems.
- Reducing the environmental and climate impact of production and consumption, particularly in the areas of energy, industrial development, buildings and infrastructure, mobility and the food system.

The 8th EAP calls for active engagement of all stakeholders at all levels of governance, to ensure that EU climate and environment laws are effectively implemented. It forms the EU's basis for achieving the United Nation's 2030 Agenda and its Sustainable Development Goals.⁹²

In summary, EAPs play an important role in implementing the EU environmental policy. Although, as mentioned above, there are still challenges, such as ensuring effective and harmonized implementation by the Member States, these programmes provide a valuable framework at the EU level. They set the framework for future action for all areas of

⁹¹ For the goals of the 8th Environmental Action Programme see See European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

⁹² European Commission - Environment action programme to 2030. Available at: https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en (Accessed: 11 September 2024).

environmental policy.⁹³ The close links of the 8th EAP with the 2030 Agenda for Sustainable Development and the EGD represent an important step towards greater applicability of environmental policies in the EU.⁹⁴ Since the 8th EAP comprises a list of headline indicators for monitoring progress towards the EU's environment and climate goals to 2030 'the EU gets back on track to living and working within planetary boundaries', as the Commission points out.⁹⁵ As such, 'the indicators capture progress towards environmental wellbeing, including also economic and social aspects.'⁹⁶ Thus, the 8th EAP is an important instrument for implementing the objectives of the EGD.⁹⁷

3.3. Horizontal Strategies

In addition to the EAPs, the so-called horizontal strategies are effective mechanisms for achieving the environmental protection goals of the EU. The horizontal strategies in EU environmental law have an important role to play in ensuring a coordinated and integrated approach to tackling environmental problems in various policy areas. They allow integrating environmental objectives into other policy areas, such as agriculture, energy and various fields of industry, e.g. transportation or waste management. By integrating environmental objectives into various sectors, these horizontal strategies ensure that environmental concerns are taken into account in decision-making processes and policy development.

Horizontal strategies support and promote coherence between different policy areas and coordinate these areas. Horizontal strategies also help to identify synergies between different policy areas and avoid conflicts between environmental objectives and other policy objectives. In this way, they ensure that policies and measures in different sectors complement each other, thereby promoting more efficient results. For example, the EU

⁹³ Halmaghi, 2016.

⁹⁴ Pindaru et al., 2023.

⁹⁵ EU Commission, 8th Environment Action Programme: EU sets out to measure progress on Green Deal environment and climate goals, Press release, 26.07.2022. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4667 (Accessed: 12 September 2024).

⁹⁶ EU Commission, 8th Environment Action Programme: EU sets out to measure progress on Green Deal environment and climate goals, Press release, 26.07.2022. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4667 (Accessed: 12 September 2024).

⁹⁷ For the Environment Actions Plans see Langlet and Mahmoudi, 2016, p. 28.

introduced its first sustainable development strategy back in 2001,⁹⁸ thereby incorporating environmental aspects into the Lisbon Strategy as mentioned above.

As a result of the 2030 Agenda for Sustainable Development,⁹⁹ which was adopted by the United Nations in 2015, the EU Commission published the communication “Towards a sustainable future – European Sustainability Policy” in 2016.¹⁰⁰ In this communication, the EU Commission explained how the Sustainable Development Goals should be integrated into the EU's political priorities. This was followed in 2019 by the reflection paper entitled “Towards a sustainable Europe by 2030”, in which the Commission sets out the Sustainable Development Goals.¹⁰¹

Concerning the protection of biodiversity, the EU already pursued a horizontal strategy over a decade ago. For example, the EU adopted the “Biodiversity Strategy 2020” back in 2011.¹⁰² The biodiversity strategy is also based on international agreements on the protection of biodiversity. The United Nations Convention on Biological Diversity, the ‘Biodiversity Convention’ (CBD),¹⁰³ contains numerous obligations to protect biodiversity, as well as access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation, as reflected in the Nagoya Protocol.

⁹⁸ EU Commission, Communication from the Commission – A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development, Brussels, 15.05.2001, COM(2001) 274 final. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52001DC0264&from=LV> (Accessed: 12 September 2024).

⁹⁹ For the 2030 Agenda for Sustainable Development of the United Nations see United Nations, Transforming our world: the 2030 Agenda for Sustainable Development. Available at: <https://sdgs.un.org/2030agenda> (Accessed: 12 September 2024).

¹⁰⁰ EU Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Strassburg, 22.11.2016, COM(2016), 739 final. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0739> (Accessed: 12 September 2024).

¹⁰¹ EC, 2019.

¹⁰² European Commission - Biodiversity Strategy for 2030. Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en (Accessed: 11 September 2024). For the strategy see also Wulf, 2022.

¹⁰³ United Nations - Convention on Biological Diversity (Biodiversity Convention, CBD). Available at: <https://www.cbd.int/> (Accessed: 11 September 2024).

The CBD is not just the basis for the two agreements – the Cartagena Protocol¹⁰⁴ and the Nagoya Protocol.¹⁰⁵ Rather, the CBD is the most important international agreement in the field of biodiversity protection to which the EU has acceded. As a contribution to the debates on a global framework for biodiversity post-2020 (UN Biodiversity Conference 2022 (COP15)), the Commission presented its EU Biodiversity Strategy for 2030¹⁰⁶ in May 2020 as a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems.

In June 2021, Parliament approved this strategy and made further proposals to strengthen it. The EU also pursued another horizontal strategy in a completely different area: In 2020, for example, the Commission presented the “From Farm to Fork” strategy as part of the EGD, which aims to make food systems fair, healthy and environmentally friendly. Regarding the combat of climate change, the Commission adopted a new EU strategy on adaption to climate change on February 2021 as part of the EGD which sets out how the EU can adapt to the unavoidable impacts of climate change and become climate resilient by 2025.¹⁰⁷ As the Commission points out, this strategy ‘will support the further development and implementation of adaption strategies and plan at all levels of governance with three cross-cutting priorities: integrating adaption into macro-fiscal policy, nature-based solutions for adaption’ and ‘local adaption action’.¹⁰⁸ Thus, horizontal

¹⁰⁴ United Nations - Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Cartagena Protocol on Biosafety). Available at: <https://bch.cbd.int/protocol> (Accessed: 11 September 2024).

¹⁰⁵ United Nations - Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (Nagoya Protocol on Access and Benefit Sharing (ABS)). Available at: <https://www.cbd.int/abs/default.shtml> (Accessed: 11 September 2024).

¹⁰⁶ EU Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (EU Biodiversity Strategy for 2030), 20.05.2020, COM(2020) 380 final. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52020DC0380> (Accessed: 12 September 2024). For the background see also European Commission - Biodiversity Strategy for 2030. Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en (Accessed: 12 September 2024).

¹⁰⁷ European Commission - EU Adaption Strategy. Available at: https://climate.ec.europa.eu/eu-action/adaptation-climate-change/eu-adaptation-strategy_en (Accessed: 17 September 2024).

¹⁰⁸ European Commission - EU Adaption Strategy. Available at: https://climate.ec.europa.eu/eu-action/adaptation-climate-change/eu-adaptation-strategy_en (Accessed: 17 September 2024).

strategies play as cross-cutting or horizontal policies are essential in the environmental policy of the EU, since they align environmental objectives with other EU policies, ensuring coherence and assisting in implementing complex environmental objectives across all related sectors of EU policies.

3.4. International Cooperation on Environmental Issues

International cooperation of the EU can be mentioned as a further mechanism within the framework of climate and environmental legislation at the EU level. It is widely recognised and understood that many environmental challenges, such as climate change, biodiversity loss, and pollution are global in nature and cannot be effectively tackled by individual countries alone. As these problems are global, measures are also needed that go beyond national borders.

International cooperation enables the EU to work with other countries and international organisations to tackle these challenges together. Environmental problems are very often not limited to one state but extend beyond national borders. This means that they not only affect the state in which they originate but also neighbouring states and distant regions. Cooperation with other states helps not only the EU but all states to tackle cross-border environmental problems, such as air and water pollution, marine litter and biodiversity loss. The EU Commission emphasizes in light of high environmental standards in the EU, that ‘even robust EU environmental legislation is not sufficient to address transboundary and global environmental degradation, nor to sufficiently reduce the impact of the EU’s economic activity on natural resources worldwide.’¹⁰⁹

As already mentioned, the EU has had its own legal personality since the Lisbon Treaty and therefore has the right to negotiate, conclude, amend and terminate international agreements on its behalf.¹¹⁰ Thus, the EU plays an active role in multilateral environmental agreements and other environmental negotiations and processes.¹¹¹ Already before the EGD, the EU had also the function of a leader in global environmental governance.¹¹²

¹⁰⁹ European Commission - International Cooperation. Available at: https://environment.ec.europa.eu/international-cooperation_en (Accessed: 17 September 2024).

¹¹⁰ Jančíková and Pásztorová, 2021.

¹¹¹ European Commission - International Cooperation. Available at: https://environment.ec.europa.eu/international-cooperation_en (Accessed: 17 September 2024).

¹¹² See for example, Kelem, 2011.

The EU is already a party to numerous global, regional and sub-regional multilateral environmental agreements on various topics, such as nature conservation and biodiversity, climate change and transboundary air and water pollution based on its own legal personality, taking into consideration that the goals of the EGD cannot be achieved by Europe alone. Climate and environmental protection at the EU level therefore have an international influence. For example, the Union has contributed to the drafting of important international agreements that were adopted at the United Nations level in 2015. These include in particular the United Nations 2030 Agenda for Sustainable Development,¹¹³ the 17 global goals for sustainable development of the 2030 Agenda¹¹⁴ and the associated 169 targets, known as the Sustainable Development Goals (SDGs) and the Paris Climate Agreement.¹¹⁵

In light of the EGD, the Commission points out that sustainable development is a core principle of the TFEU, as already mentioned above, and in particular with regard to Articles 191-193 TFEU, and a priority objective for the EU's internal and external policies.¹¹⁶ In light of this, the EU, 'as a leading proponent of international environmental action and cooperation, is a Party to many multilateral environmental agreements.'¹¹⁷ The Commission emphasizes the need for international action by addressing 'the triple planetary crisis of climate change, biodiversity loss and pollution, as well as other global environmental challenges' that require 'efficient international cooperation' since "most environmental problems also have a transboundary nature".¹¹⁸ Therefore, for the many reasons mentioned above,

¹¹³ For the United Nations 2030 Agenda for Sustainable Development see United Nations - Transforming our world: the 2030 Agenda for Sustainable Development. Available at: <https://sdgs.un.org/2030agenda> (Accessed: 17 September 2024).

¹¹⁴ For the sustainable development goals see EC, no date.

¹¹⁵ For the Paris Climate Agreement see United Nations - The Paris Agreement. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 17 September 2024).

¹¹⁶ See European Commission - Sustainable Development Goals. Available at: https://commission.europa.eu/strategy-and-policy/sustainable-development-goals_en (Accessed: 18 September 2024).

¹¹⁷ European Commission - Multilateral Environmental Agreements (MEAs). Available at: https://environment.ec.europa.eu/international-cooperation/multilateral-environmental-agreements-meas_en (Accessed: 18 September 2024).

¹¹⁸ See for the importation of international agreements as well as for a list of those agreements European Commission - Multilateral Environmental Agreements (MEAs).

international co-operation is crucial for the EU to solve global environmental challenges that can only be solved by working together with other countries and stakeholders. Only in this way can the EU achieve its EGD objectives.

3.5. Environmental Impact Assessments

A further instrument and mechanism of climate and environmental law at the European level for pursuing environmental protection goals and the objective of a sustainable policy at the European level is the obligation to carry out Environmental Impact Assessments (EIA).¹¹⁹ EIA provide the basis for identifying and assessing the potential environmental impacts of, e.g. new projects, plans and programmes. By assessing the potential impact on ecosystems, biodiversity, air and water quality and human health, environmental impact assessments provide valuable information for making informed decisions and avoiding or at least mitigating negative impacts. Certain public or private projects that are likely to have a significant impact on the environment, such as the construction of a motorway or an airport, are subject to an EIA. The requirements for this are set out in Directive 2011/92¹²⁰ on the environmental impact assessment of certain public and private projects. EIA are, however, not only mandatory for new constructions but are also relevant in several other areas which might have an impact on the environment, such as genetically modified organisms according to the Deliberate Release Directive 2001/18/EC¹²¹ or the market authorization of new pharmaceutical products pursuant to Directive 2008/105/EC.¹²²

Available at: https://environment.ec.europa.eu/international-cooperation/multilateral-environmental-agreements-meas_en (Accessed: 18 September 2024).

¹¹⁹ For the methods of EIAs see Morris and Therivel, 2001.

¹²⁰ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, OJ L26/1, 28.01.2012.

¹²¹ Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/2002/EEC, OJ L 106/1, 17.04.2001.

¹²² Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directive 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council, OJ L 348/84, 24.12.2008.

In addition, a similar procedure is provided for a large number of public projects and programmes, such as in the areas of land use, transport, energy, waste or agriculture. In this so-called Strategic Environmental Assessment (SEA), environmental considerations are already included in the planning phase. Possible consequences are taken into account before the project is authorised or approved in order to ensure a high level of environmental protection. Both assessment procedures – EIAs and SEAs – provide for public consultation.

The basis for this is the Aarhus Convention of 2001, the so-called Aarhus Convention as a multilateral environmental convention of the United Nations for Europe (UNECE), to which all member states have acceded.¹²³ The Aarhus Convention as the leading international agreement on environmental democracy protects every person's right to live in a healthy environment and guarantees the public three rights on environmental issues: access to information, public participation and access to justice.¹²⁴ The Directive 2002/4/EC on public access to environmental information,¹²⁵ the Directive 2003/35/EC for public participation¹²⁶ and Directive 2003/4/EC on public access to environmental information¹²⁷ implement the obligations of the Aarhus Convention as comprised in the Regulation (EC) 1367/2006.¹²⁸

¹²³ Aarhus Convention, 1998.

¹²⁴ See EU Commission, The Aarhus Convention and the EU. Available at: https://environment.ec.europa.eu/law-and-governance/aarhus_en (Accessed: 18 September 2024).

¹²⁵ Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC, OJ L 41/26, 14.02.2003.

¹²⁶ Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC, OJ L 156/17, 25.06.2003.

¹²⁷ Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC, OJ L 42/26, 14.02.2003.

¹²⁸ 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 and Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies, OJ L 264/13, 25.09.2006.

3.6. Environmental Inspections and Environmental Criminal Law

In order to improve the enforcement of EU environmental law, the Union laid down non-binding minimum criteria for environmental inspections back in 2001. Environmental inspections as an instrument to observe and ensure compliance with obligations as comprised in environmental laws and regulations of the EU are carried out by the competent national authorities of the Member States to monitor and enforce environmental standards in various sectors, including industry, transport, agriculture or waste management. Through inspections, authorities control and verify compliance with EU environmental directives and regulations, identify non-compliance and take enforcement action, such as fines, penalties or corrective measures to remedy non-compliance.¹²⁹

The Commission emphasizes that the ‘Member States are responsible for fully and correctly implementing EU rules’ and as a result of this obligation ‘Member States have developed oversight responsibilities and adjudication powers to a very wide set of public authorities’, the so-called ‘environmental compliance assurance authorities’.¹³⁰ According to the Commission, there are, however, major implementation challenges which are ‘linked to persistent environmental problems, such as water pollution, poor urban air quality, unsatisfactory waste treatment and declining species and habitats’.¹³¹ The Commission has summarized these issues in the Environmental Implementation Review (EIR).¹³² In 2018, the Commission has already published an Environmental Compliance Assurance Action Plan¹³³ containing a set of nine measures that are specific to environmental

¹²⁹ For the inspections of EU secondary legislative measures and provisions and the management of inspections see Hedemann-Robinson, 2016.

¹³⁰ European Commission - Environmental compliance assurance. Available at: https://environment.ec.europa.eu/law-and-governance/compliance-assurance_en (Accessed: 18 September 2024).

¹³¹ European Commission - Environmental compliance assurance. Available at: https://environment.ec.europa.eu/law-and-governance/compliance-assurance_en (Accessed: 18 September 2024).

¹³² European Commission - Environmental compliance assurance. Available at: https://environment.ec.europa.eu/law-and-governance/compliance-assurance_en (Accessed: 18 September 2024).

¹³³ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU actions to improve environmental compliance and governance, Brussels, 18.01.2018, COM(2018)10. Available at: [https://ec.europa.eu/transparency/documents-register/detail?ref=COM\(2018\)10&lang=en](https://ec.europa.eu/transparency/documents-register/detail?ref=COM(2018)10&lang=en) (12. September 2024).

policy intending to improve compliance with EU environmental law and strengthening environmental governance in both Member States and the EU.¹³⁴

In addition to environmental inspections, environmental criminal law is also becoming increasingly important at the EU level. The EU has created a legal framework for serious environmental offences that pose a significant threat to the environment, public health or natural resources to support its environmental policy. The objective is to ensure effective enforcement of EU environmental law by harmonising criminal law provisions in the Member States and providing for sanctions, including fines and imprisonment, for serious breaches of environmental legislation. The Environmental Crime Directive 2008/99/EC¹³⁵ stipulate ‘criminalization of serious violations of 72 environmental pieces of legislation in the environmental field and requires effective, proportionate and dissuasive sanctions.’¹³⁶ As the Commission emphasizes, the Directive ‘aims at supplementing existing administrative sanction systems with criminal law penalties to strengthen compliance with the laws for the protection of the environment’, whereas ‘criminal penalties demonstrate a social disapproval of a qualitatively different nature compared to administrative penalties or a compensation mechanism under civil law.’¹³⁷

From a criminal law perspective, the question has been discussed whether criminal law can protect the environment by functioning as a means, for example of controlling environmentally hazardous activities.¹³⁸ The concept of general prevention has been particularly emphasized in relation to criminalization whose objective is environmental protection.¹³⁹ There have been serious doubts that criminal law can ensure the enforcement of environmental law, since the enforcement faces many more

¹³⁴ For the environmental compliance of the EU before the EGD see Angelov and Cashman, 2015; Čavoški, 2019.

¹³⁵ 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 328/28, 06.12.2008.

¹³⁶ European Commission - Environmental Crime. Available at: https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/criminal-justice/environmental-crime_en (Accessed: 20 September 2024).

¹³⁷ European Commission - Environmental Crime. Available at: https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/criminal-justice/environmental-crime_en (Accessed: 20 September 2024).

¹³⁸ See Du Réés, 2010.

¹³⁹ See for the conditions for general prevention in the context of environmental criminal law Du Réés, 2010.

challenges which cannot be faced merely with criminalization.¹⁴⁰ Furthermore, it has been argued that the EGD should follow a comprehensive approach in regard to understanding harms holistically done to the environment, e.g. by means of categorizing the types of crimes, the EGC ‘could at least illustrate the interlinkages between criminal acts, environmental damage and negative impacts on the functioning of societies, state institutions and the rule of law in democratic regulatory regimes.’¹⁴¹

4. Summary and Conclusion

Global environmental problems cannot be solved by states alone. Thus, national environmental regulations in themselves are not sufficient to address the protection of the environment and to combat climate change, environmental pollution or the loss of biodiversity. In order to protect the environment effectively, measures are required at the international level as well as at the level of the EU. For this reason, international environmental law, which is designed to protect the global environment, is one of the areas of international law as well of EU law.

Climate and environmental law at the EU level is not new. Its roots go back to the 1970s. The result of this is comprehensive regulation at the EU level with a previously almost unmanageable range of secondary legislation of directives, regulations and decisions. However, regulation at the EU level often only provides for a minimum standard. In addition, the effectiveness of climate and environmental policy at the EU level often depends on implementation at national, regional and local levels. With the aim of achieving greater harmonisation, various mechanisms for environmentally friendly and sustainable policies have emerged. With the EGD, however, a globally pioneering stage has been reached in climate and environmental protection. The EGD not only provides for political initiatives and measures in the area of climate and environmental protection. Rather, the EGD encompasses a large number of initiatives in all EU policy areas intending to make the EU climate-neutral by 2025. In light of this comprehensive approach, which encompasses all of the EU's policy areas, it is important not to weaken the Union's competitiveness in the global context.

This in turn requires a new, holistic and cross-sectoral approach in which all relevant policy areas contribute to the overarching climate goal.

¹⁴⁰ Faure, 2017.

¹⁴¹ See Holland, Holland-Kunkel and Röhl, 2023, p.55.

This includes in particular the policy areas of climate, environment, energy, transport, industry, agriculture and sustainable finance. With regard to the global competitiveness of the EU, it must be taken into account that the transition to climate neutrality can also lead to new business models, markets and jobs, as well as to innovation and technological development – and thus to economic growth overall. The EGD is therefore not only pursuing very fundamental, but also ambitious goals. As such, it could – hopefully - have a global impact.

Bibliography

- [1] Alaranta, J., Miettinen, M. (2022) 'Precautiously Circular: Perspectives on the Application of the Precautionary Principle in European Union Waste and Chemicals Regulation', *European Journal of Risk Regulation* (EJRR), 14(1), pp. 14-30; <https://doi.org/10.1017/err.2022.37>.
- [2] Andersen, M. S., Nordvig Rasmussen, L. (1998) 'The Making of Environmental Policy in the European Council', *Journal of Common Market Studies*, 36(4), pp. 585-597; <https://doi.org/10.1111/1468-5965.00142>.
- [3] Angelov, M., Cashman, L. (2015) 'Environmental inspections and environmental compliance assurance networks in the context of European Union environment policy', in Faure, M., De Smedt, P., Stas, A. (eds.) *Environmental Enforcement Networks: Concepts, Implementation and Effectiveness*, Cheltenham: Edward Elgar, pp. 350-376; <https://doi.org/10.4337/9781783477401.00030>.
- [4] Bäckstrand, K., Elgström, O. (2013) 'The EU's role in climate change negotiations: From leader to 'leadiator'', *Journal of European Public Policy*, 20(10), pp. 1369-1386; <https://doi.org/10.1080/13501763.2013.781781>.
- [5] Bär, S., Kraemer, A. (1998) 'European Environmental Policy after Amsterdam', *Journal of Environmental Law*, 10(2), pp. 315-330; <https://doi.org/10.1093/jel/10.2.315>.
- [6] Benson, D., Jordan, A. (2010) 'European Union environmental policy after the Lisbon Treaty: plus ça change, plus c'est la meme chose?', *Environmental Politics*, 19(3), pp. 468-474; <https://doi.org/10.1080/09644011003690948>.
- [7] Bleeker, A. (2009) 'Does the Polluter Pay? The Polluter Pays Principle in the Case Law of the European Court of Justice', *European Energy and Environmental Law Review*, 18(6), pp. 289-306; <https://doi.org/10.54648/EELR2009024>.

-
- [8] Bloomfield, J., Steward, F. (2020) 'The politics of the Green New Deal', *The Political Quarterly*, 91(4), pp. 770-779; <https://doi.org/10.1111/1467-923X.12917>.
- [9] Bogojević, S. (2017) 'EU Human Rights Law and Environmental Protection: The Beginning of a Beautiful Friendship?', in Douglas-Scott, S., Hatzis, N. (eds.) *Research Handbook on EU Law and Human Rights*, Cheltenham: Edward Elgar Publishing, pp. 8-10; <https://doi.org/10.4337/9781782546405.00032>.
- [10] Boons, F. (1993) 'Product-oriented Environmental Policy and Networks: Ecological Aspects of Economic Internationalisation', in Judge, D. (ed.) *A Green Dimension for the European Community: Political Issues and Processes*, London: Frank Cass, pp. 84-108; <https://doi.org/10.1080/09644019208414047>.
- [11] Calliess, C. (2023) 'The Role of Article 11 TFEU in the Greening of the ECS's Monetary Policy', *German Law Journal*, 24(5), pp. 796-824; <https://doi.org/10.1017/glj.2023.17>.
- [12] Čavoški, A. (2019) 'EU environmental compliance assurance', *Environmental Law Review (ELR)*, 21(2), pp. 111-118; <https://doi.org/10.1177/1461452918824508>.
- [13] Cifuentes-Faura, J. (2022) 'European Union policies and their role in combating climate change over the years', *Air Quality, Atmosphere & Health: An International Journal*, 2022/15, pp. 1333-1340; <https://doi.org/10.1007/s11869-022-01156-5>.
- [14] Christiansen, A. C., Wettestad, J. (2003) 'The EU as a frontrunner on greenhouse gas emissions trading: how did it happen and will the EU succeed?', *Climate Policy*, 3(1), pp. 3-18; <https://doi.org/10.3763/cpol.2003.0302>.

- [15] Coria, J., Kristiansson, E., Gustavsson, M. (2022) 'Economic interests cloud hazard reductions in the European regulation of substances of very high concern', *Nature Communications*, 13, 6686; <https://doi.org/10.1038/s41467-022-34492-2>.
- [16] CVCE (1972) Statement from the Paris Summit (19 to 21 October 1972), [Online]. Available at: https://www.cvce.eu/content/publication/1999/1/1/b1dd3d57-5f31-4796-85c3-cfd2210d6901/publishable_en.pdf (Accessed: 11 September 2024).
- [17] Da Graça Carvalho, M. (2012) 'EU energy and climate change strategy', *Energy* 40(1), pp. 19-22; <https://doi.org/10.1016/j.energy.2012.01.012>.
- [18] Damro, C., Hardie, I., MacKenzie, D. (2008) 'The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels', *Journal of Contemporary European Research (JCER)*, 4(3), pp. 179-192; <https://doi.org/10.30950/jcer.v4i3.110>.
- [19] De Rées, H. (2010) 'Can Criminal Law Protect the Environment? ', *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 2(2), pp. 109-126; <https://doi.org/10.1080/140438501753737606>.
- [20] Dimitrijević, D. (2011) 'Nanotechnology: The Need for the Implementation of the Precautionary Approach beyond the EU', in Meško, G., Dimitrijević, D., Fields, C. B. (eds.) *Understanding and Managing Threats to the Environment in South Eastern Europe*, Dordrecht: Springer, pp. 205-224; https://doi.org/10.1007/978-94-007-0611-8_11.
- [21] Dobbs, M., Gravey, V., Petetin, L. (2021) 'Driving the European Green Deal in turbulent times', *Politics and Governance*, 9(3), pp. 316-326; <https://doi.org/10.17645/pag.v9i3.4321>.

- [22] Dupont, C., Torney, D. (2021) 'European Union climate governance and the European Green Deal in turbulent times', *Politics and Governance*, 9(3), pp. 312-315; <https://doi.org/10.17645/pag.v9i3.4896>.
- [23] Dupont, C., Moore, B., Boasson, E. L., Gravey, V., Jordan, A., Kivimaa, P., Kulovesi, K., Kuzemko, C., Oberthür, S., Panchuk, D., Rosamond, J., Torney, D., Tosun, J., von Homeyer, I. (2023) 'Three decades of EU climate policy: Racing toward climate neutrality?', *Wiley interdisciplinary reviews: Climate Change*, 15(7), pp.1-12; <https://doi.org/10.1002/wcc.863>.
- [24] de Botselier, B. (2017) 'The European Union's Performance in Multilateral Environmental Agreements: Was the Lison Treaty a Game Changer?', *EU Diplomacy Paper*, 2017/11, pp. 1-34 [Online]. Available at: https://gcllc.coleurope.eu/sites/default/files/research-paper/edp-11-2017_de_botselier_0.pdf (Accessed: 19 September 2024).
- [25] Dederer, H.-G. (2016) 'The Challenge of Regulating Genetically Modified Organisms in the European Union; Trends and Issues', in Nakanishi, Y., *Contemporary Issues in Environmental Law*, Tokyo: Springer, pp. 139-168; https://doi.org/10.1007/978-4-431-55435-6_8.
- [26] de Sadeleer, N. (2023) 'Environmental law in the EU: A Pathway Toward the Green Transition', in da Glória Garcia, M., Cortês, A. (eds.) *Blue Planet Law: The Ecology of our Economic and Technological World*, Cham: Springer, pp. 21-33; https://doi.org/10.1007/978-3-031-24888-7_2.
- [27] de Sadeleer, N. (2012) 'Principle of Subsidiarity and the EU Environmental Policy', *Journal for European Environmental & Planning Law* (JEEPL) 9(1), pp. 63-70; <https://doi.org/10.1163/187601012X632256>.

- [28] de Sadeleer, N. (2009) 'Liability for Oil Pollution Damage versus Liability for Waste Management: The Polluter Pays Principle at the Rescue of the Victims', *Journal of Environmental Law*, 21(2), pp. 299-307; <https://doi.org/10.1093/jel/eqp016>.
- [29] de Zwan, J. W. (2009) 'The legal personality of the European Communities and the European Union', *Netherlands Yearbook of International Law*, 2009/30, pp. 75-113; <https://doi.org/10.1017/S0167676800000908>.
- [30] Eliantonio, M. (2023) 'Systematic Breaches of EU Environmental Law and Techniques of Judicial Engagement with Science: the underused Potential of Infringement Proceedings', *German Law Journal*, 24(5), pp. 948-961; <https://doi.org/10.1017/glj.2023.58>.
- [31] Faure, M. (2017) 'The Development of Environmental Criminal Law in the EU and its Member States, Review of European', *Comparative & International Environmental Law (RECIEL)*, 26(2), pp. 139-146; <https://doi.org/10.1111/reel.12204>.
- [32] Flynn, B. (2000) 'Is local truly better? Some reflections on sharing environmental policy between local governments and the EU', *Environmental Policy and Governance*, 10(2), pp. 75-84; [https://doi.org/10.1002/\(SICI\)1099-0976\(200003/04\)10:2<75::AID-EET216>3.0.CO;2-3](https://doi.org/10.1002/(SICI)1099-0976(200003/04)10:2<75::AID-EET216>3.0.CO;2-3).
- [33] Garben, S. (2019) 'Article 191 TFEU', in Kellerbauer, M., Klamert, M., Tomkin, J. (eds.) *The EU Treaties and the Charter of Fundamental Rights: A Commentary*, Oxford: Oxford University Press, pp. 1516-1525; <https://doi.org/10.1093/oso/9780198759393.003.307>.
- [34] Garnett, K., Parsons, D. J. (2017) 'Multi-Case Review of the Application of the Precautionary Principle in European Union Law and Case Law', *Risk Analysis: An International Journal*, 37(3), pp. 502-516; <https://doi.org/10.1111/risa.12633>.

- [35] Gulbrandsen, L. H., Christensen, A. R. (2014) 'EU Legislation to Reduce Carbon Emissions from Cars: Intergovernmental or Supranational Policy Making?', *Review of Policy Research (RPR)*, 31(6), pp. 503-528; <https://doi.org/10.1111/ropr.12100>.
- [36] Hadjiyianni, I. (2021) 'Judicial protection and the environment in the EU legal order: Missing pieces for a complete puzzle of legal remedies', *Common Market Law Review (CMLR)*, 58(3), pp. 777-812; <https://doi.org/10.54648/cola2021050>.
- [37] Halmaghi, E.-E. (2016) 'Environmental Action Programmes of the European Union – Programmes supporting the sustainable development strategy of the European Union', *De Gruyter Scientific Bulletin*, 2(24), pp. 87-90; <https://doi.org/10.1515/bsaft-2016-0040>.
- [38] Haum, R., Petschow, U., Steinfeldt, M., von Gleich, A. (2004) 'Nanotechnology and Regulation within the Framework of the Precautionary Principle', Berlin: *Institut für Ökologische Wirtschaftsförderung (IÖW)*, Berlin [Online]. Available at: https://www.ioew.de/fileadmin/_migrated/tx_ukioewdb/IOEW_SR_17_3_Nanotechnology_and_Regulation.pdf (Accessed: 23 August 2024).
- [39] Hectors, K. (2008) 'The Chartering of Environmental Protection: Exploring the Boundaries of Environmental Protection as a Human Right', *European Energy and Environmental Law Review*, 17(3), pp. 165 et seq; <https://doi.org/10.54648/EELR2008015>.
- [40] Hedemann-Robinson, M. (2016) 'Environmental Inspections and the EU: Securing an Effective Role for a Supranational Union Legal Framework', *Transnational Environmental Law (TEL)*, 6(1), pp. 31-58; <https://doi.org/10.1017/S2047102515000291>.
- [41] Hesselhaus, S. (2009) 'Nanomaterials and the Precautionary Principle in the EU', *Journal of Consumer Policy*, 33, pp. 91-108; <https://doi.org/10.1007/s10603-009-9123-8>.

- [42] Holland, T. B., Holland-Kunkel, S., Röhl, A. (2023) 'On the Criminal Law Dimension of the Green Deal', in Trübe, C., Scholz, L. (eds.), *The EU Green Deal and its implementation*, Baden-Baden: Nomos, pp. 45-60; <https://doi.org/10.5771/9783957104205-45>.
- [43] Howes, T. (2010) 'The EU's New Renewable Energy Directive (2009/28/EC)', in Oberthür, S., Pallemarts, M. (eds.) *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*, Brussels: VUB Press: Brussels University Press, pp. 117-150.
- [44] Jančíková, E., Pásztorová, J. (2021) 'Promoting EU values in international agreements', *Tribuna Juridică*, 11, pp. 203-218; <https://doi.org/10.24818/TBJ/2021/11/2.04>.
- [45] Jeppesen, T. (2000) 'EU environmental policy in the 1990s: allowing greater national leeway?', *Environmental Policy and Governance*, 10(2), pp. 96-105; [https://doi.org/10.1002/\(SICI\)1099-0976\(200003/04\)10:2<96::AID-EET221>3.0.CO;2-C](https://doi.org/10.1002/(SICI)1099-0976(200003/04)10:2<96::AID-EET221>3.0.CO;2-C).
- [46] Jordan, A. (2000) 'The politics of multilevel environmental governance: subsidiarity and environmental policy in the European Union', *Environmental and Planning*, 32, pp. 1307-1324; <https://doi.org/10.1068/a3211>.
- [47] Jordan, A., Gravey, V., Adelle, C. (2021) 'EU environmental policy: Context, actors and policy dynamics', in Jordan, A., Gravey, V. (eds.) *Environmental Policy in the EU: Actors, Institutions and Processes*, 4th edition, Oxon/New York: Routledge, pp. 1-10; <https://doi.org/10.4324/9780429402333-1>.
- [48] Jordan, A., Jeppesen, T. (2000) 'EU Environmental policy: adapting to the principle of subsidiarity?', *Environmental Policy and Governance*, 10(2), pp. 64-74; [https://doi.org/10.1002/\(SICI\)1099-0976\(200003/04\)10:2<64::AID-EET219>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1099-0976(200003/04)10:2<64::AID-EET219>3.0.CO;2-Z).

- [49] Judge, D. (1993) 'A Green Dimension for the European Community?', in Judge, D. (ed.) *A Green Dimension for the European Community: Political Issues and Processes*, London: Frank Cass, pp. 1-12.
- [50] Kelem, R. D. (2010) 'Globalizing European Union environmental policy', in Jacoby, W., Meunier, S. (eds.) *Europe and the Management of Globalization*, Oxon: Routledge, pp. 37-51.
- [51] Kennet, W. (1972) 'The Stockholm Conference on the Human Environment', *International Affairs*, 48(1), pp. 33-45; <https://doi.org/10.2307/2613625>.
- [52] Klamert, M. (2019) 'Article 11 TFEU', in Kellerbauer, M., Klamert, M., Tomkin, J. (eds.) *The EU Treaties and the Charter of Fundamental Rights: A Commentary*, Oxford: Oxford University Press, pp. 386-387; <https://doi.org/10.1093/oso/9780198759393.003.83>.
- [53] Knill, C., Liefferink, D. (2021) 'The establishment of EU environmental policy', in Jordan A., Gravey, V. (eds.) *Environmental Policy in the EU: Actors, Institutions and Processes*, 4th edition, Oxon/New York: Routledge, pp. 13-32; <https://doi.org/10.4324/9780429402333-3>.
- [54] Kobylarz, N. (2023) 'Anchoring the Right to a Healthy Environment in the European Convention on Human Rights: What Concretized Normative Consequences can be Anticipated for the Strasbourg Court?', in Antonelli, G., Gerrard, M., Colangelo, S., Montedoro, G., Santise, M., Lavrysen, L., Ferroni, M. V. (eds.) *Environmental Law Before the Courts*, Cham: Springer Publishing, pp. 153-199; https://doi.org/10.1007/978-3-031-41527-2_7; <https://doi.org/10.2139/ssrn.4398112>.
- [55] Krämer, L (2015) 'The EU Courts and Access to Environmental Justice', in Boer, B. (ed.) *Environmental Law Dimensions of Human Rights*, Oxford: Oxford Academic, pp. 107-133; <https://doi.org/10.1093/acprof:oso/9780198736141.003.0005>.

- [56] Krommendijk, J., Sanderink, D. (2023) 'The role of fundamental rights in the environmental case law of the CJEU', *European Law Open*, 2(3), pp. 616-635; <https://doi.org/10.1017/elo.2023.30>.
- [57] Lavrysen, L. (2023) 'Environmental Law in the Courts of Europe: A Rough Sketch', in Antonelli, G., Gerrard, M., Colangelo, S., Montedoro, G., Santise, M., Lavrysen, L., Ferroni, M. V. (eds.) *Environmental Law Before the Courts*, Cham: Springer Publishing, pp. 201-230; https://doi.org/10.1007/978-3-031-41527-2_8.
- [58] Lombardo, M. (2011) 'The Charter of Fundamental Rights and the Environmental Policy Integration Principle', in di Federidco, G. (ed.) *The EU Charter of Fundamental Rights – From Declaration to Binding Instrument*, Dordrecht/Heidelberg/London/New York: Springer Sciences, pp. 217-240; https://doi.org/10.1007/978-94-007-0156-4_12.
- [59] Langlet, D., Mahmoudi, S. (2016) *EU Environmental Law and Policy*. Oxford: Oxford University Press; <https://doi.org/10.1093/acprof:oso/9780198753926.001.0001>
- [60] Meltzer, C. R. (1990) 'The Environmental Policy of the European Economic Community to Control Transnational Pollution – Time to Make Critical Choices', *Loy. L.A. Int'l Comp. L.J.*, 12(2) pp. 579-613.
- [61] Morgera, E., Marin-Duran, G. (2021) 'Commentary to Article 37 – Environmental Protection of the EU Charter of Fundamental Rights', in Peers, S., Hervey, T., Kenner, J., Ward, A. (eds.) *Commentary on the EU Charter of Fundamental Rights*, 2nd edition, Oxfordshire: Hart Publishing, pp. 983-1003; <https://doi.org/10.2139/ssrn.3850154>.
- [62] Morris, P., Therivel, R. (2001) 'Introduction', in Morris, P., Therivel, R. (eds.) *Methods of Environmental Impact Assessment*, 2nd edition, London: Spon Press, pp. 3-19; <https://doi.org/10.2307/jj.18252429.5>.

- [63] Müller-Herold, U., Morosini, M., Schucht, O. (2005) 'Choosing Chemicals for Precautionary Regulation: A Filter Series Approach', *Environmental Science & Technology* (Environ. Sci. Technol.), 39(3), 683-691; <https://doi.org/10.1021/es049241n>.
- [64] Nash, H. A. (2009) 'The Revised Directive on Waste: Resolving Legislative Tensions in Waste Management?', *Journal of Environmental Law*, 21(1), pp. 139-149; <https://doi.org/10.1093/jel/eqp001>.
- [65] Nowag, J. (2018) 'Article 11 TFEU and Environmental Rights', in Bogojević, S., Rayfuse, R., *Environmental Law in Europe and Beyond*, Oxfordshire: Hart Publishing, pp. 155 et seq; <https://doi.org/10.2139/ssrn.3217194>.
- [66] Nowag, J. (2016) *EU Environmental Law and Policy*. Oxford: Oxford University Press.
- [67] Oberthür, S., Pallemmaerts, M. (2010) 'The EU's Internal and External Climate Policies: an Historical Overview', in Oberthür, S., Pallemmaerts, M. (eds.) *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*, Brussels: VUB Press: Brussels University Press, pp. 27-64.
- [68] Passer, J. M., Pazderová, V. (2023) 'Protection of Environment and the Courts of Justice of the European Union', in Antonelli, G., Gerrard, M., Colangelo, S., Montedoro, G., Santise, M., Lavrysen, L., Ferroni, M. V. (eds.) *Environmental Law Before the Courts*, Cham: Springer Publishing, pp. 131-152; https://doi.org/10.1007/978-3-031-41527-2_6.
- [69] Peters, M., Athanasiadou, N. (2020) 'The continued effort sharing approach in EU climate law: Binding targets, challenging enforcement?', *Review of European, Comparative & International Environmental Law* (RECIEL), 29(2), pp. 201-211; <https://doi.org/10.1111/reel.12356>.

- [70] Pindaru, L. C., Nita, A., Niculae, I. M., Manolache, S., Rozyłowicz, L. (2023) 'More streamlined and targeted. A comparative analysis of the 7th and 8th Environment Action Programmes guiding European environmental policy', *Heliyon*, 9(9), e19212; <https://doi.org/10.1016/j.heliyon.2023.e19212>.
- [71] Popeangă, V. (2013) 'Environmental Action Programmes in the European Union – Evolution and Specific', *Annals of the "Constantin Brăncuși" University of Târgu Jiu, Letter and Social Sciences Series*, 3, pp. 24-33.
- [72] Pouikli, K., Tsoukala, A., Tsakalogianni, I. (2024) 'Mapping the (in)Effective Enforcement of EU Environmental law in Greece: Lessons from the EU and Domestic Courts, Ecological Civilization', 1(2), 10005; <https://doi.org/10.35534/ecolciviliz.2024.10005>.
- [73] Proels, A. (2016) 'Principles of EU Environmental Law: An Appraisal', in Nakanishi, Y., *Contemporary Issues in Environmental Law*, Tokyo: Springer, pp. 29-45; https://doi.org/10.1007/978-4-431-55435-6_3.
- [74] Purnhagen, K. (2015), 'The EU's Precautionary Principle in Food Law is an Information Tool! ', *European Business Law Review (EBLR)*, 6, 2015, Forthcoming, Wageningen Working Papers in Law and Governance 2015/11, [Online]. Available at: <https://ssrn.com/abstract=2646723> (Accessed: 08 August 2024).
- [75] Recuerda, M. A. (2008) 'Dangerous Interpretations of the Precautionary Principle and the Foundational Values of European Union Food Law: Risk versus Risk', *Journal of Food Law & Policy*, 2008(4), pp. 1-43.
- [76] Rosas, A. (2011) 'The Status in EU Law of International Agreements concluded by EU Member States', *Fordham International Law Journal*, 34(5), pp. 1304-1343.

- [77] Saldívar-Tanaka, L., Hansen, S. F. (2021) 'Should the precautionary principle be implemented in Europe with regard to nanomaterials? ', *Journal of Nanoparticle Research*, (J Nanopart Res), 23(3); <https://doi.org/10.1007/s11051-021-05173-w>.
- [78] Schlacke, S., Köster, M., Thierjung, E.-M. (2021) 'Das "Europäische Klimagesetz" und seine Konsequenzen', *Europäische Zeitschrift für Wirtschaftsrecht*, pp. 620-626.
- [79] Schröder, M. (2011) 'Die Vorlagepflicht zum EuGH aus europarechtlicher und nationaler Perspektive', *Europarecht*, 46(6), pp. 808-827; <https://doi.org/10.5771/0531-2485-2011-6-808>.
- [80] Shaw, D., Nadin, V., Seaton, K. (2000) 'The application of subsidiarity in the making of European environmental law', *Environmental Policy and Governance*, 10(2), pp. 85-95; [https://doi.org/10.1002/\(SICI\)1099-0976\(200003/04\)10:2<85::AID-EET220>3.0.CO;2-J](https://doi.org/10.1002/(SICI)1099-0976(200003/04)10:2<85::AID-EET220>3.0.CO;2-J).
- [81] Seitz, C. (2021) 'Potential Benefits of Genome Editing and the Unknown Risk – Regulation of Genome Editing and other New Breeding Techniques in Light of the Precautionary Principle and Irreversibility', in Spranger, T. M. (ed.) *Genome Editing under Gene Technology Law: Legal Aspects and Latest Developments*, Berlin: Lexxion Publisher, pp. 100-119.
- [82] Sjäfell, B. (2014) 'The legal significance of Article 11 TFEU for EU institutions and Member States', in Sjäfell, B., Wiesbrock, A. (eds.) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously*, pp. 51-72; <https://doi.org/10.4324/9781315767864-4>.
- [83] Squintani, L. (2019) 'Case Law of the Court of Justice of the European Union and the General Court', *Journal for European Environmental & Planning Law*, pp. 407-425; <https://doi.org/10.1163/18760104-01604006>.

- [84] Stangl, F., Mauger, R. (2021) 'Essential EU Climate Law', in Woerdman, E., Roggenkamp, M., Holwerda, M. (eds.) *Essential EU Climate Law*, 2nd edition, Cheltenham: Edward Elgar, pp. 44-205.
- [85] Szajkowska, A. (2012) *Regulating Food Law: Risk Analysis and the Precautionary Principle as General Principles of EU Food Law*. Wageningen: Wageningen Academic Publishers; <https://doi.org/10.3920/978-90-8686-750-9>.
- [86] Thomale, C. (2016) 'Zur subjektivrechtlichen Durchsetzung der Vorlagepflicht zum EuGH im europäischen Verfassungsgerichtsverbund', *Europarecht*, 2016/51, pp. 510-518; <https://doi.org/10.5771/0531-2485-2016-5-510>.
- [87] Tosun, J. (2023) 'The European Union's Climate and Environmental Policy in Times of Geopolitical Crisis', *Journal of Common Market Studies*, pp. 1-10; <https://doi.org/10.1111/jcms.13530>.
- [88] Uluirnak, A. (2016) 'The Role of the Environment Action Programmes of the European Union in the Development of EU Environmental Policy', *European Journal of Sustainable Development Research*, 1(1), pp. 1-9.
- [89] Vandermersch, D. (2003) 'The Single European Act and the Environmental Policy of the European Economic Community', in Krämer L. (ed.) *European Environmental Law: A Comparative Perspective*, 1st edition, Oxon/New York: Routledge, pp. 407-429.
- [90] van der Straaten, J. (1993) 'A Sound European Environmental Policy: Challenges, Possibilities and Barriers', in Judge, D. (ed.) *A Green Dimension for the European Community: Political Issues and Processes*, London: Frank Cass, pp. 65-83; <https://doi.org/10.1080/09644019208414046>.

- [91] van Dijk, J., Gustavsson, M., Dekker, S. C, van Wezel, A. P. (2021) 'Towards a 'one substance – one assessment': An analysis of EU chemical registration and aquatic risk assessment frameworks', *Journal of Environmental Management*, 280, 111692; <https://doi.org/10.1016/j.jenvman.2020.111692>.
- [92] van Zeben, J. (2022) 'Environmental Law', in Garben, S., Gormley, L. (eds.) *The Oxford Encyclopedia of EU Law (OEEUL)*.
- [93] Vedder, H. (2010) 'The Treaty of Lisbon and European Environmental Law and Policy', *Journal of Environmental Law*, 22(2), pp. 285-299; <https://doi.org/10.1093/jel/eqq001>.
- [94] Verhoeve, B., Bennett, G., Wilkinson, D. (1992) *Maastricht and the Environment*. Arnhem: Institute for European Environmental Policy.
- [95] Voigt, C. (2014) 'Article 11 TFEU in the light of the principle of sustainable development in international law', in Sjäfell, B., Wiesbrock, A. (eds.) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously*, pp. 31-50; <https://doi.org/10.4324/9781315767864-3>.
- [96] Weale, A., Williams, A. (1993) 'Between Economy and Ecology? The Single Market and the Integration of Environmental Policy', in Judge, D. (ed.) *A Green Dimension for the European Community: Political Issues and Processes*, London: Frank Cass, pp. 45-64; <https://doi.org/10.1080/09644019208414045>.
- [97] Woerdman, E., Roggenkamp, M., Holwerda (2021) 'Introduction', in Woerdman, E., Roggenkamp, M., Holwerda, M. (eds.), *Essential EU Climate Law*, 2nd edition, Cheltenham: Edward Elgar, pp. 2-43; <https://doi.org/10.4337/9781788971300.00011>; <https://doi.org/10.4324/9781003055198-1>.
- [98] Wulf, S. (2023) 'Mainstreaming der biologischen Vielfalt in der Politik der Europäischen Union: Anknüpfungspunkte der EU-Biodiversitätsstrategie für 2030', *Natur und Landschaft*, 2023(1), pp. 27-33.

- [99] Aarhus Convention (1998) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, done at Aarhus, Denmark on 25 June 1998, [Online]. Available at: <https://unece.org/DAM/env/pp/documents/cep43e.pdf> (Accessed: 18 September 2024).
- [100] European Commission (2019) Reflection Paper: Towards a Sustainable Europe by 2030, [Online]. Available at: <https://op.europa.eu/en/publication-detail/-/publication/3b096b37-300a-11e9-8d04-01aa75ed71a1/language-en/format-PDF> (Accessed: 7 September 2024).