

EU Environmental Policy and Law: Reflections at Fifty



Europa Law Publishing, Zutphen 2026

EU Environmental Policy and Law: Reflections at Fifty

edited by Gerd Winter, Richard Macrory and Ludwig Krämer

Europa Law Publishing is an imprint of Paris Legal Publishers specializing in European Union law, international trade law, public international law, environmental law and comparative national law.

For further information please contact Europa Law Publishing via email: info@europalawpublishing.com or visit our website at: www.europalawpublishing.com.

All rights reserved. No part of this publication may be reproduced or transmitted, in any form or by any means, or stored in any retrieval system of any nature, without the written permission of the publisher.

Application for permission for use of copyright material shall be made to the publishers. Full acknowledgment of author, publisher and source must be given. Text and data mining and training of AI and similar technologies are not allowed.

Voor zover het maken van kopieën uit deze uitgave is toegestaan op grond van artikel 16h t/m 16m Auteurswet 1912 *juncto* het Besluit van 27 november 2002, Stb. 575, dient men de daarvoor wettelijk verschuldigde vergoedingen te voldoen aan de Stichting Reprorecht (Postbus 3060, 2130 KB Hoofddorp).

Voor het overnemen van (een) gedeelte(n) uit deze uitgave in bloemlezingen, readers en andere compilatiewerken (artikel 16 Auteurswet 1912) dient men zich tot de uitgever te wenden. Tekst- en datamin-
ing en training van AI en vergelijkbare technologieën zijn niet toegestaan.

© Europa Law Publishing, Gerd Winter, Richard Macrory, Ludwig Krämer, 2026

NUR 828
ISBN 9789462513976 (paperback)



Europa Law Publishing, Zutphen 2026

The present book grew out of the “Avosetta Group”. This is a small informal network of lawyers, one or two persons per EU Member State including also Iceland, Norway, Switzerland, Turkey and the UK, who have specialised in European environmental law both as practitioners and academics.¹ All of the authors of the book are members of that group. They have discussed preliminary drafts of their chapters at a meeting in Bremen on 30/31 May 2025 and since elaborated them further.

The book is not designed to be an exhaustive analysis and recap of the rich body of EU environmental law. Other textbooks and legal works do that. Instead, the authors provide reflections on issues they feel to be of crucial importance for the law’s design and effectiveness. The idea is not to provide a comprehensive review of each of the chosen areas but to identify problems and elaborate solutions that are influenced by personal experiences and views.

We are grateful to the Winter Stiftung für Rechte der Natur, Hamburg, for supporting the editing of the book, the University of Bremen for enabling the open access version, as well as Protect the Planet, Munich, and Loyfort Partners, Bremen, for sponsoring the meeting of the authors in Bremen.

February 2026

Ludwig Krämer, Madrid Richard Macrory, London Gerd Winter, Bremen

¹ For more information see <https://www.avosetta.oer2.rw.fau.de/>. “recurvirostra avosetta” is the Latin name of a rare bird which (among others) caused the European Court of Justice to establish far-reaching principles of European nature protection law in the German Leybucht case.

The authors

Alexandra Aragão is professor of European and environmental law at the University of Coimbra. She participates in environmental law networks such as the Avosetta Group, the European observatory on Natura 2000 network and water, the European Environmental Law Forum, and the Legal working group of the Society for Ecological Restoration. For her publications see <https://www.alexandraaragao.online/>.

Gyula Bándi is emeritus professor of Pázmány Péter Catholic University, Faculty of Law. He has been active in research on environmental law, mostly in the EU law context. He has served as consultant on several EU environmental law issues, in particular on the approximation of Hungarian law to the EU acquis. He has for many years worked as practitioner and as a member of different professional bodies. Since 2017 he has been the Ombudsman for Future Generations in Hungary. His second term goes until 2029. His list of publications is available at: <https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=authors10004204>.

Mariusz Baran is Polish academic and adjunct at the Faculty of Law and Administration of the Jagiellonian University in Krakow. His current research focuses on EU law and its application by national courts, environmental and administrative law. He is member of the Research Network on EU Administrative Law and the European Environmental Law Forum, as well as a team member of the Sustainability and Climate Change in EU Law (Jean Monnet Actions).

Jan Darpö is emeritus professor of environmental law at the Uppsala University Faculty of Law. He served as an adjunct member of the Environmental Court of Appeal 2001-2004. His legal scholarship is focusing on EU law, environmental procedure, nature conservation and species protection. Between 2008 and 2021, he was the chair of the Task Force on Access to Justice under the Aarhus Convention. He has also worked as a lead consultant to the European Commission and the European Parliament, and has been evaluator for several international research institutes. He is a member of the Advisory Board of the European Environmental Law Forum (EELF). For his publications, see www.jandarpo.se.

Ole Kristian Fauchald is professor of law at the Department of Public and International Law, University of Oslo. He specialises in international and Norwegian environmental law, as well as in international economic law. He also has a position as research professor at the Fridtjof Nansen Institute. For his publications in English, see <https://www.jus.uio.no/ior/english/people/aca/olefa/publications.html>.

Agustín García-Ureta is professor of administrative law at the University of the Basque Country. He holds a LLM and PhD from the University of Exeter. He

specialises in EU environmental law with a particular focus on biodiversity law. He participates in environmental law networks such as the Avosetta Group and the Legal working group of the Society for Ecological Restoration. For publications see https://scholar.google.es/citations?hl=es&user=weXlrPkAAAAJ&view_op=list_works&sortby=pubdate.

Leena Hansen, Docent in Indigenous peoples' rights, has done research on indigenous peoples and wrote several reports on Sámi rights for the by the Finnish government. She was a member of Parliament's Human Rights Board and is legal advisor in the national Art. 8 j CBD working group. She works as a university researcher in Máhtut and as visiting researcher in the Arctic Centre, University of Lapland.

Nathalie Hervé-Fournereau is a CNRS Research Director at the University of Rennes (France – Western Institute for Law and Europe IODE, UMR 6262 CNRS). Her research focuses on the dynamics of EU environmental law, in particular on the pluralism of regulatory approaches and innovative expressions of democracy and socio-ecological justice. She is also engaged in interdisciplinary research on water and biodiversity issues and serves as Vice-President of the French Society for Environmental Law. For her publications see <https://cv.hal.science/nathalie-herve-fournereau>.

Barbara Iwańska is professor at the Jagiellonian University and Head of the Environmental Law Center at the Faculty of Law and Administration at the Jagiellonian University. Author of publications in the field of EU and Polish environmental law, including legal aspects of environmental protection guarantees, the Europeanization of environmental law, legal issues of nature conservation, access to environmental information, public participation in environmental matters, as well as access to court in environmental matters. She is member of the Scientific Council of the Tatra National Park.

Jerzy Jendroška is professor of EU law at Opole University, Managing Partner at the law firm JJB in Wrocław, and Head of the Environmental Law Department at the Institute of Environmental Protection – National Research Institute in Warsaw. He served as Vice-Chair of the Aarhus Convention negotiations (1996-1998) and SEA Protocol negotiations (2001-2003), as Secretary to the Aarhus Convention (1998-1999) and as Vice-Chair (1999-2002) and later the Chair (2002-2003) of the Aarhus Convention Bureau. He was arbitrator at the Permanent Court of Arbitrage in the Hague (2001-2016), member of the Implementation Committee of the Espoo EIA Convention (2004-2017), and member of the Aarhus Compliance Committee (2006-2025). Publications: <https://orcid.org/0000-0002-0436-099X>.

Simon Jolivet is associate professor of public law authorized to direct research at the University of Poitiers (France), and the current president of the French

Society for the Environmental Law (SFDE). He is notably the co-author of the handbook “Droit de l’environnement”, Précis Dalloz, 9th ed., 2023, and one of the annotators and commentators of the French environmental code (Code de l’environnement annoté & commenté, Dalloz, 29th ed., 2026). For his publications see <https://cv.hal.science/simon-jolivet>.

Vasiliki (Vicky) Karageorgou is an associate professor of EU Environmental law and EU Administrative Law at the Panteion University of Social and Political Sciences (Athens, Greece). Her research interests focus on EU and National Environmental Law and their interrelation with International Environmental Law, including specific aspects of EU Administrative Law (judicial protection, transparency). She has served as a legal advisor to entities both at the international and national levels (UNEP-MAP, Ministry for the Environment) and litigated environmental cases before the Greek Council of State. For her publications see: <https://deps.panteion.gr/?portfolio=karageorgou-vasilliki&lang=en>.

Markus Kern is professor of constitutional, administrative and EU law at the University of Bern. In addition to his law degrees (licence from the University of Fribourg, maîtrise from the University of Paris II, LL.M. from Harvard), he also holds a BA and MA in Economics from the University of Bern. He specialises in the regulation of network industries, data protection law and environmental law.

Rajko Knez is a Constitutional Court judge and a full professor at the Faculty of Law, University of Maribor. He is also active in EU law, particularly environmental protection and nature conservation law. For his detailed CV, see <https://www.us-rs.si/en/about-the-court/judges/prof-dr-rajko-knez>, and for his publications, see bib.cobiss.net/bibliographies/si/webBiblio/bib201_20251226_200411_a4034403.html.

Timo Koivurova is a research professor of the Arctic Centre, University of Lapland, Finland. He served as the director of the Centre from 2015 to 2020. His doctoral dissertation in 2001 was on environmental impact assessment in the Arctic. He became the director of the Northern Institute for Environmental and Minority Law 2003 and professor in 2004.

Ludwig Krämer was a judge at the Landgericht Kiel (Germany). He served for more than thirty years in the environmental department of the European Commission and is now retired. Outstanding among his many publications is his textbook “Krämer’s EU Environmental Law” (Hart Publishing), 9th edition 2025. He was one of the founding members of the Avosetta Group.

Richard Macrory is emeritus professor of environmental law at University College, London. He has had a long interest in questions of implementation and enforcement of environmental law. He was the first chair of the UK

Environmental Law Association and chaired its Brexit Task force following the 2016 referendum. He served as one of the first non-executive directors of the Office for Environmental Protection set up as independent environmental audit and enforcement body after Brexit. Richard was one of the founding members of the Avosetta Group.

Massimiliano Montini is professor of European Union law at the University of Siena (Italy), where he holds a Jean Monnet Chair on Circular Economy for the Internal Market (CE4INT), is the Rector's Delegate for European Citizenship and the Co-Director of the Research Group R4S (Regulation for Sustainability). He is Fellow of C-EENRG Research Centre and Life-Member of Clare Hall College at the University of Cambridge, Co-Chair of the Ecological Law and Governance Association (ELGA) and Member of several national, European, and international academic networks.

Angel M. Moreno is a full professor of administrative and environmental law at Carlos III University of Madrid. His teaching and research activities focus mainly on EU and Spanish environmental law, on administrative law and on local government, at national and European level. He has served as an alternate member of the Board of Appeal of the European Chemicals Agency (ECHA).

Lana Ofak is a full professor and chair of the Administrative Law Department at the University of Zagreb Faculty of Law in Croatia. Her research focuses on administrative procedure, judicial review, and environmental law. For her publications see <https://www.croris.hr/osobe/profil/602?lang=en>.

Marco Onida is an official of the Environmental Department of the European Commission, where over the last 32 years he has dealt with waste policy, infringement of EU environmental law, access to justice and forest protection. He has observer status in the Avosetta Group.

Emanuela Orlando is associate professor in environmental law at the University of Sussex. She holds a PhD in law from the European University Institute, an MJur from the University of Oxford and a law degree from the University of Siena. During her academic career, Emanuela has researched and published on various topics of EU and international environmental law. She is also the author of a monograph on Environmental Liability and the Interplay between EU Law and International Law (Routledge 2023).

Nicolas de Sadeleer is full professor in UCLouvain, Saint-Louis. He is a specialist of EU law (institutions, internal market), environmental law (international and domestic) and comparative law. He is an active commentator on EU legal and political issues in the areas of trade, investment, and sustainable development. In addition to holding guest academic positions at several universities

around the world, he has been the recipient of six international university chairs. In addition, he has worked as consultant with national and international authorities on a wide range of environmental issues. He is supervising several research projects on the implementation of the EU Green Deal.

Hendrik Schoukens is a professor of EU environmental law at Ghent University and a solicitor at the Brussels Bar. He has an extensive publication record spanning a wide range of topics in EU environmental law. In addition to his academic work, he has achieved several notable courtroom victories in strategic environmental litigation before Belgian courts, including cases on wetland protection, Natura 2000, PFAS pollution, species protection, and pesticide regulation.

Eloise Scotford is professor of environmental law and Dean of the Faculty of Laws at University College London. Her research covers many aspects of environmental law, in UK law and globally. She is a leading scholar on the legal treatment of environmental principles, air quality law, climate change governance, and legislative and adjudicative processes relating to the environment. Eloise has advised the UN Environment Programme, the Commonwealth Secretariat and the UK Department of Environment, Food and Rural Affairs on matters of environmental law. She is an Associate Member of Landmark Chambers and Advisory Board member for the *Journal of Environmental Law*.

Jiří Vodička is an assistant professor at the Department of Environmental Law and Land Law at Masaryk University in Brno (Czechia). His research focuses on environmental regulation in the automotive industry and climate policy. Jiri Vodicka has taught at international institutions including the University of Antwerp, National Tsing Hua University (Taiwan), the Academy of European Law, and the Czech Judicial Academy. ORCID: 0000-0003-1026-3077. For his publications see <https://www.muni.cz/en/people/393046-jiri-vodicka/publications>.

Bernhard Wegener is professor of constitutional, administrative and EU law at the Friedrich-Alexander University of Erlangen-Nuremberg. In addition to his law degrees, he also holds a MA in Public Administration from the College of Europe in Bruges. He specialises in EU-law, information law, constitutional history and environmental law and acts as counsel in German and European environmental law disputes. For his publications see <https://www.oer2.rw.fau.de/>.

Gerd Winter is retired professor of public law at the University of Bremen. He specialises in environmental law in a multilevel perspective. He has consulted on administrative and environmental law development in several transition states and acted as counsel in German and European environmental law disputes. He was one of the founding members of the Avosetta Group. For his publications see <https://www.gerd-winter.jura.uni-bremen.de/veroeffchronol.html>.

Introduction and overview

Environmental policy and law at 50? Indeed, well before 1987 when environmental competences were incorporated into the Treaty on the European Economic Community by the Single European Act environmental policy had already materialised. The founding step was the first Programme of Action on the Environment of 1973. Then followed from 1975 onwards a number of legal acts protecting and improving the aquatic environment, directives on waste (1975), restrictions of dangerous chemicals (1976) and nature conservation (1979). Measures to reduce polluting emissions from motor vehicles even date back as far as 1970. The eighties and nineties brought an ever-increasing range of environmental legislation, including laws on pollution from industrial plants (1984), environmental impact assessment (1985) and access to environmental information (1990).

One may ask why an assessment of 50 years of environmental law is of relevance in the present world of turbulence and fundamental reorientations. Changes of tectonic character are indeed underway. Three dimensions should be mentioned. First, fundamental changes of the environmental conditions of life are taking place. Examples include increasing weather extremes, creeping loss of biodiversity, ubiquitous contamination with toxic chemicals, soil degradation, and growing water scarcity. Second, deep changes in governance structures have emerged as international law is undermined by new state egoisms, wars are fought about the expansion of territories and spheres of influence, autocratic regimes gain ground, and democratic legitimation of power and the rule of law are coming under pressure. Third, social values and political priorities may be changing as economic growth is seen as a higher priority than environmental protection.

Where should Europe be placed in this scenario? We believe European experiences can serve as a source for finding ways out of the present catastrophes. Europe may have heavily contributed to the environmental deterioration of the region but has now had successes in improving core components such as water, air quality and endangered species. So far Europe has defended its trust in the practice of democracy, rule of law and multilateralism. Europe has still resisted to give up completely ecological priority for economic growth.

But two challenges are outstanding. One is that the original tasks have yet to be completed. Higher levels of environmental protection, improved democratic rights and better legal protection are still to be desired. The other is that Europe too is hit by the new global pressure to downgrade substantive and procedural environmental law.

In this context the present book may provide three kinds of insight: that the *acquis* of EU environmental law is a remarkable achievement, that it can and should be improved in many respects, and that it should be defended against

destructive attacks. With this orientation in mind the book breaks down into three parts: studies on sectoral law, studies on horizontal law and more fundamental reflections.

As indicated in the foreword, the authors of the contributions to the book do not aim to provide a comprehensive account and evaluation of European environmental law. Instead, they chose issues they feel to be of crucial importance, identify problems and suggest solutions, drawing on their professional experiences and personal views. Some readers may think there are areas where more could have been said, but not everything could be covered in depth, and this collection, featuring many of the most distinguished experts in European environmental law, remains distinctive and important.

The book is divided into three Parts. Part A concentrates on **sectoral policy and law**, and is divided into two sections, one on the protection of **environmental media** and the other on **product quality**.

In the first section, **Agustín García-Ureta**, with the assistance of **Marco Onida**, undertakes to **assess the EU biodiversity policy and law**. He starts by pointing at the limited knowledge of the state of the EU biodiversity, which raises difficulties for taking appropriate measures of improvement. The main drivers for the apparent deterioration of EU biodiversity are agricultural and forestry activities, urban sprawl and tourism, invasive alien species, water use and, above all, climate change effects. As weaknesses of the EU legislation and policy on biodiversity, the contribution identifies the failure to grant protection status to all species, the limitation of existing strategies to fight biodiversity loss, the lack of transparency of measures to enforce existing provisions and the lack of substance and consistency of plans and programmes to conserve biodiversity. Also, the substantive measures to protect biodiversity lack coherence; the role of science remains limited and the obligations of Member States, as established by the ECJ, had limited effects. Giving rights to nature is discussed, though the EU has not yet raised this issue and the experience in Member States (e.g. Spain) is very limited. The implementation and enforcement of plans, programmes and projects that affect EU biodiversity, as well as the problems of ensuring a fair compensation in cases of reduced protection of the biodiversity, and also the full protection of fauna and flora species, the application of the precautionary principle in biodiversity law and the implementation of the provisions on ecological corridors are discussed, but remain challenging problems. The new legislation on nature restoration will need effective and continued implementation and enforcement management to help biodiversity. Although they agree that the EU has enacted and enforced more legislation on biodiversity than any other region in the world, the authors are not too optimistic as regards the future of biodiversity, yet they signal a modest hope in the deployment of rights of nature.

Henrik Schoukens then considers **nature restoration as a binding legal duty in the EU** and concentrates on forthcoming ways and means to restore biodiversity within the EU. He first examines, how far one should go back in time with a restoration: an ecosystem in 1900, 1950, 1980 and 2020 may be of quite different character and require different measures. Neither a wilderness nor a pre-human status can be the objective of restoration. Member States' restoration plans, which must extend until 2050, will have to carefully weigh the measures to undertake. In a second section, the author discusses enforceable restoration duties and timetables, underlining that a voluntary approach to reach restoration has failed within the EU. However, the new regulation, based on legally binding national restoration plans, does not guarantee a successful large-scale restoration. This also becomes obvious when it is considered that for marine waters, birds, other species and habitats, the restoration objectives are not robust. The third section addresses the impact of climate change on nature restoration, in particular the measures taken over a number of years to let projects on the generation of renewable energy prevail over the interests of protected species or areas. This leads Schoukens to raise the prudent question of whether the international discussion on rights of nature should not lead, in the long-term perspective, to recognise that EU ecosystems have rights of their own. Schoukens underlines that the EU Regulation on nature restoration is, from a global perspective, a unique piece of legislation, but despite all its innovative provisions, it remains imperfect. In the light of a 2050 perspective, it cannot be perceived other than being a first step to protect biodiversity.

Eloise Scotford analyses **EU air quality law**. She begins with a brief history of the EC/EU air quality regulation since 1970 that has developed as an “increasingly coherent and robust system”. Five key features have emerged: monitoring and assessment, quality and total quantity standards, air quality planning, transboundary obligations, and public information. They are to be implemented by Member States that are strictly supervised through Commission infringement proceedings. In an analytical section the author identifies five contradictory aspects of the air quality governance: the simultaneous success and failure of protective effects that are due to a number of implementation problems and insufficient protective ambition; its technocratic character that neglects the deeply social embeddedness of air pollution; a factual alignment with, yet a regulatory separation, from climate change; the multilevel character of the regime that has not yet found an appropriate division of competences on communal, state and EU levels; and a thrust on regulation and lack of judicial interpretation. The third part of the chapter considers future areas of EU law and policy that will be grounded on the Ambient Air Quality Directive 2024. Among others the new approach introduces a new 2050 zero-pollution objective, more ambitious quality standards, bolstered enforcement measures, strengthened planning obligations, cross-sectoral coordination, public participation, and transboundary engagement. In conclusion the author acknowledges that the new Directive sets a different tone of ambition and sophistication but warns

that the implementation will “require an orchestra of different players” to work together.

Water pollution and the 2025 EU water resilience strategy is the subject of **Nathalie Hervé-Fournerau’s** chapter. She draws a balance of the EU policy and law concerning the quality situation of surface and groundwater. Water management is described as a complex problem, as it has to deal with diverse forms of pollution and is affected by numerous policies (energy, transport, agriculture, industry, etc.). After having tried several management approaches, the present approach is marked by a “one health strategy” and integrated water resource management, which tries to combine the prevention and monitoring of pollution across different sectors of policy. The different measures must, however, be considered insufficient to lead to a good status of waters. EU water legislation and in particular the water framework directive show a number of legal weaknesses which Member States can exploit. This concerns vague definitions of terms, “a striking lack of clarity”, derogation possibilities and exemption clauses. All ongoing efforts to review the water framework directive and other water legislation show these weaknesses, making it rather unlikely that the binding targets of 2027 or 2030 will be reached; it even seems that flexibility clauses will be used more frequently in future. The Court of Justice of the EU has, according to the author, a very important role to play in water management. Its decisions frequently have a normative character, sharpen vague terminology and unclear targets and thus help national courts and administrations to orient their decisions on them. It is all the more disappointing that the Union’s resilience strategy neglects this important cornerstone of the Union’s water policy. In policy terms, there is a need for a human-rights based water governance of the Union, which is, at present, not yet realised or even in preparation.

Vasiliki Karageorgou addresses **water scarcity in the context of EU environmental law**, a problem that has only very recently come into focus in EU environmental policy and law. After a short introduction which sets the scene, the author discusses the role of international water law in addressing the issue and concludes that the agreements adopted to date do not specifically deal with water scarcity. EU law has also been slow in developing rules on water scarcity. This might be attributed to the provision that requires unanimous decisions for quantitative measures of water management (Article 192(2) TFEU). The water framework directive focuses on qualitative measures, yet droughts are mentioned and several provisions of the directive would allow the taking of measures on water scarcity. Other pieces of EU water legislation offer a similar picture: water efficiency considerations are mentioned, but specific measures on water scarcity are lacking. The common agricultural policy is examined in detail with emphasis on the conditionality rules for obtaining financial support, which concern measures that fight water scarcity, and on eco-schemes. Also, the capacity of the Regulation on the reuse of water for irrigation to boost water reuse practices is considered. Overall, though, the EU common agricultural

policy has not given much attention to the problem. The same applies to different soft-law actions such as Commission communications or the EU resilience strategy of 2025: the problem is identified, in particular due to the influence of climate change, but the approach of EU institutions remains general and non-committal. The author then proceeds to a case-law study of the water diversion project from the Acheloos river to Thessaly, in order to show the difficulties of addressing water scarcity only by infrastructure measures. Due to judicial controversies, the project is still not realised, some 50 years after its conception. The contribution concludes by pointing out the possibilities for the EU legislature to address water scarcity, for example by introducing provisions which set a hierarchy of the permissible water uses in water-stressed areas and enshrine the water efficiency as a first principle.

Angel M. Moreno focuses on the EU policy and law aimed at **mitigating climate change**. He starts with an overview of the key legal instruments, and then considers core characteristics discussing their advantages and drawbacks. One is the high ambition of emissions reduction to which the EU has committed itself trusting that the other states including the largest polluters will follow suit. But there is a risk that they will not and will outcompete the EU economically. Another feature is the long-term targets set out for emission reductions. They give guidance but no sanctions are provided if they are not met. As for instruments the author digs into the promises and failures of emissions trading. Although praised as being market-based, it is heavily framed by regulation, loaded with bureaucratic costs, distorts the international competitiveness – requiring exemptions and border adjustment mechanisms – and allows for windfall profits if emission allowances are allocated for free. One more feature concerns the legislative technique. The law is more and more complex, detailed, and technical and the policy implications are hard to understand and thus inaccessible for public deliberation. The author also raises constitutional doubts about the increase in normative and executive powers handed over to the Commission, as well as a trend to use badly defined terms and boast new principles. The chapter concludes with a reflection on the inner-ecological conflicts between climate policy and biodiversity protection, as well as the pros and cons of carbon capture and storage.

In the second section of Part A (product quality) **Angel Manuel Moreno** examines the **EU chemicals legislation**, assessing the experience gained since the adoption of Regulation 1907/2006 (REACH) some twenty years ago. He begins by mentioning the challenges of designing laws concerning chemicals, such as the lack of knowledge about the hazards and toxicity of chemicals, the scientific uncertainty as to their impact on humans and the environment and the objective of promoting trade in chemicals. Finding a balance between protection and free trade elements is necessary, but often complex and difficult. Moreno briefly retraces the history of EU chemicals legislation, before detailing the present rules under the REACH regulation. His main section describes the advantages

and disadvantages of REACH. As for the main advantages he describes eight aspects, including the shift from the assessment by public authorities of chemicals existing on the market to the obligation of industry to submit the necessary information on the chemicals they intend to market, as well as the prioritisation of substances of high concern. He also identifies six weak points of the REACH system, in particular the slowness of the decision-making process, the fact that responsibilities between Member States, ECHA, and the Management Board of ECHA are often not clear, and the expert language used that is hard to understand by the broader public. Other sections examine in detail the function and performance of the chemical agency ECHA, the enforcement of REACH and the activity of ECHA's Board of Appeal which was recently transformed into an ad hoc body, thereby reducing its past beneficial impact. The author concludes by pointing to three main advantages of REACH: a high level of protection, a large national and EU scrutiny capacity and its impact on millions of EU citizens. He considers that the main weaknesses are the slow decision-making process and the fact that effective application and enforcement is left in the hands of Member States, which might not all be on the same wave-length.

Nicolas de Sadeleer explores the **EU regulation of plant protection products**. He begins by outlining the effects and regulatory need of pesticides in the environment taking Glyphosate as an example. This is followed by a description of the objectives, principles and legal bases of Regulation 1107/2009 highlighting the principles of high level of protection and precaution. The next section is dedicated to active substances for pesticides, and in particular the procedure, criteria and renewal of authorisation by the Commission. The different steps and the risk assessment requirements are illustrated by concrete examples from cases decided by the European Union courts. The author then considers reports on the authorisation of pesticide products that the Member States are competent to provide. de Sadeleer discusses in some detail the mutual recognition of authorisations and the assessment of risks, the precautionary principle playing an important role. Other sections concern the emergency powers of Member States, the "rebellion" of some national courts against the EU decisions on glyphosate and a short overview on Directive 2009/128 on the sustainable use of pesticides. The author concludes that the pesticides Regulation is a demonstration of how health and environmental concerns in the Union legislation are given priority over the free circulation of goods.

Jiří Vodička describes the development of the **EU's waste management policy and law during the last fifty years**. His introduction draws the attention to the paradigm shift of the EU, which went, during the last ten to fifteen years, from waste management to a circular economy approach, to be achieved by 2050. The progressive development of this change through the different legislative acts since the 1970s is retraced. Vodička discusses the controversial definition of "waste", the limited implementation efforts, prevention of waste generation,

treatment, export and disposal of waste, mentioning the tension between measures on waste prevention and product policy. He then turns to circular economy aspects, starting with a discussion of its definition, describing the two EU action plans and the measures and policies, which the EU developed (eco-design, eco-label etc.). This section is followed by a more detailed discussion of three key elements concerning the policy of circular economy: the legal basis for EU measures (Article 114 and/or Article 192 TFEU), the polluter pays principle in waste management and the question as to whether, as the author finds desirable, “circularity” should be developed into a general principle of EU policy and law. But while waste generation in the EU is still increasing and recycling rates are small, he acknowledges that over-ambitious measures might affect the competitiveness of the EU economic actors. Furthermore, the impact of EU measures on third countries is not yet really assessed. Overall, the emphasis of EU waste law and policy has moved away from solely the environmental sector (Article 192 TFEU) and is now also based on internal market and product policy considerations. This shift should find its expression in a legislative act which concentrates on circular economy considerations.

Part B of the book focuses on **horizontal measures** that crosscut sectoral law. It has 6 subparts: on **instruments, implementation, liability, democratic rights, legal protection, and legislative issues.**

Concerning **instruments Ole Kristian Fauchald** examines the EU legislation and practice of the **strategic environmental assessment (SEA)**. He first outlines the CJEU jurisprudence on the scope of application of the SEA, and in particular the definition of public authority, the notion of requirement by law, and the inclusion of regulatory measures. He then identifies differences of alternatives testing in the SEA and EIA and discusses whether the SEA concept not only applies to existing plans and programmes but even requires plans to be adopted under certain circumstances. He notes how the case law has extended the scope and content of the SEA in search of a realm of strategic decisions in need of environmental assessment. The author then looks at the implementation of the SEA Directive and the political discussion about a possible reform. He identifies two streams of practices and discourse: one defending a narrow but effective realm that focuses on land use planning and another one asking for extending the SEA to strategic policies and regulation. His own suggestion is to consider a separate legislative basis for the strategic concept which would add a third trajectory to project and plan related assessments.

Regulation has often been categorised as being either direct or indirect, with self-regulation as a third variant. **Gerd Winter** examines **direct regulation**. He first compiles the core components he considers to be characteristic for direct regulation. He notes the common critiques of direct regulation as being rigid, ineffective, inefficient and transaction costly, but argues that similar or even

greater failures can be found in indirect regulation, or can be avoided through proper design. The chapter focuses on how trends in the design of direct regulation are internally eroding the concept. While the intention of an instrument can be characterised as direct, the regulation itself is often undermined through what the author calls over-flexibilisation. He proposes four subtypes of over-flexibilisation which are illustrated by case studies. They include unlimited off-setting, the regulation of CO₂ emissions from vehicles serving as an example, unlimited exceptions as illustrated with the Natura 2000 exemption regime and other examples, unlimited specification as demonstrated with the regulation of dangerous chemicals, and unlimited economisation explained within the cap-and-trade system for green-house gas emissions. In conclusion the author defends properly designed direct regulation as a means to provide a common level playing field for all regulatory addressees.

Markus Kern then discusses indirect regulation, or **economic instruments**. He begins with a historical overview of the emergence of economic instruments within the EU, stressing their increase after the long practice of direct regulation, and compiling the main reasons why they were found attractive. The author categorises these instruments into three groups: those that require payment as a disincentive for certain undesirable conduct, those that contain subsidies or benefits as incentives for certain desirable conduct, as well as compensation for damage caused. The study focuses on the first category and distinguishes between various forms of payment, such as taxes, charges, deposits, entitlements, and payments for services. Then, the author presents two case studies in greater detail as a basis for evaluating the pros and cons of economic instruments. One case study is on the EU Emissions Trading System which is an example of an EU initiative and EU involvement in the design of economic instruments, including in particular the pricing of emissions as a lever mechanism. The second case study is on road pricing, which differs from the first because the EU's role has been enabling and limited rather than mandatory. Thus, it contains only weak incentives of internalisation of environmental costs. The author then provides a general evaluation of economic instruments. He sees the advantages as a reduced administrative burden, greater flexibility, implementation of the polluter pays principle, freedom of choice, and information generation. The disadvantages are the permissive moral signal, uncertainty about adequate pricing, and social implications. Overall, the author recommends searching for the best combinations of regulatory and economic instruments based on a careful analysis of the positive and negative effects. He advises studying the actual behaviour of those addressed by the regulations rather than relying on models of rational behaviour of the "homo oeconomicus".

Ludwig Krämer and Richard Macrory explore the **European Commission's role in ensuring that Member States comply** with their environmental obligations. The EU system is distinctive and far more developed than any equivalent found

in other supra-national legal systems. It has secured some notable achievements in securing better compliance by Member States, but the authors explore more recent developments that have generally been detrimental to an effective enforcement system. They note that neither the Council nor the European Parliament takes a systematic interest in implementation issues and that the Commission now largely focuses on enforcement cases considered to be of strategic importance. There is a growing lack of transparency and detailed, publicly available information on enforcement. The chapter includes details on major implementation gaps at national level across key EU environmental legislation, showing that all is not well with the system. The authors conclude with opening for discussion a number of ideas for improving the system. As they conclude, “we do not believe the current position is sustainable in the future without causing further significant damage to the environment and the rule of law”.

One of the ideas they suggest is the development of **national environmental oversight bodies** to complement the role of the Commission. In Chapter II 2 b **Richard Macrory** develops this idea further in his chapter. He notes that the Commission has promoted rights of legal action by environmental NGOs and others against national governments and public bodies to ensure better implementation of environmental law. While such action can be important, he doubts whether they can replicate the more systematic and independent supervisory role performed by the Commission. All Member States have created official audit bodies to provide an independent and transparent scrutiny of public finances. But most have no equivalent body specialising in the environment. Ombudsmen may explore issues of environmental maladministration but again tend to lack environmental expertise. He considers three examples within the EU of independent official bodies that can hold government to account for environmental failings. He then provides detailed analysis of British Office for Environmental Protection which was set up following Brexit to replicate as far as possible the independent scrutiny and enforcement role of the European Commission. The author advocates the development of specialist national audit bodies throughout the EU. He does not suggest that one model can fit all countries but concludes with a number of minimum common elements that need to be addressed.

Liability issues are addressed in the next two chapters. **Emanuela Orlando** considers how the question of **environmental liability** has been addressed in the European Union. She begins by noting the theoretical arguments concerning the role of liability regimes, and how these have helped shape the background to the development of EU initiatives. Member States resisted the early attempts by the Commission to harmonise more conventional tort-based liability rules, and the focus shifted to providing administrative tools for the remedying of environmental and natural resource damage. The author considers that the adoption of the Environmental Liability Directive in 2004 was in principle a significant step.

The focus on natural resource damage filled a gap in the national legislation of most Member States. But ambiguities and the extent of discretion contained in the Directive has resulted in a very uneven application in practice across Member States. In seeking to improve the situation, the author warns that the Directive cannot be considered in isolation. Any proper evaluation of its role and effectiveness must place it within the complex web of both national and international legal instruments providing parallel sets of duties and responsibilities.

Rajko Knez then provides a sophisticated analysis of the challenges of securing effective **criminal law concerning the environment**. The EU Directive 2024, replacing the 2008 Directive on the subject, has tightened the definitions of offences and specified more detailed maximum penalties. The author characterises the legislation as a minimum harmonisation instrument, and explores the notion of unlawfulness contained in the Directive. When it comes to transposition into national law various options can be employed, given the need to respect principles of certainly in criminal law (*nulla crimen sine lege*). Where conduct is not exhaustively covered, the author argues that a closed and explicit list of unlawfully references together with specific thresholds will be needed. Here, although not explicitly defined in the Directive, there is bound to be a link between the criminal law and administrative environmental law. He warns against a simple copy-out transposition of the Directive into national law – the discretion contained in the Directive must be used to translate open formulas into reviewable criteria rather than simply replicate vagueness. Effectiveness also requires consideration of prosecutorial discretion and the need for more specialised prosecutors. Above all, he concludes the environmental criminal law should not be considered in isolation, but as part of an integrated system combining criminal, administrative preventive and restorative responses.

The next sub-part concerns **democratic rights**. **Lana Ofak** explores the question of rights to **public access to environmental information** within the EU. She notes this is a field of considerable legal complexity. International agreements, including the Aarhus Convention, can provide overlapping legal frameworks. There may be tensions between general rights of access to information within Member States, and specific rights concerning environmental information. The EU has not attempted to harmonise general rights to access but focused on sector-specific instruments such as the Environmental Information Directive and the Open Data Directive. She provides a critical analysis of access to environmental information at EU level, and recent data from the European Ombudsmen highlights instances where the Commission has been reluctant to release information. Against that background she goes on to provide a detailed examination of how access to environmental information works in practice in one Member State, Croatia. Most claims are based on more familiar general rights to information, guaranteed under the Croatian Constitution, rather than the specific laws implementing the EU Directive. She finds that potential conflicts with

the Aarhus Convention still remain, largely due to a lack of awareness of its provisions. Her conclusion, which is probably echoed in many other field of environmental law, is that the main challenge is not so much inadequate laws, but deficient implementation.

Jerzy Jendrośka then elaborates on **public participation in environmental proceedings** focusing on the compatibility of related EU legal acts with the Aarhus Convention. He summarises the provisions of the Aarhus Convention and describes its legal status within the EU and its implementation by EU law, differentiating between participation on the levels of EU and Member State institutions. The core of the chapter is on achievements and drawbacks of EU secondary legislation in comparison with the Aarhus requirements. Various issues are discussed including the concept of participation as being a “floor” rather than a “ceiling”, the scope of application, in particular concerning plans and programmes, the content and subjects of participation, with a focus on the difference between the general public and the public concerned as well as differences concerning individual persons and non-governmental organisations (NGOs). He then considers issues of timing such as early opportunities and time frames for participation, rights of foreign publics to participate, and key procedural steps including notification of the public, the information to be provided, rights of comment, the taking of comments into account, notification of the decision, and judicial review of procedural mistakes. In conclusion, the author asserts that Articles 6 and 7 of the Convention have not sufficiently been implemented and new legislation is needed concerning participation for plans and programmes as well as additional initiatives that have significant effects on the environment.

Legal protection is the focus of the next sub-part. **Jan Darpö** provides personal insights on **EU access to justice issues**. He notes the profound importance of the EU’s ratification of the Aarhus Convention and analyses five key cases of the CJEU concerning Aarhus and access to justice. Judgments of the Court, decisions by the Aarhus Compliance Committee, and the direct effect doctrine have substantially opened up access to justice in environmental matters within Member States and contributed to more effective enforcement of environmental law. But Aarhus is currently under attack from politicians and industry. Counterintuitively perhaps, he argues that the academic response should now be a rather more open and critical analysis of certain aspects of Aarhus than has been the case in the past, where he feels too much was accepted as being always positive. He concludes by considering two issues he regards as being of growing significance. The question of standing lies at the heart of many recent climate change cases. The recent decision of the European Court of Human Rights in *Klimaseniorinnen* represents an important development in our understanding of access to justice in environmental matters, and he notes the influence of Aarhus on the Court’s reasoning. The final issue of growing interest concerns the

granting of direct rights to nature. The author notes that the Rights to Nature movement has raised areas of real interest to pursue, but argues that the question of standing and who should represent nature in the courts has yet to be properly addressed in the literature. To date, the Rights of Nature movement has largely advocated notions of an *actio popularis* but the author maintains this may be counterproductive, and that a more subtle and nuanced approach on standing for environmental non-governmental organisations (ENGOs) in line with the position of EU law should be developed.

Jan Darpö with the assistance of colleagues, then considers **land and cultural rights of the Sámi people and access to justice**. It addresses a population that has often been undervalued by states and – even more so – by the EU although spanning over large territories in Norway, Sweden, Finland and Russia. The chapter starts with an outline of the current life conditions of the Sámi people, and describes their organisational structures as indigenous communities and their protection by general and regional international treaties. The authors then give particulars about their legal status in the Norwegian, Finnish and Swedish legislation. The focus is on land rights as a basis for reindeer herding which is a core economic activity and income source. In addition, court cases are presented that deal with classical conflicts between traditional herding rights and industrial logging or mining activities. In addition, recently conflicts between herding rights and large projects of renewable energy production have arisen, which creates a tension between biodiversity and climate protection that is also to be found in other areas. Although access to national courts has improved, there are still challenges in terms of the consultation process, as well as the ability to challenge activities that are not covered by permit regimes. Also, there is not yet clarity about legal standing if a Sámi community were to challenge an EU legal act – or its omission – before the EU General Court.

The final sub-part of Part B concerns legislation. **Massimiliano Montini** elaborates on the **evolution of the legislative style in EU environmental law**. Compared to more familiar approaches he sees several new features emerging, many of them as a corollary of the European Green Deal. One is the production of an immense amount of new legislation. The author regards this as hyperactivity, which may produce overlaps, inconsistencies and application costs. A recurrent feature is legislation in what the author calls “silos”, i.e. legislation setting diverging priorities on issues such as such as climate change, energy, circular economy, and biodiversity without proper mutual adjustment and guidance through reference to general principles such as integration and sustainable development. A second facet is the creeping extension of EU competences. This happens both through the addition of new topics to the scope of environmental law (as demonstrated by the Nature Restoration Regulation) and by promoting environmental interests within legal acts based on the internal market competence (as demonstrated by the Ecodesign Regulation). The author considers that

this may be a step towards realising the integration principle, but he reminds us that such competence enlargement marks a step away from environmental protection *strictu sensu*. Furthermore, he notes an increased use – or overcoming – of the subsidiarity and proportionality principles, taking the RED III Directive as an example. He also observes a trend of using the Regulation instead of the Directive in environmental policy. Discussing examples such as the EU Climate law the author urges that an analysis of the matter at stake should be the starting point of instrument choice. Lastly, the author reflects on the increasing extraterritorial bearing of EU law. He shows in what ways the EU acts as a global “soft” green regulator, examples being the Carbon cross-border adjustment mechanism (CBAM) Regulation, the Regulation on the prevention of deforestation, and the Regulation on Eco-Design. From here a bridge is built to Alexandra Aragao’s chapter on external effect of EU law.

Simon Jolivet discusses the **codification of environmental law on state and EU levels**. He first identifies different meanings of “codification” as being “à droit constant” or “droit nouveau”, and, as is common practice at the EU level, as assembling a basic act and its amendments à droit constant (called codification) or with substantive changes (called recasting). The aim of codification (in the non-EU general sense) can therefore be to bring scattered legal acts into a transparent order, with or without creating new terms and concepts. Alternatively, or in addition, codification can also be used to add new policy to existing law. Concerning national and EU levels, the author observes a paradox in that most of environmental law is produced on the EU level while citizens would probably prefer a national code. He then reflects on problems of codification on the EU level. One is whether to compile a general part based on “horizontal” issues such as environmental information, EIA, administrative procedures, access to justice, but also principles of environmental protection. The sectoral law could be ordered following the different environmental media on the one hand and the human legal acts impacting on the environment on the other. A more specific issue is whether codification should cover directives or be confined to directly applicable law. Concerning national codification the author reflects on how to deal with EU law that is directly applicable, citing two approaches practiced in France. As a general proviso the author casts doubts whether the political discourse in the EU would be prepared to venture into a codification enterprise.

The **final part of the book, Part C**, ventures into some fundamental issues, including human rights, the protection of future generations, the role of the Court of Justice of the EU as motor of EU environmental law development. This Part concludes with two final contributions reflecting on an overall critique of environmental law in general taking profoundly different positions on prospective futures.