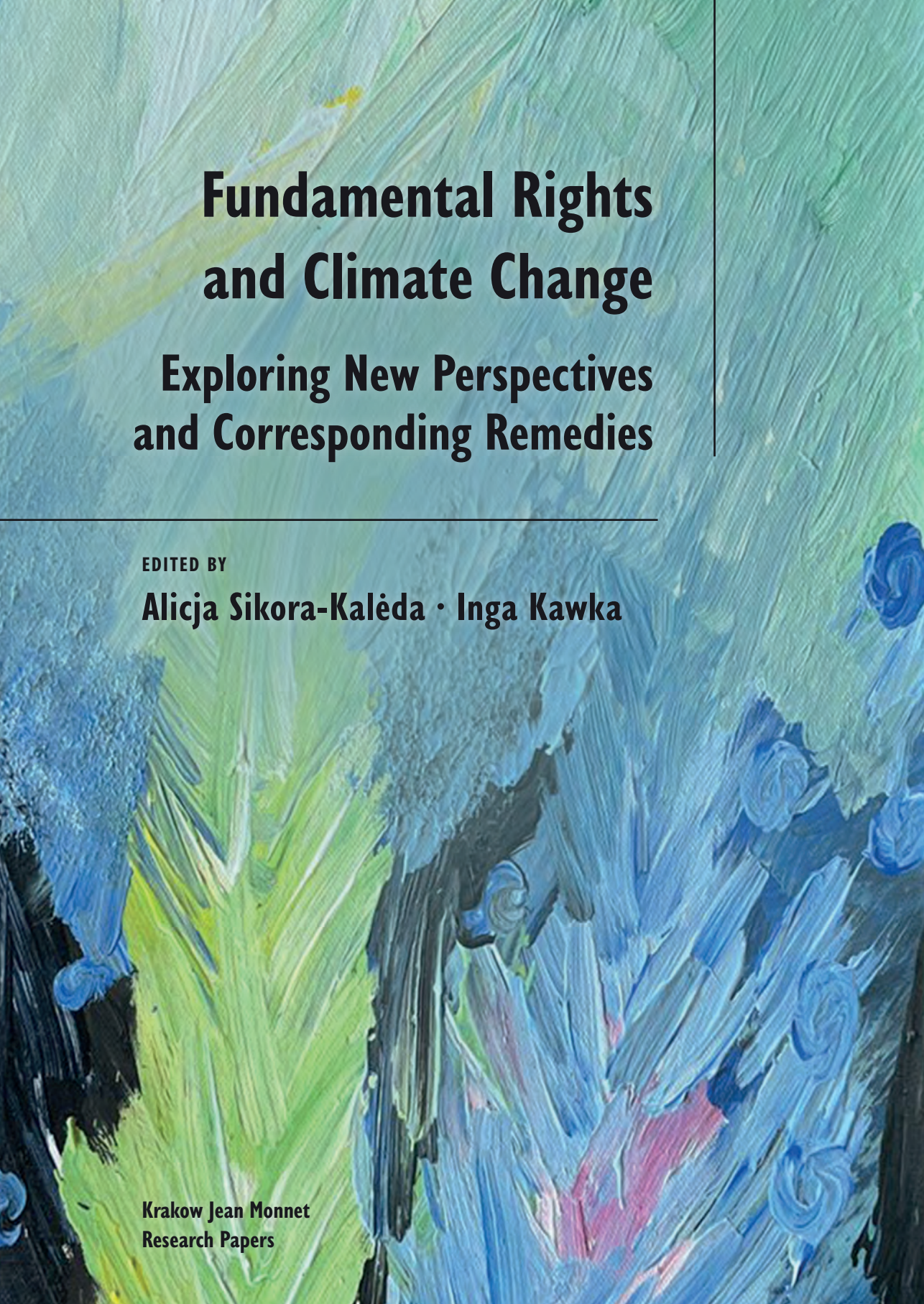

Fundamental Rights and Climate Change

Exploring New Perspectives and Corresponding Remedies

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Alicja Sikora-Kalėda · Inga Kawka

Krakow Jean Monnet
Research Papers

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Alicja Sikora-Kalėda
Jagiellonian University, Kraków, Poland
https://orcid.org/0009-0001-1204-7020
alicja.1.sikora@uj.edu.pl

Inga Kawka
Jagiellonian University, Kraków, Poland
https://orcid.org/0000-0001-6909-5798
inga.kawka@uj.edu.pl

Review: Prof. dr hab. Dagmara Kornobis-Romanowska

Language editor: Lily Buchanan

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ul. św. Anny 6, 31-008 Kraków
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e-mail: publishing@akademicka.pl
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Introduction

The environment is where we all meet;
where we all have a mutual interest;
it is the one thing all of us share.

Lady Bird Johnson

The monograph outlines the growing importance of fundamental rights in the European Union, particularly in the context of environmental protection and the fight against climate change. These rights have become a cornerstone in shaping policies that address ecological challenges while balancing economic and social aspects. The European Green Deal (EUGD), a landmark initiative, embodies the EU's commitment to transitioning into a climate-neutral, modern economy by 2050. This ambitious goal requires comprehensive legislative action and coherence in implementing policies across various sectors, ensuring that all measures align with and uphold fundamental rights as enshrined in the EU legal framework.

This monograph is the culmination of scholarly work inspired by discussions from the conference titled 'Fundamental Rights and Climate Change in EU Law and Beyond – Mapping Fundamental Rights, Nature's Rights, and Corresponding Legal Remedies,' organized in September 2023 as part of the Jean Monnet Module project, 'Sustainability and Climate Change in EU Law.' This academic event, hosted by the Chair of European Law at the Jagiellonian University, brought together experts from diverse fields to discuss and exchange perspectives on sustainability and the legal frameworks within the EU. The insights shared during the conference laid the foundation for the analyses presented in this book, highlighting the complex interplay between fundamental rights, environmental challenges, and legislative coherence.

The chapters of this book reflect a collective scholarly effort to explore diverse aspects of fundamental rights and their intersections with environmental law within the EU framework. The opening chapter, authored by Alicja Sikora-Kalėda investigates the limits of human rights as instruments to advocate for global climate action. It examines how climate litigation impacts human rights and evaluates the potential evolution of environmental rights in EU law. Ilona Przybojewska contributes with an analysis of how poor environmental conditions can lead to state liability, referencing a notable 2021 Polish Supreme Court resolution. Her work probes the extent to which environmental issues can be recognized as affecting personal rights and the broader implications of this recognition.

This monograph aims to serve as a comprehensive resource for legal practitioners, scholars, and policymakers, encouraging further dialogue on the integration of environmental and human rights within the EU legal system.

Alicja Sikora-Kalėda
Inga Kawka

Fundamental Rights and Climate Change – Exploring New Perspectives and Corresponding Remedies
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Inga Kawka[1]

Enhancing the EU Green Transition through the Protection of Fundamental Rights in the Digital Environment

Abstract: The European Union faces the dual challenge of advancing digital transformation while ensuring environmental protection and safeguarding fundamental rights. The article explores how EU legislation protecting fundamental rights including the GDPR, DSA, and AI Act, contribute to a human-centric digital transformation aligned with environment protection goal. It underscores the critical role of digital technologies in achieving ecological objectives, as outlined in EU policies like the Green Deal and Circular Economy Action Plan. By analyzing the application of environmental principles in the digital context, the article highlights the emergence of concepts like digital pollution and the potential need for a new right to a clean digital environment.

Keywords: fundamental rights, EU digital transition, EU legislation, EU green transition

1. Introduction

The European Union's proactive approach to safeguarding fundamental rights in the digital era is commendable, but significant challenges remain, particularly in harmonizing digital transformation with environmental protection. Frameworks such as the GDPR, DSA, and the Declaration on Digital Rights and Principles establish robust strategies for ensuring fundamental rights such as privacy, data protection,

[1] Dr hab. Inga Kawka, prof. JU, Chair of European Law, Jagiellonian University, https://orcid.org/0000-0001-6909-5798.

and user safety, yet the environmental impact of digitalization poses a complex issue. Recognizing these challenges, the EU emphasizes sustainability and the right to clean environment as a core principle of its digital policy agenda. This article explores how the EU addresses these issues by examining the legal measures implemented to ensure a clean online and offline environment while demonstrating how a human-centric digital transformation supports and accelerates the green transition. The article also points out that the right to a clean offline environment may affect the right to a clean online environment.

2. Offline and online protection of fundamental rights

Digital transformation in the EU generates the need to emphasize that fundamental rights protected in reality must also be protected online. An example is the right to information and freedom of expression. According to Article 11 of the Charter of Fundamental Rights of the EU (hereinafter – CFR),[2] 'everyone has the right to freedom of expression. This right includes freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers.' Additionally, 'the freedom and pluralism of the media shall be respected.' This article applies to EU institutions and its Member States when they implement EU law (Article 52(5) CFR). These provisions correspond to Article 10 of the European Convention on Human Rights (hereinafter – ECHR) titled 'Freedom of Expression,' which states: 'Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers.'[3] According to the case law of the Court of Justice of the European Union (CJEU),[4]

[2] *Charter of Fundamental Rights of the European Union*, "Official Journal of the European Union" 2012, C 326/39.

[3] Official Journal, 1993, no 61, poz. 284. Currently, all EU Member States are parties to the ECHR. The right to freedom of expression also stems from national constitutions, such as Article 54 of the Constitution of the Republic of Poland. Its observance is thus guaranteed in Europe at both the international level and within individual Member States. Although the CFR and the ECHR are legal acts functioning within different legal systems (the CFR is part of EU law, while the ECHR is part of the Council of Europe's law), according to Article 52(3) CFR, the meaning and scope of the right expressed in Article 11 CFR are the same as those guaranteed by Article 10 ECHR. Therefore, it has a broad scope of application. This right applies to everyone—it is not limited only to natural persons but also includes legal entities. Furthermore, it protects expressions regardless of the type of content. These may include words, images, photographs, and actions expressing ideas.

[4] CJEU judgments: C-274/99 P, *Connolly v Commission*, EU:C:2001:127, para. 39; C-203/15 and C-698/15, *Tele2*, EU:C:2016:970, para. 93; C-163/10, *Patriciello*, EU:C:2011:543, para. 31.

the right to freedom of expression is one of the essential foundations of a pluralistic and democratic society and forms part of the values on which the Union is based, as stated in Article 2 of the Treaty on European Union (TEU).[5] The CJEU holds that guaranteeing freedom of expression is particularly significant in the digital environment, especially on the Internet.[6] The Council of the EU also highlighted this in its guidelines on human rights regarding freedom of expression online and offline dated May 12, 2014.[7] According to this document, technological innovations in information and communication technologies have provided people with new means to disseminate information to large audiences, significantly impacting citizens' participation in decision-making processes.

Digitalization often involves the collection, storage, and processing of vast amounts of information, raising concerns about privacy and the protection of personal data from unauthorized access or misuse by corporations and governments. The latter are collecting increasingly large amounts of data, which has sparked growing criticism over their use of data-driven digital technologies at the potential cost of privacy. These are also sensitive data, e.g. in the field of health.[8] Although the concept of open data and digitalization on public services is generally viewed positively and is aimed at modernizing public administration at different levels and for various stakeholders,[9] the public release of government datasets can pose risks to personal privacy, such as enabling open profiling or data mining for private purposes.[10] The digitization of public administration can also enable extensive surveillance activities by governments, raising concerns about individuals' right to privacy and freedom from arbitrary interference in

[5] According to Article 2 of the TEU 'The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail'.

[6] CJEU judgments: C-392/19, *VG Bild-Kunst v Stiftung Preußischer Kulturbesitz*, ECLI:EU:C:2021:181, para. 18; C-160/15, *S Media BV v Sanoma Media Netherlands BV and others*, EU:C:2016:644, para. 45.

[7] Council of the European Union, *EU Human Rights Guidelines on Freedom of Expression Online and Offline*, Brussels 2014, pkt 6, https://eeas.europa.eu/sites/default/files/eu_human_rights_guidelines_on_freedom_of_expression_online_and_offline_en.pdf (12.02.2022).

[8] M. Blanquet, N. de Grove-Valdeyron (2023), *Les interférences entre la politique de la santé et la politique du numérique* [in:] *La politique européenne du numérique*, B. Bertrand (ed.), Bruxelles 2023, pp. 491-514.

[9] A. Bouhend et al., *State-of-Play Report on Digital Public Administration and Interoperability 2020*, Luxembourg 2020, https://interoperable-europe.ec.europa.eu/sites/default/files/news/2020-10/SC263_D04.02_State-of-play%20report_vFINAL.pdf (19.11.2024), p. 7.

[10] P. Acosta Gallo, *E-Administration: Is There a Fundamental Right to the Protection of Personal Data?*, "Revista General de Derecho Administrativo" 2007, no. 15.

their private lives (cyber surveillance and mass surveillance).[11] Furthermore, as public service infrastructure becomes more dependent on digital systems, the risk of data breaches and cyberattacks increases. Such incidents can threaten confidential information and undermine individuals' right to data security (data security risks). Very large internet platforms also pose a range of risks to personal data and privacy. These platforms often collect vast amounts of user data, including preferences, habits, and online activity, to create detailed user profiles. The EU has introduced several regulations to address these risks and protect the privacy and personal data of its citizens. The General Data Protection Regulation (GDPR)[12] requires organizations to obtain explicit consent for data processing, provide clear information on data usage, and uphold individuals' rights to access, correct, transfer, and delete their data. Non-compliance with GDPR can result in significant fines.[13] The GDPR is complemented by the ePrivacy Directive,[14] which focuses on specific aspects of digital communication (the confidentiality, the use of cookies and similar technologies, and unsolicited marketing communications), and it is set to be replaced by the forthcoming ePrivacy Regulation,[15] which aims to modernize and strengthen these rules in light of technological advancements. The Digital Services Act (DSA)[16] mandates transparency and accountability from online platforms, especially large ones, in removing illegal content and protecting user data. The Digital Markets Act (DMA)[17] targets major platforms, known as 'gatekeepers', ensuring fair competition and user

[11] S. Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, London 2019.

[12] *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation)*, "Official Journal of the European Union" 2016, L 119/1, pp. 1-88.

[13] Ch. Kuner, L.A. Bygrave, Ch. Docksey (eds), *The EU General Data Protection Regulation (GDPR): A Commentary*, Oxford 2020.

[14] *Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 Concerning the Processing of Personal Data and the Protection of Privacy in the Electronic Communications Sector (Directive on Privacy and Electronic Communications)*, "Official Journal of the European Union" 2002, L 201, pp. 37-47.

[15] Proposal for a regulation concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications), Brussels, 10.1.2017, COM/2017/010 final.

[16] *Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and Amending Directive 2000/31/EC (Digital Services Act)*, "Official Journal of the European Union" 2022, L 277/1, pp. 1-102.

[17] *Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on Contestable and Fair Markets in the Digital Sector and Amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act)*, "Official Journal of the European Union" 2022, L 265, pp. 1-66.

protection. The Cybersecurity Act establishes an EU-wide framework for certifying the cybersecurity of digital products and services and enhances the role of the EU Agency for Cybersecurity (ENISA)[18] in tackling cyber threats. Lastly, the NIS Directive, updated to NIS2,[19] addresses the cybersecurity of essential service operators and digital providers, strengthening the resilience of critical infrastructure and digital systems across the EU.[20] These regulations collectively aim to safeguard user privacy and personal data, enhance transparency, and bolster cybersecurity to mitigate the risks posed by large online platforms. These examples demonstrate that the EU emphasizes the protection of fundamental rights both online and offline, including the right to information, personal data protection, and privacy. These rights are firmly grounded in primary law, notably the Charter of Fundamental Rights of the EU, which enshrines the right to private life, protection of personal data, and freedom of expression. Complementing this, secondary law, such as the GDPR and the ePrivacy Directive, provides detailed rules to ensure these rights are respected in the digital realm, demonstrating the EU's commitment to safeguarding fundamental rights in a rapidly evolving technological landscape.

Additionally, the human-centric direction of the digital transformation is guided by a politically significant document that shapes the actions of the EU and Member States in this area: the Declaration on Digital Rights and Principles for the Digital Decade[21] (Declaration) proclaimed by the European Parliament, the Council and the Commission in January 2023. The Declaration highlights the importance of a human-centric transformation of Europe. This act contains the principles governing Europe's digital transformation, which are to guarantee the use of new technologies and the resulting digital facilities for man's well-being. According to the Declaration, the goal of digitizing the EU is, among others: to support solidarity and social inclusion, to ensure easy access to online digital public services, to support the participation of citizens in the digital public space, to increase the security, protection and empowerment

[18] *Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019 on ENISA (the European Union Agency for Cybersecurity) and on Information and Communications Technology Cybersecurity Certification and Repealing Regulation (EU) No 526/2013 (Cybersecurity Act)*, "Official Journal of the European Union" 2019, L 151, pp. 15-69.

[19] *Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on Measures for a High Common Level of Cybersecurity Across the Union, Amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and Repealing Directive (EU) 2016/1148 (NIS 2 Directive)*, "Official Journal of the European Union" 2022, L 333.

[20] D.P.F. Möller, *Guide to Cybersecurity in Digital Transformation: Trends, Methods, Technologies, Applications and Best Practices*, Cham 2023, pp. 1-70.

[21] *European Declaration on Digital Rights and Principles for the Digital Decade*, "Official Journal of the European Union" 2023, C 23, pp. 1-7.

of EU citizens in the digital environment and to promote sustainable development. This document outlines the principles and rights of EU citizens, emphasizing the protection of new digital rights and reinforcing those already established in EU law.[22] An example of the first category is the right to disconnect, ensuring safeguards for work-life balance in a digital environment.[23] An example of the second category, reflected in secondary legislation but elevated to the status of a principle, is network neutrality – the commitment to a neutral and open Internet where content, services, and applications are not unjustifiably blocked or degraded. The importance of certain principles, such as sustainable development, is also highlighted in the Declaration in the context of digital transformation.

3. The impact of Protection of Fundamental Rights online on environmental protection

3.1. The digital transformation of Europe closely related to the ecological one

The link between digital transformation and ecological transformation is emphasized in the EU soft law acts.[24] In 2020, the Council adopted conclusions "Digitalisation for the benefit of the environment,"[25] as a result of a process steered by the German presidency. In 2021, on the occasion of the Digital Days, organized by the Portu-

[22] C. Cocito, P. de Hert, *The Transformative Nature of the EU Declaration on Digital Rights and Principles: Replacing the Old Paradigm (Normative Equivalency of Rights)*, "Computer Law & Security Review" 2023, vol. 50.

[23] Currently, there is no specific European legal framework that directly defines or regulates the right to disconnect. However, the Working Time Directive (*Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003 Concerning Certain Aspects of the Organisation of Working Time*, "Official Journal of the European Union" 2003, L 299) indirectly addresses related issues, particularly by establishing minimum daily and weekly rest periods designed to protect workers' health and safety. The right to disconnect also aligns closely with the broader goal of achieving a better work-life balance, which is central to recent European initiatives. These include Principle 9 ("Work–life balance") and Principle 10 ("Healthy, safe and well-adapted work environment and data protection") of the European Pillar of Social Rights, as well as the Work–Life Balance Directive.

[24] I. Kawka, *E-governance and Environmental Protection towards Greater Sustainability* [in:] *The European Green Deal and the Impact of Climate Change on the Eu Regulatory Framework: Searching for Coherence*, A. Sikora, I. Kawka (eds), Bruxelles 2024, pp. 60-61.

[25] Council of the European Union, *Draft Council Conclusions on Digitalisation for the Benefit of the Environment*, Brussels 2020, https://data.consilium.europa.eu/doc/document/ST-13957-2020-INIT/en/pdf (19.11.2024)

guese Presidency of the Council, 26 EU Member States signed a ministerial declaration "A Green and Digital Transformation of the EU."[26] Both documents stress that digital technologies can be used as a key enabler to reach the EU's environmental and climate targets.[27] In its 2022 Strategic Foresight Report entitled Twinning the Green and digital transitions in the new geopolitical context,[28] the European Commission concluded that digital technologies can play a key role in achieving climate neutrality, reducing pollution and restoring biodiversity. In the Berlin Declaration, the Council stressed the need to ensure synergies between the digitalization of Europe and the sustainability of the Union. According to this document, digital transformation in Europe should, inter alia, contribute to the UN Sustainable Development Goals,[29] and provide a common data space for the European Green Deal to extend and deepen EU cooperation, data reuse and exchange, good practices and solutions of digital governance. In the Green Deal itself, we can find the statement that 'digital technologies are a critical enabler for attaining the sustainability goals of the Green Deal in many different sectors.'[30] In particular, Information and Communication Technologies (ICT) such as artificial intelligence, 5G network, cloud computing, the architecture of distributed information resources (edge computing) and the Internet of Things can serve to accelerate and maximize the impact of policies on climate change and environmental protection.[31] Digitalization has an impact on individual EU policies and should be used within them to protect the environment. An example is the common agricultural policy (using AI to minimize the use of pesticides), energy policy (smart energy networks), or consumer protection policy (product passports). New technological solutions are also used directly to achieve environmental goals, e.g. biodiversity (creating digital twins of the earth or oceans).[32]

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[26] *A Green and Digital Transformation of the EU: Ministerial Declaration*, 2021, https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx?v=%3D%3DBQAAAB%2BLCAAAAAAABAAzNDQxMwMAT7AwdwUAAAA%3D (20.11.2024).

[27] *Toulouse Call for a Green and Digital Transition in the EU*, 2022, https://www.economie.gouv.fr/files/files/2022/Call_for_Green_Digital_Transition_EU.PDF (20.11.2024).

[28] European Commission, *Communication from the Commission to the European Parliament and the Council: 2022 Strategic Foresight Report: Twinning the Green and Digital Transitions in the New Geopolitical Context*, Brussels 2022.

[29] Cf. https://sdgs.un.org/goals (12.11.2024).

[30] European Commission, *Communication from the Commission: The European Green Deal*, Brussels 2019.

[31] B. Bertrand, *The Twin Digital and Green Transition*, "Revue trimestrielle de droit européen" 2022, no. 4, pp. 619-653.

[32] A. Trantas et al., *Digital Twin Challenges in Biodiversity Modelling*, "Ecological Informatics" 2023, vol. 78.

3.2. The right to a clean environment and digital transformation of the EU

The cornerstone of sustainable development within the EU is the commitment to achieving a 'high level of protection and enhancement of environmental quality.' The Court of Justice of the European Union (CJEU)[33] regards this goal as a fundamental aim of the Union, pursued through the implementation of the EU's environmental policy, as outlined in Title XX of the TFEU (Articles 191–193).[34] Article 191(2) TFEU articulates the guiding principles of this policy: it aims for a high standard of environmental protection, considering the diverse circumstances across various regions of the Union. The policy is grounded in the precautionary principle, the principle of preventive action, the prioritization of rectifying environmental harm at its source, and the 'polluter pays' principle. Furthermore, Article 37 of the Charter of Fundamental Rights of the European Union emphasizes that a high level of environmental protection and the enhancement of environmental quality must be integrated into EU policies, adhering to the principle of sustainable development.[35]

The EU digital transformation is directly related to the right to a clean (offline) environment. The EU institutions focus on the environmental impact of ICT. Under the 'Sustainability' principle expressed in the European Declaration on Digital Rights and Principles for the Digital Decade (Declaration)[36] digital products and services should be designed, produced, used, disposed of and recycled in a way that minimizes their negative environmental and social impact to avoid significant harm to the environment,[37] and to promote a circular economy. In addition, according to the Declaration 'everyone should have access to accurate, easy-to-understand information on the environmental impact and energy consumption of digital products and services, allowing them to make responsible choices'. Thus, in the European Declaration institutions commit to: 'supporting the development and use of sustainable digital technologies that have minimal environmental and social impact and

[33] Case 240/83, *ADBHU*, ECLI:EU:C:1985:59, para. 13; C-28/09, *Commission v Austria*, ECLI:EU:C:2011:854 para. 120.

[34] See especially: A. Sikora, *Constitutionalisation of Environmental Protection in EU Law*, Zutphen 2020, pp. 75-78.

[35] I. Kawka, *E-governance*…, p. 58.

[36] *European Declaration on Digital Rights and Principles for the Digital Decade*, "Official Journal of the European Union" 2003, C 23/1.

[37] For a definition of 'significant harm to the environment', see Art 17 of the *Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088*, "Official Journal of the European Union" 2020, L 198/13.

developing and deploying digital solutions with a positive impact on the environment and climate'. Human-centred transformation therefore inherently involves safeguarding the right to a clean environment, reflecting the EU's commitment to balancing technological progress with sustainability. This approach recognizes that environmental protection is not just about natural resources but also about fostering healthy, sustainable living conditions for individuals, ensuring their well-being in both the physical and digital realms. The Declaration highlights the intrinsic connection between human rights and environmental protection, emphasizing the need for policies that prioritize public health, reduce environmental harm, and promote sustainable development. By integrating environmental protection into digital policies, the EU aims to create a transformation that benefits both individuals and the planet. For this purpose, EU law provides legal solutions that, on the one hand, have a positive impact on environmental protection and, on the other hand, are intended to prevent digitalization from harming the environment.

3.3. Digital solutions with a positive impact on the environment and climate

In order to contribute to sustainable production and consumption, according to 'A New Circular Economy Action Plan,'[38] 'digital technologies can track the journeys of products, components and materials and make the resulting data securely accessible. The European data space for smart circular applications will provide the architecture and governance system to drive applications and services such as product passports, resource mapping and consumer information'. An interesting example of a new technological solution to empower consumers for the green transition is the "Digital Product Passport."[39] It is a key regulatory element enhancing the traceability of products and their components (origin and composition including substances of concern, their reuse, repair, dismantling and recycling possibilities, and end-of-life handling, as well as their environmental footprint). Digital product passports will store and share information about a product's life cycle and could help consumers make better-informed choices and encourage producers to increase the sustainability of their products.

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[38] European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A New Circular Economy Action Plan for a Cleaner and More Competitive Europe*, Brussels 2020.

[39] *Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 Establishing a Framework for the Setting of Ecodesign Requirements for Sustainable Products, Amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and Repealing Directive 2009/125/EC*, "Official Journal of the European Union" 2024/1781.

Information and data play a pivotal role in addressing environmental challenges. Citizens' access to information about environmental policies, air quality, pollution levels, and sustainability practices can be enhanced through digital applications and platforms.[40] When theirs rights are protected online, individuals can better engage in environmental decision-making and advocate for stronger environmental protections. Access to data and information is essential for gaining a deeper understanding of issues, shaping and influencing policies, assessing risks, setting policy priorities, and enabling informed decision-making.[41] The role of environmental data is exemplified by the use of environmental electronic databases. One notable example is Copernicus, the European Union's Earth observation program. It provides comprehensive information services based on data collected from Earth observation satellites and in-situ (ground-based) sources.[42]

Another example of data management in the environmental field is the work of the European Environment Agency (EEA), which plays a central role in providing reliable and comparable environmental data. The agency collects and disseminates information on various environmental issues, using data shared by Member States through initiatives like INSPIRE. This cooperation ensures that the environmental data available to policymakers and the public is accurate, up-to-date, and consistent across the EU. The INSPIRE directive[43] aims to create a European Union spatial data infrastructure for EU environmental policies and policies or activities that may have an impact on the environment.

An important role in access to environmental information is also played by the database – European Green Deal Dataspace.[44] This is a tool created under the Digital Europe Programme, as an element of a common European Data Space.[45] The common European Green Deal Dataspace interconnects currently fragmented data from various ecosystems, both for/from the public and private sectors. These data, combined with digital infrastructure (e.g. supercomputers, cloud, ultra-fast networks) and

[40] S. Kravchenko, *Is Access to Environmental Information a Fundamental Human Right?*, "Oregon Review of International Law" 2009, vol. 11, no. 2, pp. 227-265.

[41] A.P.J. Mol, *Environmental Governance in the Information Age: The Emergence of Informational Governance*, "Environment and Planning C: Politics and Space" 2006, vol. 24, no. 4, pp. 497-514.

[42] Cf. https://www.copernicus.eu/en.

[43] *Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)*, "Official Journal of the European Union" 2007, L 108/1.

[44] Cf. https://green-deal-dataspace.eu/ (12.11.2024).

[45] *Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on Harmonised Rules on Fair Access to and Use of Data and Amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act)*, "Official Journal of the European Union" 2023/2854.

artificial intelligence solutions, facilitate evidence-based decisions and expand the capacity to understand and tackle environmental challenges. They also play a crucial role in predicting natural disasters such as droughts, floods, hurricanes and help to reduce the damages.[46] The Commission's vision is to use the major potential of data in support of the Green Deal priority actions on climate change, circular economy, zero-pollution, biodiversity, deforestation and compliance assurance.[47]

3.4. EU legal solutions preventing negative impact of ICT on environment and climate

The digitalization of the EU economy, society and administration also has a negative impact on the environment. The manufacturing and use of ICT devices can become a major source of emissions. Also, many ICT devices contain non-renewable and non-recyclable components that can cause significant environmental damage. In addition, blockchain, Machine Learning in Artificial Intelligence, or metaverses, require high levels of electricity consumption for their operations and cooling. EU law provides many solutions to address environmental threats caused by the rapid technological development. One of the examples is regulation (EU) 2024/1781 establishes a comprehensive framework for setting ecodesign requirements for sustainable products in the EU. It replaces Directive 2009/125/EC and expands the scope of ecodesign rules to include almost all product categories, not just energy-related products. The primary goal is to promote sustainability across the entire product lifecycle, reduce environmental impacts, and support the transition to a circular economy.

According to Eurostat data, the amount of electrical and electronic equipment waste in the EU is increasing.[48] Therefore, European Union has introduced several legal acts related to the recycling of electronic products, aimed at reducing the environmental impact of waste electronics.[49] The key legislative act is WEEE Directive

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[46] T. Ibrahim, A. Mishra, A. Bostan, *Role of E-government in Reducing Disasters*, "TEM Journal" 2019, vol. 8, no. 4, p. 1157.

[47] European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A European Strategy for Data*, Brussels 2020.

[48] The amount of electrical and electronic equipment put on the market in the EU evolved from 7.6 million tonnes in 2012 to a peak of 14.4 million tonnes in 2022, cf. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Waste_statistics_-_electrical_and_electronic_equipment (12.11.2024).

[49] M. Hedemann-Robinson, *The EU Directives on Waste Electrical and Electronic Equipment and on the Restriction of Use of Certain Hazardous Substances in Electrical and Electronic Equipment: Adoption Achieved*, "European Energy and Environmental Law Review" 2003, vol. 12, no. 2, pp. 52-60.

(Waste Electrical and Electronic Equipment).[50] The WEEE Directive regulates the collection, processing, recovery, and recycling of waste electrical and electronic equipment. It requires producers to take responsibility for their products after they have reached the end of their life, ensuring that used electronic devices are collected and recycled in an environmentally friendly way.

Another example of EU secondary law protecting the environment from the negative impact of digitalization is RoHS (Restriction of the Use of Certain Hazardous Substances) Directive.[51] The RoHS Directive is designed to minimize the risks to human health and the environment associated with the disposal of electronic and electrical waste. It currently prohibits the use of ten substances: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), bis(2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP), diisobutyl phthalate.[52] All products containing electrical and electronic components, unless specifically exempted, must adhere to these restrictions.

Environmental issues are also taken into account when investing in new technologies. To include sustainability criteria in investments, a Taxonomy regulation[53] was adopted, which also takes into account the environmental impact of ICT. For example, the EU Taxonomy Climate Delegated Act[54] establishes the technical screen-

[50] *Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic Equipment (WEEE)*, "Official Journal of the European Union" 2012, L 197, pp. 38-71; *Directive (EU) 2024/884 of the European Parliament and of the Council of 13 March 2024 Amending Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE)*, "Official Journal of the European Union" 2024/884.

[51] *Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment*, "Official Journal of the European Union" 2011, L 174, pp. 88-110; *Directive (EU) 2017/2102 of the European Parliament and of the Council of 15 November 2017 Amending Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment*, "Official Journal of the European Union" 2017, L 305, pp. 8-11.

[52] Annex II RoHS Directive.

[53] *Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on Sustainability-Related Disclosures in the Financial Services Sector*, "Official Journal of the European Union" 2019, L 317/1 *Amended by Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088*, "Official Journal of the European Union" 2020, L 198/13.

[54] *Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 Amending Delegated Regulation (EU) 2021/2139, as Regards Economic Activities in Certain Energy Sectors and Delegated Regulation (EU) 2021/2178, as Regards Specific Public Disclosures for Those Economic Activities*, "Official Journal of the European Union" 2022, L 188/1.

ing criteria for data centers and digital solutions contributing substantially to EU Taxonomy objectives, and should be expanded to include more activities for developing sustainable digital solutions and using sustainable crypto-assets.

The principle of sustainability is also integrated into EU funding. Instruments such as the Recovery and Resilience Facility, Horizon Europe, and cohesion policy funds support, inter alia, technological investments, and promote innovation. However, they must also take into account environmental protection issues. Thus, three types of investments can be co-financed from the multi-annual EU budget: 1) in digital technologies that contribute to achieving environmental objectives, 2) in environmentally-friendly ICT digital technologies, 3) in digital technologies that contribute to achieving economic or social objectives, which have no negative impact on the environment. This results both from strategic planning and programming documents, as well as from the obligation to adopt appropriate criteria for selecting projects for co-financing. Effective and credible environmental policy mainstreaming requires also a robust system to measure the contributions made by different EU spending programmes to a given overarching policy priority: this is known as tracking.[55] The Commission has implemented tracking methodologies for climate and biodiversity under the 2014-2020 Multiannual Financial Framework (MFF). These methodologies were based mainly on the intent of the financed action – i.e. whether the actions were designed to help achieve the overarching objective or were only expected to make a significantly positive contribution. The Commission is now further developing its tracking methodologies to take into account not just intent but also expected effects of the actions. Moreover, the funding instruments of the 2021-2027 MFF and Next Generation EU, particularly the Recovery and Resilience Facility, include specific requirements to ensure that EU co-financing takes environmental considerations into account. These requirements include compliance with EU environmental legislation, adherence to the 'do no significant harm' principle, and the application of sustainability proofing.

4. Right to a clean environment and new fundamental digital rights

Digital transformation may also lead to the emergence of new fundamental rights or their new understanding. Technology often seems to develop faster than the legal framework. Most of the fundamental rights were drafted in an era in which the

[55] Tracking requires a detailed understanding of how specific actions contribute to a given policy priority; these actions need to be identified in a way that allows the related financial resources to be counted, or tracked, and then aggregated at the level of the entire EU budget to monitor progress.

world looked completely different. For instance, the European Convention on Human Rights was ratified in 1950, before any computers, databases or the internet existed. Admittedly, most fundamental rights are drafted in general phrases, aligned with core ethical and societal values, rather than tailored to specific situations and circumstances. The advantage of these broad phrasings is that these rights provide room for interpretation and can easily be applied to very different situations in very different contexts. This aspect most certainly has helped most fundamental rights to stand the test of time and to remain fundamental. However, this does not mean that the values underlying these fundamental rights have not changed over time. For instance, perceptions of the right to privacy have changed over the decades. With the rise of social media, people increasingly disclose information about themselves. This may be an indication that people attach less value to their privacy. Or perhaps they now have to make different types of decisions than a few decades ago, balancing privacy risks with fostering their online reputation. So, there may be situations in which additional fundamental rights may be needed.[56]

One of the new fundamental rights that could be introduced into EU law is the right to a clean digital environment. The right to a clean offline environment could serve as a model for the development of this new right. Building on this idea, it could be argued that data acts as the pollution of the information age. Every action we take in the digital space leaves a trace. Similar to environmental pollution, this 'digital waste' can have significant negative effects on the online ecosystem.[57] It can contribute to noise and bias in aggregated data or analyses, and it can obstruct access to more relevant information – akin to how smog reduces visibility in the physical world. In environmental law, several instruments have been developed to address pollution and resource management, such as energy efficiency labels, emissions quotas, and tradable emissions rights. It would be valuable to explore whether similar mechanisms could be adapted to support a clean digital environment. Such an exploration would need to assess the extent to which digital pollution harms individuals, both in the short term and long term, and evaluate whether a right to a clean digital environment should primarily be a governmental duty of care, an individual right, or both.[58] Given the inherently international nature of the digital world, enforcing rights to a clean digital environment may face challenges similar to those encountered in global environmental law.

[56] B. Custers, *New Digital Rights: Imagining Additional Fundamental Rights for the Digital Era*, "Computer Law & Security Review" 2022, vol. 44, pp. 4-5.
[57] *Ibidem*, p. 11.
[58] *Ibidem*, pp. 11-12.

In addition, legal measures used to ensure the right to a clean environment and to combat climate change (which are the response to the adverse environmental effects of industrialization may be a guideline for solutions related to protection against the threats of digitization and datafication for individuals and society. An example of an instrument used in environmental protection is risk management. Environmental risk management (ERM) helps to ensure that environmental risk is contained to acceptable levels.[59] This instrument was also used in the case of DSA. Under the DSA very large online platforms and search engines are obliged to assess and mitigate systemic risks. These risks are linked to the dissemination of illegal content; negative effects for the exercise of fundamental rights and negative effects on civic discourse caused for ex. by disinformation and electoral processes, and public security. The Artificial Intelligence Act (AI Act) also is a risk-based regulation designed to ensure the safe and ethical use of AI technologies within the European Union. It classifies AI systems into different risk categories – unacceptable, high, limited, and minimal – based on their potential impact on fundamental rights and safety. High-risk AI systems, such as those used in critical infrastructure or hiring processes, are subject to stringent requirements for transparency, accountability, and oversight. This risk-based approach aims to balance innovation with the protection of individuals and society, ensuring that AI technologies are developed and deployed responsibly.

5. Conclusion

The European Union's efforts to harmonize the digital transformation with environmental protection underscore the interconnectedness of technological innovation, sustainability, and fundamental rights. Instruments such as the GDPR, DSA, and AI Act, alongside the Declaration on Digital Rights and Principles, demonstrate the EU's commitment to creating a human-centric and sustainable digital transition. As the EU integrates digital solutions into policies like the Green Deal and Circular Economy Action Plan, it exemplifies how technological advancements can drive ecological goals.

Moreover, the conceptualization of new rights, like the right to a clean digital environment, reflects the evolving needs of the digital age. Drawing parallels with the right to a clean offline environment, this right emphasizes the importance of

[59] M. Rhoen, *Rear View Mirror, Crystal Ball: Predictions for the Future of Data Protection Law Based on the History of Environmental Protection Law*, "Computer Law & Security Review" 2017, vol. 33, no. 5, pp. 603-617.

mitigating digital pollution and ensuring that digital ecosystems promote individual well-being and collective sustainability.

However, challenges remain, particularly in defining and enforcing environmental protection in the digital decade on an international scale, ensuring robust governance frameworks, and minimizing the environmental footprint of digital technologies themselves. The EU's proactive stance offers a blueprint for balancing innovation, fundamental rights protection, and environmental sustainability, setting an example for global digital and ecological transformation.

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For many years legal thought and practice focused on the general concept of environmental rights as a legal tool meant to enforce the human right to a healthy and sustainable environment. Whilst there is an undeniable link between human rights and climate change, as illustrated notably by the global phenomenon of the climate change litigation, this monograph focuses on the growing role of potential, sectoral fundamental rights and tailored remedies available in the EU legal order in absence of a substantive fundamental right to a healthy environment in EU law. Against the background of the European Green Deal and its ambitious climate-neutrality goal by 2050, the book echoes the sustainability-based approach and its limits.

Contributors analyse two interrelated perspectives. On the one hand, authors explore the procedural dimension by discussing the climate litigation and the limits of the concept of human environmental rights, state liability for loss and damage caused to individuals as a result of breaches of EU law, national remedies available in case of bad condition of the environment as well as the limits of the public interest litigation and challenges related to climate claims against private actors in national law. On the other hand, contributors discuss substantive aspects from a global perspective of food insecurity, soil monitoring and resilience as well as digitalisation, green skills and climate-induced migration. With insights from leading experts, this work highlights the evolving tensions and expectations within the EU legal framework.

Essential for legal practitioners, policymakers, academics, and students of law and administration, this book offers a comprehensive exploration of the intersection between sustainability, climate action, and the protection of fundamental rights in EU law.

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