12th EELF Conference 2025

Climate adaptation and resilience: legal avenues to prepare Europe for survival in a hothouse world

10 - 12 September 2025

Abstract Book

EELF
European Environmental Law Forum

GHENT UNIVERSITY

SER SOCIETY FOR ECOLOGICAL RESTORATION EUROPE

fwo

UCL

FACULTY OF LAW AND CRIMINOLOGY

Parallel sessions 1 – Wednesday 10 September 13:30-15:00

Abstract 1.1.1

Do we need to rethinking EU conservation nature (biodiversity) law?

Mariusz Baran, University in Kraków, Poland

Environmental law, which is essentially due to the dominance of an anthropocentric viewpoint, is largely reactive and piecemeal in nature, which can and does slow down the pace of adverse environmental changes (including those relating to climate change), but when it comes to solving environmental problems and threats, it is not preventive and regenerative in nature. Hence, among other things, are the failures and deficits in achieving the goals of environmental law and the effectiveness of its implementation.

Nature conservation has a long tradition. Nature legislation has until now, mostly been written from a perspective and implemented with a focus rather on conservation than on restoration. Lately, attention for restoration has increased. Recent international and EU policy documents see an important role for ecological restoration and ecological restoration is now seen as a global priority.

The degradation and disappearance of natural ecosystems in Europe has occurred in spite of the EU's existing nature conservation laws. In the context of the 'failure', the subject of criticism are the existing EU nature protection regulations (mainly the Habitats Directive and the Birds Directive). Indicated, on the one hand, are the shortcomings of the existing nature protection legislation, and on the other hand, the problem with the effective enforcement and application of existing legal instruments.

In the regulations of EU nature conservation law, the restoration of natural resources is only partially the responsibility of the Member States, according to the mandatory provisions. but there are significant problems associated with the implementation of these obligations. There are both inadequacies in the existing regulations (e.g., lack of clear or binding targets and deadlines and definitions or criteria for the restoration or sustainable use of natural ecosystems), but also sizeable areas of natural resource restoration issues have not yet been regulated by EU law. These circumstances significantly impede the restoration and maintenance of natural ecosystems in Europe.

Statements about your topic to open the discussion with the public:

Nature conservation is based on three overarching principles: (i) maintenance, (ii) sustainable use, and (iii) restoration of resources, creations and components of nature.

It is no longer just a matter of protecting dedicated areas, the importance of regulations requiring the protection and sustainable use of nature outside protected areas is increasing. Conservation should be an integral part of spatial policy, other sectoral policies and development strategies drawn up by authorities at various levels

In this context, several questions need to be formulated:

- Is it necessary to move away from the sectoral concept of nature conservation to a holistic approach?
- Will the EU Nature Restoration Law succeed in facilitating biodiversity restoration efforts in Europe?
- Could the focus on quick gains in climate change adaptation jeopardize the shift toward resilient nature restoration efforts across Europe?

Biography:

Dr Mariusz Baran - Assistant Professor at Environmental Law Center, Faculty of Law and Administration of the Jagiellonian University in Kraków; membership in the Research Network on EU Administrative Law and the European Environmental Law Forum; laureate of scientific awards, inter alia, winner in the Competition of the Minister of Science and Higher Education of Republic of Poland for scholarships for outstanding young scientists in 2015; author of many works in the field of environmental law and EU law.

Abstract 1.1.2

Water in the landscape – how to reconcile climate adaptation, water management and biodiversity concerns?

Helle Tegner Anker, Professor of law, Faculty of Science, University of Copenhagen - Denmark

Restoration of intertidal areas or wetlands holds a potential to meet urgent demands for climate adaptation, water management and biodiversity concerns. According to the European Commission a catchment approach to flood risk management can offer real benefits and it may also pave the way for natural or nature-based flood management, e.g. through the re-creation of intertidal areas or wetlands. Such natural or nature-based flood management may have the potential to combine prevention and protection strategies. Yet, despite the obvious linkages between the Floods Directive and the Water Framework Directive, integrated and/or coordinated flood risk management at catchment level is left to the Member States with limited application in countries like Denmark.

At the same time, EU nature protection law, and most recently the EU Nature Restoration Regulation, highlights the need for restoring inland and coastal wetlands as well as riparian and dune habitats. Thus, nature restoration may, in some situations, go well in hand with more water in the landscape. A key question is where and how? And which (legal) instruments are needed or needs to be adjusted to ensure that climate adaptation and water management supports land transformation for biodiversity purposes? This presentation aims to set out the overall legal framework for (more) water in the landscape drawing linkages between the key legal instruments at EU level, and pointing at potential pitfalls in the legal framework.

Furthermore, the presentation will draw on Danish experiences, including a newly launched land transformation effort, aimed to restore inter alia 140.000 ha wetlands.

Key questions include:

How to ensure integrated or coordinated landscape-wide planning across different legal instruments?

How to address project assessment and governance, balancing benefits v harm?

Biography:

Helle T. Anker is Professor of Law at the Department of Food and Resource Economics, Faculty of Science, University of Copenhagen. She has specialised in environmental and planning law covering a broad range of topics, including access to justice, EIA, land use planning, nature protection, water quality and renewable energy with a particular focus on wind energy. Helle T. Anker has been appointed as member of several committees established by the Danish Government. In 2021 she was appointed as chairman of the Planning Appeals Board. She is a member of the advisory board of EELF.

Abstract 1.1.3

Marine biodiversity protection in EU environmental law – falling through the cracks of legal fragmentation?

Suvi-Tuuli Puharinen, Maastricht University - the Netherlands

The seas are crucial hotspots for Earth's remaining biodiversity. In Europe, the sea areas host a wide and highly diverse range of coastal and marine ecosystems with a large variety of habitats and species. Functioning and healthy marine ecosystem also provide many crucial ecosystem services, including climate mitigation and adaptation benefits. For instance, marine habitats include carbon-rich habitats providing carbon sequestration, the seas absorb heat and provide temperature regulation and coastal habitats can provide protection against sea-level rise and coastal flooding.

However, the legal regime pertaining to marine biodiversity protection has for a long time been in the process of taking shape. One key reason for this is that marine life has been poorly known and understood compared to terrestrial biodiversity. In the EU, one of the corner stones of nature protection law – the Habitats Directive – covers only a limited scope of marine habitats and species due the to limited knowledge on marine nature that prevailed at the time of its adoption. Another key reason is that conventional nature protection instruments, most notably the designation and management of nature protected areas, work poorly in the more dynamic marine context. In Europe, marine protected areas (MPA) cover only around 12 % of the marine space, but only 0.2% of MPAs are considered to be fully or highly protected against harmful human activities.[1]

The presentation discusses, first, how conventional nature protection regimes need the support from holistic ecosystem management instruments in order to function well in the marine context. In EU, this involves the Water Framework Directive especially on coastal waters and the Marine Strategy Framework Directive on the marine environment more holistically. While these legal instruments can together with nature protection law form comprehensive regimes on marine biodiversity protection, the plurality of instruments also gives rise to coherence challenges related to legal objectives, timelines, Member States´ obligations and rules and exemptions pertaining to different activities. Notably, the EU Nature Restoration Law, adopted in 2024, adds yet another instrument in this plurality; while the NRL is crucial in supplementing existing laws with explicit restoration obligation, it also bears a risk of creating more distortion, incoherence and fragmentation that may undermine effectiveness of the framework. As the sea space is subject to enormous growth aspirations for economic uses in the coming decades, there is a crucial need to improve the understanding of the deficiencies of current legislation and overcome its blind spots in order to halt the loss of biodiversity in the seas.

_____

(1) Juliette Aminian-Biquet, Sašo Gorjanc, Jennifer Sletten, Timothé Vincent, Anastasiya Laznya, Nataşa Vaidianu, Joachim Claudet, Juliette Young, Barbara Horta e Costa, Over 80% of the European Union's marine protected area only marginally regulates human activities. One Earth Vol. 7(9) 2024, s. 1614–1629.

Questions or thesis to be discussed with the audience

- What are the positive features of the adoption of the NRL in this context and what are the downsides?
- What about implementing the relevant legal instruments at national levels, can problems be resolved there?
- What is the role of maritime spatial planning in this context?

Biography

Suvi-Tuuli Puharinen is Assistant Professor of European Law at Maastricht University. Her research focuses on what kind of regulatory solutions are needed in the EU for enacting systemic changes to halt widescale environmental crises such as biodiversity loss and pollution, and to achieve effective protection of the natural environment. She defended her PhD dissertation at University of Eastern Finland in 2024, where her research focused on the regulation of environmental quality objectives in EU environmental law, and particularly, in freshwater and marine contexts. Previously she has worked as a legal specialist at the Ministry of the Environment of Finland and as a legal trainee at the enforcement unit of DG Environment of the European Commission.

Abstract 1.1.4

The assessments of alternatives in environmental law directives

Author: Tessa Rötscheid, Utrecht Centre for Water, Oceans and Sustainability Law

Several environmental law directives require an assessment of alternatives when permitting projects that have a (potential) negative impact on the environment. If no, for the environment significantly better, alternatives are available, the plan, project, or program is mostly still allowed when there is an overriding public interest and measures are taken to prevent and/or mitigate the negative effects on the environment as much as possible. This contribution/presentation focuses on the alternatives assessments of four environmental law directives, namely: article 6(4) of the Habitats Directive (Hrl), Article 4(5) and 4(7) of the Water Framework Directive (WFD), Article 5(3)(b) of the Environmental Impact Assessment Directive (EIA Directive) and Article 5(1) of the Strategic Environmental Assessment Directive (SEA Directive). The presentation will involve the relevant European and national case law (of the Netherlands).

Questions that may be addressed and discussed with the audience during the presentation are:

1. What substantive requirements are set for the various alternatives assessments and how are these assessed by the national (Dutch) and European court?
2. In Dutch case law on (for example) alternatives assessments in the context of the SEA Directive, only those alternatives that meet the objectives of the plan or program are considered to be reasonably and

therefore have to be taken into consideration (see, for example, the Dutch Council of State of 24th of November 2021, ECLI:NL:RVS:2021:2627) By formulating a narrow objective many alternatives can be excluded from the assessment. One may question whether this interpretation aligns with the broad purpose and scope of the SEA Directive and/or contribute to more environmentally friendly decision making in the light of tackling climate change.

3. To what extent and in which way can the assessments of alternatives from the different directives be substantively integrated and/or procedurally streamlined, in order to promote more integrated decision-making and reduce research burdens?

Biography

T. (Tessa) Rötscheid (28) is a PhD candidate at the Utrecht Centre for Water, Oceans and Sustainability Law. She is writing a dissertation on the implementation of the article 4 objectives of the Water Framework Directive in the Netherlands. Tessa regularly writes case notes for the Dutch environmental law journal Milieu & Recht. Before starting her dissertation at Utrecht University, Tessa worked for several years as a lawyer in the field of nature conservation law and spatial planning law.

Abstract 1.1.5

The limits of environmental impact assessments and health impact assessments to cope with new challenges: towards a more comprehensive "One Health" impact assessment?

Elisa Cavallin, Ghent University, Ghent, Belgium

In a world facing multiple crises, the scrutiny of certain planned actions or activities in terms of their potential effects assumes crucial importance. There exist a few instruments that are generally used to achieve this. Environmental assessments (EAs) are especially dedicated to the assessment of the impacts of a planned activity on the environment. Next to EAs, Health Impact Assessments (HIAs) are also increasingly employed. A Health Impact Assessment entails a combination of procedures, methods and tools by which a certain activity initiated or undertaken by public authorities or companies (a policy, strategy, plan, programme or project) can be assessed as to its potential health effects and their distribution on a population.

Interestingly, HIAs happened to originate, develop and be regulated beside and separately from EAs because their genesis also lays in public health movements emphasising the importance of promoting health concerns at the policy level and the role of HIAs in this endeavour.

That said, HIAs can also be part of Strategic or Environmental Impact Assessments: this is because the relationship between the environment and humans is reciprocal and legislative and regulatory instruments may recognise the role of the environment for human health and the impacts that certain policies, plans, programmes or projects may pose to both the environment and human health. In such cases, regulations requiring the carrying out of impact or strategic environmental assessment often demand not only the assessment of environmental effects of plans, programmes, policies or projects on environment and biodiversity but also effects on populations and human health.

However, both EAs and HIAs have inherent limitations due to their potential silo approach and limited scope and due to HIAs remaining predominantly a voluntary instrument. Additionally, the assessment of health effects in the context of EAs has often been skewed towards bio-physical health determinants rather than taking a more holistic perspective that includes broader determinants of health; this highlights the need for a more comprehensive approach to health and sufficient involvement of different authorities and health experts in assessment procedures.

The matter of climate change adaptation perfectly illustrates why EAs and HIAs may need rethinking. Indeed, climate change adaptation objectives may generate many interconnected challenges not limited to environmental or human health effects along the human-environment nexus, requiring the concomitant

consideration of the animal-human and the animal-environment nexuses. For example, this could be crucial in deforestation or road construction projects that may have negative effects on the environment and human health, interfere with nature-based solutions for adaptation and influence the emergence and spread of infectious diseases.
Against this backdrop, it is worth considering, then, if a more comprehensive “One Health” impact assessment might be more effective in addressing these challenges than a more focused environmental or health impact assessment.
This presentation intends to cover these issues and make a case for the introduction of a One Health impact assessment next to the more traditional environmental impact assessment and the newer health impact assessment.

Biography
Elisa is a postdoctoral researcher at Ghent University, currently working on the link between environment and health in international and EU law. She is a member of the Legal Working Group and of the Marine Restoration Working Group of the Society for Ecological Restoration, European Chapter.
She holds a Master’s degree in Law, an LL.M. in International and European Law and a PhD in environmental law. Her PhD research consisted of an investigation of the legal opportunities and challenges related to biochar production and use in the EU and in Belgium/Flanders, using a value chain approach. In the past, she worked in the European Parliament as a policy adviser on environment, health, animal welfare and energy issues. Her expertise and knowledge cover different areas of environmental law, including nature conservation and restoration, agriculture and agro-chemicals, (bio)energy, waste and materials, impact assessment and industrial emissions.

Abstract 1.2.1

The Role of EU Law in Responding to Natural Disasters: building resilience in a changing risk landscape
Dr. Kleoniki Pouikli, Assistant Professor in EU Law and Sustainability, Utrecht University

The growing frequency and intensity of natural disasters, driven by climate change, is reshaping risk landscapes in Europe and beyond. In response, the EU has steadily assumed a more active role in disaster management, both internally and globally. As climate-related vulnerabilities increase, the EU must reconsider how its legal and policy frameworks support resilience and adaptation.
Internally, since the Lisbon Treaty expanded its role in civil protection, the EU has improved coordination in disaster response across Member States. Mechanisms like the EU Civil Protection Mechanism (UCPM) allow resource-sharing and mutual aid during emergencies. However, disaster management remains predominantly the responsibility of individual States, making the EU’s involvement supplementary rather than central. The effectiveness of this division of responsibilities has been questioned in light of increasing climate risks.
Externally, the EU has positioned itself as a global leader in disaster response and humanitarian aid, advocating for a rights-based approach to international disaster response law (IDRL). It has committed significant financial resources and diplomatic efforts to support disaster-affected regions, reinforcing its role as a key donor. Yet, while the EU has advanced international cooperation in disaster management, there is room for improvement in ensuring that international and EU responses are harmonized.
The aim is to examine these issues within the broader EU policy landscape. The EU Green Deal, with its core goal of climate neutrality, calls for transformative changes beyond the existing EU acquis. In this context, the EU’s role in managing natural disaster risks is evolving, challenging the limits of current EU law.
As natural disasters intensify, there is a need to revisit the appropriateness and effectiveness of the existing legislative framework and assess whether it meets the demand for a more integrated and proactive approach to disaster prevention and resilience. In addition, the EU’s commitment to climate adaptation offers a potentially powerful toolbox for addressing vulnerabilities related to natural disasters. By promoting stronger cooperation among Member States, improving access to climate data, and encouraging nature-based solutions, the EU's Climate Adaptation Strategy seeks to mitigate the impact of disasters while enhancing preparedness and resilience.

Questions:

1.Is the EU's current legal and institutional framework still fit for purpose in effectively responding to the growing frequency and intensity of natural disasters?

In light of rising climate-related risks, it is important to assess whether the EU's civil protection and disaster response tools—such as the Solidarity Clause and the Union Civil Protection Mechanism— are adequate for addressing the growing scale and cross-border nature of disasters. It also prompts reflection on the EU's role in International Disaster Response Law (IDRL), and whether its external actions align with internal capacities or point to the need for a more cohesive EU-level approach.

2.How does the EU Climate Adaptation Strategy address region-specific vulnerabilities such as floods, droughts, and wildfires?

The key issue here concerns how the Strategy targets specific climate-related hazards and supports Member States in building resilience through risk prevention, data sharing, and financial instruments. It also raises the issue of uneven climate impacts across regions and considers the EU's role in promoting coherent and equitable adaptation efforts.

Biography

Dr. Kleoniki Pouikli is an Assistant Professor in EU law and Sustainability. Her research encompasses various aspects of EU environmental law, including waste and circular economy, biodiversity, environmental liability, and air pollution. Additionally, she focuses on sustainability issues such as sustainable trade and green public procurement. Previously, she worked as a Course Director in EU Environmental Law at ERA Academy of European Law and taught EU Environmental Law at the University of Athens. Kleoniki actively participates in conferences and regularly publishes in international and national journals. She is Associate Editor in the Journal for European Environmental & Planning Law (JEEPL).

Abstract 1.2.2

Strengthening the legal framework for climate justice and disater control in Nigeria: Lessions from Europe

Prof. Adeniyi I. Olatunbosun, SAN and Dr. Temilade O. Jolaosho; Department of Private and Commercial Law, Faculty of Law, KolaDaisi University, Ibadan.

Nigeria is witnessing increased environmental challenges which include but are not limited to floods, droughts and coastal erosion posing fundamental threats to human rights, sustainable development and environmental justice. There is an undeniable gap in the legal and institutional mechanisms needed to protect citizens and mitigate climate-related disasters, in spite of the fact that Nigeria formulated the National Disaster Risk Management Policy of 2018 and enacted the Climate Change Act 2021. It is imperative to set up an institutional framework to address climate justice and disaster control in Nigeria due to the growing impacts of climate change, especially in vulnerable communities. Research shows that Europe has developed comprehensive climate legislation and disaster management frameworks to address the scale and vagaries of climate-related disasters, wherefrom Nigeria can draw and adopt probable lessons.

This paper seeks to answer the following questions: How effective is Nigeria's legal framework in addressing climate justice and disaster control, and what lessons can be drawn from European legal system to improve Nigeria's response to climate-related disasters? In what ways can Nigeria integrate European legal principles of climate justice into its national disaster management policies to enhance resilience and reduce the impact of climate change on vulnerable communities? Is there any correlation or key differences between the climate justice and disaster control laws in Europe and Nigeria, and how can the differences, if any, inform the development of a more robust legal framework for climate action in Nigeria?

In answering these questions, the paper found that European nations have established well- integrated policies and legislation that prioritize both climate adaptation and mitigation, which are two main elements of sustainability and policy responses to manage the risks of climate change as well as disaster risk reduction and climate justice. The paper acknowledges that there are notable lessons to embrace from Europe's multi-level governance, increased funding for climate adaptation and stronger human rights protection, proactive legal interventions and participatory approaches, to build a legal framework in Nigeria, that ensures equitable distribution of climate change- related resources and support for marginalized communities.

By drawing on successful European models, Nigeria can develop effective legal instruments, in addressing immediate disaster risks, climate resilience and social justice by emphasizing effective international cooperation and support with a view to achieving national implementation and community engagement.

Biography

Professor Adeniyi I. Olatunbosun, SAN is a Professor of Law, Senior Advocate of Nigeria and Vice Chancellor of KolaDaisi University Ibadan, Nigeria. He is a member Nigerian Association of Law Teachers; Nigerian Bar Association; European Society of Criminology; Nigerian Society of International Law; Society for International Relations Awareness; American Society of International Law; IUCN Academy of Environmental Law; and European Energy Law Forum. A Carnegie fellowship scholar, visiting fellow; British Institute of Comparative and International Law, and British Institute of Advanced Legal Studies, London. Visiting Researcher, Max- Planck Institute of Foreign and International Criminal Law, Freiburg, Germany; Visiting Professor, the University of the Gambia, Banjul. Appointed Expert International Criminal Court, the Netherlands, and Visiting Professor, Airlangga University, Surabaya, Indonesia. He served as editor-in-chief of Juris the Nigerian Law Journal, a former Dean of Law, University of Ibadan and former President of Nigerian Association of Law Teachers.

Dr. Temilade Jolaosho is a senior lecturer and the Acting Head of Department of Private and Commercial Law, Faculty of Law, KolaDaisi University, Ibadan, Oyo State. She is a member of the Nigerian Bar Association (NBA), National Association of Law Teachers (NALT) and International Federation of Women Lawyers (FIDA). She has strong research, analytical skills and specializes in international environmental law and policy related matters, environmental sustainability and governance, family law and gender, with commitment to providing advisory and professional services. She has served in various capacities as mediator and counsel/ solicitor in reputable law firms across the country. Dr Jolaosho has certifications in 'Climate Change International Legal Regime' and 'Gender and Environment' organized by the United Nations Institute for Training and Research (UNITAR, Geneva)

Abstract 1.2.3

Extreme Heat: can International Human Rights Law Cool the Future?

Vesselina Newman, ClientEarth - London - United kingdom

"[E]ffective protection of the rights of individuals from serious adverse effects on their life, health, well-being and quality of life requires[…] adaptation measures aimed at alleviating the most severe or imminent consequences of climate change, taking into account any relevant particular needs for protection."
European Court of Human Rights judgment in VereIn KlimaSeniorinnen and Others v Switzerland

Law can be a powerful tool for achieving effective heat adaptation and resilience. At present, however, no European state has a clear and comprehensive heat adaptation legal framework. International law related to climate adaptation is relatively new and underdeveloped. Relevant 'soft' law such as the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework), is not seen as creating obligations on States. And there is a lack of understanding among policymakers that taking adaptation measures to prevent death and health harms from climate change is a human rights duty. All this is a major reason why heat adaptation action has failed to materialise at scale.

The legal solution to this situation can, and indeed must, come first of all from international human rights law (IHRL). IHRL can achieve a comprehensive high level of protection against climate disasters such as deadly heat, which threaten human life and well-being. The right to life for example, guaranteed by the European Convention on Human Rights and by the International Covenant on Civil and Political Rights, is a non-derogable right and is not dependent on resources.

THESIS: IHRL can and does go further than the Sendai Framework and the Paris Agreement adaptation obligations. For example, the European Convention on Human Rights contains far-reaching obligations to protect life from deadly floods. These were established independently from the climate crisis context. Key developments under the Convention on the Rights of the Child and other UN treaties resulted in duties for governments to take systemic special measures to protect children, women, people with disabilities and other people who are disproportionately affected by the climate crisis.

At this key stage of the development of international climate adaptation legal framework, it is crucial to integrate the recent Sendai Framework and the climate adaptation duties under the Paris Agreement, on the one hand, with the well-established national constitutional laws and international human rights law and mechanisms such as European Convention on Human Rights and the European Court of Human Rights, on the other hand.

ClientEarth is working on two adaptation cases – both at national and international level - and can share its observations on the implementation of the Sendai Framework and IHRL in practice. One of cases involves a conflict between the duty to protect life and the prohibition on forced displacement which raises important legal and social questions.

Biography
Vesselina Newman is Lead of Fundamental Rights at ClientEarth, and international environmental legal non-governmental organisation. Vesselina has practiced strategic human rights litigation for over twenty years. She has litigated cases in Europe and Africa before national and international courts. At ClientEarth, Vesselina works at the nexus of international human rights and environmental law, and she works to develop ClientEarth's strategic litigation approach integrating the protection of the environment and human rights, since every day shows these to be ever more inextricably entwined. She co-authored a chapter in Sindico, Francesco, Kate McKenzie, Gastón A. Medici-Colombo, and Lennart Wegener (eds.), Research Handbook on Climate Change Litigation, (Edward Elgar Publishing, 2024.) Vesselina is based in the London office of ClientEarth.

Abstract 1.2.4

From Prevention to Adaptation? Legal Reflections on Shifting Climate Discourses in International Governance
Giorgia Carratta, University of Münster, Germany

As the impacts of climate change become increasingly visible and severe, the way international institutions frame climate action may be undergoing a fundamental transformation. While early climate governance efforts prioritized the need to prevent dangerous anthropogenic interference with the climate system, more recent institutional discourses appear to focus less on prevention and more on adaptation, resilience, and mitigation. This paper investigates whether the concept of prevention is being de-emphasized in international climate discourse, and if so: (1) how this shift is articulated; (2) when it becomes discernible over time; (3) which institutions contribute to it; and (4) whether it correlates with the growing recognition of irreversible climate impacts.
The study conducts a longitudinal discourse analysis of documents published between 2007 and 2025 by key international and supranational actors, including the IPCC, UNFCCC, UNEA, the European Union, the WMO, and the IEA. The corpus includes binding legal instruments (e.g., the Paris Agreement, the EU Climate Law), soft law and scientific assessments (e.g., IPCC reports, Global Stocktake documents), and major policy frameworks (e.g., the European Green Deal). These documents are treated as discursive instruments that construct institutional climate narratives and shape legal and policy expectations across governance levels. The time frame captures key inflection points in global climate governance: from the IPCC Fourth Assessment Report and Bali Action Plan (2007), to the Paris Agreement (2015), the IPCC Special Report on 1.5°C (2018), and the first Global Stocktake (2023–2024). Methodologically, the paper combines discourse and framing theory with legal and policy analysis. Using a structured coding framework applied through MAXQDA, the analysis traces how key climate concepts—such as prevention, mitigation, adaptation, urgency, irreversibility, and justice—are articulated across institutions and over time. The codes are developed based on a review of relevant legal and governance literature, combined with inductive refinement during document analysis.
By mapping these discursive patterns, the paper contributes to legal scholarship in multiple ways. First, it offers an empirical and conceptual lens for understanding how institutional narratives influence not only international legal and policy development but also normative frameworks at all levels of governance—global, regional, and national. Second, it highlights the potential legal implications of a discursive shift: when climate change is framed less as a problem to be prevented and more as a condition to be managed, this may affect the ambition, coherence, and scope of legal obligations, the interpretation of existing legal principles, and the design of future legal and regulatory instruments. Ultimately, the paper invites reflection on how the language of institutions contributes to shaping the legal architecture of climate governance in the Anthropocene.
Questions for discussion:

- To what extent does a declining emphasis on prevention affect the legal obligations and accountability mechanisms in international climate law?

- Can the growing prominence of adaptation in institutional discourse lead to a reframing of key legal principles such as the precautionary principle or the duty to cooperate?
- How should legal scholars respond to discursive shifts that precede or exceed formal legal developments in shaping future climate regimes?

Biography

Dr. Giorgia Carratta, University of Münster, Germany

Giorgia Carratta is a dedicated researcher currently working at the intersection of technological innovation and sustainability. As a Postdoctoral Researcher at the University of Muenster, Germany, she investigates bio-based batteries' social and legal implications within the BIOSTORE project (founded by the Ministry of Culture and Science of North Rhine- Westphalia). In 2024 Giorgia earned her PhD in Economics from HHL Leipzig Graduate School of Management, Germany, focusing on the legal aspects of microplastic pollution. She holds a Bachelor's and a Master of Law from Università del Salento, Italy. Giorgia's expertise spans international public law and international and EU environmental law.

Abstract 1.3.1

Taking biodiversity into account when insulating buildings: a crucial requirement if urban wildlife is to adapt to climate change

Charles-Hubert Born, UCLouvain, Belgium

The urgency of the ongoing fight against climate change has led the European Union to impose increasingly strict measures to improve the energy performance of buildings (EPB), through Directive 2024/1275/EU. Apart from a very general requirement for consistency between building and biodiversity policies (art. 14.9), the new EPB directive is silent on the impact of building insulation on the micro-habitats on which many animal species that are specific to old walls and attics depend, such as bats, birds and solitary bees nesting in buildings.

However, the external insulation of building walls and roofs – the most energy-efficient for of insulation - in order to comply with EPB standards means that all the crevices used by these species for nesting or resting are sealed off, leading to a major Europe-wide reduction in their habitats. The protection afforded to birds and bats at European level under the Birds and Habitats Directives certainly applies to building owners when renovating buildings. However, the absence of prior inventories often renders these measures inapplicable, as the renovation work can't be qualified as 'intentional'. Furthermore, the new regulation (EU) no. 2024/1991 on the restoration of nature only addresses the restoration of urban ecosystems from the angle of preserving areas of green space and tree cover (art. 8), without targeting micro-habitats in buildings.

We defend the hypothesis that this failure to take biodiversity into account in the building insulation process is a major obstacle to the adaptation of rural and urban wildlife to climate change and contributes to the massive regression of species such as swifts and house sparrows. From a legal point of view, the silence of the texts on the EPB is contrary to the principle of integration referred to in Article 11 TFEU and to the requirements of the Bern Convention. However, there are many technical solutions to this situation (exceptions for certain buildings, installation of nesting boxes, tiles or hollow bricks, fitting out attics and cornices, etc.), which the Member States could incorporate into their legislation on the energy performance of buildings and/or their planning law, in particular via their planning regulations and by imposing planning charges. By way of example, we will analyse Walloon and Brussels law, and will make forays into comparative law to analyse their potential for integration to this end.

3 questions: how far does the EPB directive comply with the integration principle and the Bern Convention, as it does not provide exceptions for biodiversity conservation reasons ? How does your country deal with micro-habitats protection in rural and urban built environment ? Are there legal tools from urban planning law of relevance for this purpose ?

Biography:
Charles-Hubert Born is Professor at the Faculty of Law and Criminology of Université Catholique de Louvain (UCLouvain) and lawyer at the Bar of Nivelles (Belgium). He has a PhD in Legal Science and has degrees in biology and in environmental management sciences. He teaches introduction to law, land use planning law and environmental law. He performs and leads research on various topics in environmental and planning law and especially in biodiversity law at the Seminar of Environmental and Land-Use Planning Law (SERES) in the Faculty of Law. He has published several books and papers on these subjects. He is managing editor of the Belgian french-speaking leading journal on planning
and environmental law.

Abstract 1.3.2

Promoting circular economy practices within the building permit and its procedure to ensure livable and flourishing cities in Belgium (and beyond)
Jonas Voorter - Hasselt University, Mariet Stiers - Hasselt University

According to the new Circular Economy Action Plan, the construction sector drives economic activity but consumes 50% of the extracted materials, generates over 35% of all EU waste and contributes 5-12% of national greenhouse gas emissions, which could be cut by 80% through better material efficiency. The construction sector therefore holds significant potential for greater engagement in the circular economy (CE) to, eventually, contribute to a more sustainable society.

The permit (for construction purposes) is considered to be a strong instrument to facilitate the transition towards a more circular, sustainable and climate friendly built environment, ensuring that housing is easily available and adaptable and sufficient room in cities is reserved for green and public spaces. This paper therefore explores how the regulatory framework on the permit and its procedure can support the transition to a circular economy (CE) in the built environment. We use the Belgian regulatory framework as a case study. Our paper is focused on the potential role of licensing authorities to encourage CE practices during the permitting process. We believe that, although sustainable solutions should be part of initial project applications, these authorities may need to actively guide project owners or other stakeholders within the built environment towards circular practices. The main research question therefore is: 'To what extent does the Belgian regulatory framework on the environmental permit (procedure) oblige/facilitate licensing authorities to actively contribute to a circular economy, a sustainable society and livable cities?'.

To answer the main research question, first the ratio legis for the environmental permit will be touched upon, creating a solid theoretical basis for our in-depth analysis. Subsequently, we will highlight both substantive and procedural provisions on the building permit (procedure), pinpointing obstacles and opportunities in the Belgian regulatory framework regarding the ambitions on sustainability, circularity and climate-neutrality mentioned above.
Additional information:
This abstract ties in closely with the overarching theme of the conference and fits perfectly within the scope of subtheme 3 of the conference (Urban and land-use planning).
We also would like to propose the following three questions/thesis to discuss with our international audience:

- Licensing authorities should be legally obliged to include considerations on sustainability, circularity, climate neutrality in their permitting decisions;
- Can we exempt project owners that use innovative sustainable or circular methods/techniques/materials in their buildings completely from the obligation to get a permit?
- Not licensing authorities, but project owners should be stimulated to include climate, sustainability or circularity considerations in their permit applications.

Biography:
Dr. Jonas Voorter obtained his PhD from Hasselt University in 2023. After working as a postdoctoral researcher at Tilburg University (NL), he is now affiliated at Hasselt University as an assistant professor of environmental law. His main area of work is the legal transition towards a circular economy in various economic sectors, with a

specific interest in waste, innovative materials, soil and urban planning. He also is a member of the Flemish Circular Economy Policy Research Center.
Mariet Stiers is a PhD researcher at Hasselt University within the research unit Administrative Law and Public Administration. Her PhD focuses on the allocation and organisation of administrative enforcement powers in Belgium. Before starting her PhD in 2024, Mariet worked as a researcher at Hasselt University. She was involved in several research projects concerning circular economy, which she continues to work on.

Abstract 1.3.3

Legal frameworks for the integration of climate adaptation in local spatial planning (opportunities and barriers)

Justyna Goździewicz-Biechońska, Adam Mickiewicz University in Poznań, Poland

The new EU Strategy on Adaptation to Climate Change (2021) recognises the need for more systemic development and implementation of climate adaptation strategies and plans at all levels of governance. The strategy identifies cross-cutting priorities in this systemic adaptation approach, including local adaptation action and nature-based solutions for adaptations. It emphasizes that the local level is the bedrock of adaptation. That indicates the importance of decisions made within the spatial planning process at the local level in addressing climate change adaptation. Therefore, establishing an adequate legal basis for adaptation-orientated spatial planning is crucial.

This presentation aims to identify how the legal framework can foster the integration of climate adaptation into local spatial planning and how law can help avoid 'climate-blind' decisions regarding land use. It also addresses the question whether more binding legal requirements are needed to integrate climate change adaptation into local planning instruments and building permits. Since the land-use policy and its legal basis are locally sensitive, the analysis focusses on the national regulatory context, the Polish law. It analyses the recent developments in Polish law in this regard (e.g. Act on amending the Environmental Protection Law and certain other acts) and assesses these instruments (their legal character, policy potential, and barriers for implementation). Considering that climate change adaptation challenges are common and the Polish system is rooted in EU law and policy, this study could be useful for some generalisations and comparative studies.

Topic statements for discussion:

- What national approaches are adopted to improve climate adaptation in land-use planning and building law?
- Is a more binding integration of climate adaptation-related concerns in spatial planning law required?

Biography

Dr. Justyna GOŹDZIEWICZ-BIECHOŃSKA, Ph.D., is Assistant Professor at the Faculty of Law and Administration, Adam Mickiewicz University in Poznań. She holds an MA in law (2004) and a Ph.D. in law (2011). She is also an architect. Her research focuses on environmental law and legal studies regarding natural resources, land use planning, and renewable energy. In her work, she draws from her interdisciplinary education, academic and practical experience. She authored over 40 peer-reviewed articles, chapters, and one monograph. She has published in leading national and international journals and participated in scientific dialogues presenting her research in many international conferences.

Abstract 1.3.4

Title : Territorial Approaches to Climate Adaptation: Rethinking Spatial Planning for Resilient and Sustainable Human Landscapes

Raquel Carvalho, Faculty of Law, Universidade Católica Portuguesa portugal

Climate change generates a wide range of impacts on the human landscape, manifesting with varying intensities across different geographical and socio-economic contexts. These effects extend beyond the

biophysical environment to directly influence human health, livelihoods, and settlement patterns (IPCC, 2022). Given the deep interconnection between environmental change and human systems, it is essential not only to identify these impacts but also to critically examine how human activities shape, constrain, or enhance territorial and environmental sustainability (Folke et al., 2011).

Spatial planning—both in urban and rural contexts—aims to balance economic development, social cohesion, and environmental protection. As such, it holds significant potential as a strategic instrument in climate change adaptation and mitigation (Davoudi et al., 2009). In light of the differentiated nature of climate change impacts, a key question emerges: should land use planning responses be tailored to specific climate-related phenomena, or is it possible to develop synergistic approaches that integrate urban and rural planning objectives?

The pursuit of sustainability, in line with the United Nations Sustainable Development Goals (particularly SDG 11: Sustainable Cities and Communities, and SDG 13: Climate Action), invites further reflection on the types of planning tools employed. Should nature-based solutions (NBS), which leverage ecosystem services for climate resilience, be prioritized (Cohen-Shacham et al., 2016)? Alternatively, should they be combined with conventional grey infrastructure, or selected based on the unique vulnerabilities and capacities of each context?
Moreover, the design and implementation of public policy must take into account factors such as the geographical characteristics of a region, its level of socio-economic development, and the presence of climate-induced migration, which can increase demographic and infrastructural pressures, particularly in urban areas (Black et al., 2011). These considerations raise important governance questions: should climate-related land use policies be sectoral, nationally integrated, or transboundary in nature—as is often the case in environmental law (Bodansky, Brunnée, & Rajamani, 2017)? Addressing these challenges requires a nuanced, multi-scalar planning approach that recognizes the complexity and interconnectedness of climate change impacts and governance structures.

Biography
Raquel Carvalho is an Associate Professor at the Faculty of Law, Universidade Católica Portuguesa. Her academic and research work focuses on urban sustainability and the integration of sustainability principles in public procurement. She has published extensively on these topics, contributing to the advancement of legal frameworks that support sustainable development in both urban planning and public procurement. In addition to her research, Professor Carvalho teaches courses related to sustainability, with a particular emphasis on legal and policy dimensions. Her work bridges the gap between law, policy, and practical implementation, aiming to foster more resilient and sustainable urban environments and public procurement policies.

Abstract 1.3.5

Legally Robust AI in Climate Adaptation Planning: Aligning Risk Regulation and Interdisciplinary Perspectives under the EU Artificial Intelligence Act.
Lina K. Irscheid , University of Freiburg - Germany

The need for strategic municipal climate adaptation planning is becoming ever more pressing in light of the increasing frequency of extreme weather events. The impacts of such events are strongly influenced by local conditions, including the degree of land sealing, building density, and topography. Whereas climate change mitigation focuses on reducing global emissions, climate adaptation therefore requires locally differentiated planning.

In this context, AI systems offer possibilities, as they enable the production of comprehensive, high- resolution forecasts that assist planners in determining adaptation needs, developing appropriate measures, increasing their effectiveness, and making existing uncertainties visible. Particularly promising is their integration into municipal legal instruments, such as land-use plans or climate adaptation strategies. However, the use of AI also raises legal challenges. In this regard, the EU Artificial Intelligence Act (AI Act) is of particular relevance. The risks associated with AI systems are closely linked to the data and methods used. Accordingly, the AI Act adopts a risk-based regulatory approach, requiring AI systems to meet requirements that correspond to their respective risk

levels. The contribution examines the AI Act and assesses the extent to which AI systems used in climate adaptation planning fall within its scope and what requirements arise as a result. Since the legal requirements set out in the AI Act alone are insufficient to ensure legally robust use of such systems, the article raises the question of additional guidelines tailored to the specific use case and technical design. This calls for interdisciplinary perspectives, including those from meteorology, environmental sciences, hydrology, and computer science. Only through such collaboration can it be ensured that AI- based predictions are not only technically reliable but also legally robust. In this context, the discussion engages with issues of transparency, discrimination, and data protection.

The contribution will demonstrate that a legally sound and responsible use of AI-based predictions in municipal climate adaptation planning can only succeed if specific requirements are established at an early stage of developing the AI systems.
Questions to be discussed

1. Is the risk-based regulatory approach of the AI Act sufficient to govern the use of AI in municipal planning processes?
2. What interdisciplinary requirements should be additionally formulated to ensure transparency, non-discrimination, and data protection?

Biography
Lina K. Irscheid completed her law degree at the University of Potsdam in 2021 with distinction. From May 2021 to June 2024, she worked as a research assistant in the legal component of the interdisciplinary research project "I4C – Intelligence for Cities" at the University of Freiburg. Her research focused on whether and how AI-based 3D city models and prediction tools developed within the project can help reduce uncertainties and improve the legal basis for decision-making in the context of climate adaptation planning. This year, she submitted her PhD thesis entitled "Artificial Intelligence as a Basis for Decision-Making in Climate Adaptation Law". She is currently working as a research assistant at the Chair of Transformation towards Sustainable Energy Systems, held by Professor Cathrin Zengerling.

Abstract 1.4.1

The uses and abuses of security in food and energy law and policy
Dr. Matti Gurreck, University of Eastern Finland

This paper looks at how and to what ends “security” is used in legislative and juridical proceedings and what effects this has on climate adaptation and mitigation. In political, judicial and administrative documents in the EU and its Member States, security is constantly invoked – as “security of supply” in energy and as “food security” in case of agriculture. The treaties mention the security aspect in article 194(1) point b) TFEU, according to which the Union shall aim for security of energy supply in the Union. Article 39(1) points d) and e) TFEU states that two of the Common Agricultural Policy’s objectives are assuring “the availability of supplies” and ensuring “that supplies reach consumers at reasonable prices”.

The paper investigates whether the use of security rhetoric poses an obstacle to climate adaptation and mitigation efforts in the fields of energy and agriculture. Furthermore, the paper analyses whether and how the concept and function of security differs between energy law and agricultural law, for example due to different institutional setups and legal frameworks. Comparing the invocation of the security argument in these two areas is justified, as they are interrelated in multiple ways and frequently addressed within a shared analytical framework – mostly in political science – namely under the heading food-energy-water-nexus.

To do so, the paper explores the effects of the Russian war against Ukraine on EU law-making as a case study. In agriculture, the war led to a backlash against agri-environmental measures, among others the proposed (and eventually withdrawn) Regulation on pesticides (SUR) and certain conditionalities under the Common

Agricultural Policy (standards on good agricultural and environmental condition of land (GAEC))). Conservative voices claimed the measures would contribute to food insecurity, whereas a broad consensus among scientists and agricultural experts called – on the contrary – for an increase of environmental ambition to ensure food security. In energy policy saw, on the one hand, measures to accelerate the deployment of renewable energy were adopted, though probably at the cost of nature conservation. On the other hand, Russian gas was partly replaced by US and Norwegian supplies and individual Member States concluded gas supply contracts with other states (Azerbaijan, Senegal, etc.), which might lead to lock-ins that threaten the achievement of the EU's net zero target.

Preliminary findings indicate that the effects of invoking security on climate adaptation and mitigation in both policy areas depends inter alia on the conceptions of security as short-term or long-term security. In other words, it depends on whether there is a transformative, long-term vision underlying the security rhetoric.

Questions/Theses to be discussed:
Which actors use security as a legal argument and to what ends? Is this an obstacle to climate adaptation and mitigation in energy and agriculture? Are there differences between the use of the security rhetoric in energy and agriculture?

Biography
Matti Gurreck is a postdoctoral researcher at the University of Eastern Finland in the INTEL project (funded by the European Research Council, 2024-2029) and the FOUNDATIONS project (funded by the Academy of Finland, 2024-2028), which seek to develop the foundations of energy law in Europe. He studied law in Germany, the United Kingdom and India and obtained his PhD with a thesis on EU soft law. Prior to joining the University of Eastern Finland, he worked in research projects on water governance (as part of the German Advisory Council on Global Change, WBGU), energy law (Kopernikus project "Ariadne") and climate policy (Wissenschaftsplattform Klimaschutz, WPKS). Outside of academia his work experience includes political advocacy for an environmental NGO in Brussels. He is interested in EU and international energy law, environmental law, and food law.

Abstract 1.4.2

Legal pathways for climate adaptation in intensive livestock farming
Lucie Zdráhalová, Faculty of Law, Masaryk University, Brno, Czech Republic

This paper reflects on the gap between strategic ambitions at the EU level and their adaptation within the national environmental permitting regimes, highlighting a potential blind spot in the regulation of livestock systems that are vulnerable to climate change.

The EU's climate adaptation strategy calls for greater resilience across all sectors, including agriculture. While the Common Agricultural Policy has been increasingly associated with the delivery of adaptation goals, the extent to which its instruments address the specific challenges of intensive livestock farming remains an open question. The paper aims to identify gaps in the current legal framework and to explore avenues for strengthening the role of adaptation in livestock-related decision-making.

Using the Czech Republic as a case study, the paper examines how adaptation-related obligations are (or are not) incorporated into the legal and administrative frameworks governing the siting and operation of intensive livestock farms (particularly through instruments such as Environmental Impact Assessment and Integrated Pollution Prevention and Control). It further explores whether animal welfare may serve as an indirect adaptation measure to climate change, especially in the face of rising heat stress and increased disease risks.
The analysis draws on doctrinal legal research and a quantitative review of a comprehensive set of EIAs and permits for the operation of large livestock farms. While grounded in the Czech legal system, the questions raised

are broadly relevant across the Member States and underscore the need to further integrate climate adaptation considerations into both environmental regulation and agricultural policy.

Key questions:

1. How are EU-level adaptation goals reflected in national legislation and subsequently incorporated into the permitting processes for intensive livestock farms?
2. To what extent can current instruments under the Common Agricultural Policy support climate adaptation in intensive livestock systems?
3. Can animal welfare be used as a climate adaptation tool in regulatory practice?

Biography

Lucie Zdráhalová is a PhD candidate and Instructor at the Department of Environmental and Land Law at Faculty of Law, Masaryk University, Brno, Czech Republic. Her doctoral research focuses on the legal requirements for climate protection in intensive livestock farming. Her broader academic interests include animal, agricultural and food law. Before joining academia, she worked as a judicial assistant at a regional court. Her current work explores how legal instruments at both EU and national levels address climate-related challenges in agriculture, particularly concerning intensive animal production.

Abstract 1.4.3

Legal hurdles for agroforestry under the EU Common Agricultural Policy

Marina Klimke, University of Freiburg - Germany

European agriculture is an important source of greenhouse gas emissions, while in the same time being vulnerable to the effects of climate change such as increasing drought and flood events. Agroforestry describes the intentional integration of woody vegetation into agriculture to benefit from the resulting interactions. By creating a microclimate beneficial for crop growth and contributing to water retention in the soil, it offers the possibility to enhance the resilience of agriculture in face of climate change, while in the same time contributing to Carbon sequestration, biodiversity conservation, soil quality and income diversification.

The potentials of agroforestry are acknowledged in European subsidy law by the CAP Strategic Plans Regulation (EU Regulation 2021/2115) which identifies agroforestry as a sustainable farming practice that “needs to be promoted” (Recital 26) and requires the member states to define the term agriculture “to comprise arable land, permanent crops and permanent grassland, including when they form agroforestry systems” (Art. 4 (3) CAP Strategic Plans Regulation). However, legal constraints for the establishment and management of agroforestry systems and barriers in subsidy law are criticised as major hurdles for the promotion of agroforestry across Europe.

This contribution focuses on the role of agroforestry in European subsidy law and legal hurdles under the European Common Agricultural Policy (CAP). By drawing on insights from doctrinal and non- doctrinal legal research, it argues that while agroforestry may offer a significant contribution to the CAP strategic objectives, especially with regard to climate mitigation and adaptation, the potentials of agroforestry are not sufficiently addressed by the CAP funding instruments. To do so, firstly, it provides an overview of the contribution of agroforestry to the CAP strategic objectives and other legal objectives with regard to sustainable agriculture at international and EU level. Secondly, it draws on the implementation of the CAP in German subsidy law to provide an example of how the CAP is implemented with regard to agroforestry at the level of member states.

Thirdly, it highlights legal shortcomings with regard to both the CAP legislation at EU level and its implementation in Germany, including (a) terminological shortcomings with regard to the legal definition of agroforestry and the legal distinction between ‘productive’ agroforestry systems and ‘unproductive’ landscape

features, (b) structural shortcomings with regard to the architecture of the CAP and a focus on area-based direct payments and (c) shortcomings in German subsidy law. Ultimately, it argues that a more transformative shift for the Common Agricultural Policy is required to allow for an uptake of resilient farming practices such as agroforestry beyond few pioneer farmers.

Biography:
Marina Klimke is a PhD candidate in sustainability law at the chair Transformation towards Sustainable Energy Systems at the University of Freiburg, Germany (Prof. Dr. Cathrin Zengerling). Trained as an environmental scientist, she is particularly interested in taking an interdisciplinary perspective on the role of law in steering sustainable agriculture. In her PhD, she combines doctrinal and non-doctrinal legal research methods to analyse the legal framework for agroforestry in the EU and Germany.

Abstract 1.4.4

Enhancing Animal Welfare in the Context of Climate Adaptation
Dr. Elien Verniers, Faculty of Law and Criminology - Ugent, Belgium

As climate change intensifies, the need for robust climate adaptation strategies becomes increasingly urgent. While much attention is given to human and environmental impacts, the welfare of animals—both wild and domesticated—often remains overlooked. This contribution explores the intersection of animal welfare law and climate adaptation, highlighting the legal challenges and opportunities in ensuring the protection of animal welfare amidst climate-induced changes.

Related subthemes

- Agriculture and fisheries (4)
- Partcipation, EIA and access to justice (5)
- Human rights law (6)
- Opportunities and hurdles for adaptation in law and governance (8)

Short content description

- Legal Frameworks and Animal Welfare: This section will examine existing international and EU legal frameworks related to animal welfare and their applicability in the context of climate adaptation. It will assess whether current laws sufficiently address the needs of animals affected by climate change and identify potential gaps.
- Climate Adaptation Measures and Animal Welfare: The paper will analyze specific climate adaptation measures, such as habitat restoration, relocation, and emergency response strategies, and their implications for animal welfare. It will discuss the potential for maladaptation and the importance of integrating animal welfare considerations into adaptation planning.
- Case Studies and Best Practices: By presenting case studies from various EU Member States, this section will highlight successful integration of animal welfare into climate adaptation strategies. It will identify best practices and lessons learned that can inform future policy and legal developments.

Recommendations for Legal Reform: The paper will propose recommendations for enhancing animal welfare protection within the EU's climate adaptation framework. This includes suggestions for legislative amendments, improved enforcement mechanisms, and increased collaboration between environmental and animal welfare authorities.

Three questions

How can existing animal welfare laws be adapted to better address the impacts of climate change on animals?
What are the potential conflicts between climate adaptation measures and animal welfare, and how can they be mitigated?
What role can EU institutions play in promoting the integration of animal welfare considerations into climate adaptation policies?

Biography

Dr. Elien Verniers is a postdoctoral researcher and a member of the Centre for Environmental Law within the department of European, Public and International Law at the Faculty of Law and Criminology of Ghent University, Belgium.Her research focusses on legal issues with regard to Animal Welfare and Conservationism.
Her current research project is related to compassionate conservationism in EU law. She obtained her doctoral degree in October 2022 with her PhD "Towards new legal instruments for animal welfare". At Ghent University she also teaches the course Animal & Law.

Parallel sessions 2 – Wednesday 10 September 15:30-17:00

Abstract 2.1.1

Developing Nature Credits: Lessons from Finland's Biodiversity Offsetting System and Assessment of the System from the Point of View of Climate Adaptation

Minna Pappila

As the EU moves forward with plans to create EU-wide nature credits and implements the ambitious targets of the Nature Restoration Regulation, there is increasing momentum to develop scientifically robust and credible systems—especially in contrast to the challenges faced by carbon credits, such as concerns over reliability and greenwashing. In this context, Finland's experience with biodiversity offsetting offers valuable lessons.

In my presentation, I will introduce Finland's biodiversity offsetting system, developed under the new Nature Conservation Act (2023) and the Compensation Decree issued by the Ministry of the Environment. The regulatory framework was shaped through broad collaboration involving the Ministry, researchers, and dozens of habitat and restoration specialists from academia, public authorities, and the private sector. The resulting criteria have been widely recognized as scientifically sound, with key principles such as additionality, permanent protection, the same-for-same principle (with flexibility within habitat groups), and geographical limits that ensure ecological relevance. A notable feature is Finland's detailed, case-by-case methodology for assessing habitat quality and quantifying biodiversity losses and gains through restoration and protection.

However, the system is not without criticisms—particularly regarding its voluntary nature and the absence of a mandatory mitigation hierarchy. Despite this, the framework offers useful insights when viewed through the lens of climate adaptation in urban settings.

The ten largest cities in Finland have committed to halting biodiversity loss while also pursuing ambitious climate targets. Although biodiversity and climate goals are not entirely aligned, they are largely synergistic. It is increasingly important to understand how nature conservation, climate goals, and land use policies can be integrated, and how land use impacts on urban ecosystems can be holistically assessed—not only for biodiversity and climate mitigation, but also for adaptation.

From an environmental perspective, the mitigation hierarchy—prioritizing harm avoidance—is relevant to both biodiversity and climate policy. In urban areas, preserving green spaces is a primary means of maintaining carbon sinks, and tree canopy cover is directly linked to climate benefits. While Finland's offset legislation does not strictly mandate following the mitigation hierarchy, incorporating a climate lens encourages prioritizing the conservation of existing nature.

My presentation will assess how the principles and design of Finland's biodiversity offsetting system intersect

with, or potentially conflict with, the goals of climate adaptation in cities. As urban populations grow, cities are under increasing pressure to incorporate these interconnected considerations into land use decision-making. Finland's example provides a timely case study for informing the development of credible nature credit systems and integrating climate resilience into urban nature policy.

Discussion Points:
a) Do these principles and metrics sound reasonable?
b) Could a scientifically adapted version of these metrics serve as the basis for an EU-wide nature credit framework?
c) Is there need to combine nature & climate credits?

Abstract 2.1.2

Compulsory purchase for biodiversity offsets – a comparative analysis of German and Norwegian law
Håvard Bergheim, the Department of Property and Law, Norwegian University of Life Sciences (NMBU)

To counteract the ongoing global loss of biodiversity, biodiversity offsetting has been integrated into the land-use policies and legal frameworks of several countries, often as part of "no net loss" and nature restoration strategies. Based on the polluter-pays principle, biodiversity offsetting requires that developers responsible for nature degradation implement compensatory measures—typically nature restoration and conservation —outside the impacted area. In a European context, the principle is supported by, among others, the EIA Directive (EU/2014/52), which provides compensatory measures in cases of significant environmental impact.

Both private and public developers may be subject to offsetting obligations. While financial resources are often available for such measures, securing suitable land remains a significant and widely recognized barrier. Despite this, legal instruments to ensure access to land for offsets remain underdeveloped, leading practitioners to rely on ad hoc market-based solutions. These often result in suboptimal outcomes for both the quantity and quality of offsets.

Compulsory purchase (expropriation) may serve as an important tool for securing property rights for offsetting measures—both as a mechanism for implementation and as leverage in land acquisition negotiations. This paper examines the role of compulsory purchase in biodiversity offsetting through a comparative analysis of German and Norwegian law. While both countries face similar challenges regarding land acquisition for offsetting, Germany has applied legally binding offsetting requirements since the 1970s, whereas Norway is only now in the process of introducing such obligations through building permit regulations.

This comparison explores the extent to which compulsory purchase can be used to secure land for biodiversity offsets, and what legal frameworks are necessary to support its application.
The study is guided by two hypotheses: (1) that Germany, with its long-standing legal practice of offsetting, has a legal basis for compulsory purchase for this purpose; and (2) that biodiversity offsetting raises questions about whether it constitutes a public interest sufficient to justify infringements on private property.
Questions for discussion:

1. How can national legal frameworks reconcile property rights with nature restoration goals?

2. What lessons can be drawn from the German experience for countries introducing offsetting obligations, such as Norway?

By addressing these questions, the study contributes to the broader discussion of public– private tensions in property rights and offers valuable insights for policymakers seeking to strengthen legal mechanisms for securing land for biodiversity offsetting.

Biography
Håvard Bergheim (b. 1993) is a PhD candidate at the Department of Property and Law, Norwegian University of Life Sciences (NMBU). He holds a master's degree in property and law from NMBU, and his doctoral research focuses on the legal framework for biodiversity offsetting—examining to what extent its implementation is ensured, and how legal instruments should be further developed. Before starting his PhD, he worked as a land acquisition officer at Statnett, Norway's transmission system operator, and as an area manager in the City of Oslo's urban development sector.

Abstract 2.1.3

Harnessing Private Financing for Nature Restoration - Lessons Learnt from Carbon Credits
Leila Suvantola and Suvi Borgström

Nature and its functions contribute to climate mitigation, adaptation and resilience. The Nature Restoration Regulation prescribes the restoration activities for Member States in order to curb the loss of biodiversity and to carry out climate mitigating activities such as rewetting of organic soils in agricultural use. This vast challenge cannot be met without harnessing also the private sources of financing. One of the emerging tools is the tradable nature credits based on the experiences of the carbon credits.
We examine the legal nature of nature credits based on the core requirements for high integrity nature credits identified in the environmental policy literature namely additionality, permanence, measurability, independent validation and verification and transparency.

From the outset the legal questions in relation to nature credits appear similar to those related to carbon credits. The fundamental difference is that nature credits can only be generated in natural habitats through nature positive activities whereas carbon credits can also be generated via carbon sequestration from the atmosphere or through reduction of emissions. This means that all nature credits are derived from real estate and thus form one more type of property right.

Legal rights and duties around nature credits are manyfold: the duty of the landowner to manage the property in a certain manner to produce biodiversity benefits and to refrain from deterioration of those nature values, the right of the landowner to receive a payment for the nature credits; the credit buyers valid expectation of transfer of the ownership and its verification and permanence at least for the duration of the ownership; the right to transfer the ownership forward or at will retire the credits.
There are key lessons to be learnt from carbon credits trade. Firstly, nature credits have to be verified by an independent party (verification of a) the initial status of the habitat, b) the activities that increase the status of the habitat and c) generated increase of the status of the habitat according to accepted metrics). Secondly, there has to be a transparent register of the credits to provide legal certainty of ownership. And thirdly, there has to be legal certainty of the permanence of the credits. Whereas the first two can be provided by private entities, the last mentioned is best provided by the state via prohibition of the destruction of the generated nature values despite transfer of the property to a new owner.

We argue that nature credits have to be considered as a legal right distinguishable from property i.e. immaterial property in a similar manner as the right to extract soil resources or timber from the property etc. Such rights are based on private law agreement, but legal certainty has to be provided by the legislator. Lack of it would entail complicated legal processes in case of non-compliance and hamper emergence of nature credit markets.

Abstract 2.1.4

Citizen engagement and spatial risk in nature recovery: Early lessons and late warnings from the United Kingdom

Ketan Jha and Brontie Ansell

This paper explores how UK nature restoration law and policy engages citizens, contextualising citizen engagement in the context of multi-level governance. Robust and resilient ecosystems play a significant role in climate adaptation, and EU stakeholders ought to see lessons and early warnings from the UK experience. This paper focusses on biodiversity net gain (BNG) specifically, employing a law-and-geography approach to citizen engagement with nature restoration. We highlight the links between climate adaptation and nature restoration by examining how the replacement of UK habitats that play a significant role in climate adaptation are governed, ultimately suggesting that there are unresolved tensions between adaptation-focussed approaches and the present mechanisms for bolstering citizen engagement.

Biodiversity Net Gain is the key legal tool focussing on the reconciliation of the deleterious environmental effects of development and biodiversity/nature targets at the national and international level. This delicate function of negotiating the tension between nature restoration and development, lends importance to our first question: how does biodiversity net gain (BNG) in the United Kingdom incorporate local communities? The typical spaces of engagement are the planning process, where an engaged community might (a) seek to protect a space from development, (b) seek to stop it from being allocated for development in a Local Plan, or (c) advocate against the grant of planning permission. The critical difference with BNG, within these spaces, is the replacement of nature.

The paper presents and then problematises a simple answer to that thorny question. A formalist reading of the law says that community engagement in BNG is tacit; the core of BNG is an obligation imposed by local (planning) authorities on developers. The salience of local communities, then, does not emerge from legislation. It is instead in the biodiversity metric, required in name by the Act but at its core a creature of policy. The metric calculates a biodiversity unit score for a given area. A crucial element is the <1 'spatial risk multiplier,' which reduces the unit score for restoration efforts based on distance from the development. This structure recognizes that 'restored' nature is most beneficial—ecologically and socially—if it remains close to the communities that benefit from and impart meaning to it. This meaning-making capacity of local communities, which has no textual legal basis, demonstrates law can be sensitive to the geographical notion of place.

Another unspoken element emerges when we connect place-sensitivity back to the law: engaged communities contribute to the enforcement of BNG. They agitate for, or even perform, ecological monitoring that is essential to achieve net gain, even though the principal legal actors are local authorities and developers, bound together by a regulated contract. We show that this citizen enforcement function is a natural extension of the role communities already play with respect to (i) the existing planning process and (ii) existing approaches to citizen science in the UK and the EU. We illustrate how these roles can converge, using a case study of acid grassland in Essex. Finally, we tease out tensions between this approach to spatial risk and adaptation projects that require distance from a development site.

In this paper we have two principal aims. The first is to render explicitly the tacit role of communities in monitoring and enforcing biodiversity net gain. The second is to analyse this role in the context of place-based approaches to nature restoration. Both aims center the substantial contribution of an engaged citizenry to participatory democracy, particularly on behalf of nature. We argue that contribution is about the capacity of ordinary people to practise nature recovery and therefore contribute to environmental governance, noting that the UK's current approach may introduce tradeoffs with climate adaptation by disincentivising the restoration of distant sites.

Questions for further discussion:

1. Are there comparators for the UK's tacit approach to citizen participation in nature governance in the EU, and are there substantial differences between plans post-dating the EU Nature Restoration Law and existing measures, e.g. the Flemish Biodiversity Law?

2. How can climate-adaptive nature restoration be reconciled with the UK's approach to spatial risk and place?

Biography
Ketan Jha is Senior Lecturer at Brighton Law School, University of Brighton, where he convenes modules in Environmental Law and Public Law. He consults with Lawyers for Nature and is a trustee of People and Planet. Brontie Ansell is director and co-founder of Lawyers for Nature, a community interest organisation focussed on realising the rights of nature. She was previously Associate Professor at Essex Law School, University of Essex.

Abstract 2.1.5

Into a maze of forest trails: how national law can grow (or slow) EU green goals on climate resilient forests
Drs. Edo Schoone, University of Hasselt

As a society, we expect that forests fulfill a myriad of social, economic and ecological functions. The EU 2030 Forest Strategy highlights that forests are essential for supporting EU climate policy, the economy, biodiversity and the health of all Europeans. Yet, forests are increasingly under pressure due to the effects of climate change, including forest fires and invasive beetles outbreaks. In response, EU policy emphasizes the need for robust and diverse forests. To support this, the EU published guidelines outlining criteria to establish resilient forests. However, as forestation mainly remains a competence of member states, national regulation and practice can form a bottleneck in achieving this goal.

To assess whether national afforestation practice aligns with EU objectives and to identify good (and bad) practices, my research critically compares three regulatory pathways of afforestation in Flanders and the Netherlands against the EU's criteria. After identifying and defining EU criteria for resilient forests, I examine three distinct regulatory pathways through which member states facilitate or mandate the creation of new forests. The analysis reveals clear discrepancies of afforestation policies within a single member state, between different member states and between national policy and the EU guidance, leading to differing climate robustness.

The first pathway involves voluntary afforestation through subsidization. The Flemish legislation establishes criteria that have to be met in order to receive subsidies. Depending on the content of these criteria, different types of forests are enabled. These criteria have changed considerably in the past 30 years, most notably the tree-species to be used, the cultivation material and the local suitability. The Dutch legislation takes another approach, clearly outlining afforestation projects depending on the location and function of the forest.
The second pathway considers forest compensation after deforestation through permitting. The Dutch 'herplantingsplicht' incorporates the mitigation hierarchy, including the necessity to replant the same species in the same location. Meanwhile, the Flemish 'compensatieplicht' uses quantitative criteria, but does not incorporate qualitative criteria, meaning that the lost species can be compensated elsewhere with a different species.[1]

The third pathway considers the practice of remedial reforestation after illegal deforestation. This pathway centers around the practice of the supervisors of the Flemish Agency of Nature and Forests (ANB), who have the authority to impose remedial measures when an environmental crime has been committed. In cases of illegal deforestation, the remedial measure imposes reforestation, including different modalities depending on the case. I analyzed 84 remedial decisions concerning forest remediation through content analysis with the aim to determine principles of the remedial practice.

I end with comparing how the three national pathways align or diverge from the EU afforestation criteria. I conclude that, depending on the regulatory framework and the actors involved, forests of varying ecological quality and resilience are established with some frameworks leading towards more climate robust forests than others. I end with a call for further comparative work.

Leading questions:
• Are afforestation policies harmonized in your member state, and how does it relate to the EU criteria?
• Should we let go of the focus on native tree-species and introduce (foreign) species more resilient to climate change?

Bibliography

Edo Schoone started in 2022 as a PhD-researcher at the UHasselt Faculty of Law, where he is connected to the Environmental Law Unit and the Centre for Environmental Science. He has an additional master's degree in Environmental Sciences and experience in practice (consultancy). His work is funded by the interdisciplinary FWO INVABIO-project (www.invabio.eu). The topic of his PhD is the analysis of the application of administrative discretion through a historical analysis of biodiversity in executive regulation, the valuation of biodiversity damage in permitting decisions and the valuation of biodiversity in (administrative) sanctioning decisions. He has a three-monthly column in the legal journal M.E.R. about recent evolutions in environmental law and has published an article together with several case notes on Flemish and European caselaw

---

(1) For my research article on this topic: SCHOONE E. en BILLIET C.M., 'Het boscompensatiemechanisme: een ecologische minderwaarde voor het hedendaags natuurbeleid', MER, Vol. 3 2023, 162-182.

Abstract 2.2.1

Just transition in framework climate laws: Between meaningful governance and performative law

Vilja Johansson, University of Eastern Finland, CCEEL

A growing number of governments strive to ensure socially just mitigation and adaptation policies by taking legislative measures to advance a 'just transition'. These emerging legislative practices have, however, gathered limited scholarly attention. To understand the meaning and impact of this novel trend, this contribution undertakes a comparative case study on the operationalisation of just transition within framework climate laws in Ireland, Scotland, and Spain. The article identifies and assesses three mechanisms through which the concept is operationalised: (1) definition and legal status, (2) planning and reporting requirements and (3) just transition advisory bodies. The analysis shows how these mechanisms can amount to meaningful just transition governance – if applied in good faith – by establishing justice as a new expectation for climate mitigation and adaptation policy within the jurisdiction and putting in place the planning frameworks and institutional setups for ensuring its fulfilment within subsequent practice. The legal requirements also substantially shape the realisation of just transitions, by determining the meaning of the concept as well as the actors, information and considerations that are considered relevant within the policymaking process. This ultimately determines the justice concerns the mechanisms manage to identify and address. Moreover, in cases of bad faith or lack of capacity, the abstract and aspirational nature of the legal requirements, combined with the lack of robust accountability, can transform the mechanisms into performative law that promises justice without necessarily delivering.

Three questions with a view to a discussion with the audience:

1. Is just transition understood in the same way in relation to adaptation and mitigation policy?
2. How well can the assessed legal provisions facilitate a just transition?
3. What potential avenues are there for climate law frameworks to better support the justness of the policy measures?

This abstract relates to the conference themes 1 and 9 as it deals with how frameworks climate laws can support the justness of adaptation (and mitigation) policies.

Biography

Vilja Johansson is a doctoral researcher at the Center for Climate Change, Energy and Environmental law at University of Eastern Finland. Her research explores legislative practices that aim to enhance the justness of climate measures, with a focus on the concept of a just transition. In particular, she researches the legal evolution of just transition in international, EU and domestic contexts and the mechanisms that are applied for the implementation of a just transition in different jurisdictions.

Abstract 2.2.2

'Just resilience': Understanding the Dimension of Equity or Justice in EU Climate Adaptation Law
Elias Van Gool , KU Leuven - Belgium

The European Climate Law, the 2021 Adaptation Strategy and a slate of subsequent EU policy documents confirm that EU climate adaptation must focus on the most vulnerable actors and achieve so-called 'just resilience'. This dimension of 'equity' or 'justice' in EU climate adaptation is becoming an exceedingly important topic, due to the unequal nature of impacts of and vulnerabilities to climate change but also due to the risk of 'maladaptive' measures and processes that exacerbate existing inequalities. Despite this potential significance, there currently exists no clear consensus on what 'just resilience' in the EU precisely entails and how it can be best pursued in practice, as illustrated by recent national implementation plans. What are the key components of this dimension of 'equity' or 'justice' in climate adaptation within the EU? And is it only an ancillary concern, as institutional documents seem to imply, or should it rather be seen as a core normative goal? Moreover, to what extent is it different from comparable provisions in the Paris Agreement and international climate law, which have received already more scholarly attention?

This paper aims to provide a general understanding of what 'just resilience' can and should mean as a part of EU climate adaptation law. To achieve this, relevant legal sources are studied side-by-side with key insights from the well-established interdisciplinary literature on 'resilience' in social-ecological systems and on 'environmental justice'. This comprehensive approach can help to answer the key theoretical questions mentioned above. Furthermore, it can offer general guidance on what can constitute 'just resilience' in the design of governance processes and concrete climate adaptation decisions at the member state and local levels. Finally, the study of relevant legal and interdisciplinary sources can also lead to a more coherent understanding of how 'just resilience' relates to general principles of environmental law and especially the goal of sustainable development enshrined in not only EU primary but also member state law.

Biography
Elias Van Gool is since November 2024 a Post-Doctoral Research Fellow of the Flemish Science Foundation (FWO). He is affiliated with the KU Leuven Centre for Public Law, where he now conducts research and teaching activities relating to environmental and climate law. His main research project, supervised by prof. Geert Van Calster, concerns environmental justice in EU environmental law. His past doctoral research at KU Leuven and the Université de Lille focused on the intersection of EU consumer law with environmental sustainability. In 2024, he obtained his Ph.D. in law with a thesis on product liability in a more circular economy.
Prior to returning to academia, Elias practised several years as an attorney at the Belgian office of an international law firm, where he focused on environmental and energy law. Elias holds a Research Master of Law Degree from KU Leuven (2014) and an LL.M. from Stanford Law School (2022).

Abstract 2.2.3

From evidence to action: legal pathways for science-based climate adaptation?
Eleonora Ciscato, post-doc researcher, University of Milan - Italy

Effective climate adaptation policies must be rooted in the best available scientific knowledge. Yet, many legal and institutional frameworks within the EU still lack the mechanisms to ensure that such knowledge is systematically and transparently integrated into decision-making processes.
This research explores how legal systems can better incorporate scientific evidence into the design and implementation of climate adaptation measures. Starting from the framework of the European Climate Law (Reg. EU 2021/1119), the analysis focuses on how advisory bodies and science-policy interfaces function at both EU and national levels, with particular attention to the conditions that ensure independence, transparency, and democratic legitimacy.

Special attention is devoted to the Italian context, where the approval of the Piano Nazionale di Adattamento ai Cambiamenti Climatici (National Plan of Climate Change Adaptation) represents a crucial step toward a coordinated national response. However, questions persist regarding the scientific robustness of the plan's foundations and the extent to which its implementation aligns with the European Commission's Better Regulation Guidelines, which require that policymaking be evidence-based, include stakeholder engagement, and ensure regulatory transparency.

Drawing on science-policy theories and the paradigm of post-normal science, the work identifies legal and procedural criteria for effectively embedding scientific input into public decisions, particularly where uncertainty and value conflicts are present. Consideration is also given to the role of participatory and deliberative mechanisms in reinforcing both the scientific credibility and democratic legitimacy of climate adaptation strategies.

Key questions to be discussed:

1. What institutional and legal structures can ensure the integration of robust, independent scientific evidence in climate adaptation policies?
2. How should scientific uncertainty be handled in legal decision-making concerning climate resilience?
3. Can participatory mechanisms enhance—not dilute—the scientific legitimacy of adaptation strategies?

Biography:
Eleonora Ciscato is a post-doctoral researcher at the Department of Italian and Supranational Public Law at the University of Milan. Her research focuses on the intersection between law and science in environmental governance, with particular attention to biodiversity policies, regulatory frameworks for climate adaptation, and participatory approaches to decision-making. She is currently involved in the national PRIN project Cop_SciPo Coping with Climate Change. Method, reasons and procedure for science based policy making. Her work adopts a multidisciplinary perspective, combining legal theory, policy analysis, and environmental law.

Abstract 2.2.4

Ex post evaluation of climate framework legislation
Paula Leskinen, University of Eastern Finland (UEF) - Finland

Recent developments in climate policy have not yet accomplished desired effects. This calls for prompt actions in all policy sectors so that the common goals set by the contracting parties of the Paris Agreement could be reached. Given the importance of climate change mitigation and adaptation on international and national policy agendas and growing interest in climate policy integration and coherence, surprisingly little attention has been paid to the ex post evaluation of climate policies from the legal perspective. As evaluation is considered an indispensable component for the transition to low-carbon societies, climate policies need to be effectively implemented and their overall effects, ambition and progress monitored by systematically collecting and assessing data.

Therefore, climate framework legislation should establish a system to track the progress towards achievement of the long- and short-term climate objectives (related to mitigation, adaptation and just transition) and ensure compliance with climate change related commitments and a mechanism to evaluate and increase the level of ambition of the time-specific targets over time. Additionally, the overall effects, effectiveness and efficiency, relevance and coherence of the laws merit consideration.

Emissions and removals have been at the core of these processes. This is partly because GHG emissions and removals are easier to monitor quantitatively. Conversely, the objectives of policies and regulations aimed at adapting to climate change by reducing vulnerability, strengthening resilience or improving adaptive capacity are more ambiguous, making it difficult to measure the progress towards these objectives retrospectively. The

same goes for the notion of just transition which is gradually being incorporated into international and national legal instruments. However, adaptation and just transition impacts of policies require equal consideration. The proposed presentation falls under the theme of opportunities and hurdles for adaptation in law and governance as it discusses effective practices among EU Member States to monitor the impacts of climate policies also from the perspective of climate change adaptation. The proposed presentation will briefly analyse monitoring and evaluation components in national climate framework laws across various EU countries, including Finland. Secondly, it will consider how ex post evaluation of climate legislation should be implemented at the national level, which will also be a relevant topic for discussion with the international audience of the conference.

Biography
Paula Leskinen is a researcher at the Finnish Environment Institute within the Societal Change Unit. She is currently pursuing her doctoral studies at the University of Eastern Finland (UEF), at the Centre for Climate Change, Energy and Environmental Law (CCEEL) of the UEF Law School. Her doctoral research focuses on ex ante and ex post evaluation of climate legislation. Additionally, Leskinen has published scientific articles and reports on a variety of topics related to EU and national environmental law.

Abstract 2.3.1

Designing sustainable and healthy cities for All through nature-based solutions. Towards a binding integration of climate adaptation concerns into Flemish spatial policy planning
Caroline Van Esbroeck, Hasselt University - Belgium

Due to climate change, cities face serious challenges requiring sustainable spatial interventions. A continued reliance on grey infrastructure exacerbates issues such as urban heat islands, flooding, and a shortage of green spaces—negatively affecting human well-being. Nature-based Solutions (NBS) present an alternative by integrating ecosystem restoration to address environmental, social, and economic issues, while enhancing urban resilience and biodiversity. Examples of NBS include well-connected green and blue infrastructure, such as parks and wetlands. International and EU regulations are increasingly mandating the inclusion of NBS in planning to achieve sustainability goals. Moreover, the EU's regulation on nature restoration obliges member states to increase urban green space. However, literature warns that green space initiatives can trigger green gentrification, deepening social inequalities. This phenomenon relates to the green space paradox: municipal strategies aimed at enhancing climate resilience and attractiveness through green infrastructure often raise property values and drive the physical displacement of working-class residents, racial minorities, and cultural communities.

In Flanders (a region of Belgium), spatial policy planning is conducted at the regional, provincial and municipal levels. A spatial policy plan includes a strategic vision and one or more policy frameworks. The strategic vision outlines long-term development goals—such as climate adaptation—while a policy framework translates these goals into medium-term actions. For instance, a thematic municipal framework may focus on 'green and blue infrastructure in the city,' with an associated action program supporting NBS like the creation of green spaces. Alternatively, frameworks may target specific areas, such as revitalizing an entire watercourse or greening a city center. However, municipalities have significant discretion in selecting their policy frameworks and are not legally required to prepare one specifically for climate adaptation. Furthermore, these policy frameworks apply solely to public authorities, and the legislation imposes no binding obligation on municipalities to implement their own plans.

The paper explores on the one hand how binding climate adaptation targets can be implemented in Flanders (Belgium) to sufficiently comply with international intentions. Using the Dutch framework as a reference, it advocates embedding binding policies and environmental values into Flemish spatial planning law. On the other hand, principles of environmental law—particularly inter- and intra-generational equity and fair benefit-sharing—are proposed to guide decisions on implementing NBS, ensuring fair access, community involvement, and equitable outcomes, minimizing environmental injustices, and benefiting all socio-economic groups. The

central question this paper seeks to address is: “How can the integration of binding climate adaptation-related concerns into urban planning policies be designed to ensure equitable benefits for all socioeconomic groups?” Questions:

- To what extent can additional principles of international environmental policy contribute to addressing the green space paradox and its associated social inequities?
- Are there alternative governance frameworks, comparable to the Dutch system, in which public authorities are legally obligated to adhere to their own spatial planning policies to uphold specified environmental values?

Biography
Caroline Van Esbroeck is a Ph.D. candidate at Hasselt University, affiliated with the Centre for Government and Law in the Department of Administrative Law. Her research, initiated in October 2021, focuses on urban planning and environmental law. She is currently preparing her doctoral dissertation, “Nature-based Solutions (NBS) for More Climate-Resilient Flemish Cities: Obligations, Competences, and Instruments for Local Governments”, within the framework of the FWO-funded InnoFins project. She holds a Master’s degree in Law (University of Antwerp) and a Master’s degree in Design Science from the urban planning department of the University of Antwerp.

Abstract 2.3.2

Nature-based solutions to climate change adaptation in urban areas: a Norwegian planning perspective
Gunnhild Storbekkrønning Solli, Mina Di Marino, Ingvild Furuset, Caroline Enge, Line Johanne Barkved, University of Life Sciences (NMBU)- Norway

Over the last decade, scholars and policy makers have recognized the Nature-Based Solutions (NBS) as key-tools to challenge climate change mitigation and adaption Despite the rise and active promotion of NBS in the international and local debates, relatively little is known about what has been effectively done (and not yet done) at the different levels of governance and planning. The main outcomes of this study refer to research conducted by an interdisciplinary group of experts on climate, water and ground water management, urban planning and laws - from NIVA, the Norwegian Institute for Water Research (NIVA), and from Norwegian University of Life Sciences (NMBU)-, and commissioned by the Norwegian Environment Agency (Miljødirektorat).

The study first focuses on the challenges in implementing NBS in planning, and secondly, the main outcomes from the four selected municipalities of Trondheim (in central Norway), Stavanger (in south-western Norway), Indre Østfold (in south-eastern Norway) and Bodø (in northern Norway) are presented. Document analysis and five among focus groups/interviews with the municipal managers (experts on urban planning, climate, environment and water security) were conducted. This study shows that the municipalities have acknowledged the relevance and need for NBS to tackle the climate changes. A variety of NBS have been identified that contribute to ecosystem restoration, habitat, flood protection and water retention, as well as soil restoration and heat regulation. Nonetheless, other tools and concepts, such as blue-green factor, blue-green structure and ecological compensations, are currently used for integrating climate change adaptation in the municipalities.

There are still barriers for implementing NBS (e.g. understanding of the concept itself among practitioners and local private actors and the use of other notions adopted in earlier plans). The study contributes to the current debate on the implementation and upscaling of NBS to further address climate, biodiversity, water and health issues among decision-makers, citizens and practitioners.

Keywords: Nature-Based Solutions, climate changes, practitioners, decision-makers and planning challenges

Biography:
Gunnhild Storbekkrønning Solli is an Associate Professor of Law at the Norwegian University of Life Sciences (NMBU). Her primary focus areas are water law (particularly groundwater law), natural resources law, and

environmental law. At NMBU, she is academically responsible for Environmental Law and Property Law and teaches across several Master's programs, including the Water Management & Hydrological Science program. In addition to her academic roles, Gunnhild serves as the chair of the board of the Norwegian Environmental Law Association and is a member of the Research Council of Norway's Portfolio Board for Climate and Environment. She is also a member of the Norwegian Regional Committees for Medical and Health Research Ethics.
Gunnhild has diverse work experience, having served in the Ministry of Justice, worked in private practice as a lawyer, and held a position as a judge. She holds a PhD in Law from the University of Oslo, a Master of Law from the University of Oslo, and an LL.M. in EU Law and International Human Rights from the University of Durham.

Abstract 2.3.3

Governing Urban Trees as Nature-Based Solutions: A Legal Analysis of Tree Management in the City of Utrecht, the Netherlands

Liping Dai, Utrecht University - The Netherlands

Urban trees are increasingly recognized as essential Nature-Based Solutions (NBS), contributing to climate adaptation, biodiversity, and human well-being, particularly by mitigating heat stress in cities. Despite the presence of many trees in Dutch cities, there is significant progress to be made. The average tree canopy cover in Dutch cities is just 12%, far below the international standard of 30% needed to effectively cool urban areas. The City of Utrecht has implemented several legal instruments to govern its urban tree stock, including the integration of tree policy into spatial planning, incentive mechanisms for private tree stewardship, and obligations for tree replacement or transplantation.
This article investigates the application of these instruments, the challenges in their implementation, and the difficulties in enforcement. The analysis also considers Utrecht's response to legal obligations for urban canopy cover under the EU Nature Restoration Law. The article concludes with recommendations to strengthen the legal framework supporting urban trees as multifunctional assets in sustainable and climate-resilient urban governance. The findings offer insights for other cities seeking to reconcile urban growth with green space preservation.
Two questions to be discussed with international audience:

1) What legal tools work well—and which ones don't—in supporting urban trees as part of climate and nature policies?
2) What challenges do cities face when trying to follow new EU rules on green space and tree cover?

Biography:
Dr. Liping Dai is an assistant professor at Utrecht University Centre for Water, Oceans and Sustainability Law. She is currently conducting research on Nature-Based Solutions (NBS) in urban areas from a legal perspective. Her work focuses in particular on small-scale NBS interventions—such as private gardens and urban trees and grass strips—and explores how these interact with land use planning, property law, and environmental governance frameworks.

Abstract 2.3.4

Mainstreaming nature-based solu2ons: Obstacles to and drivers for natural stormwater management in the Italian legal system

Francesco Venuti – University of Eastern Finland

Italy is largely exposed to the impacts of climate change, especially in relation to the consequences of extreme weather events. More than 100 floods have occurred in the 2022-2023 period and almost 30% of the country presents some level of flood risk. In December 2023, after a six-year-long process, the Ministry of Environment approved the National Plan on Climate Change Adaptation (NPCCA), which is aimed at specifying the content of the national strategy on adaptation. Despite the excitement following the NPCCA approval, this document merely contains general guidelines that neglect the legal feasibility of many actions and do not take into account territorial differences. It is indeed for single regions and municipalities to adjust the actions envisioned at the national level to the local conditions and implement the necessary measures to improve in practice urban resilience and adaptive capacity.

Among the water-related measures listed at the national level, nature-based solutions (NBS) and changes to the law stand out as relevant approaches to enhance natural stormwater management (SWM) in urban areas. However, due to the low level of detail, the legal changes mentioned in the NPCCA are quite generic and their contribution to the actual implementation of natural SWM in cities is arguably limited. Grey, traditional SWM infrastructure still represents the dominant model in Italian cities and the instances where nature-based or hybrid solutions are used to manage stormwater in urban areas are rare. Good examples combining natural SWM strategies with conducive regulatory changes are not completely missing but are rather limited. Furthermore, in recent years the extension of urban sealed area has been nationally increasing, exacerbating flood risk.

Attempts to reserve enough land to facilitate natural SWM uptake have been made through transfer of development rights programmes and changes to building codes but NBS cannot be considered fully integrated in the Italian land-use planning framework. Among the legal and administrative elements influencing the implementation of NBS for urban SWM, the coexistence of both multiple land-use plans that can affect adaptation efforts and several authorities that are competent to decide on water-related matters at different scales represent significant barriers. The result is often an uncoordinated system with unclear and sometimes overlapping responsibilities among actors carrying different interests and perspectives on SWM. Furthermore, the presence of regional regulations with different levels of ambition in relation to NBS implementation adds to the fragmentation and discourages a cross-regional approach supporting natural SWM.

This paper combines the analysis of the Italian SWM and land-use planning frameworks with a series of interviews with Italian urban planners from 8 cities to investigate legal barriers to natural SWM and highlight best administrative practices stimulating NBS for SWM. By examining how the law

influences natural SWM in practice, this paper aims to propose legal pathways to promote a regulatory approach to NBS and favour widespread implementation of natural SWM in Italian cities.

- How do the legal and governance frameworks influence the uptake of natural SWM in Italian cities?
- What are the main characteristics of a regulatory approach to NBS?

Biography

I am a doctoral researcher in environmental law at the University of Eastern Finland. My PhD focuses on the legal feasibility of urban nature-based solutions for climate change adaptation in Italy and Finland. In particular, I study how the law influences the implementation of sustainable stormwater management in Finnish and Italian cities. By analysing legal obstacles and drivers influencing the implementation of nature-based solutions, I seek legal pathways to facilitate sustainable stormwater management and accelerate urban sustainability transformations. I am also interested in comparing the legal systems of Italy and Finland, namely countries with different legal cultures and climatic profiles, to assess similarities and differences in how they govern nature-based solutions. I hold a Master's Degree in Law (2019) from the Università degli Studi di Udine and an LLM in Environmental Law and Sustainable Development (2021) from the University of the West of England.

Abstract 2.4.1

I'm still standing: assessing the environmental impacts of legacy infrastructure in the face of climate adaptation.

Maja Starosta, ClientEarth - Germany

This presentation explores a critical yet underexamined challenge for climate resilience in Europe: the regulatory blind spot surrounding EIA obligations for ageing dams. Many of these structures were built before the adoption of the EIA and Habitats Directives and continue to operate under indefinite or repeatedly renewed permits – often without ever assessing their environmental impacts.

Large dams exemplify a broader legal and governance challenge in the EU: how to address legacy infrastructure in the context of accelerating climate and biodiversity crises. As many European dams exceed their intended service life, the risks associated with continued operation increase, exacerbated by more frequent extreme climate-related natural hazards such as floods and droughts. Dams also continue to disrupt the ecological connectivity of rivers, undermining efforts to protect and restore freshwater ecosystems – already in steep decline across the EU.

Despite these risks, EU law lacks a coherent mechanism for triggering EIA obligations when permits for legacy infrastructure are extended. This enables some of the most environmentally disruptive installations to avoid both environmental assessment and public scrutiny.

Drawing on CJEU jurisprudence and case studies from several EU Member States, the presentation highlights inconsistent national approaches and reveals a fundamental legal asymmetry: while new projects must comply with contemporary environmental standards, ageing infrastructure remains governed by outdated assumptions. This gap has particularly urgent implications in the context of climate adaptation and nature restoration.

The contribution proposes a lifecycle-based permitting framework, in which lifetime extensions trigger environmental assessments. Clarifying this issue in EU law is essential to align infrastructure governance with climate adaptation and nature restoration goals. Without environmental (re)assessment, legacy infrastructure undermines legal coherence and the EU's broader environmental agenda. The presentation argues that EU law must treat infrastructure as dynamic, not perpetual.

Questions for discussion:

1. Should the EIA Directive be interpreted to cover permit renewals of ageing infrastructure as part of climate adaptation governance?
2. Which legal frameworks or reforms can ensure that legacy infrastructure does not escape accountability in an era of escalating climate risks?
3. What procedural and legislative innovations are needed to make the governance of large dams climate-resilient and ecologically responsive?

Biography:

Maja Starosta is a law and policy advisor at ClientEarth, working within the Terrestrial and Freshwater Ecosystems team. Her work focuses on litigation and legal advocacy to protect Europe's forests and rivers from key drivers of biodiversity loss. She engages with EU and national legal frameworks to strengthen enforcement of environmental laws, particularly those relating to nature protection and environmental impact assessment.

Abstract 2.4.2

Strengthening climate adaptation and resilience through the mitigation hierarchy: empirical insights from environmental impact assessments in Flanders (Belgium)

Sharleen Quarem, Hasselt University and KU Leuven- Belgium

The need for action on climate change and biodiversity loss is widely recognised across the world. Addressing these interconnected challenges requires a comprehensive approach that integrates climate and biodiversity considerations into the plans, programmes, and projects implemented throughout the EU. The success of climate change policies will, in large part, be determined by the effectiveness of efforts to halt biodiversity loss and ecosystem degradation. To address biodiversity loss, a range of tools are available to support informed decision-making, most importantly the Environmental Impact Assessment (EIA). By providing indispensable knowledge on the potential environmental impacts of proposed projects, as rooted in EU Directive 2011/92/EU, the EIA enables planners and policymakers to make well-founded choices that have the potential, among others, to enhance climate resilience and protect vital ecosystems.

In this context, the mitigation hierarchy plays a central role. Enshrined in Article 5(3)(b) and Point 6 of Annex IV of the EIA Directive, this decision-making framework directs developers to first avoid negative impacts on biodiversity. Where avoidance is not possible, impacts should be minimised, affected areas restored where feasible, and only as a last resort, remaining impacts offset. While EIAs cover various environmental aspects, this analysis focuses specifically on safeguarding biodiversity. Applying the mitigation hierarchy in this context helps preserve and restore nature while enhancing ecosystem resilience to support climate adaptation.
Although the mitigation hierarchy is a legally required component of the EIA under EU law, there is still limited literature on how it is practically applied in permitting decisions across EU member states. Therefore this presentation looks at practice, using 125 EIAs made in Flanders, Belgium, to inform permitting decisions (Flemish EIA-legislation implementing Directive 2011/92/EU). It investigates how different biodiversity impacts are classified in practice: which are considered avoidable, which are minimised, which can be restored, and which ultimately require offsetting.

First, I begin with a doctrinal analysis of the mitigation hierarchy as defined by EU law, examining relevant legal texts and guidance documents. Next, I conduct a content analysis of how the mitigation hierarchy is applied in Flemish EIA's biodiversity assessments, identifying discrepancies between legal theory and actual practice. This analysis reveals a "conceptual confusion" surrounding the different stages of the mitigation hierarchy, highlighting the urgent need for a clearer legal understanding and application of this framework.
By using large language models, I then perform a word clustering approach to analyse the co- occurrence of concepts within biodiversity impact assessments. This method allows us to identify patterns in how impacts are categorized—whether as avoidable, minimized, restorable, or requiring offsetting. Clustering will reveal trends in interpretation, highlighting inconsistencies or biases in applying the mitigation hierarchy.

In conclusion, this interdisciplinary study offers a unique, data-driven analysis of how the mitigation hierarchy is applied in Flemish EIAs. By combining doctrinal analysis with word clustering, it bridges legal theory and practice—clarifying concepts and strengthening resilience-focused permitting decisions essential for climate adaptation. It provides valuable insights for enhancing the effectiveness of EU environmental law, reinforcing the integration of biodiversity considerations into decision-making processes.

Questions:

1. In your country, how is the mitigation hierarchy—as outlined in the EU EIA Directive or similar national frameworks—applied in practice when it comes to biodiversity impact assessments? What are some best practices, innovative approaches, or recurring challenges you've encountered in implementing the hierarchy (avoid, minimize, restore, offset) in permitting decisions?
2. How might the clearer operationalisation of the mitigation hierarchy support stronger legal accountability in permitting decisions, particularly under growing pressure to accelerate climate adaptation efforts?

3. How can digital tools, such as language models or AI-driven content analysis, support more consistent and transparent biodiversity assessments in EIAs?

Biography:
Sharleen Quarem is a joint PhD researcher in environmental law and business economics since August 2023. The nature of her research places her in both the Environmental Law Unit at the Law Faculty of Hasselt University and the Center for Economics and Sustainable Development at the faculty of Economics and Business of KU Leuven. Her doctoral research is framed within the interdisciplinary S005523N-project INVABIO (Individual-based Value Assessment of Biodiversity in Policy Implementation) (2022-2026). It focuses on the value assessment of legal and illegal damage to biodiversity in decision making with an individual scope. She provides a biannual column in the legal journal M.E.R. covering the judgements of the Belgian Constitutional Court in environmental matters and has published several case notes on Flemish and European environmental law.

Abstract 2.4.3

Public involvement in climate adaptation policies and procedures
Jerzy Jendrośka , Opole University (Poland),

The paper is focused on presenting and critically analysing legal possibilities for public involvement in climate adaptation policies and procedures. Public involvement is considered quite broadly, including the three key aspects, namely access to information, public participation and access to justice. The possibilities for public involvement in the three respective aspects are examined in light of the legal obligations stemming from the applicable acquis (in particular the Aarhus Convention) and in light of the policy documents (in particular the communications from the European Commission). In this context special attention will be given to general objectives in this respect announced in the European Green Deal and practical measures proposed in the concrete legal acts meant to implement the Green Deal. Subject to examination are various pieces of secondary EU legislation, in particular the most recent ones. The analysis is complemented with some proposals and recommendations.

Biography
Jerzy Jendroska Ph.D, Professor at Opole University (Poland), Managing Partner at Jendrośka Jerzmański Bar and Partner. Environmental Lawyers (JJB) in Wrocław, and Chief Environmental Law Specialist in the Institute of Environmental Protection – National Research Institute in Warsaw.
In addition to lecturing at Opole University, he has been regularly lecturing as Guest-Professor in a number of European law schools, including at European Law Academy in Trier, Germany (2014-2021), in Riga Graduate School of Law, Latvia, (2017-2023), and in the Environmental Law Summer School in Como University , Italy (since 2017).
Professor Jendrośka has been heavily involved in a number of international processes, including serving as the Vice-Chair of the Aarhus Convention negotiations (1996-1998) and SEA Protocol negotiations (2001-2003), as the Secretary to the Aarhus Convention (1998-1999) and as the vice-Chair (1999-2002) and later the Chair (2002-2003) of the Aarhus Convention Bureau.
He served as an arbitrator at the Permanent Court of Arbitrage in the Hague (2001-2016) and as a member the Implementation Committee of the Espoo Convention (2004-2017) .
He currently serves as a Vice-Chair of the Aarhus Compliance Committee (member since 2005, Vice-Chair since 2021).
In Poland he served as Vice-Chair of the State GMO Commission (2002-2006), member of National EIA Commission (1994-2008) and a member of the State Environmental Protection Council (2014-2019) .
Professor Jendrośka has been involved as a leading legal consultant in drafting environmental legislation (in particular related to EIA, SEA and Aarhus Convention-related issues) in Poland and in a number of countries in EU, Eastern and SouthEastern Europe, South Caucasus, Central Asia and China, and in the Latin America and Carribean. He has authored and/or edited

Abstract 2.4.4

Designing effective and equal opportunities for public participation in biodiversity restoration

Morgan Eleanor Harris, University of Roma - Italy

The Nature Restoration Regulation (EU) 2024/1991 encourages Member States to adopt a "fair and cross-society approach" when implementing their duties under the same. This is arguably both a matter of environmental justice and of effectiveness, as the design of restoration interventions and nature-based climate solutions should include those citizens whose activities affect, or are affected by, targeted biodiversity and ecosystem services.

However, ensuring effective and inclusive participation in environmental decision-making can be particularly challenging where there are strong variations in the capacity of groups to engage with public authorities. Such disparities can undermine outcomes, or worsen environmental inequality, when persons well-endowed with cultural, social and economic resources dominate public discourse, a phenomenon known as the Aarhus paradox. The question is: to what extent are public authorities legally required to design participation procedures connected to the implementation of the NRR so as to account for unequal capacities for participation? Could similar duties apply also to engagement strategies outside the public participation framework? What is the role of the social sciences in doing so?

First, the presentation will briefly discuss the reasons behind unequal participation rates in biodiversity matters identified in the sociological and political science literature. These include: 1. strength of opposition (persons who oppose strongly are more inclined to participate than those who support weakly); 2. place-attachment; 3. institutional and civic trust; 4. other cultural resources, such as education; 5. social capital. The literature shows that a context-specific approach is necessary when it comes to biodiversity conservation and restoration: the same factor can promote engagement in certain contexts yet disengagement in others.

Second, the presentation will analyse potential sources of legal obligations that may require public authorities to take these context-specific differences into account when designing public participation procedures, including Article 3(2) of the Aarhus Convention, the principle of effectiveness, and the EU's fundamental rights framework. For example, Article 3(2) AC may be interpreted as requiring Member States to modify the traditional format of public comment periods and outreach campaigns to ensure that 'hard to reach' groups are able to effectively represent their interests, as suggested in the 2015 Maastricht Recommendations. To design such measures, social sciences literature can again be of guidance.

Third, the study will explore whether the need to ensure the effectiveness of the NRR itself may require Member States to foster inclusive public engagement beyond what is currently required under public participation rules. If so, then procedural flexibility – needed to meet urgent restoration and climate adaptation goals – must be coupled with proactive efforts to engage the public, again in collaboration with social scientists. However, there are limits to how far any such obligations may reach.

Ultimately, it is shown that close collaboration between legal and social sciences is crucial to ensure that biodiversity projects and other nature-based solutions are effective and consistent with the EU's values of equality, fundamental rights and democracy, even beyond any legal obligations to do so.

Biography

Morgan Eleanor Harris is a research fellow (RTD-A) in European Union law at the University of Roma Tre, Department of Law. She earned her master's in law (LMG, Hons.) and doctorate at the Libera Università Maria SS. Assunta in Rome, and a master's in environmental law at the University of Roma - La Sapienza. She has published on topics related to European and International environmental law, with a particular focus on public participation rights, the Green Deal and biodiversity. She is the principal investigator of the national research project PRIN 2022 PNRR "RINASCI" on biodiversity restoration and is a member of the Jean Monnet Module "EU4GT" on the green transition and the Erasmus+ project ProLands on the protection of agricultural soils. She has presented on numerous topics related to environmental law in Italy and abroad.

Abstract 2.4.5

Enhancing Climate Adaptation through Transparency: The Role of AI in Advancing Access to Environmental Information

Renée Knoop, Alberto Quintavalla , *Erasmus University Rotterdam - The Netherlands*

A key procedural safeguard in environmental law, transparency is exemplified by the Aarhus Convention, particularly its provision on the right of public access to environmental information. In the context of climate adaptation, this right takes on renewed significance, as informed public engagement and democratic accountability become vital in designing resilient and inclusive environmental governance.
This paper explores how the deployment of artificial intelligence (AI) can enhance transparency in environmental law. AI technologies offer novel opportunities to collect, process, and disseminate real-time environmental data. From satellite-based monitoring of forest coverage and air quality to predictive models of earthquake-early-warning systems and ecosystem vulnerability, AI can render complex environmental information more accessible to both policymakers and the public. Moreover, AI-driven tools can help translate dense scientific data and reports into comprehensible language, empowering citizens and civil society actors to participate meaningfully in environmental governance.

Yet, the integration of AI into legal frameworks designed to guarantee access to environmental information is not without challenges. Existing legal provisions may inadvertently constrain AI applications, particularly where intellectual property or trade secrets laws intersect with public access rights. At the same time, technical limitations—such as algorithmic opacity and biased data due to faulty measuring equipment —may undermine the accuracy, reliability, and accessibility of AI-generated outputs.

This paper therefore aims to map both the potential and the limits of AI as a tool for advancing transparency in environmental law. It will examine how the Aarhus Convention can accommodate or hinder the use of AI in delivering environmental information.

Biography:

Renée Knoop (presenting author) is a PhD-researcher working at the section of Innovation of Public Law as part of the Law and Markets Department at Erasmus University Rotterdam. Her PhD-project focusses on the contribution of AI technology to (EU) environmental law, and she has a broader research interest in technology, data, sustainability and environmental law. She is also a Junior Fellow at the Erasmus Centre of Law and Digitalization and a lecturer in the LL.M. course 'Perspectives on Sustainability'

Alberto Quintavalla is Assistant Professor at Erasmus School of Law and co-Director of the Erasmus Center of Law and Digitalization. His research interests lie at the intersection of digital technologies, human rights and environmental governance. He has been visiting researcher at the European University Institute and he has received the KNAW Early-Career Award from the Royal Dutch Academy of Sciences and Arts for his scholarship at the intersection of environment, artificial intelligence, and human rights.

Parallel sessions 3 – Thursday 11 September 11:00-12:30

Abstract 3.1.1

Captured Biogenic CO_2 from Forestry Biomass: A Sustainable Pathway for Climate Adaptation?
Emilie Yliheljo, Susanna Kaavi (presenter), Tiina Paloniitty (presenter)

In the face of accelerating climate change, the capture and utilization (CCU) of biogenic CO_2 from forestry biomass lays at the intersection of both the EU's climate adaptation and miti- gation strategies. Using captured CO_2 as a feedstock in industrial processes is gaining a central role in EU's decarbonization efforts. As policymakers strive to replace fossil carbon with sustain- able alternatives, biogenic CO_2 emerges as a crucial component of the EU's climate mitigation efforts. Simultaneously, healthy ecosystems efficiently cycling CO_2 are more resilient to climate impacts, making them crucial for climate adaptation, and restoration of such ecosystems are part of EU's nature restoration strategies. We explore the potential of biogenic CO_2 value chains – that according to the EU Commission's Clean Industrial Deal are to become an integral part of the EU economy – to support climate resilience.

We approach the capture and use of biogenic CO_2 as a value chain referring to the totality of activities and production processes, inputs, and outputs required for the capture and use of biogenic CO_2. In these value chains carbon changes physical form from solid – bound in material such as forestry biomass – to gaseous CO_2 – emitted and captured –, thereafter moving back to solid carbon – bound in a product. Simultaneously, the carbon changes legal form as it moves through different regulatory regimes through the value chain.

This emerging raw material of biogenic CO_2, however, only has a positive climate impact when it is sourced from sustainable biomass. Simultaneously, sustainably managed forests are more climate resilient and serve better the climate adaptation aims. We analyse whether current sustainability criteria applicable under EU legislation ensure that biogenic carbon, is sustainable in the sense that biodiversity and climate sink objectives are not compromised. EU climate and forest law pose a genuine challenge for legal scholars seeking to generate an accurate overview, let alone an in-depth analysis.

Navigating the incresingly complex intersection is however crucial for climate adaptation benefits – of advancing the resilience of forests – to take place. Our research reveals how the intersections between biodiversity, renewable energy and climate look like in the in specific legal instruments in the context of new carbon value chains. We argue that while individual carbon value chains may meet existing legislative sustainability requirements, they risk systemic unsustainability without comprehensive enforcement of carbon sink targets under the LU- LUCF regulation and restoration targets under the Nature Restoration Law. By situating the climate/biodiversity nexus within an industrial context, our research un- derscores the importance of aligning biogenic CO_2 strategies with broader climate resili- ence and biodiversity restoration goals. Only when both aims are secured simultaneously, are the carbon value chains sustainable also on the systemic level. This integration of ecosystem resilience with the CCU value chain reflects a holistic approach to sustainability. It is vital for achieving climate adaptation goals; ensuring that ecosystems remain robust in the face of cli- mate change. This study thus advocates for a more robust regulatory framework for biogenic CO_2.

Biography

Emilie Yliheljo is a doctoral researcher at the Faculty of Law, University of Helsinki. She focuses on climate law and the governance of market-based mechanisms.
Susanna Kaavi is a doctoral researcher at Faculty of Law, University of Helsinki, focusing on questions on the interface between biodiversity and climate change mitigation.
Tiina Paloniitty is Associate Professor of Environmental and Sustainability Law at the Faculty of Law (Vaasa Legal Unit), University of Helsinki. She is also Chair of the Board of the IUCN Academy of Environmental Law, and a member of the Finland's Nature Panel, a scientific advisory panel on nature.

Abstract 3.1.2

Forest Actions as Nature-Based Solutions to Climate Adaption under the EU Taxonomy

Yixin Xu, International Law School of Southwest University of Political Science and Law, University in Chongqing, China

The EU Taxonomy creates a tool to re-orient investors towards sustainable businesses and sets standards for global sustainable finance to support natural-based solutions (NBS). However, questions remain about its actual impacts on business and the compliance of cooperates, especially in transnational projects that affect ecosystems and societies in a distant country.

Forests play a crucial role in the EU Taxonomy Regulation, serving as key indicators for sustainability classification and NBS assessment. Article 10 emphasizes substantial contributions to climate change mitigation, including actions such as avoiding deforestation, restoring degraded forests, and promoting afforestation. Similarly, Article 15 focuses on protecting biodiversity and ecosystems, highlighting contributions from sustainable forest management and preventing deforestation and habitat loss.
The Taxonomy recognizes three primary forest-related activities: halting deforestation, restoring and afforesting forests, and managing forests sustainably. However, EU actions at the global level have primarily prioritized preventing deforestation, as demonstrated by the 'EU Communication on Stepping up EU Action to Protect and Restore the World's Forests' and the proposed Regulation to curb EU-driven deforestation and forest degradation. In contrast, the restoration of forests and afforestation are encouraged but lack specific regulatory measures.

With 43% of its land covered by diverse forests, the EU has limited domestic opportunities for reforestation and afforestation. Relevant investments and practices outside EU could significantly contribute to global biodiversity and ecosystem restoration amidst declining forest areas worldwide. However, challenges arise when forest carbon credits from outside the EU are excluded from the EU Emission Trading System, and unsustainable forest practices in distant countries are difficult to monitor. This raises critical questions: How can EU financial intermediaries and corporates be incentivized and adequately supervised to ensure sustainable forest activities beyond EU borders?

Using the forestry sector as a case study, this paper explores the role of financial intermediaries under the EU Taxonomy in advancing EU forest climate actions globally (Chapter 2), examines shortcomings in the legal implementation of these actions (Chapter 3), and provides recommendations for establishing an ex-post monitoring system for financial intermediaries to enhance oversight and accountability (Chapter 4).

Biography:
Dr. Yixin Xu is an analysist of sustainability standards and policies at Rabobank and an assistant professor at the International Law School of Southwest University of Political Science and Law. She received a Ph.D. from the Erasmus School of Law at Erasmus University Rotterdam. She received her Master's and Bachelor's Degrees in Law from the China University of Political Science and Law. She was also a visiting researcher at Maastricht University.

Abstract 3.1.3

The LULUCF-regulation in Flemish case law: a closed door for a 'climate test' in environmental permitting?

Britt Bocken, Environmental Law Unit of the University of Hasselt

Reaching climate neutrality by 2050 is the European Union's main climate objective. While progress has been made, provisional 2022 data shows that the EU's greenhouse gas net emissions are decreasing steadily but not fast enough. The pace, and thus the amount, of emission reductions need to be expedited (to nearly fourfold the yearly average reductions attained throughout the previous decade). Additionally, an often forgotten but essential sector in mitigating greenhouse gas emissions is not on track to meet its goals. This sector is the Land Use, Land Use Change and Forestry-sector or, in short, the 'LULUCF'-sector.

Forests and land act like natural carbon sinks, meaning they can absorb carbon dioxide from our atmosphere, resulting in a reduction of net greenhouse gas emissions. This is why the LULUCF-sector offers great potential to achieve the goal of climate neutrality. However, the net amount of carbon removals by the LULUCF-sector has declined significantly over the last years since forests remove less carbon because of, amongst other reasons, increased logging and a slight decline in forest growth. Naturally, this is problematic for the climate neutrality goal and achieving the sector-specific goals set out in the LULUCF-regulation. If no additional measures in upscaling the net removals in the LULUCF- sector are taken, the declining trend in net removals will potentially result in not meeting the 2030-sector specific goal (i.e. a net removal target of 310 Mt CO2-equivalent). Beyond their carbon sequestration function, forests and land are crucial for climate adaptation, acting as a buffer against extreme weather events like heatwaves, droughts, and flooding. Thus, strengthening the LULUCF-sector is not only a matter of emission reductions; it is essential for building Europe's resilience in a changing climate.

As the often forgotten but essential pillar of climate policy, it is not only essential to create more awareness about the regulation, its goals and obligations, but it is also crucial to examine the practical implementation of the regulation at a national level. The first goal of the presentation is to create a general understanding of the LULUCF-regulation.

In the second part of the presentation, the focus will shift to a more practical application of the LULUCF-obligations, namely when assessing (applications for) environmental permit procedures. From the perspective of Flemish law, is it possible to include European Union Member States' climate obligations in the assessment of environmental permit procedures? The Council for Permit Disputes (In Dutch:'Raad voor Vergunnings-betwistingen') seems to have closed that door with a recent judgement in March 2025. However, this is only one judgement, and other prior judgments had opened the door for a 'climate test'. So, the key to the door may not have been thrown away yet and may still fit the lock to open it back (ajar).

Discussion questions

1. Should a more explicit 'climate test' be introduced in environmental permit assessments, or does this risk placing an undue burden on individuals in achieving Member States' climate objectives?
2. What are the legal and practical risks of incorporating Member States' climate goals and obligations into environmental permit assessments?
3. How are LULUCF-obligations applied in your Member State, particularly in environmental permitting and broader land-use governance?

Biography

Britt Bocken is a PhD student at the Environmental Law Unit of the University of Hasselt, where she researches European Environmental Law. Her research focuses on the regulation that sets out the policy for the 'Land Use, Land Use Change and Forestry'-sector, or in short LULUCF-sector.

Abstract 3.1.4

EU Law and the energy transition: Leaving soils behind?

Matteo Fermeglia, Amsterdam University; Heloísa Oliveira, University of Lisbon School of Law

Despite providing essential ecosystem functions and being vital for human well-being, soil remains the most underregulated natural component within European Union (EU) law, lacking an overarching legal framework. While this omission has been previously identified, this research aims to provide a comprehensive overview of how the EU has balanced the pressing needs arising from energy transition policy on the one hand, and the EU soil policy goals of protecting, restoring, and sustainably managing soil on the other, as prescribed by the integration principle. To this end, we begin by offering a critical overview of EU climate and energy laws and policies. In order to provide a comprehensive analysis of how soil impacts are considered, we also examine other laws and policies that shape the broader context of the energy transition, including regulations on critical raw materials and sustainable investment. Finally, we analyse how the EU Nature Restoration Law addresses soil scarcity in the context of pressing energy policies. We conclude that the difficult choice between protecting soil ecosystems and advancing the energy transition has been resolved in EU law in favour of the latter. This outcome exposes an inconsistency not only within EU environmental law more broadly, but also within EU climate law specifically, given that soil plays a key role in climate change adaptation. Against this backdrop, we will moreover explore implications of the ongoing Soil Monitoring Law as the first comprehensive legislation dealing with soil management and soil health in the European Union.

Discussion questions:

1. How is the role of soils in the energy vs. food nexus balanced in EU law?
2. Given the essential role of soil in climate change adaptation, how can the EU reconcile the tension between soil protection goals and the demands of the energy transition?
3. How can EU climate and energy law better reflect and integrate soil biodiversity concerns to ensure coherence and resilience, particularly in light of the environmental integration principle?

Biography

Ma'eo Fermeglia is Assistant Professor of Climate Law and Governance at Amsterdam University, Faculty of Humanities and at the Amsterdam School for Transnational, European and Regional Studies. He holds a Ph.D. in Legal Sciences at the University of Udine, Italy. His Ph.D. Thesis focused on the legal aspects of the European Union Emission Trading System. In 2017, he was visiting scholar at Columbia Law School, where he collaborated with the Sabin Center for Climate Change Law and the Columbia Centre for Sustainable Investments. He was also visiting scholar at Copenhagen University, Graz University and Wyoming University. He regularly (co-) authors internationally peer-reviewed journal articles in the field of environmental and climate law. Ma'eo was awarded the Raúl Estrada-Oyuela Award for Emerging Scholars in Climate Law in 2017 by Lexxion publishers.

Heloísa Oliveira holds a Ph.D. in law (2020) by the University of Lisbon School of Law, where she is also an Assistant Professor. She is a Research Fellow at Lisbon Public Law Research Center – where she is the PI for the Legal Roadmap for Sustainability and the Climate Litigation Observatory projects – and a Consultant at the Legal Service of the Portuguese Government. Her research is on environmental law from an administrative, international, and European Union Law and fundamental rights perspective. She has participated in many scientific meetings and published several papers and book chapters on her area of research. She acted as the Chief of Staff for the Secretary of State of the Presidency of the Council of Ministers, and as a legal adviser to the Minister for Foreign Affairs.

Abstract 3.1.5

Economic Tools for the Alignment of the Promotion of Renewable Energy Sources with the Protection of Biodiversity in the EU

Theodoros G. Iliopoulos, Hasselt University Belgium

The promotion of renewable energy sources (RES) is a well-established objective of the EU. The European Green Deal and the REPowerEU Plan have emphasised the need to further accelerate the clean energy transition, and recent legislative amendments (e.g. of the Renewable Energy Directive 2018/2001 or of the Electricity Market Regulation 2019/943) have set more ambitious targets and have consolidated the regulatory tools that Member States use to promote RES.

RES do assist in the rise of sustainable energy systems and in the mitigation of climate change, but their development gives rise to environmental resilience questions, especially as it entails challenges for biodiversity protection and conservation. For example, the emplacement of RES requires lots of space and imperils ecosystems and habitats; or, the production of biofuels is often harmful to forests and crops. This creates a prima facie impasse, in the sense that protecting and restoring biodiversity is also a priority commitment of the Union (see e.g. the EU Biodiversity Strategy for 2030).

This submission argues that the objectives for the development of RES and the protection of biodiversity are not poles apart. They can and should be aligned, and this submission aims to investigate how, with the emphasis being placed on economic tools. Accordingly, this submission relates to the overall theme of the 12th EELF conference, and is particularly relevant to sub-theme "5.Participation, EIA and access to justice", as well as to sub-themes "2.Biodiversity, water and nature restoration law" and "3.Urban and land-use planning".
More specifically, this contribution aims to present risks that the promotion of RES entails for biodiversity; but also opportunities for biodiversity protection. The discussion is placed within the context of the recent amendment of the Renewable Energy Directive 2018/2001 that has softened the requirements for an environmental impact assessment for renewable energy projects so as to ensure the simplification of the applicable administrative processes. Within this framework, the proposed submission will also examine how economic instruments for the promotion of RES, such as direct price support schemes and bidding processes, can be designed to serve both energy transition and biodiversity protection objectives (with the focus on the possible use of non-economic grant award criteria). The aim is to propose measures about the proper exercise of the national discretion so that it can effectively serve both policy objectives.

This contribution also puts forward the following statements for discussion with the audience:

a) Can the administrative process for the permitting of renewable energy projects be simplified, without endangering environment and biodiversity protection? Or is a clash inevitable?
b) How should the balancing between security of energy supply and environmental protection be approached/conducted?
c) The promotion of renewables typically involves granting financial support through bidding, where the "best" offer wins the contract. While economic criteria are prioritised, non-economic criteria such as landscape protection or biodiversity protection can be also used. But using such criteria means that costlier projects may be selected and hence energy prices rise. Would this be a legitimate and politically acceptable outcome?

Biography

Theodoros Iliopoulos is a visiting professor of European environmental law at Hasselt University and a postdoctoral fellow of FWO (Research Foundation – Flanders) for his project "Quo Vadis, European Renewable Energy Support Law?". He has worked as an adjunct professor and a visiting professor of EU law, energy law, and environmental law at the Free University of Brussels (VUB) and the University of Athens. He has also participated in research projects at the Columbia Center on Sustainable Investment and the European Commission. His research output includes inter alia presentations in international conferences and the publication of articles in international journals, of book chapters in collective volumes, as well as of two monographs: Law of Finance for Renewable Energy Projects in the EU: Secondary Law and Support Schemes (Routledge, 2025) and Renewable Energy Support Schemes in the EU State Aid Law and the Free Movement of Goods (Routledge, 2025).

Abstract 3.2.1

Adaptation in Framework Climate Laws"

Bolesław Matuszewski, Gizem Koç, ClientEarth- Poland

For the past few years ClientEarth has been engaged in research and advocacy on framework climate laws. As an important subset of climate legislation and to be distinguished from laws that focus on specific sectors, framework climate laws are understood to be the laws that set a jurisdiction's overall climate targets and goals, its principles, institutional framework and procedures applicable to the response to climate change.
The purpose of these laws is to ensure that national legal and governance systems are enhanced in such a way as to allow for the effective and systematic fulfilment of international obligations in the field of climate protection. As of April 2025, approximately 60 countries have enacted national framework climate laws, with many others in the process of developing new legislation or strengthening existing ones—particularly with a growing emphasis on climate adaptation. Traditionally, these laws have focused primarily on reducing greenhouse gas emissions, often mentioning adaptation only in passing. As a result, a substantial body of comparative legal research now exists on how to support mitigation through framework laws. In contrast, there is still limited understanding of which legal provisions would be effective in advancing the Paris Agreement's Global Goal on Adaptation and how to align the mitigation and climate adaptation duties envisaged in these laws.
The legislative effort regarding adaptation presents both a challenge and an opportunity. While the traditional focus on mitigation treated mitigation and adaptation as separate issues, the growing focus on adaptation provides an opportunity to move beyond a narrow vision and adopt a more integrated approach that addresses the interrelated crises of climate change, biodiversity loss, and pollution.
Differences in societies and legal approaches have influenced the way in which adaptation is regulated in framework climate laws. The specificity and breadth of provisions concerning climate change is variegated, and important differences are notable between jurisdictions, particularly as regards financing climate change and the level of detail of adaptation planning.
In our paper, we plan to draw on the international legal obligations on adaptation, outcomes of climate litigation that focuses on adaptation, and ClientEarth's comparative research on framework climate laws and practical experience in jurisdictions as diverse as Poland, Spain, Germany, Turkey, New Zealand and others, where ClientEarth either presented its own proposals for a framework climate law (Poland), engaged in the legislative process leading to the drafting of such a law (Turkey) or provided feedback on amendments proposed to the existing framework climate law (New Zealand, Germany).
Our paper will include a comparative analysis of framework law provisions related to adaptation, and – in so doing – will touch upon those concerning nature-based solutions, environmental planning and decision-making, climate mainstreaming, guiding principles of climate action as well as climate finance.
We would like to hear our audience's views particularly on the following issues:

1) Which core principles, planning processes, and legal mechanisms should guide the new laws and/or revision processes of the existing laws to ensure they support an effective, integrated, equitable, and transformative response to climate change?
2) Should provisions on adaptation be limited to the obligations of the state, or should they also cover private entities?
3) What are the best methods to ensure that adaptation measures are effectively monitored and enforced?

Biography:

Bolesław Matuszewski is a qualified lawyer in Poland (an advocate) and has represented and advised clients in environmental matters since 2012. He has been affiliated with ClientEarth for more than a decade and is a senior lawyer based in the organization's Warsaw office. During his career, Bolesław has represented clients inter alia in matters ranging from local taxes related to air quality, environmental and building permits, to liability for environmental damage.
Gizem Koç is a senior lawyer at ClientEarth based in the Brussels office since March 2021. As a member of the emissions reductions team at ClıentEarth, her work focuses on climate change legal frameworks as well as challenging fossil fuel infrastructure. She holds a BA in Law from the University of Ankara and is qualified as an attorney in Turkey where she still works closely with civil society to strengthen public interest environmental legal capacity. She also completed postgraduate training in human rights law at Lund University in Sweden.

Abstract 3.2.2

Federal Climate Adaptation Act of Germany

Tim Heidler, University of Greifswald - Germany

Increasing species extinction, more frequent extreme weather events, declining groundwater levels etc. The effects of climate change are already being noticed in the present. Even if the 2-degree target is met, noticeable changes are unavoidable and will occur. Therefore, climate protection measures alone will not be able to avert the changes and consequences completely. Consequently, it is necessary to adapt to the new living conditions. Examples include the expansion of flood protection systems or the creation of open-air corridors.

The lecture gives an overview of the legal situation of climate adaptation in Germany. It introduces to the audience the Federal Climate Adaptation Act of Germany (Bundes- Klimaanpassungsgesetz, KAnG), which entered into force on July 1, 2024, and raises numerous legal questions. It is the main act addressing adaptation in Germany.

First, the lecture clarifies the concept of climate adaptation for the purposes of this act because there is no uniform definition in Germany. Moreover, the law standardizes various instruments of adaptation. The lecture focuses on the climate adaptation strategy (§ 3) and the consideration requirement (§ 8). These instruments have connections to the legal level of the European Union (especially Regulation 2021/1119) on the one hand, as well as the federal states of Germany (Länder) on the other hand because some states also have adaptation acts. The lecture analyses these instruments from different points of view (addressee, competence, function, legal consequences and protection, scope etc.).

In general, the act focuses on organizational issues rather than measures to improve adaptation or resilience immediately. Moreover, it examines the interaction with other rules of climate adaptation in federal acts. Finally, the formulation of normative improvements completes the work.
Statements

1. The Federal Climate Adaptation Act standardizes climate adaptation in Germany.
2. The Federal Climate Adaptation Act has a governance structure.
3. The Federal Climate Adaptation Act goes far beyond the adaptation law of the European Union.

Biography

Tim Heidler is a doctoral researcher and research associate at the Institute for Energy, Environmental and Maritime Law, University of Greifswald. He studied Law at the Universities of Münster and Alicante with internships in Bogotá and Brussels. Currently he is writing his doctoral thesis about the Federal Climate Adaptation Act of Germany. This work is part of an environmental law network (KomUR) funded by the Federal Ministry of Education and Research of Germany. His special interest, apart from Climate Adaptation Law, lies in Constitutional and Environmental Law.

Abstract 3.2.3

Are the Swedish Climate Adaptation Strategies delivering meaningful results for the EU's Green Deal and SDGs?

Monirul Azam, Associate Professor of Law, Södertörn University, Sweden

The European Green Deal (EGD) offers a comprehensive plan to address broader climate and environmental issues taking a "whole economy" approach. More than 168 cross-cutting strategies and initiatives have been proposed by the EU Commission under the EGD to transform the EU into a climate-neutral economy by 2050 and accomplish the Sustainable Development Goals (SDGs). The 2021 EU climate adaptation strategy as an integral part of the EGD promotes "smarter, faster and more systemic" climate adaptation in the EU member states.

The 2021 European Climate Law (requiring reporting on climate adaptation under articles 17 and 19) reiterated the importance of more meaningful progress on climate adaptation. Due to extreme weather events such as unprecedented forest fires, heatwaves, flooding and droughts in the EU member states resulting in €162 billion economic losses only between 2021-2023. This kind of continuous climate related uncertainties requires an urgent necessity to review to what extent existing climate adaptation strategies in the member states providing a 'smarter, faster and systematic' adaptation and hence be able to reduce critical economic and social threats due to climate change. The reporting on adaptation by the EU member states are mainly descriptive and lacks quantifiable data, hence it is difficult to make a systematic evaluation of progress on climate adaptation in the member states.

Due to lack of policy coherence and institutional shortcomings in some member states making slow progress in climate adaptation and therefore could not deliver the comprehensive climate and environmental policy objectives of the EGD. Even questions raise as to the adequacy of the institutional support and resources from the Commission and enormous administrative burden for the smaller member states for the integration and implementation of the climate adaptation strategies in different levels of the government. Although Sweden adopted several measures including a comprehensive climate policy framework in 2017, an Ordinance on the climate adaptation work of authorities (2018:1428) requiring 32 national authorities and 21 county administrative boards to prepare climate adaptation action plans and a revised climate adaptation strategy in 2024, there are criticisms as to lack of adequate policy coherence, institutional cooperation and comprehensive assessment mechanism. This presentation aims to identify shortcomings (if any) in implementing EU adaptation strategy in the EU member states using Sweden as a case study and intends to propose potential means to make Swedish adaptation strategies smarter, faster and systematic and hence deliver more meaningful results for the EU's Green Deal and SDGs.

Three questions

1) Has the EGD itself considered the climate adaptation systematically?
2) What Sweden is doing to comply with the EU climate adaptation strategy and climate goals of the SDG-13?
3) Are the Swedish climate adaptation strategies delivering a smarter, faster and systematic climate adaptation as required by the EU climate adaptation strategy and EU climate law?

Biography

Dr. Monirul Azam is working as Associate Professor of Law at the department of law under the Institute of Social Science, Södertörn University, Sweden. Dr. Azam obtained LLD from the department of law, Stockholm University with specialization in climate change law and intellectual property (IP) law. Earlier Dr. Azam did PhD in IP at the University of Bern, Switzerland, Master of European Legal Studies at the Södertörn University, Sweden with a thesis on EU environmental law and a specialized LLM in IP from the University of Turin, Italy. Dr. Azam conducted post-doctoral research on sustainable energy transitions and Governance of Sustainable Development at the Tokyo Institute of Technology, Japan and United Nations University. Dr. Azam intends to contribute at the intersection of intellectual property law, environmental law, technology law and energy law using legal dogmatism and an interdisciplinary, comparative and qualitative research method.

Abstract 3.2.4

Legal Conflicts between Climate Change Adaptation Policy and Planning and Infrastructure Law in England: Implications for Blue-Green Infrastructure Management – A Case Study of Surrey County Council

Dr Feja Lesniewska, Surrey Law School, University of Surrey- United Kingdom

This paper examines the legal tensions between climate change adaptation policy and the evolving planning and infrastructure regime in England, focusing on the management and implementation of blue-green infrastructure (BGI). Using Surrey County Council's climate change adaptation and flood alleviation strategies as a case study, the paper explores how local authority initiatives to enhance climate resilience intersect—and sometimes conflict—with current national legal frameworks governing development and infrastructure.

Surrey's Climate Change Strategy (2020) and its Local Flood Risk Management Strategy outline a proactive approach to adaptation, emphasising nature-based solutions such as sustainable drainage systems, wetland restoration, and urban greening. These measures are grounded in BGI principles, which aim to deliver environmental co-benefits while addressing increased flood risk, rising temperatures, and biodiversity loss. However, these local ambitions are increasingly constrained by broader legal developments, particularly the Levelling Up and Regeneration Act 2023, changes to the National Planning Policy Framework (NPPF), and fast-track mechanisms for Nationally Significant Infrastructure Projects (NSIPs).

Employing a legal doctrinal method, this paper analyses the interaction between statutory obligations under the Climate Change Act 2008, the Environment Act 2021, and the legal duties of local planning authorities. It further considers administrative law principles assessing how these influence the discretion available to councils like Surrey in integrating BGI into planning decisions. Through this analysis, the paper questions whether existing legal frameworks empower or inhibit adaptation at the local level, and reflects on the possible further implications of the Planning and Infrastructure Bill (England)

The Surrey case study reveals both innovation and legal tension. For instance, while the County's plans align with national climate adaptation policy, developers often rely on permitted development rights or appeal to centralised authorities where local BGI requirements are seen as onerous or incompatible with viability. The lack of statutory status for local BGI strategies further weakens enforcement, leading to inconsistent implementation and long-term maintenance challenges. Moreover, local flood alleviation schemes must compete with national priorities, where economic growth and housing targets can override local environmental considerations.

The paper concludes by arguing for more coherent legal integration between national infrastructure law and local adaptation duties. Without this, innovative local strategies like those in Surrey risk being sidelined, and the transformative potential of BGI for climate resilience and urban sustainability may remain unrealised.

Discussion questions:

(1) To what extent does current planning and infrastructure law in England, UK reflect the legal obligations imposed by the Climate Change Act 2008 and the Environment Act 2021—and how might statutory reform better integrate these obligations into BGI planning?
(2) How can enforceable legal mechanisms be developed to support the long-term governance and maintenance of BGI, particularly in the face of fragmented responsibility across public and private actors in England, UK?
(3) Does the growing centralisation of planning powers via instruments like Development Consent Orders undermine local democratic accountability and environmental justice in adaptation planning?

Biography

Dr Feja Lesniewska is a Senior Lecturer in Sustainable Transitions and Environmental Law at Surrey Law School, University of Surrey. Her research explores the legal and regulatory tensions that arise in efforts to address climate change, particularly in the context of transitioning to a circular (bio)economy. She also investigates the role of digital technologies—such as artificial intelligence (AI), digital twins, and Earth Observation—in supporting innovation, governance, and the protection of procedural rights within environmental systems.

Abstract 3.3.1

Match or clash? Blue carbon governance and biodiversity protection in marine ecosystems

Simon Vanhove, Ghent University - Belgium

Oceans and coasts are a major carbon sink, buffering vast quantities of atmospheric carbon dioxide. Besides that, ocean water absorbs heat better than the atmosphere. Together, this has caused ocean acidification, oxygen loss and heat waves, all impacting marine ecosystems. Through positive feedback mechanisms, tipping points may be reached, hence accelerating these effects. The carbon cycle is an essential process for all ecosystems, and hence is part and parcel to the ecosystem-based approach well-known to environmental law scholars.

Anthropogenic impacts on carbon cycles are numerous. Besides reducing emissions, carbon capture, storage and utilisation in industrial value chains also occurs. Nature-based solutions towards achieving similar results exist both in terrestrial and marine ecosystems. Nature and biodiversity protection efforts thus generate co-benefits for carbon emissions. In the marine environment, mangroves, saltmarshes and seagrass are often mentioned as 'blue carbon' projects, which store proportionately large quantities of carbon. However, these areas are especially vulnerable to marine and coastal climate change.

My presentation will explore how blue carbon governance fits in the legal framework and narrative for nature and biodiversity protection, by using the case study of the North Sea basin. The research hypothesis explores if and when blue carbon governance matches or clashes with biodiversity protection, including in marine protected areas and spatial planning.

Questions:

1) Bottom-trawling fisheries have negative effect on marine ecosystems by disrupting benthic communities. Besides this biodiversity impact, this fisheries technique also unsettles carbon stored in the seafloor sediment. Would the (additional or distinct) classification as 'blue carbon zone' contribute to the legal protection of these areas?
2) How to identify and assess the ethical concerns relating to the blue carbon governance perspective on biodiversity conservation and restoration? Is blue carbon governance a desirable co-benefit or, instead, does it constitute instrumentalization of conservation efforts? Does blue carbon governance co-opt nature protection under a anthropocentric and utilitarian approach or, instead, does it provide a valuable (supporting) perspective?

Keywords: Marine environmental law, law of the seas, carbon governance, blue carbon, North Sea

Biography:

Dr. Simon Vanhove is a postdoctoral researcher at Ghent University and substitute lecturer at KU Leuven. He holds a Ph.D. in energy law (KU Leuven, 2023). His research interests include marine environmental law, climate change law and energy law.

Abstract 3.3.2

Nature-Based Solutions and Legal Challenges: Bridging Legal Gaps in Blue Carbon Protection

Freya Russell, Tilak Ginige, Iain Green, Department of Life and Environmental Sciences, Bournemouth University, Poole-UK.

Climate change continues to disrupt natural systems across the globe, contributing to more frequent and intense extreme weather events, rising sea levels, and the spread of infectious diseases. In response to these escalating threats, the United Nations established the Sustainable Development Goals (SDGs), with particular relevance to SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land). These goals emphasise the urgent need for coordinated global efforts to mitigate climate impacts and protect vital ecosystems.

The Intergovernmental Panel on Climate Change (IPCC) has identified nature-based solutions (NBS) as effective, scalable approaches to addressing climate change. Blue carbon systems (BCS), such as mangrove forests, are a key component of NBS, recognised for their significant carbon storage potential and capacity to support climate resilience. Mangroves, which occur in over 120 countries, offer wide-ranging ecological, economic, and social benefits. These include shoreline stabilisation, water purification, carbon sequestration, fisheries support, and the preservation of biodiversity.

Despite their value, mangrove ecosystems are increasingly threatened by human activities such as coastal development, pollution, aquaculture, and deforestation. These pressures are undermining the essential functions that mangroves provide. As a result, effective and enforceable conservation measures are necessary to protect these ecosystems and the communities that depend on them. Although international frameworks exist to support mangrove conservation, gaps in legislation and enforcement persist, particularly in regions with complex legal and governance structures.

This study undertakes a systematic review of mangrove loss, legal frameworks, and conservation practices in countries with a British legal heritage, specifically Australia, Sri Lanka, and New Zealand. It employs Bayesian Belief Networks (BBNs) combined with stakeholder engagement through surveys and interviews to identify the key drivers of mangrove degradation and to evaluate the effectiveness of policy responses. Through comparative legal analysis, the research examines how different legislative and regulatory approaches influence mangrove conservation outcomes.

The study contributes to the development of more coherent and effective conservation strategies by bridging knowledge gaps in blue carbon systems and highlighting the importance of inclusive stakeholder collaboration. Its findings aim to support evidence-based policymaking and laws, promote sustainable resource management, and reinforce global efforts to build climate resilience through the preservation of critical coastal ecosystems.
up to three questions or thesis to be discussed:

- What are the key sources of conflict between different blue carbon strategies, and how can these be reconciled to ensure cohesive and effective climate mitigation efforts?
- Is there a need for a dedicated international legal framework specifically for the protection and management of mangroves, and what should this framework entail?
- In light of UNEP's 2023 discussions highlighting the ecological and climate significance of mangroves, should mangroves be granted specific international legal recognition under existing frameworks like UNCLOS, or is there a need for a new dedicated legislation?

Biography:

Freya Russell is a researcher in environmental science and law. She completed her bachelor's degree in the Faculty of Science and Technology, Department of Life and Environmental Sciences at Bournemouth University in 2021. Her first-class BSc in Geography enabled her to follow interests within the marine sector whilst also forming skills and knowledge in environmental law and Geographic Information Systems. Since graduating, she has begun her PhD research into mangrove conservation using Bayesian Belief Networks and public participation to form a science and law hybrid.

Abstract 3.3.3

Advancing Climate Adaptation and Resilience through Maritime Spatial Planning in the European Union: A Case Study of Offshore Wind Energy Development

Laura Anna Ruszel

This presentation examines the legal framework governing maritime spatial planning in the European Union and its significance for climate adaptation and the development of ecological resilience. The study focuses on the impact of the relevant EU regulations on the implementation of offshore wind energy projects, particularly in the context of the imperative to preserve marine biodiversity - a crucial factor in ensuring ecosystem resilience amid accelerating climate change.

The analysis addresses the EU legal framework for maritime spatial management, in particular Directive 2014/89/EU, which aims to coordinate various uses of maritime space. In light of the EU's ambitious climate and economic strategies (including the European Green Deal and the Fit for 55 package), offshore wind energy is gaining increasing significance as a form of maritime space use. Offshore wind energy plays a dual role in Europe's response to the climate crisis. It is not only a key pillar of the decarbonisation agenda, enabling a gradual shift away from fossil fuels, but also a vital component of the EU's climate adaptation strategy. In tandem with the growth of offshore energy projects, substantial risks to marine habitats arise, potentially diminishing the inherent resilience of marine ecosystems to buffer climate change effects, including fish stock depletion and accelerated coastal erosion.

The objective of the presentation is to assess the extent to which the current legal provisions on maritime spatial planning enable a balance between energy needs and the protection of marine ecosystems, thereby contributing to Europe's long-term resilience to the effects of climate change. The presentation further provides a foundation for a broader discussion on enhancing synergies between energy transition investments and the conservation of marine ecosystems, including areas of high ecological value such as fishing grounds. To this end, de lege ferenda proposals are put forward with a view to establishing a more harmonized, climate-oriented, and cross-border system of maritime spatial governance, positioned as a legal instrument that can support a just transition and enable climate adaptation in a hothouse world.

● Due to the growing interest in developing offshore energy infrastructure as part of the EU's climate adaptation and resilience strategy, maritime spatial planning is becoming a crucial legal tool for managing competing uses of marine space, particularly in balancing the expansion of offshore renewable energy with the need to protect ecologically sensitive marine areas.
● The current EU regulations on maritime spatial planning, notably because of the framework nature of Directive 2014/89/EU, show limited capacity to facilitate both offshore wind energy development and the safeguarding of marine biodiversity, which is essential for long-term ecological resilience.
● Maritime spatial planning holds significant potential as a legal mechanism to reconcile the EU's energy transition with biodiversity protection, provided that transboundary cooperation is strengthened and decision-making processes at the EU level are more effectively coordinated.

Biography:
Laura Ruszel is a doctoral student at the University of Warsaw. She graduated with honors with a Master's degree in law and a Bachelor's degree in European studies from the University of Warsaw. She is a multiple scholarship recipient as well as has completed academic exchanges at Korea University and Peking University. She specializes in environmental law and energy law, with a particular focus on real estate aspects of renewable energy investments.

Abstract 3.3.4

Reconciling Offshore Renewable Energy Development and Fisheries Management: Legal Pathways Toward Synergistic Marine Use in the European Union

Sebastiano Gianino, University of Copenhagen - Denmark

As the EU transitions towards decarbonization, the expansion of renewable energy projects at sea such as offshore wind farms, tidal, and wave energy installations presents a new set of challenges and opportunities for maritime governance. This paper explores the potential for "win-win" outcomes where renewable energy development and fisheries management can co- exist, with minimal conflict and mutual benefit. Offshore renewable energy projects have the potential to support climate resilience by reducing carbon emissions and providing new and sustainable sources of energy. However, these projects can also introduce spatial conflicts with existing fisheries activities, particularly where fishing grounds overlap with energy generation zones.
The paper argues that maritime law must evolve to create legal frameworks that not only allow for the development of renewable energy projects at sea but also ensure the protection of fisheries and marine biodiversity. By promoting integrated marine spatial planning (MSP), maritime law can help mitigate potential conflicts and encourage the co-management of marine space. This could involve designing offshore energy projects compatible with fisheries, such as the creation of artificial reefs around wind turbine structures that could benefit marine biodiversity and support fish stocks. Additionally, the paper examines the potential for joint-use agreements and collaborative governance structures that allow for the shared use of marine space by both renewable energy developers and fisheries stakeholders.

However, achieving "win-win" outcomes will require careful consideration of the legal, economic, and environmental trade-offs involved. Maritime law should support adaptive governance mechanisms that enable continuous monitoring and adjustment of both fisheries and renewable energy projects to ensure their mutual compatibility. This includes clear legal provisions for compensating fishing communities affected by offshore projects, as well as legal frameworks that promote the sharing of data and information between the energy sector and the fisheries sector.

In conclusion, the paper asserts that while achieving "win-win" outcomes between renewable energy projects and fisheries is possible, it requires an evolution in maritime law that facilitates adaptive management and fosters collaborative decision-making. By promoting integrated governance that balances the needs of both sectors, maritime law can play a crucial role in ensuring that renewable energy expansion at sea does not undermine the resilience and sustainability of European fisheries in the face of climate change.
This paper aims to answer the following questions:

1. How can existing EU maritime and environmental legal frameworks, including Marine Spatial Planning and the Common Fisheries Policy, be adapted to facilitate co-existence and mutual benefit between offshore renewable energy projects and fisheries?
2. What legal and institutional mechanisms are needed to support collaborative governance and equitable decision-making between the renewable energy and fisheries sectors in the context of marine space allocation?
3. To what extent can integrated offshore energy-fisheries models, such as multi-use platforms or artificial reef functions of wind infrastructure, deliver ecological and socio-economic 'win-win' outcomes, and what legal conditions are required to scale these solutions across the EU?

Biography

Sebastiano Gianino holds a master's degree in law with a major in international law from the Luiss Guido Carli University in Italy (April 2024). While studying for his master's, he spent a semester at the University of Helsinki via the Erasmus program. He also has an LL.M. in Public International Law (specializing in environmental law and law of the sea) from Utrecht University, where he graduated in October 2023. In addition to his academic experience, Sebastiano has worked in a law firm as a trainee lawyer. He has dealt with maritime law, aviation law, insurance law and international trade law, providing advice to companies and defending clients before the Italian courts. Sebastiano is currently working as a PhD student at the University of Copenhagen. His PhD project is about the implementation of an IMO GHG pricing mechanism to reduce GHG emissions from ships and the role of the WTO.

Abstract 3.4.1

Between Silence and Obligation: The Unresolved Debate on the Erga Omnes Status of Climate Protection in International Law

Kunjie Wang, the University of Coimbra, Portugal

The ICJ advisory proceedings on States' obligations regarding climate change have revitalized debates over whether climate protection should be classified as an erga omnes obligation, enforceable against all States. While some advocate for recognizing universal duties in climate law—particularly grounded in human rights norms—others resist, citing sovereignty, historical equity, and treaty-based frameworks. This paper explores whether international law currently supports climate protection as an obligation erga omnes, or whether this remains aspirational. It draws on emerging jurisprudence, including the advisory opinions of ITLOS (2024) and the IACtHR (2017), and engages with legal theories advanced by Edith Brown Weiss and Rüdiger Wolfrum on solidarity and intergenerational responsibility. While current legal texts stop short of identifying a general erga omnes obligation to adapt, the paper argues that increasing recognition of transboundary human rights harms related to climate impacts—including threats to life, health, and displacement—may gradually ground such duties in customary international law. It concludes with reflections on the potential normative influence of the ICJ's forthcoming opinion for shaping future adaptation responsibilities, particularly in rights-based frameworks within the EU and beyond.

Research Questions

1. How does the possible recognition of erga omnes climate obligations interact with existing human rights frameworks, particularly in relation to transboundary or long-term harm? Could such recognition progressively reinforce States' duties in the field of climate adaptation, or might it risk overextending fragile legal systems?
2. How might the ICJ advisory opinion influence EU-level or domestic implementation of human rights obligations in climate adaptation law and policy?
3. To what extent do historical emissions and differentiated responsibilities challenge the legal coherence of a universal obligation for climate protection?

Biography

Kunjie Wang, a postdoctoral researcher at the University of Coimbra with a major in International Law. She holds an LL.B degree from China University of Political Science and Law, an LL.M degree from the University of Torino, and a Ph.D. from the University of Macau. She has published several peer-reviewed articles in both English and Portuguese, with a focus on International Environmental Law and Trade Law.

Abstract 3.4.2

Land Use and Emissions Trading (Theme 4)

Prof. Dr. Dr. Felix Ekardt, Research Unit Sustainability and Climate Policy, Leipzig - Germany

The best-known advantage of cap-and-trade systems (quantity governance) is that these approaches promise to achieve an environmental goal particularly efficiently in the sense of "at particularly low cost". The presentation shows that there are some more important advantages connected with an ETS. Cap-and-trade approaches can comprehensively address the motivational situation of norm addressees. Furthermore, if quantity control approaches set ambitious caps, if they address easily graspable control units (such as fossil fuels or animal products at the level of slaughterhouses and dairies) on a sectorally and geographically broad scale (i.e., for example, at the EU level plus environmental clubs with other countries plus border adjustments), they can best avoid governance problems such as problems of enforcement, rebound, shifting and depicting of all environmental law instruments. In addition, quantity governance as an environmental law approach encourages both more consistency and more resource efficiency and frugality – and it is particularly compatible with basic principles of liberal democracies.

In land use, the ETS has not yet been established in the EU. Although it is sometimes advocated for its extension to agriculture as a whole (and the EU carbon removal certification approach points in this direction), However, the ETS would be unsuitable for land use as a whole because of an insolvable problem of depicting. By contrast, an ETS could be easily organized for animal husbandry and for pesticides (as well as for the drivers of the destruction of forests and peatland – but not directly for peatland and forest emissions as such).

The speech also presents the concepts developed for this purpose at the lecturer's institute.

1. The debate on ETS and economic efficiency is misleading. ETS, if designed correctly, shows the best ecological effectiveness of all possible instruments of sustainability governance.
2. There is a strong need to extend ETS to land-use challenges.
3. ETS is suitable for directly addressing livestock farming and indirectly addressing peatlands and forests, but not land use as a whole.

Biography

Felix Ekardt is Director of the Research Unit Sustainability and Climate Policy in Leipzig which he founded in 2009. Since 2009, he is also Professor for Public Law and Legal Philosophy at Rostock University (Faculty of Law) as well as member of the Leibniz Science Campus on Phosphorus Research. His scientific focus as a lawyer, philosopher and sociologist lies in issues around human science sustainability studies. More specifically issues of transformation, justice (particularly human rights), governance and law (sustainability law/ environmental law and sustainability politics/ environmental politics in terms of developing policy instruments on international, European, national and regional level).

Abstract 3.4.3

Reframing human rights: climate adaptation and biodiversity protection as interconnected challenges
Katia Laffusa , LUMSA - University of Rome - Italy

(Subtheme 6)
In recent years, many European countries and the European Union have declared a state of climate emergency. The failure to take necessary measures, along with human rights violations, has led to court proceedings and innovative regulations at national and supranational levels, seeking more decisive solutions in the fight against climate change and biodiversity loss.

In this context, the growing role of strategic environmental litigation highlights how judges and courts are to be regarded as pivotal interlocutors and active agents in fighting climate change and biodiversity loss. The contribution aims to explore the issue of strategic environmental litigation based on human rights, investigating—through the lens of comparative constitutional law— limits and potential of the current European jurisprudential framework that interweaves human rights with the climate and biodiversity crises.

The proposal is guided by three research questions:

(1) What are the main features of rights-based climate litigation? What are the potential drivers for a similar 'rights turn' in biodiversity litigation?
(2) How can current legal tools adopted for climate change mitigation and biodiversity protection be effectively implemented through a meaningful human rights-based approach?
(3) What role do Constitutions and Constitutional Courts play? Which human rights are at stake, and how far can the balancing of these rights be pushed?

In order to address these questions, the contribution will analyze selected case law, with particular reference to the legal systems of Italy, Germany, the Netherlands, and Belgium.

Biography
Dr. Katia Laffusa is a Post-doc researcher in Comparative Constitutional Law at LUMSA University of Rome, where she collaborates on the research project "Restoring Nature for the Children of Italy." She is the author of numerous interdisciplinary publications on the protection of minorities, environmental constitutionalism, and the rights of future generations.

Abstract 3.4.4

Property rights as obstacle or lever for climate adaptation: is a rethink possible?
Hendrik Schoukens, Ghent University

Private property is one of the central concepts in our current legal paradigms. Renowned political philosophers such as John Locke argued that private property arises when an individual mixes their labor with the raw materials of nature. Consequently, the protection of private property has long been considered one of the core duties of the state in many political theories.
However, during the second half of the 20th century, environmental regulation increasingly imposed restrictions on ownership. Despite this evolution, progressive environmental regulations—particularly those aimed at ensuring climate adaptation—have often encountered resistance, especially given the enduring influence of the Lockean conception of property in modern societies.
While government intervention in private property for purposes of environmental protection and climate mitigation is, in principle, lawful in Europe, its implementation in practice often leads to growing friction. This paper argues that the traditional opposition between climate policy and property rights is becoming increasingly outdated. A key development in this context is the recent recognition by the European Court of Human Rights (ECHR) that Article 8 of the European Convention on Human Rights includes the right of individuals to effective protection by state authorities against serious adverse effects of climate change on their lives, health, well-being, and quality of life. Notably, the Court made explicit reference to climate adaptation in its reasoning.

This paper contends that a new wave of climate adaptation litigation may well use property rights as a strategic lever to compel public authorities to adopt more robust climate adaptation measures. For example, in order to protect the property of current and future generations—such as homes located along coastlines or rivers—more effective adaptation strategies may be required, potentially impacting the property rights of others.
This development may herald a new era for property law, positioning it as a cornerstone in the next generation of climate adaptation litigation. In turn, this could give rise to numerous novel and complex legal questions over the coming decades.

Biography
Hendrik Schoukens is professor of environmental law at Ghent University and practising lawyer at the Bar of Brussels. His research focuses on nature protection laws, EIA, climate litigation and rights of nature.

Parallel sessions 4 – Thursday 11 September 13:30-15:00

Abstract 4.1.1

Complement the Directed: The EU's Nature Restoration Regulations' relation to the Habitats, Birds and Environmental Liability Directives

Volker Mauerhofer, Environmental Law Centre, Meiji University, Tokyo

The presentation - recently submitted for publication to a Special Issue - provides a legal analysis in the context of European Union restoration law. The presentation addresses the restoration of the habitats of species as well as of habitats to increase ecosystem resilience.
The main objective of the presentation is to identify the interrelation among the newly enacted legal act with the existing legal framework as well as to provide support to scholar and practitioners towards harmonious and consistent interpretation of the various norms in science and practice.

Methods applied are various legal interpretation methods within an overall hermeneutical research approach.
The presentation finds that the EU's Restoration Regulation was newly introduced with a clear and explicitly expressed endeavour to complement and support the existing legal framework. When primarily applying such a focus of the newly introduced norms in the interpretation of the various interrelations to the existing norms, a coherent interpretation is possible. This is particularly valid for these cases where the newly
introduced norms show a lower restoration target, less ambition of effectively achieving restoration, lesser scope of application as well as wider exception and exception options. Insofar, the existing legal frameworks prevail, and the newly introduced norms exclusively apply where their scope in terms of habitat, species and geographic coverage extends the existing norms.

The presentation identifies the legal interplay among the newly enacted legal norms with the existing legal framework in multiple dimensions. Respectively, harmonious and
consistent ways of interpretation are possible based on the supportive and complementary endeavour of the newly introduced norms.

Implications of this research are manifold. In terms of Research, the presentation for the first time – to the best knowledge of the author – in more detail identifies and outlines multifaceted legal aspects of the relationship between the European Union's just recently enacted Nature Restoration Regulation on the one side and the already existing Habitats, Birds and Environmental Liability Directives on the other side. For practice, the presentation provides interpretation support to implement the new Regulation, that was introduced as complementary support to the EU's restoration efforts, without contradiction to the already existing and well-settled legal framework, particularly of these Directives mentioned.
Questions:

1. The Restoration Regulation complements and not weakens the exiting legal framework.
2. What is the added value of the Restoration Regulation?
3. Costal habitats and species face a particular multifaceted legal situation also after the enactment of the Restoration Regulation.

Biography

Volker Mauerhofer is a Visiting Researcher at the Environmental Law Centre of Meiji University (Japan). He holds Master degrees in Laws, Natural Sciences and Ecological Economics as well as a Doctorate in Law. Former positions include Attorney-at-Law, Senior Research Fellow & Visiting Professor at United Nations University/Japan, and Coordinating Lead Author of the UN-IPBES Global Assessment/Chapter 6 (2016/17). He is involved in IUCN's WCEL (Member), EELF (Advisory Board Member) and SER's legal working group. Formerly Editor of Ecological Economics/Elsevier (2019-2022), he is co-/author of over 140 peer-reviewed publications and held more than 240 presentations worldwide. He has executed academic and freelance research & teaching over 25 years in more than 55 countries. Volker Mauerhofer initiated as Project Coordinator of the international "ALPMEMA" research project co-funded under the EU-Horizon Europe/Biodiversa+/FORMAS scheme (~1,5 Mio. Eur) as well as of the recently NordForsk/FORMAS co-funded international research project "ALAMOT" (~2 Mio. Eur).

Abstract 4.1.2

Article 4 of the Nature Restoration Regulation: requirements for restoration measures for terrestrial, coastal and freshwater ecosystems

Bente de Leeuw, Utrecht University - The Netherlands

Against all odds, the Nature Restoration Regulation (NRR) has been adopted and applies directly in all EU Member States (MS). The success of the NRR in achieving its objective to restore ecosystems is highly dependent on the development and execution of the national restoration plans the next decades. Although the Commission has published a guidance document , various questions relating to the interpretation of these obligations remain. The contribution will focus specifically on the obligations set out in Article 4 NRR, concerning the restoration of terrestrial, coastal, and freshwater ecosystems.

This provision requires that MS ensure that the area of a habitattype in 'good condition' increases until at least 90% is in good condition, ensure that the 'favourable reference area' for each habitat type is realized, and ensure an increasing trend towards the 'sufficient quality and quantity of habitats' for protected species. The targets are existing concepts closely related to the favourable conservation status (FCS) and used to assess this conservation status, but the exact interlinkages must still be addressed. Furthermore, while Article 4 does set deadlines for putting in place 'necessary restoration measures' it does not prescribe when the targets should be reached. As a result, it seems (full) recovery of ecosystems may occur after deadlines have passed, although measures aimed at continuous improvement are required in addition.

As well as that, it appears that MS have quite a large degree of discretion in deciding which precise restoration measures to put in place, but at the same time this room for discretion cannot be completely unlimited. Since the obligations in Article 4 seem to be an operationalization of existing obligations under the Birds and Habitats Directive (BD and HD), and, since the provisions have similar objectives and are closely linked, it can be argued that they must be construed in a consistent manner. Therefore, drawing parallels between restoration measures and measures prescribed in Article 4 of the BD and Article 6 of the HD, the existing case law of the CJEU may assist in the interpretation of the obligations in Article 4 of the NRR.

The contribution aims to address the following questions:

- How do the concepts of 'good condition', 'favourable reference area' and 'sufficient quality and quantity of habitats' relate to the favourable conservation status (FCS)?
- How can the obligations in Article 4 (restoration measures, continuous improvement, non-deterioration etc.) be interpreted, and should the obligations be interpreted as obligations of conduct or result?
- To what extent do MS have discretion in deciding the 'restoration measures that are necessary' in Article 4 NRR, and what substantive or procedural requirements can be expected to apply to restoration measures?

Biography:

Bente de Leeuw is a PhD candidate at the Utrecht Centre for Water, Oceans and Sustainability law (UCWOSL) at Utrecht University. She has obtained a LLM in Constitutional and Administrative law and in Law and Sustainability in Europe. Her research focuses on the recently adopted EU Nature Restoration Regulation. She aims to explore how the Nature Restoration Regulation can be implemented in Netherlands in order to ensure compliance with the obligations, and which legal consequences, opportunities and obstacles can be identified in this regard.

Abstract 4.1.3

Rewilding as a necessary tool for ecological restoration and climate adaptation

Gilles De Keer, Ugent Belgium

Ecological restoration is an important contributor towards effective climate change adaptation due to the provision of essential ecosystem services. Examples are manifold including inter alia creating a cooling effect in cities and decreasing flood risk by retaining and slowly releasing water (whilst simultaneously buffering for dry periods). These ecosystem services are best provided by complete, robust, and resilient ecosystems.

Multiple practical approaches can be followed to restore ecosystems in order to be more complete, robust, and resilient. Rewilding is one such approach that specifically targets large nature cores, sufficient connectivity between them, and the presence of keystone species. It is in these vast, well-connected spaces that impactful species such as bison or beavers can bring back natural processes and dynamics. Perhaps the bigger focus on keystone species is what distinguishes it the most from other restoration practices, but there are many similarities. Another important characteristic is the sometimes unachievable end-goal of 'letting nature do its thing' without management.

Legally speaking, implementing rewilding in the field is quite challenging as the inherently uncertain outcome of bringing back natural processes through reintroducing species can clash with fixed conservation objectives. The three underlying concepts of rewilding -cores, connectivity, and keystone species- are however quite present in international and European nature conservation law. This is mostly visible in duties to conserve -which is in current conditions impossible without restoration- and direct duties to restore. Last year, the Nature Restoration Regulation was adopted to scale-up both climate change adaptation and nature restoration. This regulation builds further on existing duties and adds significant value by providing concrete deadlines and additional scope outside of protected areas. This opens up new perspectives for rewilding as a bridge-building concept between climate change adaptation and nature restoration.

Rewilding practices have already proven to be highly successful in fostering climate adaptation and boosting biodiversity. The best example of this is probably the remarkable beaver comeback in inter alia Belgium and Germany which comes paired with giving back natural floodplains to rivers. These not only protect large areas for flooding, but incidentally form eligible habitat for many species with the river as natural corridor. In short, scaling up rewilding could bring much-needed benefits for a climate-proof future.

Question 1: The current practices focus often on floodplains and abandoned lands, but what extent is rewilding wanted/achievable in cities?

Question 2: Do individual people have certain responsibilities in rewilding our continent and are they even ready for rewilding?

Question 3: To what extent should we embrace the uncertainties and flexibilities of process-ecology instead of holding strong with clear and well defined goals?

Biography

Gilles De Keer obtained a Masters in Law from Ghent University in 2024 with a masters thesis written about legal duties concerning rewilding. After graduation, he pursued a second masters degree in European and international law at Tilburg University.

During his studies, he did a summer internship at the Flemish Agency for Nature & Forestry, and worked temporarily as research assistant at Ghent University.

Besides this, he has a passion for nature and teaching which are reflected in teaching activities at schools and participation in WWF Belgium Youth.

Abstract 4.1.4

The Restoration of Insects in the Nature Restoration Regulation Under a Changing Climate

Siemen Kalders, Hasselt University - Belgium

Extensive scientific research exists on the impact of climate change on biodiversity, with growing attention to its significant effects on insects, particularly their abundance, diversity, and ecological relationships. The effects of climate change are further exacerbated by the degradation and fragmentation of habitats critical for insect survival.

Within this scientific background, the Nature Restoration Regulation could be the key to the survival of insects in this changing climate. The survival of insects is crucial for enhancing ecosystem resilience against climate-driven pressures, especially in natural and agricultural ecosystems. Restoring insect populations is thus not only a biodiversity priority but a critical component of the EU's broader climate adaptation strategy. The Nature Restoration Regulation contains two provisions directly relevant to insects: Article 10 on the restoration of pollinator populations and Article 11 on the restoration of agricultural ecosystems.

Article 10 addresses wild insect pollinators and is grounded in a long policy process with the (revised) EU Pollinators Initiative. It contains restoration targets and obligations regarding pollinator populations for 2030 and beyond, considering that pollinators are essential for ecosystem health and food security. Article 11 establishes restoration targets and obligations for agricultural ecosystems regarding certain indicators, including the grassland butterfly index. This is a well-established monitoring scheme applied by 18 Member States, covering 15 indicator species of grassland butterflies to assess environmental health.

A common element is the requirement for Member States to set "satisfactory levels" for pollinator populations and grassland butterflies. This contribution will explore how these levels, to be defined through transparent, evidence-based processes supported by a forthcoming European Commission framework, will shape the effectiveness of insect restoration. A particular challenge is the issue of shifting baselines, where monitoring data reflect already-declined conditions since insect monitoring only started in recent decades.

In my presentation, I will tackle three questions and theses:

1. How can Member States ensure scientific robustness and democratic legitimacy in setting satisfactory levels for pollinators and grassland butterflies?
2. How can Member States ensure that they do not incorporate shifting baselines in setting satisfactory levels for pollinators and grassland butterflies, taking into account that there is almost no historical data available?
3. Are the restoration obligations for pollinator populations and grassland butterflies obligations of result or obligations of means?

By analysing these questions, the contribution aims to show how insect restoration can serve as a legal lever for broader climate resilience in Europe.

Biography

My name is Siemen Kalders and I am a PhD researcher at Hasselt University since September 2023. My doctoral research is focused on the legal protection of insects in the European Union and Flanders under the supervision of Prof. Dr. Carole Billiet. In particular, the aim is to protect insects in nature conservation legislation and pesticide legislation in order to reflect their importance to the environment, other species, and humans. I had the honour of presenting my research on the impact of wind turbines on insects at the last EELF Conference in Groningen. Furthermore, I am invited to present my research on the protection of insects under the Habitats Directive at the 4th IUCN WCEL World Environmental Law Congress in Rabat, Morocco.

Abstract 4.1.5

The Legal Protection of Deadwood as Saproxylic Beetle Habitat under EU Nature Conservation Law

Nina Verbeek (Tilburg University) ; Rens Claerhoudt (Tilburg University)

Saproxylic beetles are insects that rely on decaying wood and deadwood for at least some of their life cycle. They make important biodiversity indicators and play a key role in wood decomposition processes. However, recent conservation status assessments find saproxylic beetles to be among the most threatened insect groups in Europe. Among the most pressing threats are land use change and anthropogenic global warming, both potentially reducing the availability of suitable habitats.

Saproxylic beetles are known to have particularly specific habitat demands. Whether a habitat is suitable for a certain species of saproxylic beetle depends on a range of factors, including the diversity of deadwood types, the tree species, the deadwood's positioning (standing or lying down) and the diameter of the wood. Successfully restoring natural deadwood as saproxylic beetle habitat is difficult, because many saproxylic beetle species have a low dispersal capacity, with some species being entirely unable to fly, which can make it near impossible for them to colonize restored deadwood. This makes the continuity of deadwood availability a crucial component in successful saproxylic beetle conservation.

Both the Habitats Directive and the new Nature Restoration Law (NRL) contain provisions that (might) protect saproxylic beetle habitat in the EU. The Habitats Directive requires the designation of protected areas for about twenty saproxylic beetle species. Within these areas, Member States must put in place conservation measures that correspond with the ecological needs of saproxylic beetles listed in Annex II and take preventive measures to avoid deterioration of their habitats. The NRL, in turn, requires Member States to take restoration measures for, inter alia, terrestrial habitats of saproxylic beetle species listed in Annex II of the Habitats Directive. In addition, the NRL mentions standing and lying deadwood as two out of seven indicators for forest ecosystems and requires Member States to realize an increasing trend for at least six of these indicators.

In our paper, we aim to juxtapose ecological studies about saproxylic beetles and their habitat demands with the legal protection of their habitat under the Habitats Directive and the NRL. In doing so, we aim to reflect on the following questions: (1) What are the habitat demands of saproxylic beetles? (2) What do area protection obligations under the Habitats Directive entail in view of the habitat demands of saproxylic beetles? (3) How does the NRL contribute to the Habitats Directive in the context of the protection of saproxylic beetle habitat? By addressing these questions, we will gain insight into the current legal protection of saproxylic beetles in the EU, while also critically reflecting on both the Habitats Directive and the NRL, therewith reverberating the second conference theme on 'Biodiversity, water and nature restoration law'.

Biographies

Nina Verbeek is a lecturer in European law at Tilburg Law School, Tilburg University, the Netherlands. She teaches courses on International and European law, and Public Interest Litigation, and is active as a thesis and moot court supervisor. Prior to being a lecturer, Nina worked at the (former) Dutch Ministry of Agriculture, Nature and Food Quality as a legal policy officer. In this role, she advised on the compliance of Dutch policy with area protection obligations under the EU Birds and Habitats Directives.

Rens Claerhoudt is a PhD researcher at Tilburg Law School, Tilburg University, the Netherlands. His research focuses on the legal protection of animal parasites in biodiversity law. Before commencing his PhD, Rens was active as a professional violinist. In addition to his research, Rens is also active as teacher and thesis supervisor. He organises and chairs the regular seminars of the research community 'Constitutionalizing in the Anthropocene'.

Abstract 4.2.1

A framework law for European adaptation: what can be addressed at the Union's level?
Anne Kling

Art. 5 of the European Climate Law is dedicated to adaptation. The relevant Union institutions and the Member States shall ensure continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. The provision foresees National adaptation strategies and plans as instruments to foster adaptation at the Member States' level and the Governance Regulation includes reporting provisions accordingly. The Commission has a Union strategy on adaptation in place, which shall guide adaptation efforts. However, while the European Environmental Agency (EEA) in its European Climate Risk Assessment (EUCRA) certifies considerable progress, the report contains an urgent call for action. Policy implementation is lagging substantially behind and shared risk-ownership for most climate risks adds to the complexity. Content and role of adaptation strategies and plans are not further defined and a coherent framework to guide adaptation governance both at the Member States' level as well as on the Unions' level is still missing.

This session aims to discuss possible elements of a European adaptation framework law. Which governance elements could and should be addressed to address the gaps and foster resilience in the European Union, while respecting the principles of proportionality and subsidiarity?

Biographies
Anne works at the German Federal Environment Agency as a lawyer specializing in climate protection and climate adaptation law. She wrote her dissertation at the Research Center for European Environmental Law at the University of Bremen on climate protection and litigation, including a research stay at the Sabin Center for Climate Change Law at Columbia Law School. Anne studied law in Berlin and London.

Abstract 4.2.2

The German "Climate Adaptation Law" a blueprint for multilevel adaptation governance?
Moritz Reese, Dr. iur., is head of the Department for Environmental and Planning Law of Helmholtz Center for Environmental Research (UFZ), Leipzig, Germany

In December 2023, Germany has adopted a national "Climate Adaptation Law" (Klimaanpassungsgesetz - KAnG). The KAnG aims to implement the obligations under Article 5 of the EU-Climate law (EU-Regulation No. 2021/1999) for the Member States to adopt national climate strategies. Above, the KAnG establishes a multilevel governance system obliging not only the federal government but also all subnational levels (regional and local) to conduct climate risk assessments and prepare adaptation plans each on their respective scales, and to take climate risks and adaptation plans duly into account in administrative decision making.
With my presentation I will briefly introduce this the new German Climate Adaptation Law and its main instruments, I will explain how it creates a further example of "policy-planning-law", report about current implementation efforts and difficulties, and discuss whether and in how far this new Law can be advertised as a blueprint legal framework for national climate adaptation governance. In the discussion I aim to collect comparative insights on whether and how climate adaptation is framed and fostered legally in other countries.

Biography
Moritz Reese, Dr. iur., is head of the Department for Environmental and Planning Law of Helmholtz Center for Environmental Research (UFZ), Leipzig, Germany, and Professor of European Environmental Law at the law faculty of Leipzig University. He has worked in diverse fields of environmental law and governance, i.a. as legal consultant of the German Council on the Environment (2001-2005) before joining UFZ in 2008. Focal fields of his research include: EU environmental law, water management, public environmental services, land-use planning and climate adaptation, as well as resources and waste management. Moritz is chairman of the European Environmental Law Forum – EELF", founding co-editor of the Journal for European Environmental & Planning Law (JEEPL) and member of the editorial board of the German Journal for Environmental Law (Zeitschrift für Umweltrecht – ZUR).

Abstract 4.2.3

Scales, levels and powers of adaptation legal frameworks. Case studies from federal Belgium
Aurélien Hucq

Adaptation to the detrimental effects of climate change is necessary and resilience of socio-ecological systems must be assured (IPPC, 2022). Like mitigation, adaptation to climate change governance can be labelled as a '(super) wicked problem'. It is a cross-sectoral policy that needs to be deployed in many other policies (Verschuuren, 2022) and across different scales and levels (Adger, 2001). In terms of governance, it entails that several levels of governments (from EU to local level) and several authorities are competent for adaptation policies. There is thus a strong need to ensure the vertical and horizontal coordination of adaptation policies. Law plays an important role for adaptation as it can inter alia either facilitate or impede coordination (McDonald, 2011). Our contribution shows theoretically the diversity of powers, scales and levels of adaptation policies which ends up in a complex legal system. Both EU and national legal frameworks must be considered to embrace the multiscalar and multilevel dimensions of adaptation policies. We illustrate it empirically through two main case studies (wildfires and alien invasive species) from Belgium, which is interesting because of its federal architecture. First, Belgian scholars usually erect its federal architecture as one of the reasons for its climate governance failure in terms of mitigation (Fermeglia, 2023). Second, it has been argued that European legal order 'saves', to a certain extent, federal Belgium as it initiates and frames policies (Beyers and Bursens, 2006). Our contribution examines whether those conclusions are applicable in the case of adaptation to climate change. Drawing on the literature of European integration process (Beyers and Bursens, 2006), climate federalism (Kaswan, 2015) and European and national adaptation legal frameworks (Albrecht, 2024) complemented by semi-structured interviews (yet to be conducted before summer holidays) with actors working in those two case studies, we test one hypothesis and seek to respond to two questions:

1. Obligations of reporting national climate change adaptation planning and strategies through European Climate Law and Regulatory 2018/1999 give legal impetus to the establishment of a Belgian national framework that is yet not necessarily entirely coherent nor comprehensively coordinated.
2. To what extent can the European adaptation legal framework and its various sectoral policies mitigate the deficiencies of Belgian federalism?
3. Are European policies and/or Belgian federalism well suited to allow subnational and local entities to adopt tailor-made adaptation policies? Under which conditions and limits?

By doing so, our aim is twofold. First, we contribute to deepen the understanding of the relationship between European legal order and (Belgian) climate federalism. Second, we assess how and to what extent European policies can frame, block and/or foster Belgian adaptation policies.
Selected bibliography.

- Adger N., "Scales of governance and environmental justice for adaptation and mitigation of climate change", Journal of International Development, 2001, vol. 13.
- Albrecht J., »Climate adaptation law: a European perspective », China-EU Law Journal, 2024.
- Beyers J. and Bursens P., "The European Rescue of the Federal State: How Europeanisation Shapes the Belgian State", West European Politics, 2006, vol. 29, n° 5.
- Fermeglia M., "When decentralization strikes back: The example of climate governance in Belgium", Revista d'estudis autonomics I federals, 2023, vol. 37.
- Kaswan A., "Cooperative federalism and adaptation", in The Law and Policy of Environmental Federalism. A Comparative Analysis, Kalyana Robbins (ed.), Edward Elgar Publishing, 2015.
- McDonald J., "The role of law in adapting to climate change", Wiley Interdisciplinary Reviews: Climate Change, 2011, vol. 2, n° 2.
- Verschuuren J. (ed.), Research Handbook on Climate Change Adaptation Law, Edward Elgar Publishing, 2022.

Biography
I am a Post-doctoral researcher at UCLouvain on a WelCHANGE project (FNRS) that aims (1) to provide a state of the art of Belgian climate governance by identifying the opportunities and challenges created by its federal structure and (2) propose legal pathways to improve it.

Abstract 4.3.1

Human rights in climate change litigation, and climate adaptation as a duty of the State

Angel-Manuel. Moreno, University of Genova; Patrizia Magarò, University of Genova ;

(A) Short description of the content of the contribution

This paper explores the connection between climate change litigation, fundamental and human rights (HR) and the obligation of the State to adopt adaptation strategies.

Firstly, this paper identifies the role that the adaptation perspective has played in the field of climate change, HR-based litigation. Then it explores the thesis that the State has as a positive, stronger obligation to undertake adaptation measures, based on human rights theories.

Indeed, it is noticeable that most of the litigation in the Urgenda saga has focused on climate change mitigation, and has sought to obtain more ambitious and aggressive national greenhouse gas reduction policies in the courts. Usually, the plaintiffs have sought to oblige the State authorities to undertake policies aiming at reducing their global greenhouse gas emissions (or to increase the objectives already adopted). By contrast, adaptation considerations have been given much less weight.

However, HR theories and considerations lead to the conclusions that the State obligations in the domain of adaptation might be even stronger than in the field of mitigation. With this hypothesis in mind, the contribution assesses the most well-known examples of Urgenda-type climate litigation and tries to find conceptual and dogmatic elements on which to ground a specific and reinforced obligation of the State to take adaptation measures, based on HR considerations.

In view of the authors, the State's obligations to take adaptation measures are even more unambiguous than in the mitigation area, given that adaptive policies have a clear efficacy in protecting the HR that are usually invoked in climate litigation (ex: right to life). For instance, by implementing a comprehensive program of air conditioning installations, the State may guarantee more effectively the human right to life, and avoid the death of thousands of people in retirement homes (see: heat wave of 2003 in France); and by adopting adequate adaptation policies the State may protect the lives and properties of thousands against the rise in sea level (see: Spain´s strategy for adaptation of the coastline to climate change, 2016), which is a clear effect of climate change (see: Commune de Grand Synthe litigation).

Therefore, the requirements derived from HR underpin the thesis the State's obligations to take adaptation measures are even more unambiguous and robust, given that adaptive policies have a clear efficacy in protecting the human rights that are usually invoked in climate litigation (ex: right to life); the need for climate adaptation measures is even more urgent, and that the duty of care of the State is more radical in this field.

On the other hand, while adaptation measures provide an immediate protection of HR, the mitigation efforts of a country may not necessarily mean any significant improvement in the solution of the climate crisis (since its GHG reductions may be neutralized by the increase in the emissions of other countries).

Finally, as some HR based climate litigation has showed (ex. Greenpeace v. Spain, 2023) it may be hard to obtain in courts the recognition of ambitious mitigation-related policies, for several constitutional reasons (separation of powers, political discretion of the Government, judicial restraint doctrines, etc.). By contrast, the duty of care of the State to adopt adaptation measures is clear and specific, and it may be held liable for not doing enough to protect its own people against climate disasters, based on domestic doctrines of governmental liability.

(B) Three-four questions or thesis to be discussed with the audience

1.- Has adaptation been unduly overlooked in climate change litigation?
2.- Do human rights play when it comes to reinforcing the duty of the State to take adaptation measures?
3.- Do we need a specific trend of climate change litigation, based on the adaptation viewpoint?
4.- Is the obligation of the State to take climate adaptation measures sufficiently recognised in domestic legislation and constitutions?

Biography

Prof. Dr. Patrizia Magarò is an associate professor of comparative public law at the University of Genova, and the Project Coordinator of the European research project "Rights Turn in Climate Change Litigation", co-funded by the European Commission.

Prof. Dr. Angel M. Moreno is a full professor of administrative and environmental law at Carlos III University of Madrid. Member of the "Avosetta" group of environmental lawyers and former alternate member of the Board of Appeal of the EU agency for chemicals (ECHA).

Abstract 4.3.2

Advancing climate justice in failure to adapt climate cases: the potential of a rights-based approach

Orla Kelleher

Failure to adapt to climate impacts is the quintessential climate (in)justice issue. In 2019, the richest 1% were responsible for 16% of global carbon emissions, the equivalent emissions of the poorest 66%.[1] At the same time, the former UN Special Rapporteur for human rights and extreme poverty has warned climate change will exacerbate existing poverty and inequality.[2] This is because '[p]eople in poverty tend to live in areas more susceptible to climate change and in housing that is less resistant; lose relatively more when affected; have fewer resources to mitigate the effects; and get less support from social safety nets or the financial system to prevent or recover from the impact'.[3]

In climate governance climate mitigation and adaptation are recognised as complementary approaches: the scale of adaptation required to alleviate climate risks is dependent on the level of temperature increase.[4] Climate mitigation targets tend to be set as numeric figures, often as a percentage reduction from a baseline year, to be achieved by a certain date.[5] In contrast, climate adaptation – which by its nature much more wide-ranging and location specific than climate mitigation – tends to be formulated as less concrete, qualitative objectives and strategies.[6] The first Global Stocktake noted 'with concern… that accelerated implementation of adaptation action in this decade is important for closing adaptation gaps'.[7] It also stressed that staying within the Paris Agreement temperature goals would be 'essential to ensuring the continued availability of the largest possible number of adaptation options'.[8] To increase the speed, ambition and feasibility of climate adaptation and to protect communities who are disproportionately affected, strategic climate litigation spearheaded by vulnerable and marginalised communities is starting to play an increasingly important role. Legal scholars previously predicted that failure to adapt climate litigation could have certain strategic advantages over mitigation cases because the causal link between government inaction and climate impacts on citizens would be easier to establish and because issues of extraterritoriality would not arise.[9] However, there have been very few failure to adapt cases so far.[10] One high-profile cases, the legal challenge to the UK's third adaptation programme, was unsuccessful at first instance in the absence of strong and concrete statutory hooks under domestic climate legislation.[11]

With failure to adapt legal challenges still in their infancy, this paper seeks to explore the added value of a right-based approach in such cases as well as if, and how such an approach could advance climate justice. In particular, this paper asks how underutilised rights-based provisions on dignity and equality before the law could be deployed to vindicate the rights of people in poverty who, as mentioned above, are most at risk from ma

---

1 Oxfam, Climate Equality: A Planet for the 99% (Oxfam International 2023)

2 Report of the UN Special Rapporteur on Human Rights and Extreme Poverty on Climate Change and Poverty A/HRC/41/39 (2019) [11].

3 ibid at [12].

4 Chris Hilson, 'Hitting the Target? Analysing the Use of Targets in Climate Law' (2020) 32(2) JEL 195, 202.

5 Ibid at 198.

6 Ibid at 202.

7 UNFCCC, Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement Global goal on adaptation 2/CMA.5 FCCC/PA/CMA/2023/16/Add.1

8 Ibid.

9 Jacqueline Peel and Hari Osofsky, 'A Rights Turn in Climate Change Litigation?' (2017) 7(1) TEL 37, 63.

10 https://climatecasechart.com/non-us-case-category/failure-to-adapt/

11 Friends of the Earth and Ors v Secretary of State for Environment, Food and Rural Affairs [2024] EWHC 2707 (Admin).

Biography
Dr Orla Kelleher was appointed as an assistant professor at the School of Law and Criminology at Maynooth University in August 2022. Her research and teaching focuses on climate, environmental, and constitutional/human rights law. She was awarded her PhD (without corrections) in September 2022 from University College Dublin. She holds an LLM from the College of Europe and a BCL (Law and French) degree from University College Cork. She is a qualified barrister having been called to the Irish Bar in 2020. Over the past three years, Orla has been funded to conduct engaged research on EU climate law and strategic environmental litigation with Environmental Justice Network Ireland. She has also done work with the Community Law and Mediation Centre for Environmental Justice on strategic environmental and climate litigation.

Abstract 4.3.3

Enterprise Responsibility for Adaptation Measures
Carola Glinski, University for Applied Sciences Trier - Germany

The German case of Lliuya vs. RWE provides for a perfect case in which the (financial) responsibility of enterprises, in particular ‚carbon majors', for climate change adaptation measures is at stake. In this case, a Peruvian Farmer sues a German electricity producer for its contribution to climate change and claims a respective share of money for climate adaptation measures in order to prevent his house from being flooded, namely for fortifying and increasing the dam which prevents the area from the water of a glacier lake above. The case is based on German neighbour law, some sort of ‚private nuisance'. Crucial issues are the applicability to transnational situations, the legality of the interfering (or polluting) activities, the causality and the imminence of a concrete danger.

The OLG (higher regional court) Hamm has considered the case arguable from a legal perspective, has started hearing evidence and announced a decision for May 2025.Taking this case as a starting point, the paper discusses the above mentioned issues of transnationality, legality of emissions, causality and imminence of danger.

Biography
Carola Glinski is professor of environmental law at the University for Applied Sciences, Trier. Previously she was associate professor in environmental law and private governance at the University of Copenhagen.

Abstract 4.3.4

Public attribution, multiplicity and the future – new directions in climate adaptation law
Dr Naomi Luhde-Thompson, Oxford Brookes University, United Kingdom

Adaptation may be the neglected half of climate litigation in comparison to mitigation, which may be ascribed to the nature of perpetrator and causality in such cases inventing and re-inventing the conception of 'responsibility'. Ground is being broken in this area of climate litigation which could herald a new direction for the grounds underpinning adaptation cases. In the UK, Friends of the Earth has recently litigated on the failure of the National Adaptation Plan, required by the Climate Change Act 2008, to identify the risk inherent in the plan to address the possible and/or probably consequences for the poorest and most vulnerable communities.

A discontinued case in Canada, Burgess v. Ontario Minister of Natural Resources and Forestry, took a class action approach to claim against the recent flood damage, asserting that the Ministry had a responsibility to avert such damage. The Swiss case brought by the Verein Klima Seniorinnen Schweiz and Others against the Government to the European Court of Human Rights did find that the Swiss Government was failing to protect older women from the future increased impacts from heatwaves.

There is no question that the impacts of climate change are in dispute - these are generally acknowledged, even in cases that are dismissed. Adaptation cases therefore engage with 'attributive' legal theory – not just who is responsible, but who is responsible for taking action so 'public attribution'; secondly these cases engage with multiple claimants given the scale of impacts predicted; thirdly, these cases must engage with the constructs of

time, given the predicted worsening impacts of climate change. Given the planned response required for adaptation, how can attribution, multiplicity and the future form solid grounds in climate law?

Key questions are as follows:

- How can new legal structures lend 'new' responsibilities on public actors?
- How can environmental redress structures be strengthened, particularly 'reflexive' structures, in order to reframe and create a new footing for decisions?
- How can the future be brought into 'preventative' law?

Biography

Dr Naomi Luhde-Thompson (PhD, MSc, BA Hons)

I am Founder and Chief Executive of Rights Community Action, leading projects that use place-based art and capacity building to empower communities to act through land use planning to tackle climate change, and advocating and influencing for alternative forms of land stewardship, and climate and environmental rights, engaging in critical litigation in England and Wales. My current research (due to be published 2025 by Routledge) is titled 'Making Environmental Limits Matter', and is an exploration of preventative environmental and planning law. I am a Senior Lecturer on the Sustainable Futures MSc at Oxford Brookes University, Board Member at Friends of the Earth England and Wales, Board Member for Eryri National Park Authority, and Commissioner on the Manchester Social Housing Commission.

Abstract 4.4.1

Under Full Sails Towards Sustainability? Law as an Accelerator in the Water Transition

Dr Jan R. Starke, KWR Water Research Institute, Nieuwegein (NL) (corresponding author; presenter)
Nicolien van Aalderen, KWR Water Research Institute; Sandra Sikkema, KWR Water Research Institute

Extreme events, such as prolonged droughts and devastating floods, increasingly expose the vulnerability of European water management to the effects of the climate crisis. This underscores the urgent need for both mitigation and climate adaptation, particularly in the water domain. Sustainability transitions aim to drive the transformative change required to address these challenges. While stakeholders often perceive laws and regulations as barriers to transformative change, emerging research suggests that legal frameworks, if well-designed and implemented, could also serve as accelerators of transformative change towards more sustainable and climate-resilient water management. This contribution therefore explores how legal systems can support climate adaptation by accelerating transformative change within water governance.

To this end, we focus on the groundwater quantity goals of the European Water Framework Directive 2000/60/EC (WFD) and examine their transposition, application, and enforcement in the context of the water transition. This aspect of the WFD is especially relevant for climate adaptation in light of increasing drought risk and the resulting pressure on (drinking) water resources. Our analysis compares how this dimension of the WFD is implemented in Flanders and the Netherlands, two regions with shared hydrological challenges but differing legal and governance approaches.

Building on recent literature on the role of law in sustainability transitions, we propose a conceptual framework illustrating how legal systems can both dismantle practices that sustain climate vulnerability and build institutions that foster resilience. Through legal-dogmatic research, we assess how groundwater quantity provisions are operationalized and to what extent they enable or hinder adaptive capacity in water management. This analysis is complemented by stakeholder focus groups and workshops exploring different perspectives on the directionality of contested transition pathways.

Our preliminary findings show that despite a common European legal framework, implementation approaches towards resilient groundwater governance diverges between Flanders and the Netherlands. These differences highlight both the risks of uncoordinated adaptation efforts and the potential for mutual learning and legal innovation. By bridging transitions thinking and legal science, this study offers new insights into how climate adaptation in water governance can be strengthened through law: an essential step toward preparing Europe for a climate-proof future.

Discussion questions:

- What is the role of context-sensitivity in evaluating the transformative potential of law?
- How should the directionality of change be assessed?
- What are effective tools to stimulate learning for effective climate adaptation between member states in the application of European Union water law?
-

Biography:

Dr Jan Starke is a researcher in the governance team at KWR Water Research Institute, the knowledge institute of the Dutch drinking water sector. His work explores the creative potential of value-based conflicts and the legal system in driving transformative change in the water sector. He is particularly interested in questions around the distribution of responsibilities, burdens, and opportunities in change processes. Additionally, he investigates how to design effective systems for permitting, monitoring, and enforcing water quality regulations. He earned a PhD from Wageningen University for his research on the dynamics of policy controversies in sustainability transitions, publishing in leading international journals. Holding an MSc in Environmental Governance (Utrecht University) and an LL.M in Sustainability Law (Leuphana University Lüneburg), he integrates legal and governance perspectives. His legal research focuses on comparative studies of European Union law implementation across member states.

Abstract 4.4.2

Designing for Uncertainty: Legal Flexibility through Temporality for Climate Adaptation in Spatial Planning" Exploring the Limits and Possibilities of Time-Limited Authorisations in Dutch and European Environmental Law

Marlon Boeve; Ruda van Ravensteijn, TU Delft | Delft University of Technology

We are at a turning point in uncertain times. Not only are (competing) spatial claims increasing due to urgent societal challenges—such as the housing crisis, the energy transition, raw material supply, industry, and defense—we are also facing rising levels of uncertainty. Climate change, in particular, requires careful long-term consideration of where and how land can be used. In addition, the unpredictable consequences of both climate change and shifting geopolitical dynamics call for greater adaptability in spatial planning.

One way to enhance this adaptability is by embracing temporality in planning decisions. For instance, authorities might determine in advance that land use permits will be reviewed after 10 or 20 years, or allow industrial activities to have only temporary environmental impacts. While this approach increases flexibility, it also raises concerns around legal certainty and the protection of property rights.

The key question is whether the current legal framework is equipped to support such temporal flexibility. Does European and national environmental law sufficiently accommodate time-limited or adaptive authorisations?

This presentation explores that question using examples from Dutch environmental law and practice. It highlights the legal tensions, limitations, and opportunities related to flexible, time-bound permitting. In addition, we aim to consult the public on how temporary authorisations are regulated across different EU Member States.

Biography

Marlon Boeve is professor of Environmental and Planning Law at TU Delft, Faculty of Architecture and the Built Environment and assistant professor of Environmental Law at Utrecht Centre for Oceans, Water and Sustainability Law at Utrecht University (UCWOSL). She is an expert in the field of European and Dutch environmental law. She is a member of the editorial board of the Dutch Tijdschrift voor Omgevingsrecht (the Journal for Environmental Law) and Tijdschrift voor Bouwrecht. She is member of the board of the Dutch Association for Environmental Law.

Ruda van Ravensteijn is a PhD candidate in the field of Environmental and Spatial Planning Law at the Technical University Delft. Her research is on the (experiences in practice with) the (im)possibilities of the use of environmental law instruments that can be used to infringe acquired rights for the purpose of sustainable urban area development. She studied Environmental Law at Utrecht University and at University of Oslo.

Abstract 4.4.3

Case Study: Response to Extensive Storm Éowyn Damage in Ireland. Dealing with Emergencies in the Context of the Requirements of the Habitats Directive

Alison Hardiman

Storm Éowyn was a powerful extratropical cyclone that occurred in January 2025, bringing strong winds that caused widespread damage. Significant impacts in Ireland related particularly to widespread power loss and fallen trees. The scale of the damage conveyed the urgency of integrating climate adaptation into our climate mitigation efforts, redesigning power lines further from trees and planning for extensive clean up requirements. Clearance of fallen and partially fallen trees was halted in many locations where they were located in or near protected European sites. Accordingly, the interface between the Habitats Directive as transposed into Irish law and emergency measures became a key focus.

Their clearance had the potential to impact European sites given the impact of the displaced soil, leaves and pine needles on waterways. Their removal was thus considered to require AA. However, the extensiveness of the damage led to delays arising from lack of resourcing and difficulties regarding the conduct of assessment. It is known that the most environmentally beneficial approach when a tree's root plate is exposed or elevated is to replace the root plate quickly. Now, however, many fallen and partially fallen trees have yet to be cleared due to concerns regarding compliance with EU law.

These concerns are augmented by caselaw. In the recent Irish case Friends of the Irish Environment CLG and Roscommon County Council [2022] IEHC 44, a programme of emergency flood relief works was prevented by way of injunction on the basis that they may interfere with an Annex 1 site. The court held that as the flooding was predictable it did not in fact constitute an emergency. Instead, the local authorities ought to have planned ahead, carrying out all requisite assessments, rather than seeking to quickly undertake works on the basis of 'emergency' requirements. The real life outcome was flooding of a village in the aftermath of the judgment.

Although options have been explored with regard to the use of IROPI under Article 6(4) Habitats Directive, the consideration of alternatives and compensatory measures requirements have been found to create procedural difficulties. Furthermore, there are wide ranging views among environmental NGOs regarding the best approach to site clearance and the need to follow the letter of the law.

Questions for analysis within this presentation:
- Are extreme weather events now predictable? If so, must our responses be plan led and can the required assessments be conducted entirely at plan level (SEA)?
- The limitations of an IROPI designation where public health and safety is at issue.
- Do the Habitats Directive and Aarhus Convention require updating to reflect response to climate change?

Abstract 4.4.4

The data dilemma in EU climate adaptation law

Dr Rhoda Jennings, University College Cork

As the EU moves towards climate-resilient governance, adaptation laws and strategies are increasingly reliant on scientific data. Beneath this evidence informed approach lies a growing legal and political tension: what data should be relied on to inform adaptation — EU-wide datasets, national statistics, local observations or indigenous and minority knowledge? Ideally, a combination of all is the answer. This is hampered however by persistent data gaps, reliance on outdated data, uneven capacity amongst Member States, and the challenge of integrating diverse forms of knowledge into a legally coherent framework. This results in a fragmented adaptation landscape where legal mandates often outpace or contradict the available science. The consequences are not only evident at a policy and planning level, it is only a matter of time before the legal implications of discrepancies in data make their way to the EU courts in the form of disputes on the adequacy of adaptation measures.

Administrative clashes are currently evident. In the wake of the 2021 German floods in Ahr, insurance disputes have arisen based on the adequacy of flood maps used in planning and risk assessment. In Scandinavia, Sámi organisations have protested land-use permits granted based on national data that fails to reflect rapidly changing conditions crucial for reindeer herding. They have called for further research into changes in plant growth patterns and insect borne diseases arising out of climate change. The implications are broader. Data conflict in the face of adaptation measures has the potential to inform key elements of tort, including foreseeability and standing, and to substantiate causation and injury, with consequences for sectors such as infrastructure standards and permitting processes under the Environmental Impact Assessment Directive.
As climate modelling and climate science become more precise, the data, methods and procedures that States follow to meet their climate commitments will come under greater scrutiny. Mitigation cases such as KlimaSeniorinnen v. Switzerland[1] are indicative of this scrutiny, where the court placed weight on scientific projections, including heatwave data. The same scrutiny will be applied to adaptation measures, with a focus on what climate dataset is considered legally sufficient.

Questions to be discussed
What is “reasonable” adaptation planning if the science is incomplete or contested?
Can Member States be held accountable for risks they cannot yet model or that were modelled on EU instead of national data or vice versa?
The courts are increasingly asked to adjudicate on whether governments acted on “the best available science.” But what is the “best available science” and what if the science is contested, missing, or inaccessible?

1 *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland* - 53600/20

Biography

Rhoda Jennings is a Government of Ireland Postdoctoral researcher at the School of Law, University College Cork, Ireland. She is an environmental lawyer and scientist with over a decade of experience working in the corporate law sector and for the Irish Government. Her research area combines her legal and scientific background and focuses on the intersection of science and environmental law.

Parallel sessions 5 – Thursday 11 September 15:30-17:00

Abstract 5.1.1

The EU's Nature Restoration Law and administrative designs of the Member States: does the procedural organise the institutional? Reflections on the emerging inter-sectoral, multilevel but (still) nation-centred governance framework in the context of transboundary climate change adaptation challenges

Katarzyna Aleksandra Jancewicz

Regulation (EU) 2024/1991 on Nature Restoration, known as the Nature Restoration Law, entered into force on 18 August 2024. The new Regulation lays down rules to contribute to the long-term recovery of biodiverse and resilient ecosystems across the Member States' land and sea areas. In other words, restoration of ecosystems also contributes to the Union's climate change mitigation and adaptation objectives. By 1 September 2026, such plans should take the form of a 'regulatory tool' called the National Restoration Plan (NRP). In this way, the Nature Restoration Law shall complement (or supplement) the earlier environmental EU secondary legislation, without amending it.

Generally, according to Articles 291(1) and 192(4) TFEU, Member States shall finance and implement environmental policy. Similarly, the adaptation to new climate risks rests at the (sub)national level. However, despite the practically inevitable involvement of the Member States' public authorities and their crucial role in implementing and preparing the NRPs, the EU legislator does not explicitly determine how Member States shall organise their relevant administrative structures. At the same time, however, the Nature Restoration Law appears to break the traditional divide between sectoral and horizontal environmental legislation, positing it as a new, inter-sectoral level of environmental regulation. On the one hand, the Nature Restoration Law markedly contrasts with other EU environmental directives and regulations it aims to complement (or supplement), which impose on the Member States the extensive ecosystem-based organisational requirements (identification of river basin districts in Water Framework Directive, marine (sub)regions of Marine Strategy Framework Directive, designation of Natura 2000 sites: Special Areas of Conservation under the Habitats Directive and Special Protection Areas under the Birds Directive). On the other hand, it is submitted that certain procedural provisions appear to indirectly, though consistently, limit the national institutional autonomy by framing the Member States to prioritise the national level of planning and enforcement at the cost of more ecosystem-based approaches. How did Member States address that competence allocation dilemma? Was the coherence of the national governance framework maintained at the cost of institutional rearrangements?

To address those underlying questions, this contribution aims to map the diverse organisational arrangements tasked by the Member States with preparing their NRPs and to analyse what factors, including the Nature Restoration Law, informed and impeded the Member States' institutional design decisions. So far, the research suggests that despite the lack of explicit organisational requirements in the Nature Restoration Law, many Member States encountered considerable difficulties in adapting their institutional frameworks. For some Member States, there is still no publicly available information on who is responsible for drafting NRPs. In others, like Portugal, a new institution has been designated exactly for that purpose, while in Poland, existing authorities have been cooperating under an informal coordination mechanism.

Abstract 5.1.2

The EU Nature Restoration Law as Policy Planning Law?

Marvin Neubauer, Helmholtz Centre for Environmental Research – UFZ Leipzig - Germany

The Nature Restoration Law (NRL) organises the transformation of socio-ecological systems towards a state of 'restored nature'. In my presentation I will examine if and to which extent the NRL can be understood as a form of policy planning law—a relatively new form of legal instrument to guide transformative policy production.

Socio-ecological transformations are inherently complex. They involve a wide range of governmental and non-governmental actors, unfold over extended periods, and remain in constant interaction with other mega-trends (such as digitalisation or shifts in global power structures), other transformations (notably the transition to climate adaption), and acute political or economic crises (e.g. threats to food security). For sustainability transitions to succeed, political actors require a comprehensive long-term plan to act consistently over 10, 20 or even 30 years within such a volatile and interdependent context. The type of law that generates such political strategies and governs their implementation can be referred to as policy planning law (Reese 2020, Lammers 2023, Franzius 2023).

Policy planning laws already exist in EU and German legislation on climate protection and adaptation. This makes it possible to identify key regulatory modules that characterise this legal form: first, such a law contains one or more overarching policy goals and translates them into spatially, temporally, or sectorally specific targets—or obliges competent authorities (in the case of the NRL, the Member States) to set such targets within their jurisdiction. Next, it requires these authorities to plan the use of certain means to achieve these targets—such as the adoption of specialised legislation, the allocation of public funds, or the establishment of policy networks or information campaigns. These plans are to be updated in regular cycles and adapted to unforeseen events. In addition, policy planning law typically introduces monitoring cycles to assess whether the planned instruments are ambitious enough to achieve the targets and whether the plans are in fact being implemented. Where the monitoring reveals ambition or implementation gaps, specific enforcement mechanisms are provided. Finally, such laws often mandate periodic reviews of the law itself, to ensure it remains effective and fit for purpose even under changing circumstances. Given that transformative policy production within the EU unfolds across multiple levels of governance, policy planning law must itself be embedded within the multilevel structure of the Union.

In my presentation, I will first introduce the function and defining characteristics of policy planning law. I will then analyse the extent to which the NRL exhibits these characteristics— and the legislative innovations it contains in comparison with the EU Governance Regulation and the EU Climate Law. On this basis, I will invite the audience to discuss whether the NRL is well suited to its role of organising the production of nature restoration policies, and where improvements may be necessary.

Biography:

Marvin Neubauer studied law and philosophy at the University of Leipzig. From 2020 to 2023, he worked as a research assistant to the German Advisory Council on the Environment (SRU). He is currently pursuing his doctorate at the Helmholtz Centre for Environmental Research – UFZ in Leipzig, Germany, on the topic „Policy planning law as an instrument of sustainability transformation – an analysis using the example of legal policy planning in climate protection, climate adaptation, and biodiversity conservation".

Abstract 5.1.3

Interpretative paths for a coherent implementation of the Nature Restoration Law: lessons learned from the Nature Directives jurisprudence

Irene Sicignano, University of Bologna - Italy - University of Groningen - The Netherlands

Against the backdrop of a climate crisis, restoration of degraded ecosystems is deemed essential for the European Union ("EU") adaptation strategy.
The recently adopted Regulation 1991/2024, so called Nature Restoration Law ("NRL"), is characterised by an unprecedented holistic approach, integrating climate change and biodiversity loss as closely intertwined issues. The aim of securing interconnected and resilient habitats entails legally binding targets for Member States ("MSs") to restore natural components, particularly those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters. However, despite the legal instrument's nature, its ambiguous wording recalls the Birds and Habitats Directives (so called "Nature Directives") provisions. Within the Regulation's text, a significant margin of discretion is indeed left to national authorities as NRL's ambitious targets are not coupled with sufficiently stringent obligations, potentially hindering the achievement of its goals.
The contribution, focusing on subtheme 2), aims at investigating whether the EU Nature Restoration Law will succeed in facilitating more landscape-wide restoration efforts, contributing to the achievement of supranational climate change adaptation goals. To this end, it will examine tools offered by the EU legal order to ensure its application throughout Member States' territory is effective and coherent with the Union's objectives.
The contribution will thus address the approach followed by the European Court of Justice in guiding MSs use of their discretionary powers to grant EU law effectiveness in biodiversity-related cases. So far, Luxemburg judges, referring to EU environmental and general principles, have curbed behaviours aimed at pursuing national and short-term interests contrasting with the supranational biodiversity framework's objectives. Examples include, inter alia, sincere cooperation relevance in the designation procedure for Natura 2000 sites as well as scientific data importance for their identification; the importance of a transnational approach based on the precautionary principle when dealing with strictly protected species; the Court's extensive interpretation of Art. 6(2) of the Habitats Directive, with its obligation to prevent damage for protected habitats and species indirectly binding on MSs with regards to climate change adaptation.
In light of the foregoing, the following thesis will be presented:

The interpretation offered by the ECJ of the Birds and Habitats Directive provisions can be useful in strengthening NRL obligations for MSs, increasing ecosystems' climate adaptation capacity;

The precautionary principle, sincere cooperation duties and international law obligations (in particular, those stemming from the Bern and Bonn Conventions) represent a powerful toolbox to fill gaps in nature conservation law, ensuring resilient landscapes throughout the Union are preserved as an essential part of the supranational climate adaptation strategy;

An interpretative path of EU biodiversity law towards the realisation of a transnational cooperation model which can benefit present and future generations will be presented as grounded on the idea, enshrined in the Nature Directives, that biodiversity represents "a common heritage of European people".

Biography

Irene Sicignano is a third year PhD candidate at Alma Mater Studiorum - University of Bologna and visiting PhD candidate at the University of Groningen under the supervision of Professor Lolke Braaksma from February to August 2025. She conducts her research in the disciplinary field of European Union law, with a particular focus on the biodiversity conservation regime under the supervision of Professor Federico Casolari.
She is also a fellow of the National Biodiversity Future Center (NBFC), an Italian National Research and Innovation Center dedicated to biodiversity, funded through European Union funds – NextGenerationEU. Irene obtained her degree in 2022 from the University of Bologna, with a thesis in EU law dealing with corporate non-financial reporting, she also holds an LLM in International Business Law at King's College London.

Abstract 5.1.4

Systemic biodiversity litigation under the EU Nature Restoration Law

Laura Hildt, Ghent University - Belgium

The EU Nature Restoration Law (NRL) provides a significant opportunity to address the biodiversity crisis across ecosystems with key climate mitigation and adaptation synergies. Yet, the poor implementation track record of existing EU environmental legislation and first indications of a political reluctance to adequately implement the law suggest that litigation will likely be necessary to ensure the NRL delivers the intended climate and biodiversity benefits.

While climate litigation has grown rapidly in the last decade, there has so far been no parallel growth in systemic biodiversity litigation, notwithstanding the similarly broad scope and urgent nature of the biodiversity crisis. Biodiversity litigation to date has predominantly focused on specific protected sites, species or issues such as nitrates pollution, making cases narrower in scope and not addressing the biodiversity crisis more broadly.

This contribution argues that the NRL will, on the one hand, require litigation for its successful implementation and, on the other hand, provide an opportunity to further and broaden the field of systemic biodiversity litigation. It explores to what extent successful climate litigation approaches can be transferable to the NRL to expand the scope of biodiversity litigation. Due to the link between climate framework legislation and the growth in litigation, this contribution will analyse whether the NRL can be considered a biodiversity framework law to then focus on the transferability of climate framework litigation approaches.

Despite the inherent interlinkage of biodiversity and climate, the two continue to mostly be treated separately in strategic litigation. This contribution therefore also considers how nature-based climate adaptation litigation fits into this dichotomy and whether nature restoration could provide a bridge between climate and biodiversity litigation approaches in light of the strong climate mitigation, adaptation and biodiversity links.

Questions for discussion:

1. What lessons can be learnt from climate litigation for possible NRL litigation?
2. To what extent does the NRL constitute a framework biodiversity law? Is such framing helpful for the NRL's implementation and to tackle the biodiversity crisis?
3. How can possible future nature restoration litigation link legal strategies to address biodiversity as well as climate adaptation and mitigation?

Biography:

Laura Hildt is a PhD researcher on biodiversity litigation at Ghent University. She also works at the European Environmental Bureau as Senior Strategic Litigation Officer focused on agriculture. Prior to this role she worked on biodiversity policy and closely followed the early stages of the law-making process of the Nature Restoration Law.

Abstract 5.2.1

Nature-based solutions and water safety: legal opportunities and barriers for flood resilient landscapes in the Southwest Delta

prof. mr. H.K. Gilissen[1] and M.G. van Esterik

The Dutch Delta is in a water security transition. Rising sea levels are causing water to rise against dikes, dams and dunes, while subsiding soils are causing the land to sink. It can be asked whether the current approach of using engineering solutions is still the best choice and what alternative solutions are available. Nature-based solutions are increasingly recognised in European policy and law on climate change and biodiversity as the preferred alternative to engineered solutions.2 The recital of the Nature Restoration Regulation defines nature-based solutions as:

'solutions that are inspired and supported by nature, that are cost-effective, and that imultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. Nature-based solutions need to therefore benefit biodiversity and support the delivery of a range of ecosystem services.'[3]

A specific nature-based solution is a flood resilient landscape.4 Flood resilient landscapes aim to improve flood safety together with the ecological, economic and social quality of the landscape in the face of climate change.[5] A landward flood resilient landscape can consist of an inland double dike system connected to the sea to allow soil to build up through sedimentation. The sedimentation process takes decades, so the polder goes through different stages, from subtidal nand intertidal to vegetated foreshores that rise above the mean high water mark. The raised soil provides protection against dike breaches during storm surges, reducing the risk and effects of flooding in the hinterland.[6] Flood resilient landscapes can provide various ecosystem services can be provided during the transition process, like aquaculture, recreation and nature. The transition process can be represented as follows.

---

1 Mr. Mart van Esterik is a PhD Candidate at the Utrecht Centre for Water, Oceans and Sustainability law. Prof. mr. Herman Kasper Gilissen is a professor of Climate Change, Regulation and Deltas at the Delta Climate Center in Vlissingen and the Utrecht Centre for Water, Oceans and Sustainability Law.

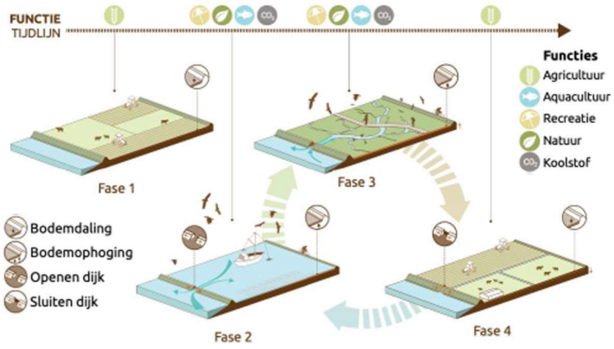
2 COM(2021) 82 final: COM(2020) 380 final: article 5(4) Regulation 2021/1119.

3 Recital (17) Regulation 2024/1991.

4 D. Verstand and others, Nature-Based Solutions Catalogus. Een Uitwerking van 10 NbS Categorieen in de Nederlandse Situatie, Wageningen: Wageningen Environmental Research 2024.

5 T. Terpstra and others, 'Flexible Deltas A historical and future perspective on the societal value of flood resilient landscapes in the Southwest Delta', DCC Research Proposal 2024.

6 K. van den Hoven and others, 'How natural foreshores offer flood protection during dike breaches: An explorative flume study', Estuarine, Coastal and Shelf Science 2023/294. J. van Belzen, G. Rienstra and T. Bouma, Dubbele dijken als robuuste waterkerende landschappen voor een welvarende Zuidwestelijke Delta, NIOZ Royal Netherlands Institute for Sea Research: Yerseke 2021: Z. Zhu and others, Historic storms and the hidden value of coastal wetlands for nature-based flood defence. Nature Sustainability 2020/3, p. 853-862.



The Delta Climate Climate Centre in Vlissingen has started a multi-year transdisciplinary research project development on flood resilient landscapes to help adapt the Southwest Delta to sea-level rise and increasing risks of storm surges, drought, heat, precipitation.7 In our presentation, we will dive into some preliminary research findings of the legal dimension of flood resilient landscapes in the Southwest Delta.

In our presentation, we will look at questions like:

- To what extent a legal obligation can be derived from European water, climate and nature protection law to apply flood resilient landscapes?
- What extent allows European nature conservation law allows for the use of temporary and dynamic nature?
- What are the legal opportunities and barriers when implementing and managing flood resilient landscapes in the Southwest Delta?

Our presentation relates to the themes of the 12th European Environmental Law Forum conference on climate and disaster law and biodiversity, water and nature restoration law. In our presentation, we will look at the obligations and conditions arising from European water, climate and nature restoration law on nature-based solutions for water safety. We will look at an innovative climate adaptation measure that aims to contribute to strengthening the resilience of the Southwest Delta, and we will outline the legal opportunities and obstacles presented by Dutch law.

Biography:
Mr. M.G. (Mart) van Esterik is a PhD candidate at the Utrecht Centre for Water, Oceans and Sustainability law at Utrecht University. He has obtained an LL.M in Administrative and Constitutional Law at Utrecht University. His research focuses on the role of the law in realizing and sustainably maintaining nature-based solutions in Dutch delta.
Prof. mr. dr. H.K. (Herman Kasper) Gilissen is a professor of Climate Change, Regulation and Deltas at the Delta Climate Centre in Vlissingen and the Utrecht Centre for Water, Oceans and Sustainability law at Utrecht University. His research focuses on the question which contribution law can have in increasing sustainability and climate resilience of deltas, the Zeeland Delta in particular.

Abstract 5.2.2

Rethinking (and redesigning) EU and Dutch water law for a climate-resilient water system
Dianthe Verhoef, Open Universiteit - The Netherlands.

Traditionally, the Netherlands has been characterised as a 'wet' region. When water caused problems, it was usually due to an excess of it. Consequently, traditional water management practices have focused primarily on draining wet soils and quickly discharging surplus water to the sea to prevent flooding. Climate change, which increases the frequency of extreme rainfall events, is expected to raise the risk of flooding. At the same time, it is also causing the Netherlands to face a relatively new phenomenon: prolonged drought. As a result, it is increasingly likely that there will not be enough water everywhere for everyone.

One potential solution that addresses both flood prevention and water scarcity is to increase the retention and storage of water during periods of heavy rainfall and utilise it during dry spells. Various measures to implement this dual-purpose strategy are already being undertaken by both governmental and private actors. These include retaining water in watercourses, the subsoil (such as in freshwater lenses and sponge landscapes), and in surface water bodies like the IJsselmeer. Partly due to the fact that Dutch water law has historically been based on the premise of sufficient or even an excess of water, uncertainty persists regarding the current legal implications of these measures and how the law can facilitate or even encourage their implementation. Therefore, I would like to discuss the following questions with the audience:

- What are the legal implications of water retention and storage in relation to water rights and allocation?
- In what ways can EU and Dutch water law facilitate and promote the development of a climate-resilient water system?

Given the transboundary nature of water and the shared challenges many countries face, discussing my preliminary results at an international conference will provide valuable perspective

Biography
M.D. Dianthe Verhoef is a PhD candidate at the Open Universiteit, where she is working on a dissertation exploring (collective) water rights from both private law and public law perspectives. Her research is supervised by Prof. Marleen van Rijswick and Prof. Pernille van der Plank. Dianthe's research is part of the interdisciplinary NWO project "Upscaling Private and Collective Water Storage for Robust Agricultural Systems (UPWAS)."

Abstract 5.2.3

Good groundwater status according to WFD: A "climate-proof" framework?
Omid Bechmann, Leipzig University - Germany

This contribution addresses the question whether the WFD as the primary source of EU water law already compels EU Member States to adopt a "climate-proof" water-management approach. To this end, it examines the good quantitative status as the most critical environmental objective of WFD in the context of addressing groundwater scarcity in a changing climate.
Groundwater constitutes the primary source of drinking water in the EU, making its protection and sustainability essential. However, climate change poses a significant threat to this resource by altering precipitation patterns in terms of quantity, seasonality and type, as well as influencing evaporation rates and soil conditions. Consequently, the question of whether the good quantitative status can contribute to a climate resilient water management is of paramount importance.

According to Art. 4 (1)(b) (ii) WFD the Member States are required to ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater status. This includes good quantitative status (Art. 2 (20) WFD) which stipulates that the level of the groundwater body must be such that the available groundwater resource (Art. 2 (26) WFD) is not exceeded by the long term annual average rate of abstraction (Art. 2 (28), Annex V, point 2.1.2 WFD). However, in Germany journalists analysed data from 6,700 monitoring points and found that, following the droughts between 2018 and 2021, half of these points recorded the lowest groundwater levels since 1990. Yet, in Germany only 4.7 % of groundwater bodies fail to achieve good quantitative status. How do these findings align?

To this end, the contribution analyses the legal framework to further define good quantitative status and conducts an in-depth analysis of Annex V point 2.1.2 WFD, including the corresponding CIS-Documents. This includes the methods used by groundwater management authorities to identify the available groundwater resource. These methods will be critically examined to determine whether they are "climate-proof". Furthermore, the WFD only addresses „anthropogenic alterations" of groundwater levels, which may undermine its goal of achieving sustainable groundwater levels in the era of an ever faster changing climate. Lastly, Annex V point 2.1.2 WFD refers to significant diminution and significant damage. But what exactly could constitute a significant diminution? After investigating these issues, I would like to discuss the following questions:

1. Can the identified problems be addressed without altering the WFD framework?
2. Can other legal frameworks, such as the Habitats Directive, the Nature Restoration Law, or the Drinking Water Directive, contribute to resolving the identified issues?
3. What are the experiences in other EU Member States?

Biography:
I completed my law studies in Hamburg (09/2014-05/2020), with a term abroad in Cape Town (07/-11/2016), and obtained my second state exam in Leipzig (11/2022). Since May 2023, I have been pursuing my doctoral studies under the supervision of Prof. Dr. Kurt Faßbender at Leipzig University. I am also a member of the Network of Competences on Future Challenges of Environmental Law (KomUR), a project funded by the German Federal Ministry of Education and Research.
My dissertation focusses on (mainly quantitative) groundwater management in a changing climate. When initially outlining my thesis, I began with the questions that I would like to explore further at your conference. By the time of EELF 2025, I aim to have completed my dissertation, and I would consider it an excellent opportunity to present (some of) my findings to a scientific public audience for the first time.

Abstract 5.2.4

Wastewater reuse: water circularity as a pathway to climate-proof water use?
Legal avenues for the transition to circular water management

Aster Veldkamp[1]; Ida Mae de Waal [1], (1)Utrecht University Centre for Water, Oceans and Sustainability Law (UCWOSL)

An average of 45.000 liters of water per capita is being supplied to households in Europe each year. This water mostly ends up in sewage systems, where it is being treated. Sewage treatment removes contaminants from wastewater, which results in a solid fraction ('sludge') and a watery fraction ('effluent'). This last mentioned fraction can be discharged into the environment or can be reused.

Wastewater contains several valuable materials, such as kaumera and struvite, which can be reused in various sectors. Wastewater in itself is also a valuable resource, given that water scarcity is becoming an increasingly pressing issue due to climate change. Therefore, wastewater reuse, or circular water management, can contribute to solving water scarcity as well as to solving resource scarcity of raw materials.

Circular water management is not only in line with the EU's transition towards a circular economy (CE), being one of the main building blocks of the EU Green Deal, but can also serve as a pathway to climate-proof water use. Looking at the current EU legal framework, recent developments show an increased focus on circular water management. For example, the Regulation on minimum requirements for water reuse (Regulation (EU) 2020/741) aims to increase the safe reuse of treated effluent for agricultural irrigation. In addition, the revised Urban Waste Water Treatment Directive (Directive (EU) 2024/3019) imposes stricter obligations for the treatment of urban wastewater, among other things by introducing extended producer responsibility for urban wastewater. At the same time, literature and questions from practice indicate that the current legal framework still poses barriers to the reuse of wastewater and, thus, to the realization of CE and climate objectives.

This paper therefore aims to examine to what extent the EU legal framework on water relates to and enables the transition to a circular and climate-proof approach to (waste)water management. Does the current legal framework on water provide sufficient guidance and incentives to initiate the transition to wastewater reuse or can legal barriers be identified? Through which (additional) legal instruments can wastewater reuse be stimulated? And, more broadly, to what extent does the current legal framework align with approaches that have been deemed to be intrinsically linked to circularity, such as life cycle thinking and coherence?

This paper fits well within the theme of the 12th EELF Conference, as it focuses on the legal developments within EU water law that are in line with the transition to circular water management. More broadly, circular water management can contribute to the protection of biodiversity, to the achievement of zero pollution and to the adaptation to climate change. The paper specifically relates to sub-theme 2, as it focuses on the extent to which EU water law facilitates the transition to circular water management as a pathway to climate-proof water use.

Biography

Mr. dr. Aster Veldkamp is Assistant Professor in environmental law. She is a senior researcher at the Utrecht University Centre for Water, Oceans and Sustainability Law (UCWOSL). Aster has a broad knowledge of European and national environmental law, with a focus on water law, waste law, circular economy, recovery of raw materials and energy from (waste) water and the use of the instruments of the new Environment and Planning Act (Omgevingswet).

Dr. Ida Mae de Waal LLM is Assistant Professor of EU and Dutch Environmental Law at the Utrecht Centre for Water, Oceans and Sustainability Law (UCWOSL). She holds a PhD in Circular Economy and EU Environmental Law (2024, cum laude) from Utrecht University. Her dissertation, titled 'A Legal Framework for the Circular Economy in the European Union', examines the role of coherence within EU chemicals legislation, product legislation and waste legislation in light of the transition towards a circular economy.

Abstract 5.2.5

Watering the Hydrogen Dream: Legal challenges in Spain's hydrogen ambitions

Álvaro Martín Morán

Hydrogen is a key element in the EU's strategy to achieve net-zero emissions, with green hydrogen—produced via electrolysis using renewable electricity—at the centre of this effort. Spain has embraced this vision, aiming to become Europe's leading green hydrogen producer by 2030, with plans to install 12 GW of electrolysers. While much attention has been placed on energy supply, infrastructure, and funding, the role of water in hydrogen production is an increasing concern—particularly in a country like Spain, where water shortages are becoming more frequent due to climate change and where most river basins are currently under severe hydric stress.

Electrolysis requires significant volumes of high-purity freshwater, not only for splitting water into hydrogen and oxygen but also for cooling and purification processes. Producing 1 kg of hydrogen typically consumes 17.5–32 litres of water. At scale, this could strain water resources—producing 10 million tons of hydrogen, as envisaged by the Spanish Hydrogen Strategy, would consume around 200 billion litres of water, equivalent to Madrid's annual water usage. Moreover, to ensure financial viability, high-quality freshwater resources are preferred, putting industrial hydrogen production in competition with other water uses.

Spain's complex water regulation reflects its territorial structure and resource scarcity. The main legal framework, the 2001 Water Act (TRLA), regulates water use through a concession system, classifying hydrogen production as an industrial use with relatively low priority. Each river basin authority—either a national hydrographic confederation or a regional agency—grants concessions and drafts hydrological plans. These plans, updated every six years, define water use priorities and reserves, and can override national preferences. Despite the overarching national framework, implementation varies significantly across Spain's 26 basin plans. While the origin of the water (surface, underground, or desalinated) does not alter the legal procedure, it can affect the technical and administrative aspects of the application.

The aim of this presentation is to provide an analysis of whether Spain's water management legal framework can reconcile the growing water demands of green hydrogen production with the preservation of hydric reserves. To do so, I will examine the legal instruments that establish hydrogen production targets at both EU and Spanish levels and compare these goals with the complex realities of Spain's water governance. While the system's complexity may deter investment in hydrogen technologies the remaining question is whether the regulation will be enough for the preservation of water resources.

1) Are Spain's Hydrogen ambitions compatible with its availability of water resources?
2) To what extent does Spain's decentralized water governance system enhance the effectiveness of water resource management in this case?

This topic fits better on the 2) topic: Biodiversity, water and nature restoration law. As it approaches the conflict between The EU push for renewable hydrogen as a decarbonisation tool in direct conflict with water supply and management. Alternatively, it could also fit on topic 8) as water regulation offers multiple opportunities for adaption towards climate change.

Biography:

Álvaro Martín Moran, Holds a BA in French and Spanish law by Paris 1 and the Complutense. He holds a MA in European Governance from Sciences Po Grenoble, a MA on European Studies by the University of Salamanca and a MA in European Interdisciplinary Studies from the College of Europe in Natolin. His previous work experience includes 3 years as an Academic Assistant at the College of Europe in Natolin. Currently he is a PhD candidate at the University Rovira i Virgili as part of THERESA project. His research involves the regulation of Hydrogen within the circular economy.

Abstract 5.3.1

Proportionality in Environmental Sanctions

Tadesse Tesfaslassie Tekle, Hasselt University - Belgium

Illegal logging poses a significant threat to global climate stability and biodiversity. It is a primary driver of deforestation and forest degradation, contributing significantly to global warming and climate change. Forests play a crucial role in mitigating climate change by absorbing carbon dioxide from the atmosphere. However, the destruction of forests through illegal logging releases stored carbon dioxide, exacerbating climate change. Furthermore, illegal logging leads to a loss of biodiversity, threatening species survival and ecosystem resilience and causing a range of environmental, economic, and governance challenges. On top of that, illegal logging is a significant barrier to effective climate adaptation because it undermines the natural ecosystems and local communities that are crucial for resilience. Tackling illegal logging is, therefore, essential for supporting both global and local climate mitigation and adaptation strategies. These pressing issues highlight the need for stronger enforcement of forestry laws, sustainable management practices, and international cooperation to combat illegal logging and ensure compliance with forest protection laws.

The EU Deforestation-Free Regulation (EUDR), introduced in May 2023, aims to address deforestation issues and promote global forest protection. While the EUDR has yet to come into effect, past experiences with its predecessor, the EUTR, highlight the importance of enforcement. The lack of effective implementation of the EUTR was underlined by the inclusion of the EUDR in the new Eco-crime directive's scope. Therefore, ensuring robust enforcement of the EUDR and fostering compliance is crucial for safeguarding forests worldwide and, thereby, climate mitigation and adaptation. One approach for Member States to encourage compliance is by imposing sanctions.

While Member States have discretion in selecting the type of sanctions to impose in the absence of harmonisation of EU legislation in the field of applicable penalties, they must adhere to general EU principles, including the proportionality principle. This research explores the meaning and application of the proportionality principle as interpreted by the European Union Court of Justice (EUCJ) in relation to environmental sanctions. In doing so, it seeks to answer the following questions:

1. How is the proportionality principle defined or understood by the EUCJ in the context of environmental law and sanctions?
2. What criteria or factors does the EUCJ consider when determining the proportionality of a sanction in relation to illegal logging or forest protection violations?

Subthemes: EU Environmental Law, Proportionality in Sanctions, International Environmental Protection, Enforcement of EU regulations

Biography

TADESSE TESFASLASSIE Tekle is a Ph.D. researcher at Hasselt University working on Environmental Law. Mr. Tekle is writing his dissertation on Illegal Logging in Europe: A Compliance Analysis Building on the EUDR.
In his presentation, Mr. Tekle discusses the principle of proportionality as understood and interpreted by the EUCJ in environmental sanctions, bringing the audience to rethink and debate their understanding of the principle of proportionality.

Abstract 5.3.2

Causality in climate lawsuits against a European state by falling short of timely implementing the necessary adaptation measures

Filipa Calheiros Ferraz, Faculty of Law of Universidade Católica Portuguesa - Portugal

Establishing causality in climate litigation, as a strategic litigation, represents one of the most current critical and complex challenges. Claimants seeking to hold states liable for adverse impacts on climate change must demonstrate a direct causal link between the state actions or inactions and the adverse impacts of climate change.

Researchers have been able to connect specific climate adverse impacts to scientific evidence. Nonetheless, using these findings in court to establish the causal link is not an easy task, particularly when it comes to a state's domestic liability. In fact, one thing is knowing that adverse impacts of climate change are caused by the rise of greenhouse gas emissions, another is to demonstrate the causal link between that rise and a particular state. Issues such as the pollution caused by multiple actors and the diffuse nature of climate impacts worldwide also hinder the establishment of the causal link.

The understanding of causality's role in climate litigation promotes the development of effective legal strategies to address the adverse impacts of climate change, to compel states to adopt more rigorous climate policies aligned with the objectives of the Paris Agreement.

We will address climate justice and tort law, focusing on if it is possible to hold a State liable for not doing enough to protect their own citizens against climate disasters, by falling short of timely implementing the necessary adaptation measures, from the causality perspective.

The following questions will be discussed with our audience:

a) How can scientific findings be balanced with the legal burden of proof required to establish causality in climate litigation lawsuits against a state?
b) Besides scientific evidence, are there any other possibilities that can contribute to the establishment of causality?
c) What role do international human rights frameworks play in strengthening causality arguments in cases where states fail to adapt adverse climate impacts?

We will start by elaborating on scientific evidence's use by courts and discuss how it can be balanced with the rules of the burden of proof. Courts have already used climate science, including International Panel on Climate Change (IPCC) reports to demonstrate the link between greenhouse gas emissions and global warming, and in the Urgenda Foundation v. The Netherlands' decision, it was also decided that state's emissions contribute to climate change.

We will then assess if this is the only possibility to establish causal link, or if there are other means that can contribute to the establishment of causality, bearing in mind that climate litigation is a strategic litigation and that we are focusing on European states, part of the Paris Agreement.
We will also discuss the utility of international huma rights frameworks, such as the European Convention on Human Rights, in contributing to the establishment of the causal link in climate lawsuits against a European state by falling short of timely implementing the necessary adaptation measures.

Biography

Filipa Calheiros Ferraz is a PhD Student at Porto Law School of the Faculty of Law of Universidade Católica Portuguesa. She is a first year PhD student and the topic of her PhD thesis is about states liability in climate change adverse impacts. She has a Master in Administrative Law, with a master thesis in public procurement, and a Degree in Law, both from Porto Law School of the Faculty of Law of Universidade Católica Portuguesa. She is also an Associate Lawyer dedicated to Public Law and ESG at Abreu Advogados, in Portugal. She is dedicated, both as a lawyer and as a PhD student researcher, to public procurement, public litigation, climate law, ESG and administrative law.

Abstract 5.3.3

Stocktaking the best available science for bridging the evidentiary gaps in determining climate liabilities for loss and damage

Dr. Haomiao Du, Department of International and European Law, Utrecht University

In contrast to the currently rapid development of climate mitigation litigation with claims for setting mitigation targets of state governments and carbon major companies, the development of climate litigation with claims for compensating loss and damage (l&d) is much less behind. The main reason for this contrast lies in the availability of conclusive scientific evidence proving that loss and damage induced by climate change has already occurred or will occur and can be attributed to a state/a carbon major. To hold state governments or private companies accountable for climate change-induced l&d at a specific place, the causality examination need to go beyond proving the link between emissions and anthropogenic climate change impacts in general; evidences are needed for proving the causation between extreme climate events at a specific place and the emissions by a state/a company and for proving that the vulnerability of a specific place has been driven by climate change impacts rather than other internal reasons.

This presentation will first examine the key evidentiary gaps and associated debates related to l&d via recent climate cases. Then this presentation will discuss some latest scientific studies, such as attribution science, l&d modelling, climate tipping points, disaster forensics, etc. in terms of their added value and limitedness to filling the evidentiary gaps for l&d litigation. In addition, scientific studies could help define key legal terms, such as vulnerability, in the context of l&d. This presentation will also emphasize the importance of promoting open-access scientific evidence for the access to justice for victims of climate disasters in the Global South.

Questions to the international audience:

- What have been the main obstacles that hinder the advancement of climate adaptation and l&d litigation?
- What should be the criteria for defining the equitable and feasible liabilities of states and/or carbon majors for climate adaptation measures and l&d?

Biography

Haomiao Du is an assistant professor of climate law and sustainability, Department of International and European Law, Utrecht University. She is specialised in international and comparative climate law. Currently, her research interest lies in the interactions between climate science and climate law, especially the interpretation of climate scenarios and modelling results for climate policy and litigation.

Abstract 5.4.1

Short-term actions, long-term Impact: overcoming dilemmas of climate change adaptation through transformative nature restoration for sustainable transitions

Alexandra Aragão

Ideally nature restoration and climate change adaptation are mutually reinforcing goals. This potential symbiosis is present in the EU Climate Law (CL): "in their national adaptation strategies, Member States [MS] shall (...) promote nature-based solutions and ecosystem-based adaptation" (CL, article 5 n.4). In 2024, the EU Nature Restoration Law (NRL) goes even further by establishing climate change mitigation and adaptation as the second most important objective of all restoration efforts (NRL, article 1 b).

However, very often, instead of symbiosis, we find conflicts between climate change adaptation and nature restoration objectives. In such cases, the most obvious legal tool to address these complex challenges and dilemmas is the *do no significant harm principle* (DNSHP, detailed in the technical guidance C/2023/111). Yet, a mechanistic application of this principle, based on narrow assumptions, can lead to undesirable results. Permitting river dams as water reservoirs for irrigation of *avocados in the desert* [1], constitutes a violation of the

[1] https://tomorrowalgarve.com/dec-2021-fruit-friction/
https://voxeurop.eu/en/avocados-spain-portugal-climate-change/

DNSHP. What is worse, it is a violation of the high level of environmental protection and the no regression principle (European Charter of fundamental rights, article 37).
If "MS shall also ensure that policies on adaptation in the Union and in MS are coherent, mutually supportive, provide co-benefits for sectoral policies, (…)" (European Climate Law, article 5 n.3), and there are tools designed to balance possible development options and to deliver sustainable outcomes (SEA, EIA, environmental permitting) what, then, is wrong in the process?

The inconsistency comes from not considering the effects of climate adaptation strategies in the long run. Climate adaptation strategies that are merely palliatives that contribute to prolong unsustainable production and consumption models while generating adverse effects on several regulation ecosystem services should not event undergo the DNSHP test.

The pitfall is ignoring the duty to trigger transformational change in the medium and long-term. Actually, engaging in systemic reforms is an ethical imperative since the 2019 European Parliament declaration of climate and environmental emergency[2] and, most of all, it is a legal duty since the European Green Deal: "the EU has the collective ability to transform its economy and society to put it on a more sustainable path. (…) It will require massive public investment and increased efforts to direct private capital towards climate and environmental action, while avoiding lock-in into unsustainable practices".

In fact, the duty to consider long term transformations is the core of the NRL (preamble, §2). Besides, the national restoration plans must include "an indication of the provisions for ensuring the continuous, long-term and sustained effects of the restoration measures" (NRL, article 15 (q) and must consider the long-term strategies for climate action, with a perspective of at least 30 years (Regulation 2018/1999, article 15).
The long-term vision is the definitive argument to abandon unsustainable farming practices and transform the production and consumption models, prioritizing nature restoration.

Thesis to be discussed with the audience

1. The duty to adopt climate adaptation measures cannot be separated from the duty to transform unsustainable practices
2. If not interpreted correctly, the DNSH principle can be a trojan horse for (un)sustainable climate adaptation measures
3. Balancing short term and long-term climate adaptation strategies requires decision-making parameters and guidelines that go beyond the DNSHP

Alexandra Aragão is Professor with a permanent post at the Faculty of Law of the University of Coimbra, Portugal, where she teaches environmental law, ecoliteracy, risk governance, food safety law and forest law. She is member of the European Natura 2000 and water observatory, of the Advisory Board of the EELF and trustee of the European group of environmental law experts, Avosetta. National expert for the elaboration of the Portuguese Agendas for Research and Innovation in Tourism and Circular Economy until 2030. Member of the Conflicts of Interest Committee of the United Nations IPBES between 2020 and 2024. She coordinates the interdisciplinary network "JUST-Side - Territorial Justice and Sustainability through spatial data infrastructures", is co-founder of the Legal Working Group of the European Chapter of the Society for Ecological Restoration and Ambassador for SDG 16 of the Portuguese Partnership for the Global Compact.
Personal page: alexandraaragao.online

[2] Resolution of 28 November 2019 on the climate and environment emergency (2019/2930(RSP))

Abstract 5.4.2

"LIVING WELL ON A FINITE PLANET: A multidimensional systems approach to sustainability"

Rosalind Malcolm, University of Surrey; Roland Clift,University of Surrey & University of British Columbia; George Martin, Montclair State University; Simon Mair, University of York

This presentation will explore how the legal system can aid the social and economic changes needed to achieve a sustainable society that recognises the finite resources of the planet, enables lives that are not merely tolerable but fulfilling and ensures that all living creatures flourish. Living well within ecological limits is a familiar objective, but this contribution is unusual in developing a coherent system-based approach combining different perspectives: industrial ecology and engineering, sociology, ecological economics, and environmental law.

The system approach is essential. The biosphere is a natural system, where all living things are interrelated. How societies are organised and their impacts on the biosphere must be seen as a system: sustainability is a system property and sustainable development is a process of system change. We look beyond the crises of climate change, pandemics and austerity and the delusion that technological developments can enable "business as usual" to continue with minor changes in practice and behaviour, to develop a systems approach incorporating themes such as "circular economy", "doughnut economics", and "the just transition". This leads to a set of priorities to guide the change to a sustainable society. We explore how far this shift can occur within the current economic system, what fundamental changes are needed, and the essential role of the legal system in driving those changes. Key themes are:

- Focus on stocks of goods and infrastructure within the economy, rather than on the financial value of goods and services flowing through the economy.
- Change business practices to focus on efficient use of resources to deliver social benefits and enhance well-being, rather than on generating financial profit.
- Promote social equity as a core element of sustainability, with labour seen as both a renewable resource and a social benefit rather than an economic cost.
- Rethink the legal basis for regulating economic activities to apply a system approach, bringing together property law, recognition of rights of nature, and organisation of business institutions and product life cycles.

Questions for an International Audience:

1. The existing legal system is inherently anthropocentric, set up to protect private property rights and facilitate exchanges via markets. How can it be redrawn to drive structural change from a linear to an equitable and resource-efficient society?
2. Would a different normative basis such as regarding the earth as a 'common treasury' with nobody and nothing excluded represent the necessary paradigm shift, from an anthropocentric to an ecocentric basis, prioritising protection and conservation of nature with natural entities granted legal standing?
3. Promoting retention of goods as stock in the economy requires the legal system to adopt a system approach, regulating business practices and the lifecycles of goods rather than stages in the lifecycle, with more legal force given to such measures as whole life Extended Producer Responsibility and 'right to repair'. Would this be achieved by placing the environment ahead of shareholders so as to create space for a significant shift with alternative business models to companies playing a central role in provisioning systems?
4.

Biography

Rosalind Malcolm is a Professor of Environmental Law at the University of Surrey and looks at the ways law can be used to protect the environment through building an economy where stocks of goods are maintained rather than being allowed to flow into the environment. She investigates whole governance frameworks for environmental law including not just the legislation but policy, implementation, enforcement and compliance as well as the impact of property rights. Her work is interdisciplinary as she believes that we will not solve the problem of the degradation of the earth unless we work across disciplines seeking solutions together. She co-directs the Surrey Centre for International and Environmental Law which is a research grouping of individuals and organisations engaged in research, teaching and consultancy into environmental regulation, compliance and enforcement. She is a fellow of the Institute for Sustainability.

Abstract 5.4.3

Ecological modelling- a crucial tool in the planning and implementation of climate adaptation strategies

Natalie Harris

It is evident through commitments of international climate change legislation and targets within government policy documents, that a shift to renewable energy will play a pivotal role in combatting the climate crisis. The EU Climate Adaptation Strategy also identifies the role renewable energy will have in climate resilience through enhancing energy security. As a result, within the North Sea, green hydrogen production produced by wind-powered saltwater electrolysis is being endorsed by governments as a renewable energy carrier. Currently wind-powered saltwater electrolysis is not conducted on a commercial scale, therefore, scaling up this production technology will undoubtedly need supporting legal frameworks on an international, European and national level to ensure its sustainability and prevent adverse effects to the local receiving environments.
My contribution will discuss how using predictive modelling of the ecological impacts of wind-powered saltwater electrolysis on North Sea biota, can be used to critically analyse existing legislation regulating renewable energy and green hydrogen production. Legislation will be analysed for its robustness to handle future expansion of this technology, following this, legal reform and enactment of new laws can be suggested. Environmental regulation such as planning law, pollution control and biodiversity restoration law will be paramount to support this transition.

Related subtheme:
This work falls within theme 9: Multidisciplinary themes. This research clearly demonstrates how science is crucial in aiding the planning and implementation of climate adaptation strategies so that government plans and targets are evidence-based. It also highlights the importance of science to ensure future climate adaptation legal frameworks protect environments on a local scale, ensuring the push for climate adaptation and resilience does not hinder other crises such as the biodiversity crisis, guaranteeing other key areas of nature conservation are not neglected.

Questions
1. How can existing European and international environmental law frameworks be strengthened to regulate the ecological impacts of emerging renewable energy technologies, such as wind-powered saltwater electrolysis, at a commercial scale?

This question invites critical evaluation of the adequacy of current laws and treaties, such as the EU Climate Adaptation Strategy, EU Renewable Energy Directive, the Habitats Directive, and the OSPAR Convention, in light of future technological deployments.

Abstract 5.4.4

Justice for Providers: Rethinking Payment of Ecosystem Services for Systemic Change

Varnika Srivastava, University of Antwerp - Belgium

The "Leave no one behind" policy of the EU advocates for systemic change to address increasing inequality and exclusionary development. However, academic literature has highlighted that marginalized groups, such as many rural communities, risk exclusion within this call for systemic change, despite being the furthest behind. This paper highlights the potential for a climate finance mechanism, Payment for Ecosystem Services (PES), to enable systemic change.

Payment for Ecosystem Services (PES) has become more and more prominent in the last decade for financing various climate initiatives. However, academic literature highlights that PES programs often fail to address increasing inequality and instead promote exclusionary development. Focusing on Southwest Flanders, a region marked by contentious relationships between farmers and policymakers, this study explores the systemic reasons for perceived injustices among farmers and the role PES can play in either exacerbating or mitigating these perceptions.

Policymakers target farms for biodiversity initiatives, but farmers are unwilling to adopt these initiatives due to perceptions of anti-farming policies. Using the evaluative framework of social and reparative justice, this paper uncovers historical reasons for perceived injustices and examines how these perceptions lead to hostility between stakeholders and how that can be changed. It proposes carefully planned climate finance mechanisms like PES as tools for systemic change, illustrating that farmers are more open to PES and have good views if there are flexible contracts, which absent in many PES schemes.

We conduct semi-structured interviews with farmers to understand their perceptions and how a proposed PES scheme can help correct them. The paper provides recommendations for policymakers on creating more effective, equitable, and sustainable policies that contribute to transformation. By addressing and acknowledging various stakeholder perspectives and incorporating social and reparative justice into policies, policymakers can better address historical power dynamics. This paper broadens our understanding of PES and its role in addressing perceptions of injustices.
Some questions that this abstract answers and thus can be used to engage an international audience are:

1. How do historical power dynamics and perceptions of injustice shape the adoption of different climate initiatives?
2. How can policy makers reconcile these differences to create better policies?

Biography:
Varnika finished her Masters in Sustainable Development from KU Leuven in 2021. Following that, she worked in EUCC-D, Rostock, Germany, in coastal management and marine governance and then in Brussels at the Global Enabling Sustainability Initiative, a non-profit in the field of digital sustainability.
From September 2023 onwards, Varnika has been doing her PhD on the topic of Payment of Ecosystem Services and social justice. Her research focusses on PES projects and how the risk and benefit sharing of these projects can be uneven. She is also working on the Horizon Europe project CLIMATEFIT, which aims to develop new financial and investment schemes for climate adaptation projects and planning.

Abstract 5.4.5

Responding to climate adaptation challenges: The role of EU energy law and potential regulatory pathways

Ting Chen, Frederik Vandendriessche, Angelo Goethals, Ghent university - Belgium

As the impact of climate change intensifies, the resilience of the European Union's energy system faces increasing threats from extreme climate events. These events can affect all major segments of the energy system, including disrupting generation, straining transmission and distribution networks, driving fluctuations or surges in energy demand, and increasing market price volatility. Facing the growing risks to the security of supply and sustainability of the energy system, a key issue arises as to how EU energy law should adapt to climate change and enhance its resilience to extreme climate-related events.

EU energy law has long focused on climate change mitigation, as evidenced by intensified efforts to accelerate the deployment of renewable energy. In contrast, the growing need for climate change adaptation has received comparatively less attention in both legislation and academic research. To contribute to addressing this gap, this research will discuss the role of energy law in adapting to climate change and explore key legal and regulatory reforms to support a more climate-resilient energy system. Due to its focus on EU law's gaps in responding to climate adaptation challenges, this research best fits into the subtheme 8 'Opportunities and hurdles for adaptation in law and governance'. Moreover, it is also relevant to subtheme 9 since it discusses how climate adaptation shapes the development of EU energy law, which indicates a noteworthy interface between environmental law and energy law.

In this research, we will mainly examine three legal questions. First, has the current risk preparedness regime in the energy sector sufficiently accounted for climate-induced disruptions? Second, how can the resilience of transmission and distribution systems to extreme climate events be strengthened? Third, have the state aid rules and EU-level funding mechanisms sufficiently aligned with resilience objectives? If not, what are the potential ways of refining them?

Biography

Frederik Vandendriessche is a part-time professor of Energy law at Ghent university, focused on energy contracts and the regulatory framework applicable to the energy sector. He has experience with on- and offshore renewable energy projects, energy efficiency projects, grid operation and construction, energy commodity trading. Frederik is the author of various publications on his areas of expertise and a regular guest speaker at seminars and conferences. He is also a lawyer active in the field of energy law and public law.

Ting Chen is an energy law PhD researcher at Ghent University. Her research areas include renewable electricity promotional law, electricity market regulation and grid regulation. Her PhD dissertation examines legal approaches to adapting the role of energy consumers to facilitate the uptake of renewable electricity.

Angelo Goethals is a part-time energy law postdoc researcher at Ghent University Ghent. His PhD and postdoc research relate to the legal framework for the connection, interconnection, and transmission of Belgian offshore wind farms and multiple use of offshore wind farms. He is moreover a lawyer, specialised in energy law.

Parallel sessions 6 – Friday 12 September 9:00-10:30

Abstract 6.1.1

Climate adaptation in transboundary biodiversity cooperation schemes: strategies and measures to tackle climate-related challenges in the Julian Alps case

Dr. Federica Cittadino, Eurac Research, Institute for Comparative Federalism, Italy

Climate change is producing evident consequences on Alpine environments: reduction of endemic habitats and species, reduced water availability, melting glaciers, and increased risk of natural hazards. Transboundary cooperation in the field of biodiversity protection is an important governance scheme for the protection and management of healthy habitats and species, which in turn are fundamental for climate adaptation to these new conditions.
Nature does not know borders, and species naturally cross national borders to be able to meet their reproductive and nutritional needs – more so due to the loss of habitats and climate change. Similarly, natural habitats do not stop at national borders and usually need transboundary strategies to both aim for effective protection and ensure their resilience to changing climate conditions. In this context, transboundary biodiversity protection allows for the full consideration of these protection needs and – this presentation argues – the preservation of resilient habitats that allow for successful climate adaptation.

One significant example of this type of cooperation in Europe is the newly established Julian Alps Transboundary Biosphere Reserve (JATBR). The JATBR is a UNESCO MAB reserve that aims to pursue sustainable development at the border between Italy and Slovenia. The reserve builds upon the cooperation consolidated since the late 1990s between two parks, the Prealpi Giulie Natural Park, a regional park in Italy, and the Triglav National Park in Slovenia, and their corresponding national biosphere reserves. In the framework of this semi-formalized cooperation, joint planning has evidenced an increased attention to coordinated actions aimed to tackle climate change, including in the field of climate adaptation.

By focusing on this case study, this presentation will explore how the transboundary cooperation scheme implemented in the JATBR addresses climate change including climate adaptation. Relevant examples include: the sharing of monitoring data about the status of species and habitats, transboundary wildlife management strategies, adaptive management of landscape and species, as well as carbon neutrality objectives. This presentation will conclude that transboundary biodiversity protection has important implications for climate adaptation and will identify areas and mechanisms where this cooperation could be intensified to mutually reinforce the biodiversity-climate nexus.

The questions explored in this presentation to be discussed with the audience are the following:

1) Is transboundary biodiversity protection in the Julian Alps contributing to climate adaptation and in which ways?
2) Which are the institutional characteristics that allow for climate adaptation to be addressed in transboundary contexts?

Biography

Dr. Federica Cittadino (PhD, University of Trento 2017) is Senior Researcher in Environmental Law and Policy at the Institute for Comparative Federalism, Eurac Research, Bolzano, Italy. She is the principal investigator and project leader of 'TRANSboundary governance models of biodiversity protection: case studies for an enhanced protection of NATURal resources in Europe – TRANSNATURE' (Biodiversa+ call 2021-2022). She is an expert of the multilevel governance of climate change, biodiversity, and the actors of global environmental governance. She is the leading editor of 'Climate Change Integration in the Multilevel Governance of Italy and Austria' (Brill 2022) and the author of 'Incorporating Indigenous Rights in the International Regime on Biodiversity Protection' (Brill 2019).

Abstract 6.1.2

On fire? Gaps in Transboundary Governance of Biodiversity Clusters in Europe. The Case of Wildfire Prevention in the Meseta Ibérica TBR

Maria Marques-Banque, Endrius Cocciolo, Jordi Jaria-Manzano, Alexandre Moreno-Urpí, Monica Pons-Hernandez, Universitat Rovira i Virgili, The Tarragona Centre for Environmental Law Studies (CEDAT)

The European Groupings of Territorial Cooperation (EGTCs), acting as a unique institutional framework for joint management, may play a significant role in advancing transboundary biodiversity governance and climate adaptation, which should play a crucial role in a such a fragmented political space as Europe is. This paper focuses on the Meseta Ibérica Transboundary Biosphere Reserve, straddling the Spanish-Portuguese border and managed through the ZASNET EGTC, particularly regarding wildfire prevention and response. As climate change accelerates, wildfires are becoming more frequent and intense across Southern Europe, causing irreversible biodiversity loss, threatening local populations, and undermining ecosystem resilience. Transboundary natural areas are distinctly sensitive to these impacts as far as fragmented and inconsistent legal frameworks and insufficient joint governance structures typically hinder coordinated responses. Against this backdrop, wildfires serve as stress tests for the effectiveness of cross-border environmental governance. Even if ZASNET do not play a direct role in wildfire governance, fieldwork conducted within the TRANSNATURE project has identified wildfires as a pressing concern among local and regional stakeholders, and a key challenge for biodiversity protection in the area. For this reason, ZASNET is a significant case of the problems confronted by transboundary governance regarding actual and pressing environmental problems in transnational biodiversity clusters.

This contribution is part of the TRANSNATURE project, funded under the Biodiversa+ 2021 Call “Supporting the protection of biodiversity and ecosystems across land and sea”. The project is coordinated by EURAC Research and carried out in partnership with Ghent University, the University of Lapland, and the Universitat Rovira i Virgili. It investigates transboundary governance models for biodiversity conservation in Europe through comparative case studies and empirical legal research. In this paper, we present the results of our case study on the Meseta Ibérica Transboundary Biosphere Reserve and the ZASNET EGTC, based on interviews with local and regional stakeholders and document analysis. While the broader project includes three other case studies in different European regions, our focus here is on the Iberian case, where wildfires have emerged as a central concern for both biodiversity protection and climate adaptation.
Research questions: The paper seeks to address the following research questions: to what extent can an European Groupings of Territorial Cooperation (EGTC) function as effective institutional frameworks for aligning biodiversity conservation with climate adaptation strategies across borders; whether ZASNET EGTC is primarily an instrument of environmental governance or also serve broader political, economic, or strategic interests beyond biodiversity conservation; and what legal, institutional, and practical barriers constrain the capacity of cross-border governance structures to address complex environmental risks such as wildfires, drawing on lessons from cases like the Meseta Ibérica Transboundary Biosphere Reserve.

Biography

Maria Marques-Banque is Associate Professor of Criminal Law and researcher at the Tarragona Centre for Environmental Law Studies (CEDAT) at Universitat Rovira i Virgili (URV), Tarragona, Catalonia-Spain. Her research interests are focused on environmental crime, wildlife crime, transnational crime, EU criminal law, sentencing and domestic criminal law. She has been visiting researcher at the Max Planck Institut für internationales und ausländisches Strafrecht, Freiburg im Breisgau (Germany); the Faculty of Law of the University of Technology, Sydney (Australia); the Institute of Marine and Environmental Law (IMEL) at the University of Cape Town (South Africa), and the Asian-Pacific Centre for Environmental Law at the National University of Singapore (Singapore). She is currently Director of the Department of Public Law and Director of the Environmental Law Clinic at URV.

Endrius Cocciolo is Associate Professor of Administrative and Energy Law at Universitat Rovira i Virgili (URV), Tarragona, Spain. He is the Academic Director of the Interuniversity Master of Law in Public Administration, URV - Universidad de Zaragoza. Endrius is Researcher at the Tarragona Centre for Environmental Law Studies (CEDAT) and the University Institute for Research in Sustainability, Climate Change and Energy Transition (IU-Rescat). He also serves as Co-Chair of the Research Committee at the International Union for Conservation of Nature – Academy of Environmental Law (IUCN-AEL) and as a Member of the Managing Board of the European

Environmental Law Forum (EELF). He is currently the coordinator of a Horizon MSCA Doctoral Network project on hydrogen regulation and of a project of the Spanish Ministry of Innovation on energy communities.

Jordi Jaria-Manzano obtained his PhD at the Universitat Rovira I Virgili, with European Distinction and awarded with the PhD extraordinary prize. He is now Head of the Department for Dissemination and Communication, at the Institute for Self-Government Studies (Government of Catalonia). He was editor of the *Revista Catalana de Dret Ambiental* (Catalan Journal of Environmental Law) between 2009 and 2017. Since 2021, he is editor-in-chief of the *Revista d'Estudis Autonòmics i Federals – Journal of Self-Government*. He has participated in several research projects about environmental law, environmental justice and global constitutionalism, as well as regarding the territorial distribution of power and legal pluralism. Now he is focused on the legal and political implications of the transition to the Anthropocene. He has authored more than 150 publications, including articles, monographs, contributions to edited books and research reports.

Alexandre Moreno-Urpí holds a Bachelor's degree in Law, a Master's degree in European Integration (2014) and a PhD in Law (2019) at the Autonomous University of Barcelona (UAB). Currently, he is member of the research group "Territory, Citizenship and Sustainability" (TCS), recognised as a consolidated research group by the government of Catalonia and he is member of the Tarragona Centre for Environmental Law Studies (CEDAT). He combined different contracts as a visiting professor at the University of Girona between 2020-2022 and the Universitat Rovira i Virgili since July 2022. His research interests are focused on international and European law, criminal cooperation, trafficking in human beings, environmental law, wildlife trafficking and human rights.

Monica Pons-Hernandez is an MSCA SEAS Postdoctoral Research Fellow at the Universitet i Bergen (Norway). She holds a PhD from the Universitat Rovira i Virgili, a bachelor's degree in Criminology from the University of Barcelona and a master's (MSc) in Transnational Crime, Justice and Security from the University of Glasgow. In 2022, she received the Young Researcher Award from the Spanish Society of Criminological Research and, in 2023, the Graduate Student Paper Award from the American Society of Criminology Division on Critical Criminology and Social Justice and the Student Paper Award from the American Society of Criminology Division in International Criminology.

Abstract 6.1.3

Restoring nature under climate pressure: balancing restoration and pollution control. Practical challenges from the Scheldt estuary

Nienke Van der Burgt

Accelerating **climate change** is placing increasing pressure on European ecosystems, urgently requiring adaptation measures. Among the most effective responses are nature-based solutions, particularly the restoration of wetlands, peatlands, and estuarine ecosystems, which play a vital role in enhancing biodiversity, regulating water systems, and mitigating flood risks. These interventions are not only ecologically beneficial but are required under binding EU legislation, such as the Habitats Directive and the Nature Restoration Regulation, which obligate Member States to restore degraded natural habitats, therewith contributing to broader climate resilience and biodiversity protection

However, the **implementation of these restoration measures** faces a growing legal and ecological challenge in industrialised areas. In such regions, **historic pollution**, such as from persistent substances like per- and polyfluoroalkyl substances (**PFAS**), contaminated soils and sediments. Restoration projects often involve earthworks, water flow modification, or sediment relocation, triggering the non-dispersal principle, a legal norm aimed at preventing the spread of hazardous substances. This principle, while crucial for pollution control, may directly conflict with the execution of legally required restoration measures. The resulting tension raises important questions about how to balance pollution containment with restoration obligations, particularly in areas where toxic legacies threaten both ecological recovery and legal compliance.
This paper investigates this conflict through the **case of the Scheldt estuary**, a transboundary socio-ecological system of high ecological and economic value shared by Belgium (Flanders) and the Netherlands. The estuary has been subject to extensive land reclamation, dike construction, and channel deepening, leading to the degradation of tidal marshes. Annex VII of the Nature Restoration Regulation highlights measures highly

relevant to this context, such as rewetting, depoldering, and infrastructure removal, which often require sediment and soil movement. However, the Scheldt area recently emerged as a hotspot for PFAS pollution, complicating restoration initiatives designed to support both climate adaptation and biodiversity conservation under EU law.
By analysing the interpretation and application of the Habitats Directive, Nature Restoration Regulation, and the Water Framework Directive, along with case law, this paper examines how current legal frameworks approach the balance between pollution control and ecological restoration. The paper questions whether existing legal frameworks sufficiently address the need for legal and operational integration between pollution control and ecological restoration. The Scheldt case, which reveals the practical challenges of reconciling overlapping environmental duties, underscores the need for clearer legal guidance. This case shall be used as an illustration and practical reference point throughout this paper to place the analysis of legal principles in a practical context and to ensure that the discussion on the balance between pollution control and restoration obligations remains relevant to actual implementation challenges.

Nienke van der Burgt is a researcher at the University of Ghent, where she is involved in the TRANSNATURE project on transboundary biodiversity protection. Before, she worked for 15 years as senior legal adviser at a law and policy consultancy, where she worked on projects in different areas, including environmental law. Since 2016, Nienke has also been working as an international legal consultant for UNDP and FAO on several projects related to environmental law and fisheries law. Examples are the assessment and amendment of environmental laws on hunting and wild fauna protection for Albania (UNDP 2017), and the development of a National Policy and Strategy for Conservation and Sustainable Management of Environmentally Sensitive Areas for Sri Lanka (UNDP 2017). In 2010, she completed her PhD on the contribution of international fisheries law to the human development, covering the assessment of multilateral and the ACP-EU fisheries agreements (VU University Amsterdam).

Abstract 6.1.4

Offshore wind power and migratory fish

Paula Tulppo, University of Lapland - Finland

The northern border between Finland and Sweden go along joint border rivers Tornionjoki, Muonionjoki and Könkämäeno. This River Tornionjoki river basin is free water system with diverse ecosystem. It is, among others, home river of migratory fish as salmon, trout and whitefish. They are born in the tributaries of River Tornionjoki river basin, go to Baltic Sea for few years and come back to their home rivers to breed. River Tornionjoki river basin is one of the main salmon rivers in Europe and main part of the juvenile of the Baltic Sea salmon is produced in it. In addition, migratory fish, especially salmon, has great ecological, cultural, as well as identity and livelihood related importance for local, transboundary community in the northern border region between Finland and Sweden.

According to the United Nations, the average temperature of the Earth's surface is now about 1.2 °C warmer than it was in the late 1800s. In the Arctic, warming has been even faster and scholars have noticed that since 1979 the Arctic has warmed nearly four times faster than the globe causing impacts on regional ecosystems and northern communities in general. With the water areas in the Arctic, such as River Tornionjoki river basin, the temperature of water rise causing, among other things, changes in the living environment of species. Green transition plays a major role in attempting to slow down global warming. Sustainable economy relies on low-carbon solutions promoting environmental biodiversity, and one tool in green transition is offshore wind power. There are several offshore wind farms in Baltic Sea area, such as one in Bothnian Sea and the other on an artificial island in Bothnian bay, both owned by Finland, while Sweden has two offshore wind farms in Baltic Sea. In addition, there are also several offshore windfarms in the Baltic Sea area owned by other Baltic Sea

countries. Furthermore, interest towards offshore wind power is increasing rapidly and there are several projects under development in Baltic Sea countries.

In the presentation the correlation of offshore wind power and life circle of migratory fish is examined taking into account that migratory fish from the River Tornionjoki river basin spend years in the Baltic Sea. Presentation is based on interviews collected in 2024 as research data in the TRANSNATURE project. According to the data there is concern about climate change and its effects on the ecosystem of River Tornionjoki river basin, but at the same time there is concern about offshore wind power in Baltic Sea and its possible effects on migratory fish of the border rivers. More knowledge is needed about the joint effects of offshore wind power on migratory fish.

Questions to audience:

1. What kind of experience the audience possibly have about offshore wind power?
2. Is the audience aware of effects of the offshore wind power to species in water?
3. Based on the experiences of audience, what kind of information is possibly needed related to offshore wind power?

Biography:
Paula Tulppo is a researcher and university lecturer in the field of administrative science at University of Lapland, Finland. She is a PhD candidate in administrative science, and a member in two research teams. One is Arctic International Relations (AIR) in Arctic Centre, and the other one is Professions in Arctic Societies (ProSoc) in the Faculty of Social Sciences, University of Lapland. Her research interests are in cross-border cooperation, regional development and governance. Currently she has focused on cross-border cooperation in nature conservation and diversity.

Abstract 6.1.5

Building the bridge between two disparate laws? The Luso-Spanish Convention on shared rivers and its emerging model of addressing climate concerns
Paulo Canelas de Castro

EU water law commits the management of international rivers to the Member States calling for their coordination or joint action. This deferral of EU water Law to the States and the overall substantive indications that mainly the Water Framework Directive contain do not comprehend any targeted normative indication as the way to address the uncertainty and variability scenarios deriving from the impacts of climate change on water bodies. We venture that that a possible model for doing so may be presently under experimentation in the Luso-Spanish Convention on Shared Rivers in its current configuration. Against a backdrop of stringent reductions of water availability in recent years in most of their rivers, Portugal and Spain further deepened and revised the original treaty by adding more detailed and variable water management solutions of water management against a set of different scenarios triggering modeled responses based on a more discreet usage of the water structures and the information available. These more differentiated topical water management solutions complement the equally relevant more structural normative institutional, procedural and logistical options materialized in different kind of obligations which attempt to densify further the substantive principle of cooperation presiding over the regime conventionally established. Additionally, the normative regime is equally designed in a time flexible way allowing for adaptation of its cardinal options depending on the information that cyclically is factored-in not only for the more topical and immediate water management options adopted.
This proposed talk relates to sub-theme 2.
Questions proposed for discussion:

1. EU water law needs to fill the normative gap regarding concerns on the climate change impacts ;
2. The operational legal constructs for this normative bridge-building are more likely institutional, procedural, logistical obligations than substantive ones, coupled with commitments modeled for different water management scenarios;
3. The very way a treaty is designed is relevant for ensuring a normative response adapted to variable and evolving social, environmental river management conditions.

Biography:
Paulo Canelas de Castro. Currently: Associate Professor, Faculty of Law, University of Macau, Macau (China); Auxiliary Professor, Faculty of Law, University of Coimbra, Portugal (on protracted leave); Jean Monnet Action *EU Environmental Law in Times of Transitions*; Board of Directors, Institute of European Studies of Macau; President, European Union Studies Association-Macau; Headquarters' Member, International Law Association; Lecturer, PRAIA Academy of International Trade and Investment Law, Macau. Formerly: Visiting Professor in Australia, Brazil, France, Germany, Malaysia, Slovak Republic; Counsel in international negotiations for States (Portugal, Mozambique) or next to International Organizations (United Nations, European Union, SADC); Counsel before the European Court of Justice and the International Court of Justice; Rapporteur in works for the International Law Commission and UNESCO; President, European Union Studies Association, Asia-Pacific.

Abstract 6.2.1

Wanted only for their services? – Wetland restoration obligations in the Water Framework Directive
Thilo Tesing, University of Bonn - Germany

The lecture will deal with the restoration of wetlands under the Water Framework Directive (WFD). The theses I would like to discuss with the audience in this context are:

1) The WFD's environmental objectives for surface water bodies do not provide for the restoration of wetlands or water-dependent terrestrial ecosystems for their own sake.
2) Groundwater-dependent ecosystems theoretically play an important role for groundwater status. The rules and guidelines for the assessment of the status of groundwater bodies in practice, however, are deficient and provide neither for sufficient protection nor for the restoration of groundwater-dependent ecosystems.
3) As a result, the WFD does not comprise a serious obligation for the restoration of wetlands and groundwater-dependent ecosystems.

1) According to Art. 2 (17) and (18) WFD, good status of surface water bodies requires a good ecological status. The condition of the surrounding (semi-)terrestrial area influences the ecological status as a hydromorphological quality element. The hydromorphological quality elements include the riparian zone for rivers and the shore zone for lakes, respectively. Both the riparian zone and the shore zone comprise surrounding wetlands. For good status, however, the hydromorphological elements only have to show a condition that allows the biological quality elements to be achieved. In other words: For the achievement of good ecological status, hydromorphological elements like the condition of the riparian or shore zone only play a supportive role. The goal is to enhance the condition of the respective aquatic ecosystem, and wetland restoration is only considered to be one possible means to reach this goal.

2) For groundwater bodies, according to Art. 2 (20) WFD good status is achieved if their quantitative status and their chemical status are good. Both the quantitative and chemical status are linked to the condition of ecosystems which are connected to the respective groundwater body (cf. Annex V, 2.1.2) For instance, the groundwater quantity has to suffice for the water requirements of terrestrial ecosystems that directly depend on them. If it does not, the WFD obliges the respective Member State to restore the groundwater body towards good quantitative status – meaning that groundwater level will rise. However, as I will further elaborate in the presentation, the guidance by the European Union on how to assess the status of groundwater bodies is deficient when it comes to the condition of groundwater-dependent ecosystems. This means that there possibly is a blind

spot when it comes to obligation to restore groundwater bodies and the terrestrial ecosystems connected to them.

3) Therefore, by design the WFD does not constitute a serious obligation for Member States to restore wetlands or groundwater-dependent ecosystems. Wetland restoration is rather pushed by the Habitats Directive and the Nature Restoration Law.

Biography:
After having studied law at the University of Münster, I passed the first state examination at the Higher Regional Court of Hamm in 2019. Afterwards, I did my legal clerkship (Referendariat) in Mönchengladbach and passed the second state examination at the Higher Regional Court of Düsseldorf in 2022. Currently, I am PhD Student in the "Network of Competence on Future Challenges of Environmental Law" (KomUR) at the chair of Prof. Dr. Dr. Wolfgang Durner (University of Bonn). My thesis deals with the protection and restoration of peatlands in German environmental law. In addition, I am working as a research assistant for the Cologne based law firm Lenz & Johlen Rechtsanwälte Partnerschaft mbB in the field of environmental law.

Abstract 6.2.2

Restoring wetlands to create resilient nature and societies
Katrine Broch Hauge, Endre Stavang

The paper we will present is based on lessons learned from studies of peatland restoration aimed at enhancing biodiversity and improving natural CO2 uptake and storage in Norway (PEATWAY). It seeks to contribute to the available legal frameworks for nature restoration on the national level, with a particular emphasis on incentivizing landowners to participate in restoration projects and ensuring the preservation of restored areas.
Well-functioning wetlands are key to a climate-resilient society. Wetlands contribute to the storage and absorption of greenhouse gases, and they also provide crucial and multiple ecosystem services in a changing climate. As water reservoirs, wetlands can mitigate floods, function as water purification systems, and, not least, serve as local natural barriers during wildfires. Restoring wetlands, and legal tools necessary to upscale restoration activities, consequently are an important piece in climate adaptation efforts, with significant potential for preventing various types of damages.
The topic is especially pertinent considering the Nature Restoration Law (NRL) adopted by the EU in 2024. Although Norway's current position is that the NRL is not relevant under the EEA framework, we will face common challenges with EU countries and others in identifying effective and impactful measures to implement peatland restoration. The possibilities for implementing restoration projects in collaboration with, and with the help of, private property rights at the national level have also been identified by others as an important area of research in the years to come (Hoek 2024).
For decades, peatlands have been drained to accommodate traditional agricultural practices. In recent years, Norway has implemented a nationwide plan for wetland restoration; however, these projects have primarily been initiated and managed by public authorities. New measures are necessary to scale up restoration initiatives. Peatland restoration typically does not require significant physical interventions, but it must be executed properly to avoid additional CO2 release. To restore water levels and allow peatlands to regain, nature must be allowed to recover over an extended period.
We adopt the perspective that nature provides ecosystem services and thus constitutes a form of natural capital. The natural capital perspective promotes a holistic approach that recognizes the interconnections among different ecosystems and the services they provide. Wetland restoration can positively impact water quality and flood control, while also supporting biodiversity. Accordingly, the ecosystem services provided by wetlands will play a very important role in both Norwegian and other countries' environments in the years to come to create resilient nature and societies.
Our exploration of the possibilities for and implementation of peatland restoration has revealed that the legal issues can be categorized into three primary groups:
1. Accessing relevant natural areas (previously developed peatlands) suitable for restoration.
2. Existing legislative barriers to realizing restoration projects, such as land and forestry regulations not aligned with ecological restoration.

3. Challenges in ensuring the long-term impact of restoration projects.
In this article, we intend to investigate how a natural capital perspective can facilitate and enhance the participation of landowners in ecological restoration projects. Regarding access to land, approaches that emphasize the value of natural capital may indicate that landowners should be compensated for increasing the level of ecosystem services provided by peatlands. The natural capital perspective can also broaden the understanding of what constitutes "land and forestry purposes". Nevertheless, our primary focus is on challenges related to ensuring the long-term impact of restoration projects.
Our main research questions are:
1. What compensation mechanisms or incentives should be established to promote landowners to secure the lasting ecosystem services of the restored areas?
2. How can private legal instruments such as easements be utilized and developed to ensure the sustainability of ecosystem services over time?

Biography
Hauge and Stavang, Associate professor, University of Oslo (The Faculty of Law), Katrine Broch Hauge academic interests include energy law, environmental law, expropriation law, property law, and natural resources (e.g mineral and water) and environmental law. She has experience in leadership both in research and educational contexts. She is consistently interested in analyzing the legal developments within energy- and natural resource law from various perspectives of justice. In several of her works, she has also integrated environmental and planning disciplines with an indigenous perspective.
Professor Endre Stavang, University of Oslo (The Faculty of Law, is professor in property law and is trained in and has for years also conducted research in law and economics. Stavang is the Head of the Research group for Natural Resources at the Faculty of Law in Oslo. He has written a number of articles in both fields and has also published several widely used textbooks on both property law and law and economics.

Abstract 6.2.3

The importance of wetlands for climate adaptation in cities: The Wiels Marsh case study.
Matilde Meertens; Ghent University - Belgium; University of Strathclyde, Glasgow - united Kingdom

It is expected that by 2050, three out of four EU citizens will live in urban areas. Phenomena like urban heat islands significantly affect cities and their population: they are indeed extremely vulnerable to the impact of climate change. In this context, appreciation for urban nature (green and blue areas in a city) has grown. This evolution is, for example, reflected in the recognition of urban biodiversity in the recently adopted Nature Restoration Regulation, which also encompasses targets for urban ecosystems. Moreover, in recent years, the concept of nature-based solutions have come to the fore. They have been defined by the IUCN as 'actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits' (2016). In an urban context, enhancing the state of urban nature and increasing the number of urban green and blue infrastructure can address urban challenges, such as the need to adapt to a changing climate. In this respect, urban wetlands are of particular interest: they have a crucial role to play in climate adaptation, but have remained underrated so far.

This presentation will revolve around the Wiels marsh, an accidental (artificial) marsh that emerged on an abandoned construction site in Forest, Brussels. As such, the Wiels marsh provides a prime example of the significance of urban wetlands within the city landscape and the main threats to their existence. Indeed, action by a neighbourhood committee eventually led to the purchase – and thus protection – of the site by the

government of Brussels. However, a part of the site is still threatened by development. The case study is centred around three aspects of the marsh: (i) its ecological features and the extent to which it can contribute to climate adaptation; (ii) the relation between the marsh and the urban dwellers; and (iii) the relevant legal framework. With respect to the latter component, it will be examined to what extent recent developments, such as the adoption of the EU Nature Restoration Regulation can bolster protection.

Biography

Matilde Meertens holds a Master of Laws from Ghent University and an LLM in Global Environmental Law and Governance from the University of Strathclyde, Glasgow. Matilde is currently preparing her doctoral thesis under the supervision of Prof. Dr. An Cliquet and Prof. Dr. Francesco Sindico. Her research focuses on international and European biodiversity law and ecological restoration, with a specific focus on wetlands and peatlands. She is also a member of the SERE Legal Working Group.

Abstract 6.2.4

What are the legal challenges concerning water management and spatial planning and land use for rewetting Dutch peatlands and the possible solutions to these challenges?

Martijn van Gils, Utrecht Centre for Water, Oceans and Sustainability Law (UCWOSL), Utrecht University, the Netherlands

In Dutch peatlands, the soil subsides as a result of peat oxidation, which occurs when peatlands dry out as a result of drainage for agricultural use, mostly intensive dairy farming. Soil subsidence and peat oxidation have various adverse effects, including the desiccation of Natura 2000-areas and the emission of considerable amounts of GHG emissions. The emission of GHG emissions from peatlands make up 2 to 4% of the annual GHG emissions of the Netherlands.[1] To contribute to reducing greenhouse gas net emissions and increasing biodiversity, the Nature Restoration Law includes obligations for EU Member States to rewet drained peatlands in agricultural use[2]. Rewetting peatlands does not only contribute to climate change mitigation, but also plays an important role in climate change mitigation in Dutch peatlands. The rewetting of peatlands requires that more water is retained in ditches and canals, which makes peatlands more resilient to drought and can even help against a rising sea level, as rewetting ensures that the soil no longer (sharply) subsides.

However, the rewetting of peatlands in the Netherlands raises several legal questions, concerning both water management and spatial planning and land use. For example, raising water levels in ditches and canals leads to a decrease in water storage capacity, for which specific norms are stipulated in provincial by-laws. In order to fulfill these norms in rewetted areas, additional measures have to be taken, such as the establishment of new water storage areas. Rewetting peatlands could also hinder agricultural activities in peatlands, as certain crops, such as corn, can no longer be cultivated at high groundwater levels. Proportional decision-making thus requires that water levels are raised gradually, so that farmers have time to adapt their agricultural practices) or that they are compensated, financially or otherwise (e.g., by the installation of drainage systems). This also raises institutional questions: as rewetting peatlands can have significant consequences for (agricultural) land use in peatlands, are regional water authorities, who are solely responsible for water management, allowed to raise water levels on their own or should the raising of water levels be accompanied by the regulation of agricultural use of peatlands by provinces and municipalities, who could for example prohibit the cultivation of corn or other crops that require high groundwater levels in peatlands?

This paper aims to provide an overview of these legal questions and possible solutions for them. Therefore, the following research question is answered: what are the legal challenges concerning water management and spatial planning and land use for rewetting Dutch peatlands and the possible solutions to these challenges? The paper fits well within the theme of the 12th EELF conference, as reducing soil subsidence and rewetting peatlands does not only contribute to climate change mitigation, but also to climate change adaptation in the Netherlands. The paper relates to the subthemes biodiversity, water and nature restoration law, urban and land use planning and opportunities and hurdles for adaptation in law and governance.

Biography
Martijn van Gils LLM is a Postdoc at the Utrecht University Centre for Water, Oceans and Sustainability Law (UCWOSL) in the Netherlands. His PhD thesis, which he handed in earlier this year, is about the legal aspects of reducing soil subsidence and rewetting peatlands in the Netherlands. It discusses both the European and national obligations to rewet peatlands and the legal instruments for rewetting peatlands and reducing soil subsidence, both in the domains of water management and spatial planning and (agricultural) land use. His postdoc project, in which he hopes to further broaden and deepen his knowledge of and research into environmental and water law, is part of the Future FRM (Flood Risk Management) programme (https://www.nwo.nl/en/researchprogrammes/perspectief/perspectief-grants/future-frm-tech-future-flood-risk-management-technologies-rivers-and-coasts).

_____

[1] M. Lof a.o., The SEEA EEA carbon account for the Netherlands, Den Haag: Wageningen University & Research & Centraal Bureau voor de Statistiek 2017, p. 4.

[1] Art. 11(4) of Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869 requires restoration measures for organic soils in agricultural use constituting drained peatlands. These measures shall be in place on at least: 30 % of such areas by 2030, of which at least a quarter shall be rewetted; 40 % of such areas by 2040, of which at least a third shall be rewetted; 50 % of such areas by 2050, of which at least a third shall be rewetted.

Abstract 6.2.5

Biodiversity, Water, and Nature Restoration Law in the Czech Republic and Central Europe: Legal Challenges and Climate Resilience

Milan DAMOHORSKÝ, DrSc., Law Faculty of the Charles University, Prague, Czech Republic

In the context of accelerating climate change, the preservation and restoration of biodiversity, ecosystems, and water resources represent fundamental pillars of resilience in Central Europe. This contribution focuses on the Czech Republic and its neighbouring countries as case studies to explore the evolving legal landscape in the fields of biodiversity protection, freshwater management, and nature restoration. These areas are critical for both climate adaptation and long-term environmental security.

The presentation evaluates the alignment of national legal frameworks with the goals of the EU Biodiversity Strategy for 2030 and the proposed Nature Restoration Law. It highlights legal and practical obstacles to effective implementation, including fragmented governance structures, insufficient enforcement, and ongoing conflicts between conservation goals and economic pressures, such as intensive agriculture, infrastructure development, and water abstraction. Special attention is given to natural activities of new beaver population in revitalization of water landscapes in Czechia instead of human investments.

Special attention is paid to the protection of wetlands, forests, and river systems, as these ecosystems serve as vital buffers against climate extremes such as droughts, floods, and heatwaves. The study also reflects on the implications of recent CJEU jurisprudence and assesses the potential of current legal instruments to drive systemic change.

This contribution calls for a more integrated and enforceable legal architecture, capable of balancing national specificities with EU-level obligations. The aim is to foster a legal environment that supports not only compliance, but also climate-resilient ecosystems and societies.
Opening discussion points:

1. Are current legal instruments in Central Europe adequate to secure long-term biodiversity and ecosystem resilience under increasing climate stress?
2. How can we reconcile economic land use interests with the urgent need to restore degraded water bodies and landscapes?
3. What role can legal reform and judicial interpretation play in accelerating nature restoration in practice?

Biography
Prof. Milan Damohorský served as Vice Dean for Foreign Affairs and Head of the Environmental Law Department at the Law Faculty of Charles University in Prague for 22 and 20 years, respectively. Since the 1995 he has represented the Czech Republic in the World Commission for Environmental Law of the IUCN and is the founder and President of the Czech Society of Environmental Law. He advises the Czech Ministries of Environment and Agriculture and has authored over 350 publications in environmental, natural resources, and energy law.

Abstract 6.3.1

"To Litigate or to Participate, That is The Question": How the Absence of Environmental Democracy Fuels Climate Justice

Ludovica D'Apote , University of Milan -Italy

As the climate crisis intensifies, civil society increasingly turns to courts to demand accountability and action. In this context, strategic environmental and climate litigation has emerged as a powerful tool for shaping policy, influencing public discourse, and holding states accountable for inadequate responses. Among the most prominent judicial bodies in this field are the European Court of Human Rights (ECtHR) and the Inter-American Court of Human Rights (IACtHR).

Yet, litigation's strategic value comes with limitations. Despite offering redress, it remains an ex-post mechanism, addressing violations only after they occur. Additionally, civil society's access to justice is often hindered by legal standing requirements, particularly within the ECtHR system. Nonetheless, recent breakthroughs, such as KlimaSeniorinnen v. Switzerland, signal a shift toward broader admissibility and recognition of collective claims.

A further challenge lies in establishing the causal nexus between environmental – especially climate – harm and human rights violations. The IACtHR has historically adopted a progressive stance on this issue, recognising the right to a healthy environment as an autonomous right in the Advisory Opinion OC-23/17 and in landmark cases, including Lhaka Honhat v. Argentina and La Oroya v. Peru. By contrast, the ECtHR employs stricter evidentiary and procedural standards. Despite a longstanding body of environmental jurisprudence tracing back to Lopez Ostra v. Spain, recent rulings like Cannavacciuolo v. Italy underscore the complexity of substantiating victim status.

Evidently, litigation alone – while impactful – is insufficient. Judicial strategies must be complemented by a preventive approach that empowers communities with access to information and genuine influence over environmental and climate decision-making.

International instruments like the Aarhus Convention and the Escazú Agreement reveal the potential for participatory rights – prior consultation, access to information, procedural safeguards – as enablers of justice.
The ECtHR, relying on Aarhus as interpretative background, has deemed procedural safeguards essential to human rights compliance, as evidenced by Guerra v. Italy, Taskin v. Turkey, Giacomelli v. Italy. In KlimaSeniorinnen, the Court considered procedural deficiencies in Switzerland's climate policies as human rights violations. Nevertheless, environmental procedural rights under the ECHR are primarily granted to directly affected individuals, rather than the general public. The IACtHR, drawing on Escazú, imposes obligations on states to prevent environmental harm while reinforcing procedural guarantees, particularly for Indigenous communities. Cases like Kaliña y Lokono Peoples v. Suriname, Kichwa de Sarayaku Vs. Ecuador, Pueblos Rama y Kriol v. Nicaragua illustrate the Court's commitment to communities' prior consultation and informed participation. However, national enforcement of judgments and implementation of participatory mechanisms remain problematic.

This study advocates a paradigm shift: from litigation as a last resort to participation as a first response. Addressing widespread phenomena (namely, climate change) requires the active involvement of civil society.
Therefore, states must prioritise compliance with voluntarily assumed obligations. For instance, the European Union has codified Aarhus' principles through Directive 2003/4/CE and Regulation 1367/2006, binding on Member States. Where compliance falters, courts can serve as enforcement mechanisms, by ensuring states not

only redress violations but also integrate affected communities into decision-making, thus fostering a more democratic governance and mitigating the root causes of environmental and climate disputes.

Questions:

1. To what extent can an expanded reading of procedural environmental rights under the Aarhus Convention and Escazú Agreement bridge the urgency of climate adaptation with democratic legitimacy?
2. How are emerging norms – such as the right to a healthy environment – reshaping tort law and strengthening the duty to act pre-emptively, in line with a "do actual good" perspective that goes beyond the classic no-harm rule?

Biography

Ludovica D'Apote is a PhD student at the LEES program of the University of Milan, under the supervision of Professor Ragni.

Her research focuses on climate adaptation measures, particularly how their undefined provisions under international agreements are shaped by various branches of international law. Currently, she is exploring the evolving role of courts and civil society in advancing climate adaptation.

She has published on these topics in the SIDIBlog, where her recent post exploring State liabilities for insufficient adaptation will be expanded into an article for a top-tier Italian law journal. Beyond her academic focus, Ludovica has written on non-human animals' legal status in Quaderni di Diritto degli Animali, reflecting her broader commitment to justice across species.

She is active in promoting sustainability through volunteering with the university's Green Office. Collaborating with GenerAzione Mare, she drafted the legal section for a proposed Area di Riequilibrio Ecologico (ARE) in Rimini municipality.

Abstract 6.3.2

Litigating for Climate Justice: Transnational Litigation in Practice

Kata Dozsa and Liliana Lizarazo Rodriguez, Brussels School of Governance - Vrije Universiteit Brussel

This presentation draws on data from semi-structured interviews conducted as part of the ERC Curiae Virides project, which explores how environmental movements, NGOs and legal practitioners use transnational litigation to promote environmental and climate justice. Based on semi-structured interviews with actors involved in strategic litigation, tort and rights-based cases in Europe, the Americas, Africa, Asia and Oceania, the research highlights legal strategies aimed at holding both states and corporations accountable for environmental and climate impacts. It shows how these organisations, building on existing legal mechanisms, are progressively operating simultaneously in several jurisdictions and working together to secure systemic change, either by challenging environmental permits or regulations, by using traditional channels of tort litigation, or by relying on the concept of environmental human rights to secure access to justice for victims. These strategies vary from actor to actor and from continent to continent, with clear cross-fertilisation and mutual influence: we gained insights on how climate justice in other continents is strongly influenced by European organisations; challenging environmental permits is strongly influenced by the US legal practice; litigation based on the right to a healthy environment is influenced by Latin American countries; and claiming the rights of nature to demand concrete mitigation and adaptation measures is also strongly influenced by Oceania and Latin America organisations mobilising in the name of ecosystems of Mother Earth.

In this presentation we want to discuss three important themes that connect with the conference themes 5 and 7: First, how do attribution science, ecocentric approaches and environmental human rights frameworks intersect in transnational legal mobilisations? Second, do these mobilisations seek new legal avenues to overcome the barriers to access to justice that many communities and individuals currently face? Or do they seek systemic change by asking courts to order concrete climate action by states and corporations? Third, how can we conceptualise the variety of legal channels that actors are finding to use the law to demand that states and corporations respond to the global climate crisis by adopting both mitigation and adaptation measures? The presentation will also discuss the methodological approach of the ERC project, ethical considerations and findings, offering insights into how empirical legal methods can inform and support the legal research on complex topics such as the responses of the law to global warming.

Key words: transnational litigation; tort law; climate justice; access to justice; strategic litigation; qualitative empirical research.

Biography
Kata Dozsa is a postdoctoral researcher and adjunct professor at the Brussels School of Governance where she conducts empirical research in the Curiae Virides project on transnational ecological litigation. She holds a PhD in law from University of Antwerp. Between 2011 and 2018, she worked for the European Commission in various posts, such as press officer for Climate Action and later as policy officer for the rights of the child. Kata Dozsa is the author of the book "Children as Climate Citizens" (Routledge, 2023), and she has numerous publications about children's rights, the rights of future generations and climate change, including in the 2020 and 2023 editions of the European Yearbook on Human Rights. She was awarded the 2022 Sustainability Research Award for my contribution to climate change policy-development in Belgium.

Abstract 6.3.3

From Urgenda to KlimaSeniorinnen Schweiz – the normative impact of European jurisprudence on climate change litigation
Trevor Daya-Winterbottom, University of Waikato, New Zealand

This paper will critically interrogate the normative impact of European jurisprudence on climate change litigation in New Zealand. In particular, the paper will address the related subthemes of the enforceability of international climate agreements in the context of judicial review proceedings before national courts, urban and land use planning (e.g. national and regional transport plans and the construction of new roads), participation and access to justice (e.g. standing rules, strike out, and the classic application of administrative law principles which can sometimes impede citizen action before the courts), the interaction with human rights regimes (e.g. rights to life and culture under the UNICCPR, and indigenous rights), and tort law and questions of attribution in negligence, public nuisance, and novel actions to reduce GHG emissions.

The paper will address the normative impact of European jurisprudence on climate change litigation (and related subthemes) through the lens of three decisions from the Senior Courts in New Zealand – Thomson v Minister for Climate Change [2017] NZHC 733, Smith v Fonterra Co-operative Dairy Group Ltd [2024] NZSC 5, and Smith v Attorney-General [2024] NZCA 692. For example:

- Thomson v Minister for Climate Change addressed the enforceability of the UNFCCC and the Paris Agreement in the context of judicial review proceedings before the New Zealand High Court. The decision has provided the catalyst for subsequent judicial review proceedings. Notwithstanding a dualist approach to international law, the court was prepared to recognize the legal influence of the Paris Agreement on setting national targets for GHG reductions and considered the efficacy of court orders to drive ministerial action. More importantly, the decision opened the floodgates for the reception of European jurisprudence on climate change.
- Smith v Fonterra Co-operative Dairy Group Ltd focused on the justiciability of tort actions in negligence, public nuisance, and establishing a novel duty of care to reduce GHG emissions. In particular, the New Zealand Supreme Court articulated a generous approach to strike out jurisdiction to ensure access to justice. The issue of attributing damage to the tortfeasors remains for substantive determination.

- Smith v Attorney-General is ambitious in challenging the extent of state responsibility to address climate change adaptation through the lens of human rights (rights to life and culture, and indigenous rights), and a common law claim based on the public trust doctrine.

The legal questions exposed by these decisions that warrant discussion include:

a) The legitimate role of national courts in enforcing international climate agreements?
b) The efficacy of court orders to drive climate action by ministers and other public actors?
c) The appropriate exercise of strike out jurisdiction to avoid the pre-emptive elimination of climate action.
d) The vexed question of attribution of harm against multiple tortfeasors?
e) The scope of the inherent jurisdiction of courts to make declarations of inconsistency regarding the protection of human rights and national and international legal instruments?
f) The extent of state responsibility to address climate change adaptation?
g) The relevance of the public trust doctrine for climate action?

Biography
Dr Trevor Daya-Winterbottom FRSA FRGS is a Professor of Law at the University of Waikato, New Zealand, where he is the Director of the Centre for Environmental, Resources, and Energy Law. His current research focuses on Antarctica, climate change litigation, freshwater management, oceans governance, and rights of nature.

Abstract 6.3.4

A human rights-based approach to climate adap5on law – the procedural dimension of positive obligations in "KlimaSeniorinnen" and beyond
Niklas Täuber, Freie Universität Berlin - Germany

Thesis: Obligations for national legal frameworks on climate adaption following from the European Convention on Human Rights (ECHR) are mainly procedural ones. A uniform substantive standard for climate adaption cannot be formulated on the basis of human rights.

My presentation will consider the ECHR's implication for national legal frameworks on climate adaption. This will be achieved by extracting the findings of the "KlimaSeniorinnen"-decision for climate adaption and combining them with the established case law in the field of environmental law.

The human rights enshrined in the ECHR are primarily freedom rights against state interference. However, especially in environmental law, it is in most cases not a state but rather private actors that interfere with personal freedoms. In accordance with the specific goal of the ECHR to effectively ensure the rights enshrined, the European Court of Human Rights (ECtHR) has bridged this protection gap with detailed case law on the "positive dimension" of human rights. In environmental law, positive obligations arise in particular from Article 2 and 8 ECHR. On this basis, states are not only obliged to refrain from interfering with human rights but to act and offer effective protection against non-state actors.

Over the past decades, the ECtHR has developed an elaborate body of case law on environmental protection. My presentation will give examples that demonstrate that the ECtHR in some cases cannot or will not define a substantive standard of environmental protection on the basis of the ECHR. Instead, it interprets the Convention to include "compensatory" procedural rights such as a right to information or a right to participate in the decision-making process for those effected.

In its "KlimaSeniorinnen" decision, the ECtHR extends these positive obligations of human rights to climate change. While the focus of the decision lies on climate mitigation, the ECtHR also highlights the importance of adaption to climate change. However, the ECtHR does not spell out its requirements for a human rights respecting climate adaption law in the same way as for the field of climate mitigation.

My presentation will suggest that the ECtHR – due to the unforeseeable and regionally differentiating nature of the effects of climate change – will not be able to define a common substantive standard for the field of

climate adaption. Instead, a human rights conscious climate adaption law will have to implement procedural guarantees to inform and involve those who will be affected by floods, heavy rain, intense heat, and other events that will shape life in the "hothouse".
Questions:

1. Could, contrary to my thesis, a universal substantive human rights-standard for climate adaption law be defined?
2. What procedural safeguards have been implemented in climate adaption law in your respective national jurisdiction?
3. How can law be adapted to comply with these procedural obligations derived from the ECHR? Can national legislators draw on existing instruments in environmental law?

Biography
Niklas Täuber studied law at the University of Münster (Germany), Roma Tré (Italy) and completed a LL.M. program in European Law at the University Paris Panthéon-Assas (France). Since 2023, he has been a research assistant at the chair for Public Law (esp. European and Environmental law) of Prof. Dr. Christian Calliess at the Free University of Berlin (Germany) as part of the "Network of Competence of Future Challenges of Environmental Law" (KomUR), which is funded by the German Federal Ministry of Education and Research. He is currently pursuing a PhD, his thesis is focused on the interface of environmental legislation and constitutional law. His further research interests and current publications revolve around human rights-based climate protection as well climate litigation.

Abstract 6.4.1

Economic Instruments in the EU Law and their Potential for Enhanced Environmental Protection and Climate Adaptation
Natálie Polanská

The need to protect our environment substantially rises with the issue of climate change and its consequences. Although the European Union issues secondary legislation regarding the environment and climate change policies quite abundantly, it is up to the Member States to implement them into their national legislations. And if they do not, the European Union has mechanisms to be used in cases of non-compliance. Such mechanisms, however, do not always produce the desired effects and the environment remains unprotected or harmed.
Financial sanctions in the form of penalties and lump sums are the only means of enforcement in the EU law, according to Art. 260 TFEU. In their current form, they do not prevent Member States from infringing the EU environmental and climate change law and thus, their deterrent effect is questionable, perhaps even lacking. Hence, other financial instruments should be reviewed – in particular, the possibility to amend the access to the EU funds.
Similarly, the need to adapt to climate change presents a rising issue in the European Union. EU climate adaptation is still at its beginning, nevertheless, the enforcement as well as motivational mechanisms should present an integral part of the EU adaptation strategy for Member States to act on their pledges in this area. Due to the complex legal nature of EU adaptation strategy, financial instruments could play a crucial role regarding compliance of Member States.
Therefore, the paper examines the range of financial instruments in the EU law and their current use. Specifically, it analyses the Member States' access to the EU funds and a new potential role of its amendment leading to an enhanced climate protection and adaptation. In this regard, there are three **key questions**:

1) What are the current financial instruments in the EU law and their role in the EU law enforcement?
2) How could the EU funds and the possibility of amendments to their access enhance the climate protection and adaptation?
3) Under what conditions/rules could be such financial instrument introduced?

Biography
Mgr. Natálie Polanská is a PhD candidate at the Department of Environmental and Land Law at the Faculty of Law, Masaryk University in Brno, Czech Republic. The main topic of her doctoral research is the compliance of (Member) States with their commitments regarding climate change. Even though she is still at the very beginning of the research (first year of studies), she has dealt with a related topic in her master thesis, for which she has

won an award in the end of last year. The topic of Member States' (non)compliance is, nevertheless, the focus of her everyday life as she is part of the Infringement Unit, Department of International Relations, at the Ministry of the Environment of the Czech Republic. Environmental, International and European Law are, thus, the center of her academic as well as professional interest.

Abstract 6.4.2

Regulating the compensation of climate change damages, between private insurances and public interventions

Nadia Coggiola, Università di Torino Dipartimento di Management Corso Unione Sovietica Torino Italy

(a) It is now widely acknowledged that one of the most significant and immediate repercussions of climate change is the escalating financial burden that populations and governments in certain regions of the world face in addressing the economic losses incurred due to natural disasters such as floods, hailstorms, fires, and other extreme weather events that are either directly caused or exacerbated by climate change.

Historically, the financial burden of natural disasters has been shouldered by private entities, insurance providers, and governments across different nations, contingent on factors such as national wealth, political systems, and the nature of the damage incurred. In most cases, if not always, damages resulting from events deemed highly unlikely were compensated by the state, while those that were more predictable, albeit rare and uncertain, were borne by the same victims, who were often protected by voluntary insurance. This arrangement was economically viable for all parties involved, including governments, private insurers and the affected individuals.

However, this equilibrium has undergone significant alterations in recent years, owing to an increase in both the number of events causing natural catastrophes and the amount of economic damages caused by these same events. The inevitable consequence of this is that none of the parties involved – governments, insurances and damaged parties – are able to cover the costs of the damages suffered in accordance with the traditional rules.

For instance, insurance companies in California have ceased to offer policies for fire damage due to the declining profitability of such business. Conversely, the Italian government has recently implemented legislation mandating compulsory insurance for owners of immovable properties situated in high-risk flood zones. The objective of this initiative is to provide compensation for damages arising from floods, a measure deemed necessary due to the unsustainability of compensating damages using government funds.
This underscores the necessity for a novel approach to the management of the issue.
(b) The presentation will explore, from a comparative perspective, the challenges posed by climate change to the conventional methods of compensating damages arising from or exacerbated by climate change. It will therefore examine how the responses of governments to these challenges are, in essence, frequently an attempt to transfer the responsibility for compensation, where possible, to the affected parties and private insurance providers. Simultaneously, governments are seeking to establish a new equilibrium between governmental interventions and private obligations.

Biography

Nadia Coggiola is Associate Professor of Civil Law at the University of Torino, Department of Management, where she is lecturing in Private Law and Private Law and Behavioural Studies. She holds a PhD in Comparative, Private and European Law from the Faculty of Law at the University of Ferrara in Italy. She has held positions as Research Fellow at the Faculty of Law, University of Cambridge (UK), Marie Curie Fellow at Tsinghua University School of Law, Beijing (China) and Visiting Professor at Université Catolique de Lyon, University of Luxembourg and University of Tasked, Uzbekistan. Her primary research areas are torts and contracts, with a particular focus on consumer contracts, from a comparative perspective. She has participated in numerous national and international research groups and has authored three books and approximately 80 articles, book chapters, papers and book reviews.

Abstract 6.4.3

Disaster Insurance for Households and Businesses: Analysing the Italian Experience through a Comparative Lens

Stefano Fanetti – University of Insubria, Como (Italy)

Insurance can play a key role in addressing the growing impact of climate-related extreme events, offering a more effective alternative to traditional public ex-post compensation schemes, which are often marked by delays, lack of coordination, and unequal distribution of funds. However, insurance alone is not enough. It should be part of a broader risk management strategy, one that not only compensates for losses after disasters, but also promotes long-term vulnerability reduction of both infrastructure and territory.

Despite its potential, the spread of disaster insurance coverage remains limited, due to several well- known hurdles: the widespread underestimation of natural risks by both citizens and businesses; the issue of adverse selection; and a generally low level of insurance literacy and awareness.

These weaknesses are particularly clear in the Italian context. Although the introduction of a mandatory disaster insurance scheme has been discussed for years, several legislative proposals have been held back by a combination of cultural resistance, political caution, and financial concerns. Many citizens continue to rely on public compensation after a disaster, considering it a natural and expected duty of the State. In this context, insurance is often perceived as an additional burden – or even as a disguised new tax – further reinforcing resistance to its adoption.

As for households, no mandatory coverage has been introduced in Italy. Tax incentives in recent years have slightly increased the number of insured homes, and the possibility of a compulsory scheme has been raised on several occasions. Nonetheless, no concrete steps have been taken so far, and the debate remains largely inconclusive.

Some progress, on the other hand, has recently been made regarding the business sector. The 2024 Budget Law introduced a mandatory insurance requirement for businesses (excluding those in the agricultural sector). While this represents an important step forward, its implementation has been uncertain: enforcement deadlines have been postponed multiple times, and the relevant implementing provisions were adopted with significant delay.

The Italian case fits within a broader European debate, where various countries have adopted different approaches to disaster insurance and risk governance. Comparative analysis may help identify best practices and adaptable features, both in terms of regulatory design and public engagement strategies.

Questions or thesis to be discussed:

- How can cultural resistance to mandatory insurance be overcome, particularly in countries with a strong tradition of public intervention in disaster recovery?
- Mandatory insurance may risk becoming a mere mechanism of risk transfer if not accompanied by effective risk reduction policies. How can this be avoided?
- How might the structure of the Italian business landscape – dominated by small and medium- sized enterprises – influence the effectiveness of the newly introduced compulsory insurance scheme?

Biography

Stefano Fanetti (Como, Italy - May 11th, 1982) graduated with honours in law from the University of Insubria in 2006 (with a thesis in comparative law). In 2007, he obtained a master in environmental law from the University of Milan. In 2011, he was awarded a PhD in comparative law from the University of Milan (with a dissertation on “Renewable energy sources: economic incentives and other support instruments. A comparative law analysis”).

Currently, he is assistant professor of comparative private law at the University of Insubria (Department of Law, Economics and Cultures) and teaches environmental law at the Department of Science and High Technology of the same University.

He is the author of several publications in the field of environmental and energy law, with a special focus on climate change adaptation and mitigation.

Abstract 6.4.4

Weather derivatives to bear climate risks: embedding sustainability in credit assessment

Michele Cespa, attorney at the Milan Bar - Italy

Climate risks (both physical risk and transition risk) can a:ect banks' exposure to credit risk. First, climate risks should be approached by Banks from an accounting perspective. Moreover, all stages of the credit lifecycle will likely be impacted by climate risk. Banks are beginning to infuse more climate-related considerations into each step of the credit management process.

In this perspective, the first thing that Banks should take in account in this due diligence process, is a sectoral approach to analyzing climate risk in their lending activity (and actual credit portfolios).
Secondly Banks should scrutinize factors including the client's decarbonization progress, future production plans, and the availability of renewable energy technologies to power its operations.

Thirdly Banks should also monitor whether clients are abiding by covenants linked to sustainability, which are increasingly being added to contracts to keep clients moving toward environmental goals ("green covenants").
Last but not least, Banks should also incorporate data on late and default payments that result from climate change into credit risk appraisals.
In this stream, it should be emphasized, for credit risk assessment, the importance to optimize the use of collateral across the portfolio, as well as perform risk transfer and hedging ("collateral management and hedging").
One way to hedge the negative impact of catastrophic climate events, as well as loss from potential gradual climate change would be to use derivatives. Weather derivatives are therefore a tool and the use of them should score (or, indeed, should be a condition) for lending to business a:ected by climate risk.
Despite some operational limits (predictability of climate change on a large scale) such contracts are more effective than insurance and, being financial instruments, would have the merit to be regulated and traded in financial markets, which are well known to banks.
The nudging that could be undertaken in this direction has to face the markets and financial instruments regulation, which is rather weighty especially in EU, but this would still be an additional protection for the counterparty (and, ultimately, for the banks themselves).

Biography

Michele Cespa is attorney at the Milan Bar since 2014. Specialized in banking and finance advice and litigation, he works with Advant NCTM firm and UniQLegal s.t.a.p.a., an entity of which is part primary Italian bank, UniCredit S.p.A. In the academic field, he gained a PhD in Comparative Law at the University of Milan in 2013 and has been a research fellow, developing projects and courses dealing with civil law instruments to protect the environment.

Abstract 6.4.5

Adaptation and the Climate Crisis: Towards a EuropeanLaw of Crisis

Francesco Vetrò, University of Parma; Nicola Brignoli,University of Parma

The intensification of extreme climate impacts calls for a profound reconsideration of the European Union's legal architecture in the field of climate change adaptation. Although the European Green Deal and the 2021 Adaptation Strategy have formally elevated adaptation to a core component of EU climate policy, the current approach remains largely grounded in strategic, non-binding instruments. In a context where the urgency of adaptation now stands alongside – if not ahead of – mitigation, it becomes essential to question the adequacy of the existing legal framework and to explore pathways towards a more structured and binding EU law of adaptation.

After clarifying the legal meaning of crisis, and distinguishing it from emergency, this contribution proposes to conceptualise climate change as a systemic and enduring crisis – one that durably affects legal planning and the balance between public interests and fundamental rights. From this perspective, the paper critically examines, first, the extent to which adaptation has been integrated into the key components of the European Green Deal, highlighting the structural limits of a governance model still largely mitigation- centred; and second, the effectiveness of the EU Adaptation Strategy as a multilevel coordination tool, in light of the critical issues raised by the European Court of Auditors. The analysis then focuses on the prospects for a normative shift that would transform the current strategic framework into a coherent system of legal obligations, effectiveness criteria, and implementation mechanisms, capable of binding Member States and ensuring greater accountability in the governance of climate risk. Particular attention is paid to the interaction between adaptation law and other areas of EU law, as well as to the potential role of intergenerational principles and the right to a healthy environment in redefining the foundations of public responsibility.

The aim is to contribute to the transition from a programming-oriented model of adaptation governance to a fully-fledged legal regime – one that integrates sectoral legislation,intergenerational justice, and fundamental rights, while respecting subsidiarity and the division of competences between the Union and its Member States. Yet the climate crisis does not occur in isolation: it forms part of a broader constellation of crises – health, energy, economic – which place increasing strain on institutional structures and call for integrated, systemic legal responses. In this light, adaptation may serve as a testing ground for the construction of a broader European law of crises, capable not only of reacting to emergency, but also of proactively guiding the planning, transformation, and long-term resolution of systemic disruptions.

Key questions and theses for international discussion:

- Does the European Green Deal provide for the full and coherent integration of adaptation, or does a structural normative gap persist in comparison to mitigation?
- Is the EU Adaptation Strategy sufficient to meet future climate challenges, or is a qualitative leap towards binding legislation required?
- What legal and institutional pathways might lead to a European law of adaptation with normative force, implementation effectiveness, and accountability mechanisms?

Biography

Francesco Vetrò is Full Professor of Administrative Law and Rector's Delegate for Legal Affairs at the University of Parma. His research focuses on general administrative law, public accounting and procurement, public assets and services, and competition law. He is the author of numerous publications on these topics and frequently speaks at conferences and seminars in Italy and abroad.He has been Visiting Professor at the University of Granada and the University Rovira i Virgili of Tarragona. A qualified lawyer, he has served as Chair of the Board of Directors of Gestore dei Servizi Energetici S.p.A. and of the Cassa per i Servizi Energetici ed Ambientali, and was listed as a senior expert in energy, mobility, and transport by DG Energy of the European Commission. He currently serves as director and chair in capital companies in the banking, finance, energy, and biotech sectors, and as Proboviro of Cisambiente – Confederazione Servizi Ambiente.

Nicola Brignoli holds a Ph.D. in Legal Sciences and is a research fellow in the project "Public Procurement in Special Sectors" and Teaching Assistant in Administrative Law at the University of Parma. He was Visiting