biodiversa+
European Biodiversity Partnership

EUROPEAN PARTNERSHIP

Stakeholder Conflicts and Conflict Management in Nature Restoration in Europe, and Beyond

BiodivRestore Knowledge Hub Work Stream “Stakeholder Conflicts”

Co-funded by
the European Union

Document Information

Grant Agreement number	101052342
Project acronym	Biodiversa+
Project full name	The European Biodiversity Partnership
Biodiversa+ duration	7 years
Biodiversa+ start date	Start date: 1st October 2021
For more information about Biodiversa+	Website: http://www.biodiversa.eu/ Email: contact@biodiversa.eu LinkedIn: Biodiversa+

Deliverable title	Stakeholder Conflicts and Conflict Management in Nature Restoration in Europe, and Beyond
Dissemination level	Public
Authors	Metodi SOTIROV, Rik DE VREESE, Richard LILLEY, Maitane ERDOZAIN, Lyla O'BRIEN, Vito Emanuele CAMBRIA, Jean-Yves GEORGES, Kathrin THEISSINGER, Laura PUÉRTOLAS, Elena VELADO-ALONSO, Josep LLORET, Rachel KRISTENSEN, Laura GUIMARÃES, Kris DECLEER, Sebastian BIRK, Nataša LOVRIĆ, Jerylee WILKES-ALLEMANN, Marie MÜLLER, Walter Timo DE VRIES, Judith FISHER, Chris FRISSELL, Arturo ELOSEGI, Miriam COLLS, Marco MASSIMI, Laura G. AMORÓS, Josep VILA, Sílvia GÓMEZ, Ondrej KUSBACH, Cloé DURIEUX.
Lead partner	Technology Agency of the Czech Republic (TA CR), Agence nationale de la recherche (ANR)
Date of publication	September 2026
Disclaimer	Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them. This deliverable may not have been approved yet by the European Commission and may be subject to change.

Cover page illustration: Photo by Raymond RUTJES on Unsplash

What is Biodiversa+

The European Biodiversity Partnership, Biodiversa+, supports excellent biodiversity research with impact for policy and society. Connecting science, policy and practice for transformative change, Biodiversa+ is part of the European Biodiversity Strategy for 2030, which aims to put Europe's biodiversity on a path to recovery by 2030. Co-funded by the European Commission, Biodiversa+ brings together partners from research funding, research programming and environmental policy across European and associated countries to work on five main objectives:

Plan and support research and innovation on biodiversity through a shared strategy, annual joint calls for research projects, and capacity building activities.

Set up a network of harmonised schemes to improve monitoring of biodiversity and ecosystem services across Europe.

Contribute high-end knowledge for deploying Nature-based Solutions and valuing biodiversity in the private sector.

Ensure efficient science-based support for policy-making and implementation in Europe.

Strengthen the relevance and impact of pan-European research on biodiversity in a global context.

More information: https://www.biodiversa.eu/

Table of contents

What is Biodiversa+ **3**
Table of contents **4**
Acknowledgments **6**
Executive Summary **7**
Five types of restoration conflicts and conflict management pathways 7
The central finding: diagnose before prescribing 8
Implications for the EU's Nature Restoration Regulation 9
Overall conclusion 10
1. Introduction **11**
1.1. The BiodivRestore Knowledge Hub and the purpose of this report 11
1.2. Nature restoration as an ecological and societal imperative 11
1.3. The European policy context: from nature protection to legally binding restoration 12
1.4. National Restoration Plans as a science-policy and governance challenge 13
1.5. Stakeholder conflicts as a major barrier to restoration 14
1.6. The social science gap in nature restoration research and practice 15
1.7. A conflict-diagnostic approach 16
1.8. Aim, objectives and research questions 18
1.9. Scope and intended audience 18
1.10. Structure of the report 19
2. Theoretical and analytical framework of stakeholder conflicts and conflict management **20**
2.1. Understanding stakeholder conflict in nature restoration 20
2.2. Five ideal types of societal conflict 21
2.3. Ideal types, dominant conflicts and conflict dynamics 25
2.4. From conflict diagnosis to conflict management 25
2.5. Analytical framework applied in this report 26
3. Methodology **27**
3.1. Study design 27
3.2. Identification and review of evidence 27
3.3. Case identification and the Case Study Kit 28
3.4. Diagnosing dominant and interacting conflict types 29
3.5. Comparative and cross-case synthesis 30
3.6. Methodological scope and limitations 30
4. Stakeholder conflicts and conflict management in Europe: case studies **31**
4.1. Agricultural ecosystems 31
4.2. Forest ecosystems 44
4.3. Freshwater ecosystems 56
4.4. Coastal and marine ecosystems 76
4.5. Urban ecosystems 88
4.6. Multiple ecosystems 90
5. Stakeholder Conflicts and Conflict Management in Nature Restoration in Europe: A Historical Perspective **97**

5.1. Interest-based Conflicts: Competing Land Uses and Economic Incentives..... 97
5.2. Rules-based Conflicts: Policy Incoherence and Regulatory Rigidity..... 98
5.3. Norms-based Conflicts: Cultural Practices, Social Expectations, and Public Perceptions.....99
5.4. Ideological and Knowledge-based Conflicts: Values, Perceptions, and Awareness..... 100
5.5. Power-Based Conflicts: Ownership, Governance, and Decision-Making Authority..... 101
6. Discussion..... 102
6.1. From historical experience to contemporary restoration conflict..... 103
6.2. Cross-case patterns: different ecosystems, recurring conflict types..... 103
5.3. Matching conflict-management pathways to underlying conflict causes..... 105
6.4. What can be learned from unsuccessful and unresolved conflict management?..... 109
6.5. Contribution to the state-of-the-art knowledge.....110
6.6. Implications for the EU Nature Restoration Regulation and National Restoration Plans.....111
6.7. Recommendations for policy and practice..... 112
6.8. Research needs and concluding reflections..... 114
Conclusion..... 116
References..... 117

Acknowledgments

Rik De Vreese has been supported by the UNPplus project (Urban Nature Plans+), UNPplus is funded by the European Union (Grant Agreement No. 101135386). Lyla O'Brien acknowledges funding from the EU Horizon project WILDCARD (Grant Agreement No.101081177). Elena Velado-Alonso was supported by the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship METAGROLAND (grant agreement 101204400). Kathrin Theissinger and Jean-Yves Georges were supported by the Long-term Studies in Ecology and Evolution (SEE-Life) program of CNRS at Neu-Woerr, the project Emys-R (https://emysr.cnrs.fr/) funded through the 2021-2021 Biodiversa+ and Water JPI joint call for research projects, under the BiodivRestore ERA-NET Cofund (GA No. 101003777), with the EU and the funding organizations Agence Nationale de la Recherche (ANR, France, grant ANR-21-BIRE-0005), Bundesministerium für Bildung und Forschung (BMBF, Germany, grant BMBF project number 03LW015), State Education Development Agency (VIAA, Latvia, grant ES RTD/2022/2), and National Science Center (NSC, Poland, grant 2021/03/Y/NZ8/00101). Kathrin Theissinger was additionally supported by the DFG Heisenberg programme (TH 1807/10-1).

Executive Summary

The EU Nature Restoration Regulation marks a major step in European biodiversity policy by establishing legally binding restoration objectives across freshwater, coastal, marine, agricultural, forest, and urban ecosystems. Achieving these objectives, however, is not only an ecological and technical challenge. Restoration changes how land, water and natural resources are used and governed. It can affect livelihoods, property and use rights, policy and law, economic opportunities, established practices, cultural values and the distribution of decision-making authority. Anticipating and managing societal conflicts is therefore likely to be an important feature of restoration planning and implementation.

This report examines **why societal conflicts arise in nature restoration and how different types of conflict can be managed more effectively**. Its central proposition is that successful conflict management requires more than stakeholder participation or communication in general: it requires identifying the underlying mechanisms producing disagreement and matching management responses to that mechanism. The report develops and applies a framework distinguishing five types of conflicts and conflict management pathways: **interest-based, rules-based, norms-based, ideological/knowledge-based and power-based**. In practice, conflict causes can be multiple, with dominant causes of conflict potentially hiding underlying and interacting causes of conflicts. The dominant cause of conflict may even change over time.

The analysis combines a review of relevant literature and historical European experience with a purposive portfolio of restoration cases covering agricultural, forest, freshwater and peatland, coastal and marine, urban and multi-ecosystem settings. The cases were selected to identify and compare conflict causes and conflict management pathways rather than to estimate how frequently particular types of conflict occur across Europe.

Five types of restoration conflicts and conflict management pathways

The cross-case analysis shows that similar restoration measures can generate very different conflicts, while similar conflict types occur across very different ecosystems. **The ecosystem type or restoration measure alone therefore does not explain the stakeholder conflict; the underlying** causes and mechanisms of **societal conflicts need to be diagnosed.**

Interest-based conflicts arise where stakeholders face competing material costs, benefits, risks or opportunities. Restoration may generate substantial public ecological benefits while imposing concentrated private costs - for example through reduced agricultural production, restrictions on resource use, or changes in access to land. Where the interest-based cause is dominant , information or consultation alone is unlikely to resolve opposition, but participation may be helpful to understand the interests that stakeholders consider to be threatened by restoration. Compensation, incentives, contracts, benefit sharing or changes to the economic conditions of restoration may be necessary. The RESALAR and SUPERB cases illustrate this logic.

Rules-based conflicts arise where restoration objectives interact with inconsistent, ambiguous or competing formal rules. The cases include tensions between environmental restoration and cultural-heritage protection as well as between EU biodiversity requirements and national policy and legal frameworks in forestry, freshwater water, marine and coastal cases. Such conflicts require policy

coordination, legal clarification, regulatory reform or, in some circumstances, authoritative judicial decisions. Participation may help manage the wider societal consequences, but it cannot by itself reconcile contradictory legal obligations.

Norms-based conflicts concern legitimacy, fairness, recognition and socially accepted practices. Stakeholders may support environmental objectives while opposing the way restoration is planned or implemented, particularly where interventions challenge established understandings of responsible land management or where affected actors believe that their concerns have not been recognised. The Parkforest Ghent case demonstrates how negotiation, participation, compensation, land swaps and adjustment of implementation plans can improve the social acceptability of restoration. Participation can improve the (perceived) fairness and legitimacy of the process, and stakeholders can feel more recognised.

Ideological and knowledge-based conflicts arise from competing beliefs, interpretations, knowledge claims and understandings of what landscapes and ecosystems should be. Providing more scientific information may be useful where uncertainty is genuinely factual, but information alone is insufficient where disagreement concerns values, identity or competing interpretations. Such conflicts require collaborative processes such as dialogue, joint learning, knowledge exchange, mediation and sometimes long-term relationship building. The Deba river-restoration case illustrates how apparently technical disagreement over barrier removal was intertwined with cultural identity, perceived risks and competing understandings of the river landscape.

Power-based conflicts concern who possesses resources, authority and effective influence over restoration decisions. Formal consultation does not necessarily correct such inequalities. Where power is central, conflict management may require co-governance, empowerment, procedural safeguards or institutional reform. Several cases (Abbeyleix Bog, Mar Menor, RESELAR, Gulf of Roses, Parkforest Ghent) show that differences in access to expertise, legal resources and decision-making institutions can influence restoration processes, while the Mar Menor case demonstrates how institutional innovation can alter who has standing to represent ecological interests.

The central finding: diagnose before prescribing

Across the cases reviewed, the strongest general finding is that **conflict-management pathways need to correspond to the causal mechanisms sustaining the conflict**. Economic losses require an economic response; contradictory rules require institutional or legal action; legitimacy problems require fair and meaningful procedures; competing knowledge and values require learning and dialogue; and unequal influence requires attention to power and decision-making authority.

At the same time, real restoration conflicts rarely fit neatly into a single category. Interest, rules, norms, knowledge and power interact. As conflict types are multiple and interact, addressing one dimension can therefore leave another unresolved. In the Deba catchment case, for example, legal clarification removed a formal barrier to river restoration but did not eliminate local social opposition which was based on cultural identity, perceived risks and competing understandings of the river landscape. In North Rhine-Westphalia case, relocating a contested forest-restoration intervention allowed implementation elsewhere but displaced rather than resolved the underlying disagreement.

The practical implication is that stakeholder conflict management should follow an **adaptive sequence: anticipate potential conflict → diagnose the dominant conflict cause and interacting causal mechanisms → match the primary conflict management pathway**

→ **combine and sequence complementary conflict management instruments → monitor outcomes → re-diagnose and adapt.**

This sequence can be applied both for anticipating conflicts and for analysing and managing current conflicts.

Successful restoration governance consequently depends on **smart mixes of conflict management pathways** , rather than a universal reliance on individual tools such as participation, regulation or financial incentives. Historical European experience reinforces this conclusion: restoration conflicts have long been addressed through combinations of economic incentives, regulation, specialised institutions, education and advisory services, contractual arrangements and shared governance.

Implications for the EU's Nature Restoration Regulation

The findings have direct implications for preparation and implementation of **National Restoration Plans (NRPs) and nature restoration projects in the context of the EU's Nature Restoration Regulation**. Conflict analysis should be integrated into restoration planning from the outset rather than introduced only after opposition emerges. Alongside ecological condition, restoration potential, financing and monitoring requirements, authorities should systematically consider **who bears costs and receives benefits; where legal and policy requirements conflict; whether proposed interventions are perceived as legitimate; which competing values and knowledge claims exist; and how decision-making power is distributed**.

Five priorities emerge for implementing the EU's Nature Restoration Regulation through conflict management in nature restoration in Europe, and beyond (own illustration):

Priority	Implication for restoration planning
1. Anticipate conflict early	Undertake stakeholder and conflict analysis before restoration measures and locations become fixed.
2. Diagnose causes, not only positions	Distinguish material interests, conflicting rules, legitimacy concerns, knowledge/value disagreements and power inequalities.
3. Match conflict management pathways and instruments to identified conflict types and causal mechanisms	Use compensation for material losses, legal coordination for rule conflicts, meaningful participation for legitimacy problems, dialogue and learning for knowledge/value conflicts, and institutional reform where power is central.
4. Combine and sequence conflict management instruments	Most stakeholder conflicts require economic, legal, procedural, informational and institutional measures in combination rather than a single intervention.
5. Monitor and re-diagnose	Include social and governance indicators alongside ecological monitoring because conflicts can evolve during implementation.

Particular attention should be given to **policy coherence, which belongs to rules-based conflicts and conflict management pathways**. The cases analysed repeatedly identify tensions between environmental objectives and other legal or sectoral frameworks. National Restoration Plans under the EU' Nature Restoration Regulation therefore offer an opportunity not only to identify where restoration should occur, but also to identify and address regulatory inconsistencies across agriculture, forestry, fisheries, water, heritage, energy, infrastructure and other policy domains, and their sectoral plans, legal, policy and funding frameworks.

The findings also qualify the widespread emphasis on stakeholder participation. **Participation is essential, but it is not itself a complete conflict-management strategy.** Consultation cannot compensate an economically disadvantaged landholder, reconcile incompatible legislation or redistribute decision-making authority. The appropriate form and depth of participation should therefore depend on the conflict cause type and the degree of influence stakeholders require.

Finally, the objective should not necessarily be to eliminate societal conflict. Restoration involves genuine differences in interests, values and visions of desirable landscapes, some of which cannot be fully reconciled. Effective conflict management may therefore mean resolving a dispute, mitigating its consequences, reaching accommodation, establishing legitimate institutions for continuing disagreement, or transforming the conditions that generated the conflict. This broader understanding is consistent with the report's analytical framework.

Overall conclusion

The report concludes that **nature restoration is simultaneously an ecological intervention and a process of societal choice and governance**. Societal conflict is not simply evidence of poor communication or stakeholder resistance. It can signal uncompensated costs, contradictory policies, contested legitimacy, competing knowledge and values, or unequal power. Understanding which of these causes are operating is therefore essential for effective restoration.

For the implementation of the EU's Nature Restoration Regulation, the central recommendation is to make **conflict-sensitive governance an integral part of National Restoration Plans and Practical Application**. EU institutions and Member States will require not only ecological targets, maps, indicators and restoration measures, but also institutional capacity for stakeholder conflict mapping and management to anticipate societal conflict, diagnose its causes and deploy appropriate combinations of economic, legal, procedural, informational and institutional conflict management pathways .

European historical experiences and the contemporary cases examined in this report point in the same direction: durable restoration depends not only on determining **what ecosystems need**, but also on understanding **why people disagree, who bears the consequences of restoration, how decisions are made, and which governance arrangements can make ecological recovery socially legitimate and institutionally durable**.

1. Introduction

1.1. The BiodivRestore Knowledge Hub and the purpose of this report

The BiodivRestore Knowledge Hub on Nature Restoration was established in May 2024 by BiodivRestore Cofund and WaterJPIas a pan-European network connecting research, policy and practice. Building on the 22 research projects funded through the BiodivRestore call, the Knowledge Hub (KH) brings together expertise from ecology, biodiversity science, social and political sciences, land and water management, and related fields. Overall, the KHbrings together 50 experts from BiodivRestore projects, other Biodiversa+ projects and EU initiatives. Its central purpose is to synthesise and share knowledge that can support countries in developing and implementing National Restoration Plans and achieving European and international restoration targets.

The KH operates through an Implementation Task Force and a Research and Innovation Task Force. During its establishment, the latter identified societal conflict resolution as one of three priority workstreams, alongside monitoring and lesson learning and the future research and innovation agenda. The societal conflict-resolution workstream was created in recognition of the challenges associated with stakeholder involvement, differences among national restoration approaches, and the need to align scientific knowledge with policy and implementation needs.

This report is a principal output of that workstream. It responds to a practical and scientific problem: nature restoration is increasingly ambitious, legally consequential and socially demanding, yet knowledge about stakeholder conflicts and their management remains fragmented. Restoration guidance frequently recognises that stakeholders should be involved, that local knowledge should be considered and that decision-making should be inclusive. These principles are important, but they do not by themselves explain why stakeholders enter into conflict or why an engagement process succeeds in one setting and fails in another.

The report therefore takes a more diagnostic approach. Its central argument is that effective conflict management begins with understanding the dominant underlying cause of a conflict. Opposition may be driven primarily by economic costs and benefits, contradictory legal or policy rules, contested norms of fairness and legitimacy, incompatible beliefs or knowledge systems, or unequal control over authority and resources. Because these causes differ, the instruments needed to address them also differ. At the same time, real conflicts commonly involve several interacting causes, requiring combinations or sequences of management strategies rather than a single instrument.

This report consequently does not constitute another general call for stakeholder participation. Instead, it develops and applies a framework for diagnosing five types of stakeholder conflict and relating them to appropriate, and often interacting, conflict-management pathways.

1.2. Nature restoration as an ecological and societal imperative

Ecosystem degradation, biodiversity loss, climate change, pollution, biological invasions and the fragmentation and transformation of land and seascapes have reduced the condition, functioning and resilience of ecosystems in Europe and globally. Nature restoration has therefore become a central element of contemporary biodiversity policy. It complements the protection of remaining biodiversity by

assisting the recovery of ecosystems that have been degraded, damaged or destroyed and by re-establishing ecological functions, connectivity and resilience.

International restoration policy has expanded substantially during the past two decades. Restoration features prominently in the United Nations Decade on Ecosystem Restoration, the Kunming–Montreal Global Biodiversity Framework and the European Union's Biodiversity Strategy for 2030. These policies become more concrete in the EU's Nature Restoration Regulation (2024), which sets binding goals for restoring nature in Europe, including in agricultural areas, urban areas and forests and along rivers. The growing policy commitment reflects recognition that conservation that solely focuses on preventing additional damage is insufficient where ecosystems are already extensively degraded.

Contemporary international restoration standards treat restoration as a planned, context-dependent process requiring engagement with ecological conditions, social settings, governance arrangements and stakeholder interests throughout design, implementation and evaluation (Gann et al., 2026). Kerr et al. (2026) proposed that ecological novelty should be analysed not only through compositional, functional and abiotic change but also through a social dimension encompassing human interactions with, and perceptions of, nature. Accordingly, conservation requires choices about what should be restored, where restoration should occur, which ecological reference conditions or future trajectories should be pursued, what forms of land and resource use remain acceptable, and how costs, benefits, responsibilities and risks should be distributed. These choices are becoming more difficult under rapid environmental change. Climate change, land-use transformation, species introductions, defaunation and other pressures increasingly produce ecosystems that differ from historical configurations. Hobbs et al. (2009) argued that such novel or no-analogue systems challenge conventional restoration norms based on recreating past species assemblages.

Restoration targets are therefore not always self-evident or socially neutral. Different actors may support different baselines, desirable ecosystem states and forms of intervention. They may disagree about whether restoration should prioritise historical fidelity, biodiversity, ecosystem services, climate resilience, cultural landscapes, food production, livelihoods or combinations of these objectives. Nature restoration is thus simultaneously an ecological intervention and a process of collective societal choice and societal conflict within complex social-ecological systems.

1.3. The European policy context: from nature protection to legally binding restoration

European biodiversity policy has long been anchored in the EU's Birds and Habitats Directives. These Directives established a common legal framework for protecting species and habitats and created the Natura 2000 network. Scientific and practical evidence indicates that the Nature Directives remain fundamentally fit for purpose and have contributed, where effectively implemented, to reducing pressures, slowing declines and enabling recoveries of protected species and habitats. The Natura 2000 network has also generated substantial ecosystem-service and societal benefits (Sotirov et al. 2026).

Nevertheless, many of the EU's Nature Directives' objectives remain incompletely achieved. The 2026 Biodiversa+ White Paper on safeguarding European biodiversity legislation concludes that the principal limitations lie in implementation gaps rather than fundamental deficiencies in the legislation. These gaps include insufficient financing and administrative capacity, inadequate translation of obligations into operational action, weak policy coherence with economic and land-use sectors, stakeholder tensions,

monitoring deficiencies and insufficient coordination across administrative and ecological boundaries (Sotirov et al. 2026).

The EU Nature Restoration Regulation, Regulation (EU) 2024/1991, represents an important expansion of this policy framework. It establishes legally binding obligations for restoring terrestrial, coastal, freshwater, marine, agricultural, forest and urban ecosystems. Among other requirements, Member States must introduce restoration measures for specified habitat types, improve ecosystem indicators and prepare National Restoration Plans setting out how the Regulation's targets and obligations will be achieved. Draft National Restoration Plans were to be submitted to the European Commission by 1 September 2026.

The Regulation therefore moves European policy beyond a primary focus on protecting remaining biodiversity towards the active recovery of degraded ecosystems at a much larger scale. Its implementation will require decisions across privately and publicly owned land and waters, economic sectors, policy domains and levels of government. National authorities will need to coordinate restoration with agriculture, forestry, fisheries, water management, urban development, infrastructure, climate and energy policy. They must also consider the relationship between National Restoration Plans and other policy and funding frameworks, including national Common Agricultural Policy strategic plans.

This expansion makes restoration not only more ambitious but also more politically and administratively complex. The designation and management of Natura 2000 sites already demonstrated that conservation policies can generate prolonged conflicts over land-use restrictions, compensation, property and use rights, scientific knowledge, administrative competence, legitimacy and participation. The Nature Restoration Regulation extends implementation beyond existing protected areas and affects a wider range of ecosystems, activities and stakeholders. It therefore has the potential both to deliver substantial public benefits and to create or intensify societal conflicts unless these are anticipated and appropriately managed.

1.4. National Restoration Plans as a science-policy and governance challenge

National Restoration Plans constitute the principal instrument through which Member States will translate the Regulation's European targets into national priorities, measures and implementation arrangements. Their preparation requires ecological assessments and spatial planning, but also decisions about financing, institutional responsibilities, policy coherence, stakeholder involvement and the distribution of implementation burdens.

The Biodiversa+ Dialogue-Event on National Restoration Plans held in May 2025 brought together representatives of 20 EU Member States and experts from the BiodivRestore Knowledge Hub to exchange experience on the preparation of the plans and identify common knowledge gaps. The dialogue revealed encouraging progress but also systemic challenges associated with data availability, methodologies, institutional coordination, policy and funding coherence, communication, participation and implementation capacity. Participants emphasised the need to give stakeholders a stronger voice in the design and implementation of National Restoration Plans, communicate the multiple benefits of restoration and the costs of inaction, improve alignment between EU policies and funding mechanisms, and retain sufficient adaptability to incorporate new information and feedback (Orliac et al. 2025).

The dialogue demonstrates that National Restoration Plans cannot be treated as purely technical documents. They must integrate ecological evidence with political priorities, sectoral policies, existing

rights and obligations, socioeconomic conditions and plural societal values. Even where stakeholders broadly support nature restoration, they may disagree over its location, timing, methods, financing, legal implications or distributional consequences.

Stakeholder involvement is therefore necessary, but the practical challenge is not solved merely by creating opportunities for participation. Authorities need to understand what lies behind disagreement. A consultation process cannot remove an uncompensated economic loss; additional scientific information may not overcome a fundamental value conflict; economic incentives may not resolve concerns about procedural injustice; and locally inclusive dialogue may have limited effect if the decisive authority is held elsewhere. National Restoration Plans require not only engagement architectures but also analytical capacity to diagnose conflicts and select strategies suited to their causes.

1.5. Stakeholder conflicts as a major barrier to restoration

Stakeholder conflicts are consistently recognised as a major obstacle to effective restoration (Erdozain et al. 2026). In a Delphi assessment of European restoration experts, Cortina-Segarra et al. (2021) identified 33 barriers to the advancement of ecological restoration. The most important barriers were located mainly in the socioeconomic and political domains rather than the environmental domain. Insufficient funding ranked first, followed by conflicting interests among stakeholders and low political priority for restoration.

Restoration can affect a wide range of actors, including landowners, farmers, pastoralists, foresters, fishers, hunters, recreationists, water users, businesses, local communities, municipalities, conservation organisations, researchers and public authorities. These actors differ in their dependence on land and natural resources, exposure to restoration costs, access to benefits, legal rights, professional knowledge, cultural attachments and influence over decision-making.

Conflicts may concern competing uses of the same land or water, restrictions on established practices, lost income or opportunity costs, eligibility for payments, distribution of public funding, inconsistencies between conservation and sectoral legislation, administrative burdens, perceived exclusion from decision-making, distrust of authorities, disagreements over ecological evidence, or competing conceptions of desirable human-nature relationships. Some conflicts are visible through formal objections, litigation or protest. Others remain latent, becoming apparent through non-participation, non-compliance, delayed implementation or symbolic rather than substantive delivery.

Empirical research shows that even stakeholders supporting restoration in principle may interpret its priorities differently (Erdozain et al. 2026). In a study in South America, Castillo et al. (2020) found that local communities, ecological experts and government managers prioritised different restoration areas and decision criteria. Community members placed greater emphasis on ravines and watercourses, whereas experts prioritised landscape connectivity, biodiversity and ecological value. Experts also assigned less importance to social and economic criteria than community members and government managers. The authors concluded that such differences need to be addressed to secure social approval and long-term restoration success.

This illustrates an important distinction between stakeholder diversity and stakeholder conflict. The existence of different interests, values or forms of knowledge does not automatically constitute conflict (Gómez, Carreño, Lloret, 2021). Conflict emerges when actors perceive their objectives, claims, rights, values or preferred courses of action as incompatible and act - or are likely to act - in ways that obstruct one another. Despite being "conflicts with environmental content" (Folchi, 2001), they also contain cultural values and mask economic interests and power relations with concerns for the environment. As

Folchi states: “conflict of environmental content occurs, precisely when the historical stability achieved between a community and its habitat is put under stress” (2001: 91). Conflict may be destructive when it entrenches polarisation, delays action or produces inequitable outcomes. Yet conflict can also reveal hidden costs, institutional contradictions, excluded knowledge or power asymmetries. Properly analysed and managed, it may contribute to learning, institutional adaptation and more legitimate restoration strategies.

The aim of conflict management is therefore not necessarily to eliminate disagreement. In many restoration settings, complete consensus is neither realistic nor normatively desirable. The more appropriate goals may be to prevent escalation, clarify differences, correct avoidable injustices, create workable agreements, facilitate coexistence or transform the institutions and relationships that reproduce conflict.

1.6. The social science gap in nature restoration research and practice

Despite the importance of these issues, restoration research has historically been dominated by ecological and biophysical approaches. Ballari et al. (2020), reviewing ecological restoration scholarship across the Global North and Global South, found that ecological research frameworks predominated. Socio-ecological frameworks were emerging, but explicitly social-science studies remained uncommon; within their sample, such studies were found only in the Global North and represented a small share of the literature.

Bibliometric evidence points to gradual change. Shen et al. (2023) found that ecological restoration research increasingly addresses coupled socioeconomic and natural systems and identified multidisciplinary integration as an important direction for future research. Nevertheless, ecological restoration of particular ecosystem types, biodiversity conservation and environmental drivers continued to dominate the field’s research hotspots.

This imbalance is not unique to restoration. Bennett et al. (2017) observed that conservation social sciences remain misunderstood and underutilised despite widespread recognition that conservation outcomes depend on human-nature relationships, behaviour, governance and institutions. They identified ideological, institutional, knowledge-related and capacity barriers to meaningful social-science integration and argued for the inclusion of social scientists throughout conservation planning and implementation rather than only after technical plans have been developed.

Recent restoration scholarship has responded by advancing more explicitly social-ecological approaches. Löfqvist et al. (2023) argue that restoration science and policy often overlook the social processes that determine equity and effectiveness. Their review indicates that projects aligned with local preferences and implemented through inclusive governance are more likely to produce positive social and ecological outcomes. Tedesco et al. (2023) similarly conceptualise restoration as an inclusive social-ecological process integrating multiple values, practices, knowledge systems and objectives across scales and stakeholder groups. They emphasise that equity and power asymmetries need to be considered from the beginning and throughout restoration design and evaluation.

Other contributions stress participation, community empowerment, local knowledge, social and environmental justice, and alignment between restoration and local needs. Maniraho et al. (2023), for example, conclude that many forest-landscape restoration initiatives overlook social perspectives, and

therefore propose a set of social-ecological drivers centred on inclusion, empowerment, justice, local knowledge and locally meaningful objectives.

This literature has substantially advanced recognition of the social dimensions of restoration. However, it has devoted less systematic attention to the differentiated causal structure of stakeholder conflicts and to the question of which management instruments are appropriate for which conflict mechanisms. Social considerations are often treated as a broad category, while participation, collaboration, co-design or communication are proposed as generally applicable solutions.

Such approaches may be useful but are not universally sufficient. Conflicts over income losses require attention to costs and incentives. Conflicts caused by contradictory laws require legal or policy coordination. Conflicts over legitimacy may require procedural reform and recognition. Conflicts rooted in incompatible beliefs or knowledge systems may require dialogue, deliberation and learning. Conflicts arising from unequal authority may require institutional restructuring or empowerment. Treating all of these situations as a generic need for "more stakeholder engagement" risks misdiagnosing the conflict and applying instruments that do not address its underlying cause.

1.7. A conflict-diagnostic approach

Based on synthesis of social science research and conflict theories (see chapter 2), this report addresses that gap through a typology of five stakeholder-conflict types:

1. **Interest-based conflicts**, centred on the distribution of material costs, benefits, risks and opportunities;
2. **Rules-based conflicts**, arising from legal, regulatory, policy or institutional inconsistency and disagreement over applicable rules;
3. **Norms-based conflicts**, concerning social expectations, fairness, legitimacy, recognition and appropriate conduct;
4. **Ideological and knowledge-based conflicts**, rooted in competing values, beliefs, causal interpretations, problem definitions or knowledge systems; and
5. **Power-based conflicts**, concerning authority, representation, access to decision-making and control over material, institutional or informational resources.

These categories are analytical ideal types. They isolate distinct logics of stakeholder action and conflict causation, but they are not intended to imply that empirical conflicts fall into separate and mutually exclusive boxes. A restoration conflict may, for example, begin as a disagreement over uncompensated costs, become intensified by perceptions of unfair procedure, and subsequently develop into a broader ideological struggle over the legitimacy of restoration policy. Conversely, an apparent knowledge dispute may partly reflect institutional interests or an unequal distribution of authority.

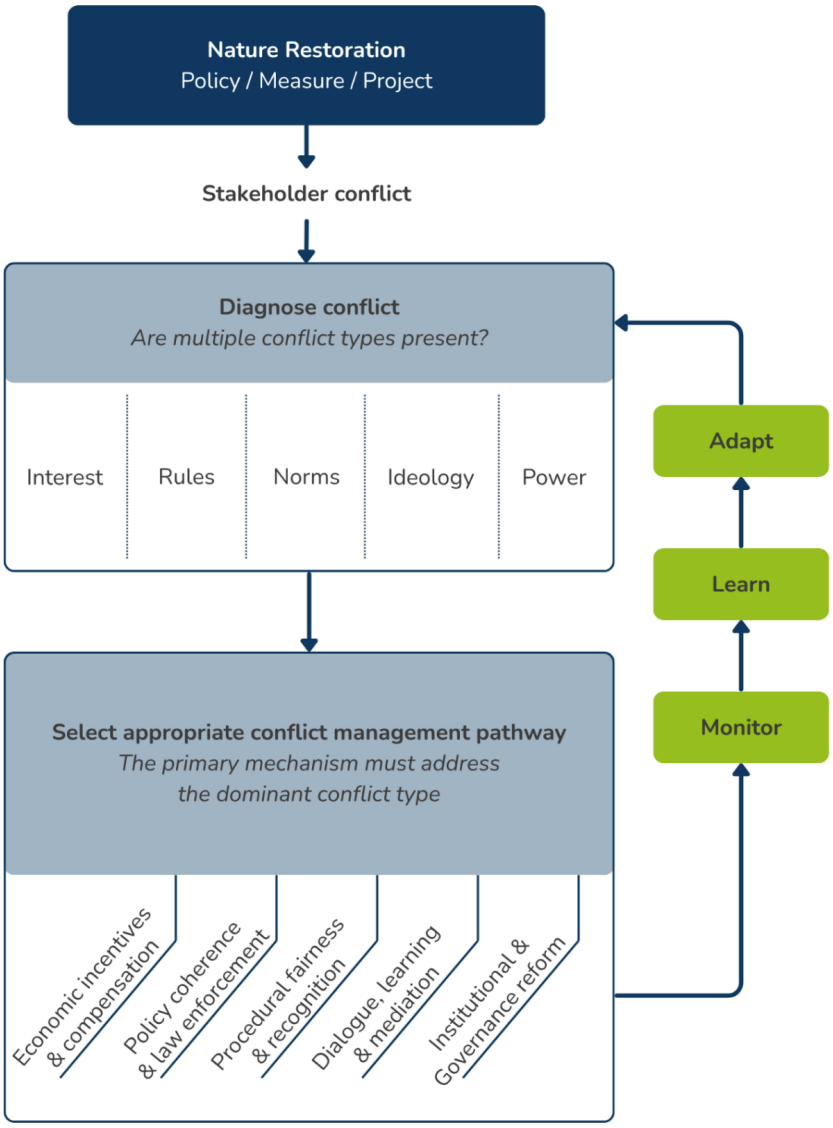
The framework therefore distinguishes between the **dominant conflict type** and the wider **conflict configuration**. The dominant type is the causal mechanism that best explains the principal opposition, impasse or escalation at a given time. The conflict configuration comprises the additional conflict dimensions that interact with it. Dominance of a particular conflict type may change over time as policies develop, stakeholders mobilise and management interventions alter the conflict.

The same logic applies to conflict management (see details in Chapter 2). The dominant conflict type indicates the primary mechanism that an intervention must address and therefore provides a starting point for selecting an appropriate conflict management pathway:

- economic instruments for material and interest-based problems;
- legal and regulatory instruments for rules-based problems;
- procedural and recognition-oriented instruments for norms-based problems;
- informational, deliberative and learning-oriented instruments for ideological or knowledge-based problems; and
- institutional and organisational reforms for power-based problems.

This is not a rigid one-to-one formula. A primary instrument may need to be accompanied by complementary measures addressing interacting conflict dimensions. Financial compensation may be necessary but insufficient where land users distrust the responsible authority. Participation may improve legitimacy but cannot compensate for substantial income losses. A court ruling may clarify legal obligations while leaving underlying ideological disagreement unresolved. Effective conflict management may therefore require a smart mix or sequence of instruments adapted as the conflict evolves.

Figure 1. Conflict-diagnostic framework for stakeholder conflict management in nature restoration (own illustration).



1.8. Aim, objectives and research questions

The overall aim of this report is to strengthen the capacity of policymakers, public authorities, practitioners and stakeholders to anticipate, analyse and manage societal conflicts associated with nature restoration, with particular relevance to implementation of the EU Nature Restoration Regulation and National Restoration Plans.

The specific objective of the research is to identify and compare the principal mechanisms through which stakeholder conflicts arise and are managed in different restoration contexts, through a comparative qualitative review of literature and restoration projects.

The report pursues four specific objectives:

- to establish a theoretically grounded typology of stakeholder conflicts in nature restoration;
- to relate the five conflict types to corresponding conflict-management pathways;
- to apply the framework of conflict types and conflict management pathways to empirical cases from different ecosystems, sectors and governance settings in Europe, and beyond; and
- to derive cross-case lessons and practical recommendations for restoration policy and implementation, especially in the context of the EU's Nature Restoration Regulation.

The study addresses three overarching research questions:

1. How, when and why do societal and stakeholder conflicts arise in nature restoration?
2. How can dominant and interacting conflict types be identified and analysed?
3. Which conflict-management pathways including instruments, their combinations and sequences are appropriate under different conflict configurations?

In addressing these questions, the report contributes to science by integrating concepts from political science, institutional analysis, sociology, policy studies, economics, conflict research and conservation social science. It contributes to policy and practice by translating this knowledge into a diagnostic framework that can inform restoration planning, stakeholder analysis, policy design and adaptive conflict management.

1.9. Scope and intended audience

The report focuses primarily on stakeholder conflicts associated with nature restoration in Europe. Particular attention is given to the implementation context of the Nature Restoration Regulation, the Birds and Habitats Directives, Natura 2000 and relevant sectoral policies. Evidence from outside Europe is included where it provides transferable conceptual or practical lessons.

The analysis covers restoration in agricultural, forest, freshwater, marine, coastal and urban ecosystems, as well as conflicts associated with species recovery and wider landscape and resource governance. It considers governmental, economic and civil-society actors operating at transnational, European, national, regional and local levels.

The intended audience includes:

- International organizations (e.g., CBD/IPBES, UNFCCC/IPCCC, FAO, UNEP, IUCN, World Bank), European Union (EU) institutions and national policymakers;
- Public authorities preparing and implementing National Restoration Plans;
- Environmental, agricultural, forestry, fisheries, water and spatial-planning administrations;

- Nature restoration practitioners, project managers, consultants, and think-tanks;
- Landowners, land-users and natural resource managers and their representative organisations;
- Extractive industries and businesses (e.g., mining, agriculture, forestry, fisheries)
- Environmental non-governmental organisations (NGOs), social rights civil society groups (CSOs), community organisations, and citizens groups;
- Researchers and educators in restoration ecology, conservation social science, environmental governance and conflict studies; and
- Organisations supporting mediation, participation, knowledge exchange and institutional development,
- Journalists, mass-media, and the public at large.

1.10. Structure of the report

Chapter 2 presents the theoretical and analytical framework. It defines stakeholder conflict, develops the five conflict types, describes their underlying action logics and links them to broad categories of conflict-management instruments. It also explains the interaction of conflict types, dominant conflict pathways and instrument mixes.

Chapter 3 describes the methodology, including the review and synthesis of scientific and project evidence, expert input, selection and preparation of case studies, and the common analytical template used to enable cross-case comparison.

Chapter 4 presents case studies from different ecosystems, sectors and geographical settings, organized by ecosystem type. Each case identifies the conflict issue and parties, the dominant and interacting conflict types, the principal management pathway, the outcome and the resulting lesson for policy and practice.

Chapter 5 provides a historical perspective on conflicts associated with conservation and restoration, demonstrating how earlier policy experiences have shaped contemporary stakeholder relations and implementation challenges.

Chapter 6 provides the cross-case synthesis. It compares the occurrence of the five conflict types, examines how they interact, evaluates the management instruments and combinations observed in practice, and analyses different forms of conflict outcome, including resolution, mitigation, transformation, accommodation, displacement and persistence.

Chapter 7 integrates the discussion, conclusions and recommendations. It assesses the theoretical and practical contribution of the conflict-diagnostic approach and develops recommendations for the design and implementation of National Restoration Plans and wider nature-restoration policy.

2. Theoretical and analytical framework of stakeholder conflicts and conflict management

2.1. Understanding stakeholder conflict in nature restoration

Nature restoration takes place in social-ecological systems in which multiple actors make decisions about land, water and natural resources on the basis of different interests, rights, responsibilities, values, knowledge and capacities. Even where actors agree on the general desirability of restoring nature, they may disagree substantially about what should be restored, where and how restoration should occur, who should bear its costs, which knowledge should guide decisions, and who has authority to decide (Cortina-Segarra et al. 2021; Löfqvist et al. 2023; Tedesco et al. 2023).

Conflict is therefore an inherent possibility in restoration rather than an exceptional failure of implementation. Forest landscape restoration research, for example, has shown that projects that appear broadly desirable in principle may become controversial in practice because of disagreements over restoration activities, property rights, budget priorities and landscape boundaries. Potential sources of conflict extend beyond material interests to relationships, trust, values, justice, jurisdiction and power (Emborg et al. 2012; Redpath et al. 2013; O'Brien et al. 2025).

For the purposes of this report, **stakeholder conflict** refers to a situation in which two or more actors or groups of actors (incl. public/private actors; states/international organizations) perceive their claims, objectives, interests, values, rules, power or preferred courses of action concerning nature restoration to be incompatible and where this perceived incompatibility affects their behaviour towards one another or towards the restoration process (Wehr 1979; Bartos & Wehr 2012). This definition builds on grand schools of thought in the social sciences that theorize about interest-based, value-based, norms-based, rules-based, and power-based rationalities of human behaviour (Kalberg 1980; Bernstein and Cashore 2012; Sotirov et al. 2019; Sotirov and Swedlow 2026). This also refers to the still underdeveloped conservation-conflict literature, which understands conflicts fundamentally as conflicts among humans rather than between humans and nature (Redpath et al. 2013).

Not every difference constitutes a conflict. Stakeholders can hold different preferences or knowledge without actively opposing one another. Similarly, a **trade-off** describes a situation in which improving one objective entails costs to another, whereas a **conflict** concerns how actors perceive and respond to such incompatibilities. Conflict becomes particularly important for restoration when it produces opposition, non-compliance, litigation, delay, withdrawal, polarisation, institutional blockage or another behaviour that affects implementation (Redpath et al. 2013; Winkel et al. 2015).

A central premise of this report is that the observable subject of a conflict does not necessarily reveal its underlying cause. A dispute that appears to concern a restoration technique may ultimately be driven by financial losses, legal uncertainty, perceptions of unfairness, incompatible beliefs about desirable ecosystems or exclusion from decision-making. Conservation conflicts that appear superficially to concern material impacts can have deeper origins in self-interests, values, cognition, culture, history, institutions, and power relations. Effective management therefore requires **diagnosis of the underlying cause and mechanism generating the stakeholder conflict**, rather than selecting a generic stakeholder engagement technique on the basis of the visible dispute alone. Several conservation social science works show how stakeholder engagement does not necessarily resolve poorly understood stakeholder conflicts, and sometimes can lead to even suboptimal or undesirable

socio-ecological outcomes (e.g., process capture, symbolic implementation, continuation of status-quo, waste of resources, environmental damage) (Winkel et al. 2015; Sotirov et al. 2026).

The analytical approach used throughout this report asks four related diagnostic questions that can be derived from conflict regulation theories and applications to environmental resources (Wehr 1979; Bartos & Wehr 2012; Redpath et al. 2013; Sotirov et al. 2019; Sotirov and Swedlow 2026):

- What is the societal conflict about?
- Who are the conflicting parties and what claims do they make?
- What is the dominant underlying cause of the conflict?
- Which conflict management pathway, intervention or policy instrument is applied to address that cause of conflict and can it help manage the conflict?

2.2. Five ideal types of societal conflict

Human behaviour cannot adequately be explained by a single model of rational decision-making. Social-science theories distinguish different rationalities through which actors assess situations and justify behaviour. Weberian theory in particular rejects a one-dimensional conception of rationality; subsequent interpretations distinguish multiple forms of rationality that may coexist, reinforce one another or come into conflict (Kalberg 1980; Bernstein and Cashore 2012; Sotirov et al. 2019; Sotirov and Swedlow 2026).

This insight is particularly relevant to natural-resource management. Theoretical and empirical evidence shows that assuming interest-led actors simply maximise utility neglects important drivers such as moral norms, values, beliefs and knowledge. A review of empirical and theoretical works demonstrates that several behavioural logics can operate simultaneously, but that one may exert the strongest influence on behaviour in a particular situation (Deuffic et al. 2018; Sotirov et al. 2019).

Building on these theoretical traditions and the analytical framework developed for this report, we distinguish **five ideal types of stakeholder conflict**: interest-based, rules-based, norms-based, ideological/knowledge-based and power-based conflicts (Table 1).

2.2.1. Interest-based conflicts

Interest-based conflicts arise when actors perceive that restoration affects their material benefits, costs, opportunities, needs or rights in incompatible ways. They are grounded primarily in a behavioral **logic of consequences**: actors compare expected gains and losses associated with alternative courses of action (Kalberg 1980; Bernstein and Cashore 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Interests are benefit-centred orientations towards objects, resources, conditions or outcomes. They are generally more context-dependent and negotiable than deeply held values. The scientific literature therefore characterises interest conflicts principally as distributional or redistributive conflicts (Kalberg 1980; Deuffic et al. 2018; Sotirov et al. 2019).

In restoration, such conflicts may arise where landowners lose productive land, farmers incur costs from altered management, fishers face access restrictions, restoration creates risks for infrastructure or businesses, or costs and benefits are distributed unequally among actors. Even when stakeholders support restoration objectives in principle, they may rationally oppose measures that impose substantial private costs while producing predominantly public benefits (Winkel et al. 2015; Deuffic et al. 2018; Sotirov et al. 2019; Sotirov et al. 2026).

Because the underlying cause concerns expected costs and benefits, the primary management pathway is usually **economic**: compensation, subsidies, payments for ecosystem services, contractual arrangements, market incentives, taxes or other instruments that modify the incentive structure (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

The relevant diagnostic question is therefore: **Is opposition primarily driven by who gains, who loses, and by how much?**

2.2.2. Rules-based conflicts

Rules-based conflicts arise when actors face incompatible, unclear or contested formal prescriptions concerning what they are legally or administratively required, permitted or prohibited to do. They follow a **legal or formal logic of appropriateness**: behaviour is shaped by binding laws, regulations, policies, competences, contracts and formally established procedures (Kalberg 1980; Bernstein and Cashore 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Nature restoration frequently operates within dense and sometimes inconsistent policy environments. Biodiversity legislation may conflict with agricultural support rules, forestry legislation, infrastructure requirements, water policy, health safeguards or property regulations. Rules can also conflict vertically - for example between EU, national and regional requirements - or horizontally between sectoral policies at the same governance level (Winkel et al. 2015; Sotirov et al. 2015; Sotirov et al. 2026).

The analytical distinction between rules and norms is important. **Rules-based conflict concerns formal prescriptions and institutional mandates; norms-based conflict concerns socially held expectations of legitimacy and fairness** (Kalberg 1980; Bernstein and Cashore 2012; Deuffic et al. 2018). A restoration measure may therefore be legally unambiguous but socially contested, or socially accepted while formal rules remain contradictory (Winkel et al. 2015; Sotirov et al. 2015).

Rules-based conflicts are primarily addressed through **legal and regulatory pathways**: clarification of legal obligations, amendment or harmonisation of rules, policy integration, administrative decisions, enforcement or judicial rulings (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019). The report's case-study framework similarly identifies legal or policy inconsistency as the principal diagnostic marker of this conflict type and court rulings or binding rules as its characteristic management pathway.

The diagnostic question is: **Is the central obstacle disagreement or inconsistency concerning the formal rules that govern restoration?**

2.2.3. Norms-based conflicts

Norms-based conflicts concern disagreement over what actors consider socially appropriate, fair, legitimate or acceptable behaviour. Norms are sustained not only by formal sanctions but also through expectations, professional standards, traditions, reputation, peer pressure, identity and social approval (Kalberg 1980; Bernstein and Cashore 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Actors may therefore oppose restoration not because it violates a formal rule or causes an unacceptable material loss, but because they perceive the process or outcome as unfair. Typical examples include exclusion from consultation, inadequate recognition of local practices, perceived disrespect for landowners or resource users, unequal treatment of stakeholder groups, or disagreement over what constitutes a legitimate decision-making procedure (Winkel et al. 2015; Sotirov et al. 2015).

The distinction between legal compliance and social legitimacy is particularly important. Conservation policy studies show that actors may reject formally available governance arrangements when these do

not resonate with their moral norms, even where participation would be materially beneficial. Thus, a restoration authority may comply fully with statutory consultation requirements yet still encounter conflict if stakeholders regard the procedure as tokenistic or inequitable (Winkel et al. 2015; Sotirov et al. 2015; Deuffic et al. 2018; Sotirov et al. 2026).

The primary management pathway for norms-based conflicts is therefore **procedural and recognition-oriented**: meaningful participation, mediation, stakeholder recognition, transparent procedures, fair representation, trust-building and processes that improve procedural justice and social legitimacy (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

The diagnostic question is: **Is the opposition primarily driven by perceptions that the process, treatment of stakeholders or resulting arrangement is unfair or illegitimate?**

2.2.4. Ideological and knowledge-based conflicts

Ideological and knowledge-based conflicts arise where actors understand the problem, desirable future or causal relationship between interventions and outcomes in fundamentally different ways. They are associated with a **logic of cognition and interpretation** (Kalberg 1980; Bernstein and Cashore 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Actors filter information through pre-existing beliefs, values, knowledge and mental frames. Such belief systems influence how problems and solutions are defined and which evidence actors consider credible. Theoretical and empirical works describe this cognitive logic as one in which relatively stable belief systems, knowledge, frames and storylines guide behaviour; actors tend to accept policy change when it resonates with core beliefs and resist it when they regard the proposed course of action as fundamentally wrong (Sotirov and Swedlow 2026).

This conflict type is especially relevant to restoration because the concept of “restoration” itself can have competing meanings (O’Brien et al. 2025; Erdozain et al. 2026). One stakeholder may view removing trees as ecological restoration of an open habitat while another interprets the same action as environmental degradation. One group may favour historical reference conditions while another prioritises climate-adapted future ecosystems. Scientific experts, practitioners and local actors may also disagree about causal relationships, uncertainty or which types of knowledge should inform decisions. Studies emphasise that stakeholders construct restoration situations differently according to their perspectives, values and interests, with alternative understandings competing in policy and decision-making processes (Emborg et al. 2012; Deuffic et al. 2018; Sotirov and Swedlow 2026).

The primary management pathway is **informational, deliberative and learning-oriented**: knowledge exchange, education, collaborative learning, joint fact-finding, dialogue, reframing and deliberation. Such processes need not to produce convergence on fundamental values. They may instead clarify differences, correct factual misunderstandings, expose assumptions and identify areas where coexistence or compromise remains possible (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

The diagnostic question is: **Is the disagreement primarily about what is true, what matters, how the problem should be understood or what kind of nature and restoration is desirable?**

2.2.5. Power-based conflicts

Power-based conflicts concern actors’ capacity to influence decisions, control resources, define agendas or determine which interests and knowledge count. In the scientific literature , power refers

both to control over scarce resources and to the ability of one actor to impose its will despite opposition (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Power asymmetries may arise through unequal legal authority, ownership, financial resources, technical expertise, political access or organisational capacity. Some stakeholders may formally participate but have little actual influence; others may be excluded entirely. Conflicts may also occur among public authorities over institutional competence and responsibility (Winkel et al. 2015; Sotirov et al. 2015).

Power therefore differs from norms-based concerns about whether participation is fair. A process can be perceived as procedurally respectful while still leaving substantive authority highly unequal. Conversely, redistributing authority may not itself create perceived legitimacy (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

Primary responses to power-based conflict are **institutional and governance instruments**: redistribution of decision-making authority, co-governance, co-regulation, empowerment, organisational reform, clarification of institutional competences and creation of structures giving affected actors meaningful influence (Kalberg 1980; Bartos and Wehr 2012; Deuffic et al. 2018; Sotirov et al. 2019).

The diagnostic question is: **Is the central conflict about who controls resources, who has authority and who is able to influence the decision?**

Table 1. Diagnostic typology of stakeholder conflicts and primary management pathways

Conflict type	Dominant decision-making logic	Central diagnostic question	Typical restoration manifestation	Primary conflict management pathway
Interest-based	Consequences	*What do actors gain or lose?*	Income loss, opportunity costs, unequal benefits or risks	Economic incentives, compensation, benefit sharing
Rules-based	Formal/legal appropriateness	*What are actors required, permitted or prohibited to do?*	Conflicting legislation, policy incoherence, unclear rights or mandates	Legal clarification, enforcement, policy change or integration
Norms-based	Social appropriateness	*Is the process or outcome regarded as fair and legitimate?*	Lack of recognition, procedural injustice, contested legitimacy	Participation, mediation, procedural reform, recognition
Ideological / knowledge-based	Cognition and interpretation	*What is true, valuable and desirable?*	Competing restoration paradigms, beliefs, knowledge or problem definitions	Dialogue, joint learning, knowledge exchange, reframing

Conflict type	Dominant decision-making logic	Central diagnostic question	Typical restoration manifestation	Primary conflict management pathway
Power-based	Authority and control	*Who decides and who can influence outcomes?*	Exclusion, unequal authority, resource control, institutional dominance	Governance reform, empowerment, redistribution of authority

2.3. Ideal types, dominant conflicts and conflict dynamics

The five categories are **ideal types** intended to isolate analytically distinct causes of stakeholder conflict. They should not be interpreted as mutually exclusive categories describing all dimensions of an empirical case.

Real stakeholder behaviour is usually influenced by several rationalities. Research on natural-resource decision-making demonstrates that actors can draw simultaneously on economic, normative and cognitive logics, although one logic may have greater behavioural influence in a particular context (Deuffic et al. 2018; Sotirov et al. 2019). The same applies to restoration conflict.

This report therefore distinguishes between a **dominant conflict type** and a wider **conflict configuration**. The dominant conflict type is the cause and mechanism that most directly explains the principal opposition, behavioural response or implementation blockage at a particular stage. The conflict configuration comprises additional conflict dimensions that reinforce, modify or interact with it.

For example, a landowner may initially oppose restoration because of uncompensated income losses - an interest-based conflict. If compensation rules subsequently appear inconsistent, a rules-based conflict emerges. If affected landowners believe they were not treated with respect, norms-based conflict may intensify. If they have little ability to influence the final decision, the conflict also contains a power struggle. .

Conflict configurations can consequently evolve over time. Conflict management measures may reduce one cause of conflict while leaving another intact or even revealing it more clearly. The framework therefore does not require every case to be reduced artificially to one conflict type . Where one conflict type clearly dominates, it should be identified; where several types interact, these should be separated analytically and their relationship explained.

2.4. From conflict diagnosis to conflict management

The purpose of diagnosis is not classification for its own sake. It is to identify **which causal mechanism needs to change for conflict to become more manageable**.

The present theoretical and analytical framework distinguishes five categories of pathways incl. different instruments for conflict mitigation: economic instruments for interest-based conflicts; legal and regulatory instruments for rules-based conflicts; procedural instruments for norms-based conflicts; informational and learning-oriented instruments for ideological/knowledge-based conflicts; and institutional instruments for power-based conflicts.

This correspondence should not be interpreted as a mechanical formula in which one conflict type always requires one instrument. Rather, the dominant conflict diagnosis indicates the most plausible **primary management pathway**. Complementary instruments may be required where multiple conflict types interact.

Thus, participation cannot compensate for substantial uncompensated economic losses; payments cannot resolve a disagreement rooted in incompatible values; information cannot correct contradictory legislation; and consultation cannot remove a structural power imbalance if stakeholders lack actual authority. Conversely, combining instruments may address several conflict causes simultaneously.

This leads to the concept of **smart mixes of conflict-management instruments**. Economic incentives may be accompanied by dialogue and legal safeguards; regulatory clarification may be combined with knowledge exchange and learning processes; institutional reform may be supported through mediation and recognition; and participation may need to be coupled with actual redistribution of decision-making authority. The sequence may also matter: trust-building may precede negotiation, legal clarification may be necessary before agreement becomes possible, or knowledge exchange and learning may reveal that the original conflict diagnosis needs revision.

For this reason, the report uses **conflict management** as the broader concept rather than assuming that all conflicts can or should be fully resolved. Restoration studies emphasise that conservation conflicts are dynamic and may persist for long periods; success frequently consists of reducing their destructive consequences and enabling workable coexistence rather than eliminating disagreement (Redpath et al. 2013; Tedesco et al. 2023)

2.5. Analytical framework applied in this report

The framework is operationalised through a simple diagnostic sequence used throughout the case studies and cross-case synthesis.

First, the **subject and parties** to the conflict are identified: what is contested, which actors are involved and what claims or demands they advance. Second, the **underlying cause** of the opposition is diagnosed. Third, the analysis identifies the **dominant conflict type**, while recording relevant interacting dimensions. Fourth, the **conflict-management intervention** is classified according to the pathway through which it seeks to change behaviour. Finally, the analysis examines the **resulting outcome** and whether the intervention addressed the diagnosed cause. This diagnosis identifies the **appropriate primary management pathway**, while interacting conflict types require complementary, combined or sequential instruments. Because conflict configurations can change over time, diagnosis and management should remain adaptive.

The basic diagnostic questions are:

1. Is resistance mainly caused by **material costs or benefits**? → **Interest-based conflict**
2. Is it caused by **legal or policy inconsistency**? → **Rules-based conflict**
3. Is it caused by **perceived unfairness or lack of legitimacy**? → **Norms-based conflict**
4. Is it caused by **conflicting values, beliefs, interpretations or knowledge systems**? → **Ideological/knowledge-based conflict**
5. Is it caused by **unequal control over authority or resources**? → **Power-based conflict**

These questions closely follow the decision tree developed in the report's theoretical and analytical framework.

The resulting analytical proposition guiding the remainder of the report can be summarised as follows: effective stakeholder conflict management in nature restoration begins with **diagnosing the dominant underlying conflict type** . This diagnosis identifies the **appropriate primary management pathway**, while interacting conflict types require complementary, combined or sequential instruments. Because conflict configurations can change over time, diagnosis and management should remain adaptive.This approach does not replace stakeholder engagement. Rather, it identifies when engagement is likely to address the underlying problem, when it needs to be combined with other instruments, and when a different intervention is required altogether. It therefore provides the conceptual bridge between understanding stakeholder behaviour and designing more effective restoration governance.

3. Methodology

3.1. Study design

This study used a **comparative qualitative research design** combining literature and document review, evidence from European restoration research and demonstration projects, expert knowledge, and structured case-study analysis. The direction of the comparative analysis was not to estimate the statistical frequency of stakeholder conflicts across all restoration projects in Europe, but to identify and compare the principal **mechanisms through which stakeholder conflicts arise and are managed** in different restoration contexts.

The methodological approach was guided by the theoretical and analytical framework developed in Chapter 2. Accordingly, cases were analysed in terms of five core elements: (1) the subject of the stakeholder conflict: what is contested; (2) the stakeholders and their principal claims or positions: which actors are involved; and their demands (3) the dominant and interacting underlying conflict types, and interactions; (4) the instruments or governance mechanisms used to manage the conflict and their outcomes, and (5) the resulting outcome and whether the intervention addressed the diagnosed cause. Particular attention was given to distinguishing the five ideal conflict types - interest-based, rules-based, norms-based, ideological/knowledge-based and power-based - and relating them to the corresponding economic, legal, procedural, informational and institutional management pathways.

The research was conducted iteratively. Evidence identified through projects and the scientific literature informed development and further refinement of the analytical framework, while the framework provided a common structure for examining heterogeneous nature restoration cases. The resulting approach combines theoretically informed classification with empirical comparison rather than treating the case studies as independent descriptive examples.

3.2. Identification and review of evidence

Evidence was assembled from three principal sources.

First, **desk research** reviewed findings from research, innovation and demonstration projects dealing with ecological restoration and its social and governance dimensions. Particular attention was given to 22 projects funded under the BiodivRestore joint COFUND call and related Biodiversa+ activities, together with 6 relevant EU Horizon projects (SUPERB, MERLIN, WaterLANDS, REST-COAST, CLEARING HOUSE and UNPplus) and restoration experience from LIFE-supported restoration projects

and other implementation-oriented initiatives. An excel database of relevant projects and initiatives was compiled and their principal investigators/project coordinators/key informants were invited to contribute to the report.

The review considered peer-reviewed scientific papers, project reports, deliverables, policy documents and other documented outputs containing evidence on stakeholder conflicts, governance challenges or conflict-management approaches in specific restoration projects. This project-based evidence constituted an important source of contemporary European restoration cases.

Second, the project evidence was complemented by an **additional scientific literature review**. This included literature on stakeholder and conservation conflicts from a historical perspective as well as natural-resource governance, conflict management and implementation of European biodiversity policy, including earlier experience with the Birds and Habitats Directives and Natura 2000. Evidence from outside Europe was considered where it provided concepts, mechanisms or lessons of clear relevance to European restoration.

Third, the review was complemented by **expert consultation and evidence elicitation**, described in the original study design as "surveying the evidence". Principal investigators and other researchers with detailed knowledge of relevant restoration projects were contacted to identify conflict-related evidence, provide project reports and publications, and explain findings and contextual information that were not always fully captured in published outputs. Experts and case-study contributors were thereby used primarily as sources for locating, interpreting and contextualising existing project evidence rather than as a statistically representative sample of stakeholder opinion.

The resulting evidence base is deliberately heterogeneous. Some cases draw predominantly on peer-reviewed studies, others on project deliverables or documented implementation experience, and several combine these sources. This reflects the applied nature of restoration, where important knowledge about conflict processes and management is frequently generated through projects and practice before it appears in the peer-reviewed literature.

3.3. Case identification and the Case Study Kit

To increase consistency among cases prepared by different contributors, the study developed a common **Case Study Kit: Societal Conflicts in Nature Restoration** (Annex 1). Its purpose was to harmonise the collection, description and analysis of cases, enable comparison across countries and ecosystems, and provide a common empirical basis for policy-relevant synthesis. The kit contained a case-study template, author guidance, a model case, five ideal-type model cases, a decision tree for identifying the dominant conflict pathway and a summary table for cross-case comparison.

Cases were included where sufficient information was available to identify a concrete restoration or biodiversity-policy conflict, the relevant stakeholders, an underlying conflict mechanism and, where applicable, a conflict-management response. The evidence base was designed to cover different ecological and governance settings rather than to constitute a statistically representative sample of all restoration activities. The portfolio consequently provides **analytical variation** across ecosystems, countries, stakeholder constellations and conflict mechanisms.

Each case was prepared according to seven common elements:

1. **Case identification:** geographical location, ecosystem or land-use type, policy context and timeframe;

2. **Problem and proposed solution:** the substantive restoration problem and the intervention or course of action under dispute;
3. **Conflicting parties:** the principal stakeholder groups and their claims;
4. **Dominant underlying conflict type:** classification as interest-, rules-, norms-, ideological/knowledge- or power-based;
5. **Dominant conflict-management pathway:** the principal policy or governance instrument used to address the conflict;
6. **Outcome:** the extent to which the conflict was resolved, reduced, transformed, displaced or remained unresolved; and
7. **Key lesson:** implications for nature-restoration policy and practice.

3.4. Diagnosing dominant and interacting conflict types

A central methodological challenge was that empirical conflicts rarely correspond perfectly to one theoretical category. The Case Study Kit therefore instructed contributors first to identify the **primary trigger of opposition** and then to determine which conflict type best explained the actors' behaviour. Financial costs and benefits pointed principally towards an interest-based conflict; legal or policy inconsistency towards a rules-based conflict; perceived unfairness or illegitimacy towards a norms-based conflict; competing beliefs or knowledge systems towards an ideological/knowledge-based conflict; and control over authority or resources towards a power-based conflict.

Where one mechanism clearly predominated, it was classified as the **dominant conflict type**. However, contributors were explicitly instructed not to force complex cases into a single category where several causal mechanisms were substantively important. In such cases, interacting conflict dimensions were identified separately and the relationship between them was described.

This distinction between dominant and interacting conflict causes is important because the visible subject of disagreement could be misleading. For example, a dispute over tree-species choice might simultaneously involve economic interests in timber production, different beliefs about ecological restoration and conflicting interpretations of conservation rules. Some cases in the report indeed contain several identifiable types; the SUPERB forest-restoration evidence, for instance, documents combinations of interest and ideological conflicts, policy incoherence and historical power imbalances.

Conflict-management instruments were analysed in the same manner. The analysis identified the principal mechanism through which an intervention sought to change behaviour: economic incentives, legal or regulatory change, procedural and participatory instruments , information and learning, or institutional and governance reform. Where several instruments were applied or proposed, their interaction was recorded rather than assuming that one instrument alone explained the outcome.

Importantly, classification was based on **underlying causal evidence rather than simply on the instrument used**. The presence of a stakeholder workshop, for example, did not automatically mean that the underlying conflict was norms-based; nor did the use of compensation automatically establish that the conflict was primarily interest-based. Diagnosis focused first on why stakeholders resisted or disagreed and only subsequently on how the conflict was managed.

3.5. Comparative and cross-case synthesis

Following preparation of the individual cases, their main characteristics were assembled into a common comparative structure recording the country or region, ecosystem or land use, dominant conflict type, principal stakeholders, dominant management instrument and outcome. The Case Study Kit explicitly designed this summary structure as the empirical basis for comparison across ecosystems and conflict pathways.

Cross-case analysis then examined recurring similarities and differences in:

- the occurrence and manifestation of the five conflict types;
- interactions among conflict types ;
- stakeholder constellations and governance settings;
- the conflict-management pathways employed;
- combinations and sequences of instruments;
- successful, partially successful and unsuccessful management processes; and
- implications for implementation of European nature-restoration policy.

The comparative analysis therefore focuses on **patterns and mechanisms rather than simple frequencies**. Particular attention is given to whether the management strategy addressed the dominant causes identified in the case and to circumstances in which apparent mismatches between conflict type and management pathways contributed to persistence or displacement of conflict.

The synthesis also considers unsuccessful and unresolved cases. These are analytically important because failure to reach agreement can reveal limitations of particular instruments, interactions among conflict types or structural conditions that restrict the possibilities for conflict management. The report's analytical framework therefore does not assume that conflict management necessarily produces consensus or complete resolution.

3.6. Methodological scope and limitations

Several limitations should be considered when interpreting the findings.

First, the case portfolio is **purposive rather than statistically representative**. It draws strongly on projects and expert networks connected to European restoration research and therefore cannot be used to estimate the prevalence of individual conflict types across all restoration initiatives in Europe.

Second, the **quantity and type of evidence differ among cases**. Some cases are supported by extensive peer-reviewed research and long implementation histories, while others rely more on project reports, stakeholder interviews conducted within individual projects or expert knowledge. Consequently, the strength of evidence regarding conflict outcomes is not uniform.

Third, **classification of complex conflicts necessarily involves analytical judgement**. The five types are ideal types, while empirical conflicts commonly contain several interacting dimensions and may evolve over time. The use of a common Case Study Kit, explicit diagnostic questions and a requirement to justify the dominant classification were intended to increase consistency, but they cannot eliminate interpretative uncertainty.

Fourth, the study is primarily concerned with **stakeholder conflict and conflict management**, not with evaluating the ecological effectiveness of restoration measures themselves. A socially accepted management arrangement is not necessarily ecologically optimal, just as an ecologically successful

intervention may remain socially contested. The cross-case analysis therefore assesses conflict-management processes and outcomes while recognising that successful nature restoration ultimately requires consideration of both social and ecological outcomes.

Despite these limitations, the combination of theoretically informed diagnosis, diverse empirical cases, expert knowledge and structured cross-case comparison provides a robust basis for identifying recurring conflict mechanisms and deriving practical lessons for confllict management in the implementation of the EU Nature Restoration Regulation, the National Restoration Plans and restoration projects.

4. Stakeholder conflicts and conflict management in Europe: case studies

4.1. Agricultural ecosystems

4.1.1. Resolving interest- and policy-based conflicts through policy adaptation and incentives for semi-natural grassland conservation and restoration in Estonia, Germany, and Spain

Authors: Elena Velado-Alonso, Philipp Gorris, Orjan Bodin, David Giralt, Annika L. Hass, Triin Reitalu, Xabier Cabodevilla, Ira Hannappel, Aveliina Helm, Elisabeth Prangel, Catrin Westphal

Main sources: Gorris et al. (2025a), Gorris et al. (2025b), Prangel et al. (2023), InterRest project (https://www.uni-goettingen.de/en/632949.html)

A. Case Identification

- **Location**:
  - Estonia (counties Pärnu and Saaremaa)
  - Germany (counties Göttingen and Northeim)
  - Spain (Segria county, Catalonia)
- **Ecosystem / land-use type**: Semi-natural calcareous grasslands under extensive grazing systems
- **Policy context**: EU Common Agricultural Policy (CAP), Natura 2000, Habitats Directive, national agri-environmental schemes
- **Timeframe**: Long-term decline since late 19th century; current restoration efforts mainly in the last ~15–20 years

B. Subject: Problem and Proposed Solution

Semi-natural grasslands, one of the most biodiverse ecosystems in Europe, are declining due to agricultural intensification, land-use changes, and socio-economic shifts. Calcareous grassland conservation and restoration require extensive grazing, but these activities are economically unviable, socially declining, and poorly supported by policy frameworks. These represent key challenges, making restoration efforts difficult to establish and scale up. Farmers' economic viability and other competing land uses (e.g., intensive agriculture, forestry), together with administrative burdens, hinder the effective

implementation of restoration programs and the achievement of conservation targets. Several solutions are proposed to ensure the viability of extensive grazing activities as a first step toward restoring calcareous grasslands. The prevailing solution consists of better-targeted agri-environmental payments under the CAP that explicitly remunerate farmers for biodiversity outcomes, combined with simplified and better-aligned policy frameworks (e.g., Natura 2000 and national schemes) to increase uptake. This is complemented by support for viable extensive grazing systems through market-based mechanisms (e.g., labelling of grassland-based products) and infrastructure investments, alongside locally adapted governance arrangements that involve farmers in co-designing management practices. Together, these measures aim to close the gap between ecological requirements and farm-level economic realities, making long-term grassland restoration both feasible and attractive.

C. Conflicting Parties / Stakeholders

In the InterRest project, there were not a direct conflict.

Main potential conflicting stakeholders for grassland restoration would be:

1. Extensive farmers (shepherds, livestock keepers)
2. Conservationists and environmental NGOs
3. Public authorities (EU, national, regional administrations)
4. Other agricultural sector actors (intensive farmers, agri-business)
5. Rural communities

Extensive livestock farmers can be considered the central conflict party, as they are both key providers of grassland management and the most affected by economic and regulatory constraints. Public authorities also emerge as central actors due to their role in designing and implementing key policies for agricultural activities.

Other actors must be contemplated from broader perspectives, since responsibility is diffuse but structurally embedded. For instance, agri-food market structures, where actors such as retailers, processors, and global commodity markets prioritise low-cost, standardised products. This creates price competition that favours intensive production systems and externalises environmental costs, leaving extensive farmers unable to compete despite providing public goods.

D. Dominant Underlying Cause of the Conflict

Extensive grazing activity is essential for grassland conservation but generates low or negative economic returns, creating a structural mismatch between restoration goals and economic incentives. This represents mainly an interest-based conflict. Other policy-related issues (bureaucracy, misfit regulations) drive rules-based conflicts that reinforce the interest-based conflict; however they are secondary to the underlying economic tension.

E. Dominant Conflict Resolution Pathway

The conflict so far has primarily been addressed through a combination of economic incentives and regulatory policy instruments, aiming to realign farmers' economic interests with restoration goals. Eco-schemes (new under CAP 2023-27) and Agri-environmental-climate measures (AECMs) under the CAP are voluntary measures aiming to compensate farmers for maintaining extensive grazing practices. Yet, their targeting, payment levels, and eligibility criteria often differ among State Members and do not consistently prioritise extensive grazing systems. Other restoration and management payments exist and typically originate from a mix of CAP Pillar II (rural development funds), EU co-financing mechanisms (e.g., LIFE programme), and national or regional public budgets. However,

these mixed schemes generally lead to fragmented and sometimes short-term funding structures. Additionally, regulatory frameworks such as Natura 2000 established conservation obligations, but rely heavily on these uneven incentive systems for implementation and sometimes can create administrative barriers.

Estonia can be considered an example of how, when funding schemes are well-aligned, sufficiently financed, and tailored to local conditions, they can effectively support restoration of agricultural ecosystems. Increasingly, complementary approaches, such as result-based payments, participatory governance, and locally adapted schemes, are being tested to address these shortcomings, though their uptake remains limited across the EU.

F. Outcome

Semi-natural grasslands remain underappreciated in the sustainability discourse and international environmental policy. Hence, the conflict is persistent as it is structurally embedded in the socio-economic system. In some regions, it has been partially resolved, particularly where policy instruments have been better aligned, sufficiently funded and local engagement succeeded. In those cases, a stabilisation or even modest recovery of semi-natural grasslands, alongside growing recognition of their ecosystem services among policymakers and society, has been achieved. Additionally, innovative local governance arrangements (e.g. farmer networks and participatory management) have improved coordination and context-specific implementation. Importantly, these successes have often been linked not only to financial incentives but also to stronger social networks, knowledge exchange, and farmer involvement in decision-making, which enhance the legitimacy and uptake of conservation measures.

However, across much of Europe, outcomes remain constrained by persistent systemic barriers. Extensive farmers continue to operate under unfavourable market conditions and insufficiently tailored policy support, while also facing high administrative burdens and policy inconsistency, which reduce participation and long-term commitment. At the same time, declining rural populations, loss of traditional ecological knowledge, and weak integration of farmers' perspectives into policy design further limit the effectiveness of restoration efforts. Without simultaneously addressing economic, institutional, and social dimensions, large-scale and durable restoration remains unlikely.

G. Key Lesson

Grassland restoration in Europe is fundamentally a social-ecological challenge marked by an interest-based and partly rules-based conflicts, not just an ecological or technical one. Effective policy must therefore offer sufficient and tailored financial compensation and but also address diverse motivations, capacities, and social embeddedness of farmers, who are essential but often "invisible" actors in conservation programs. While improving and better targeting economic incentives remains necessary, it is insufficient on its own. Long-term success depends equally on reducing administrative burdens, strengthening social capital (e.g., networks, communities of practice), and supporting knowledge exchange and local collaboration.

4.1.2. Contrasting narratives around agriculture and farmland biodiversity conservation in Europe

Authors: Elena Velado-Alonso, David Kleijn, and Ignasi Bartomeus

Main sources: Velado-Alonso et al. (2024), SHOWCASE project (https://showcase-project.eu/)

A. Case Identification

- **Location**: Europe, and global
- **Ecosystem / land-use type**: Farmlands, Agriculture, Food Systems
- **Policy context**: EU Nature Restoration Regulation, Common Agricultural Policy (CAP)
- **Timeframe**: no applicable

B. Subject: Problem and Proposed Solution

Scientific evidence for biodiversity-friendly farming does not automatically translate into adoption because, among other factors, public conversations are structured by competing narratives. Anthropocentric conservation narratives justify biodiversity because it provides ecosystem services for humans, including agriculture. However, this argument is often unconvincing to farmers, especially in high-input systems, because the private economic benefits of biodiversity rarely compensate for the costs of enhancing it. Biodiversity may generate public goods, such as wildlife conservation or landscape aesthetics, but farmers' decisions are often dominated by economic viability. Alternative conservation narratives focus on equity, governance, rights of nature, future generations, indigenous knowledge, care, identity, and interdependence with nature. These narratives are influential in some conservation-conflict contexts and in parts of the Global South, but they remain less dominant in Western agricultural policy debates. Farming narratives have also diversified. They range from yield-gap and food-security arguments to diet quality, social justice, environmental sustainability, and food sovereignty.

Yet the dominant agroeconomic narrative still frames farming through productivity, markets, control, and economic incentives. Ecological intensification modifies this view by recognising ecosystem services as useful for production, but it does not fundamentally challenge the industrial farming model. Agroecology offers a broader alternative, though its meaning varies by context: it may be treated as a science, a farming practice, or a political and social movement. In many agroecological narratives, social justice and food-system transformation are more central than biodiversity conservation itself. Conflicts around farmland biodiversity are not only about evidence or practices, but about competing worldviews. Different actors use different narratives to define the problem, justify action, and assign responsibility, which can oversimplify complex sustainability issues and increase misunderstanding or polarisation.

C. Conflicting Parties / Stakeholders

- Scientists and conservation communicators: These actors produce evidence but often lack full-time communication support and may not position their messages effectively in contested policy arenas.
- Farmers and farm managers: These actors are asked to implement biodiversity-enhancing measures but must interpret them against economic, technical, and social constraints.
- Agribusiness, retailers, and consumers: These actors shape market narratives and can either support or undermine biodiversity-friendly farming through purchasing, standards, branding, and supply-chain pressure.
- Public authorities: These actors are the addressees when communication must inform policy, agri-environmental instruments, and restoration planning.

D. Dominant Underlying Cause of the Conflict

The prevailing conflict type is ideological/knowledge-based. Competing actor groups frame farmland biodiversity through different narratives of what agriculture is for, who should bear costs, and how nature should be valued in working landscapes. It is knowledge-based because evidence is not self-executing: the same scientific evidence can be selectively interpreted, ignored, reframed, or used to support conflicting positions.

E. Dominant Conflict Resolution Pathway

The main resolution pathway is strategic science communication and narrative reframing, supported by boundary concepts and dialogue. Biodiversity becomes a bridge concept because it can connect actors with different demands without requiring them to begin from the same moral, economic, or technical premises.

F. Outcome

This case provides a communication strategy for shifting scientists from passive providers of evidence to active participants in contested biodiversity narratives. If adopted, this pathway can improve the legitimacy and uptake of restoration measures by making scientific evidence audible, actionable, and responsive to the social worlds in which farmers and food-chain actors operate.

G. Key Lesson

For EU nature restoration policy, communication is not an outreach add-on after policy design. It is part of conflict governance. Agricultural restoration targets for pollinators, landscape features, soils, peatlands, and farmland birds will face opposition if they are communicated only as ecological obligations. They need narratives that honestly connect biodiversity to farm health, public goods, food-system resilience, and concrete implementable actions while preserving scientific independence.

4.1.3. How farmers values and perceptions shape biodiversity management in agricultural landscapes in 10 countries in Europe

Author: Fabian Klebl, A. Parisi, K. Häfner, A. Adler, S. Barreiro, F. V. Bodea, V. Brönnimann, J. P. Reinier de Vries, A. Dos Santos, A. S. C. Hood, I. Melts, R. Popa, F. Vajna, Elena Velado-Alonso, and M. L. Kernecker

Main sources: Klebl et al. (2024), SHOWCASE project (https://showcase-project.eu/)

A. Case Identification

- **Location**: Estonia, France, Hungary, Portugal, Romania, Spain, Sweden, Switzerland, the Netherlands, and the United Kingdom
- **Ecosystem / land-use type**: Agricultural landscapes, including arable systems, livestock systems, mixed farms, perennial crops, grasslands, orchards, and semi-natural features embedded in production landscapes
- **Policy context**: The case is relevant to agri-environmental schemes, biodiversity-friendly farming, landscape features, and EU restoration objectives for agricultural ecosystems.
- **Timeframe**: Interviews took place in 2021-22

B. Subject: Problem and Proposed Solution

The dominant problem is not resistance to restoration as such, but disagreement over what biodiversity means in a working agricultural landscape and what kinds of biodiversity management are legitimate, useful, feasible, or morally compelling. This case shows that narrow, targeted interventions are associated with instrumental values of biodiversity, while more holistic management strategies are associated with recognition of nature's inherent value. It also shows that implementation decisions are constrained by production pathways, social dependencies, and landscape conditions, which means that "awareness raising" alone is insufficient.

The proposed solution is an approach of ethical pluralism and process-oriented policy design. This means that policy should acknowledge instrumental, intrinsic, and relational values of biodiversity; support regionally adapted programmes; and use participatory co-design to connect biodiversity targets with farmers' production realities, social identities, and landscape contexts.

C. Conflicting Parties / Stakeholders

- Farmers: Farmers are the central conflict party because their management decisions determine whether biodiversity measures are implemented in agricultural landscapes and how they are implemented, affecting agricultural landscape restoration and biodiversity outcomes.
- Conservation scientists and biodiversity policy actors: These actors often frame biodiversity through species, habitats, ecological functions, or restoration targets, which may not match farmers' lived categories of value and feasibility
- Public authorities and agri-environmental scheme designers: These actors translate biodiversity targets into payments, rules, advice, monitoring requirements, or spatial priorities, and they become central where programmes fail to fit local values and constraints
- Food-chain and market actors: These actors become relevant where biodiversity labelling, food hubs, value-chain cooperation, or KPI-based business models are used to reward biodiversity management

D. Dominant Underlying Cause of the Conflict

The prevailing conflict type is norms-based, with an important ideological/knowledge-based secondary component. The norms-based dimension dominates because the core dispute concerns societal values, identities, moral obligations, and stakeholder ideas of what "good farming" and "good biodiversity management" should mean, rather than only the level of payment (interest-based) or the legality of a measure (rules-based). This case explicitly links management approaches to instrumental and inherent values and shows that farmers' interpretations of biodiversity differ between targeted species/function framings and broader ecosystem/landscape framings. Interest-based issues remain secondary but important because farmers also face production dependencies and opportunity costs. Knowledge-based issues also remain secondary but important because different actors use different indicators and knowledge concepts of biodiversity, with farmers often relying on observable experience and emotionally connoted indicators such as birds, hares, butterflies, flowers, and bees.

E. Dominant Conflict Resolution Pathway

The main resolution pathway is participatory, process-oriented co-design, supported by ethical pluralism and regionally adapted policy instruments. This pathway does not "settle" the conflict by proving one value system right; it transforms the conflict by creating socially acceptable settings in which farmers,

scientists, policy makers, and value-chain actors can negotiate biodiversity measures that are ecologically meaningful and socially acceptable. This case recommends ethical pluralism, policy co-design, regionalisation, stakeholder participation, knowledge creation, and dialogue-based approaches such as workshops.

F. Outcome

The norms-based conflict is not resolved, it is transformed analytically into a policy design lesson: biodiversity measures are more likely to be accepted when they are aligned with farmers' values, perceptions, production systems, social relations, and landscape conditions. The case therefore supports a shift from one-way conservation prescriptions toward co-produced, regionally adapted biodiversity programmes.

G. Key Lesson

EU restoration policy in agricultural landscapes should treat stakeholder value plurality as a design condition, not as a barrier to be overcome. If restoration measures are framed only through ecological targets (rules-based) or instrumental ecosystem-service benefits (interest-based), they may miss farmers whose decisions are shaped by intrinsic, relational, social, and place-based values (norms- and knowledge-based). Conversely, if policies ignore production constraints (interest-based), they risk remaining normatively appealing but practically weak. The lesson for the EU Nature Restoration Regulation and national restoration plans is that agricultural restoration needs participatory architectures capable of integrating plural values, local knowledge, and practical farm-level dependencies.

4.1.4. Interest-based conflict between biodiversity/pollination benefits and farm profit in France and the Netherlands

Author: Jeroen Scheper, Isabelle Badenhausser, Jochen Kantelhardt, Stefan Kirchweger, Ignasi Bartomeus, Vincent Bretagnolle, Yann Clough, Nicolas Gross, Ivo Raemakers, Montserrat Vilà, Carlos Zaragoza-Trello, and David Kleijn

Main sources: Scheper et al. (2023), ECODEAL project (www.cec.lu.se/research/ecodeal)

A. Case Identification

- **Location**:
  - France, specifically the Long-Term Socio-Ecological Research site Zone Atelier Plaine & Val de Sèvre
  - The Netherlands, Wageningen University Experimental Farm
- **Ecosystem / land-use type**: Intensive agricultural landscape with grassland-sunflower systems, including 21 pairs of sunflower fields and adjacent grasslands, in a landscape of approximately 80% arable land and 10% grassland.
- **Policy context**: The case is directly relevant to agri-environmental schemes design, CAP payment for biodiversity public goods, and the objectives for pollinator recovery, and EU agricultural ecosystem restoration of the Nature Restoration Law.
- **Timeframe**: Fieldwork carried out in 2015-2016.

B. Subject: Problem and Proposed Solution

Biodiversity-friendly grassland management can increase flower availability, wild bee diversity, rare species, and pollination services to neighbouring sunflower fields, but these benefits are linked to a loss

in forage yield, favouring a gross margin gap that is not compensated by the enhanced sunflower revenue.

The study found average sunflower yield enhancement from insect pollination of 7.8% and up to 17% higher revenue on neighbouring sunflower fields, but the opportunity costs of reduced grassland forage yields consistently exceeded the economic benefits of enhanced sunflower pollination.

The proposed solution is a payment and governance architecture that compensates farmers for public goods and cross-field or cross-farm ecosystem-service spillovers. This case study argues that uptake depends critically on society's willingness to pay for public goods such as biodiversity and that policy should target habitat quality, not only habitat quantity.

C. Conflicting Parties / Stakeholders

- Grassland farmers or livestock/forage managers: These actors bear opportunity costs when reducing harvest frequency or land-use intensity.
- Sunflower growers or neighbouring crop farmers: These actors may receive pollination benefits from nearby low-intensity grasslands, creating a spatial mismatch between costs and benefits.
- Conservation agencies and public authorities: These actors design agri-environmental schemes and decide whether public money should compensate biodiversity-friendly practices.
- Society and consumers/taxpayers: These actors are the ultimate beneficiaries and potential funders of biodiversity public goods such as rare species conservation, pollination resilience, carbon sequestration, clean water, and landscape aesthetics.

D. Dominant Underlying Cause of the Conflict

The prevailing conflict type is interest-based. The conflict centres on the distribution of economic costs and benefits: biodiversity-friendly grassland management produces ecological and agronomic gains, but private profit does not align with public-good provision. The case study's central result is that pollination-related revenue gains are real but insufficient to outweigh grassland yield opportunity costs, making profitability a key constraint on adoption (interest-based). It shows a concrete economic trade-off in which ecological benefits and ecosystem-service gains do not generate enough private revenue for the farmer asked to change management.

E. Dominant Conflict Resolution Pathway

The main resolution pathway is economic incentives through agri-environmental payments (interest-based) and landscape-scale governance (rules-based). The case study reports average agri-environment scheme payment rates for grassland types and argues that financial incentives are needed when biodiversity-friendly management imposes private costs greater than private benefits. The pathway should also include spatial coordination across farms because the benefits of biodiversity-friendly management can be exported to neighbouring fields. This implies that policy instruments should reward habitat quality, floral resources, and landscape connectivity, and not only the area of semi-natural habitat.

F. Outcome

The conflict can be reduced if agri-environment schemes, public payments, private value-chain mechanisms, or cooperative landscape agreements compensate farmers for the opportunity costs of biodiversity-friendly practices. Without such compensation, biodiversity-based farming is unlikely to be adopted widely where private costs exceed private agronomic benefits.

G. Key Lesson

EU restoration policy in agricultural landscapes should not assume that ecosystem services automatically create a win-win for farmers and biodiversity. Some biodiversity gains are public goods or cross-farm benefits, and the actors who produce them may not be the actors who capture the benefits. Restoration policy therefore needs financial mechanisms, collective action arrangements, and spatial targeting that make biodiversity-friendly management profitable enough to persist.

4.1.5. A rules-based conflict partially mitigated through cooperative governance and adaptive institutional support in semi-natural grasslands of Lazio, Italy.

Author: Marco Massimi

Main sources: LIFE GRACE LAYMAN'S REPORT (2025), LIFE GRACE (http://lifegrace.eu)

A. Case Identification

- **Location (country, region):** Italy, Lazio Region, within three Natura 2000 Special Protection Areas (SPAs) - Monti Reatini, Comprensorio Tolfetano-Cerite-Manziate and Monti Ausoni e Aurunci
- **Ecosystem / land-use type:** semi-natural grassland ecosystems (EU habitats 6210*, 6220*, 6230*) managed through extensive grazing systems
- **Policy context:** EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC), within the broader Natura 2000 framework, CAP 2021–2027 National Strategic Plan and the regional implementation of conservation measures and Appropriate Assessment (VIncA) procedures in the Lazio Region.
- **Timeframe:** LIFE GRACE project implementation period (2020–2025), with relevant implications extending into the post-LIFE phase in terms of governance, institutional adaptation, and integration of conservation practices into ordinary policy frameworks.

B. Subject: Problem and Proposed Solution

The case addresses a conflict arising from the attempted implementation of ecological restoration measures for semi-natural grassland habitats within Natura 2000 sites in the Lazio Region, where scientifically grounded interventions identified by the LIFE GRACE project (e.g. shrub removal, grazing management, and habitat recovery actions) could not be effectively implemented due to structural constraints in the regional governance system. In particular, the absence or delay of clear operational frameworks — such as site-specific conservation measures, updated habitat baselines, and streamlined procedures for Appropriate Assessment (VIncA) — generated a misalignment between available ecological knowledge and the administrative conditions required to authorize and execute interventions. This resulted in significant delays or blockage of conservation actions, with cascading effects on subsequent monitoring and stakeholder engagement activities.

The solution that ultimately prevailed did not consist in a full structural resolution of these constraints, but rather in a partial and adaptive approach based on the development and application of cooperative governance tools. These included the Environmental Agreement Model and the broader cooperation framework promoted by the project, which enabled the formalization of agreements with local authorities and collective land managers, the provision of technical-scientific support to public administrations, and the progressive testing of restoration practices in selected pilot areas. Through this approach, the project managed to mitigate the operational impacts of governance gaps, allowing for

limited but concrete implementation of restoration actions and generating a transferable framework for future integration into regional policy and administrative processes.

C. Conflicting Parties / Stakeholders

The conflict involves multiple stakeholder groups operating at different governance levels. Local land managers and users, including municipalities, collective land management bodies (e.g. Università Agrarie), and livestock farmers, are directly involved in the implementation of restoration measures and are interested in maintaining or improving grazing systems and land productivity. These actors rely on clear rules, financial support, and administrative feasibility to carry out habitat management interventions. Scientific and technical actors, particularly the Department of Environmental Biology (Sapienza University of Rome) and project partners, play a key role in producing ecological knowledge, defining restoration measures, and supporting their application through technical and methodological tools.

Regional public authorities, especially the Lazio Region (Directorate for Environment), represent the central institutional actors responsible for the approval of interventions through Appropriate Assessment (VIncA) procedures, the definition of conservation measures, and the overall regulatory framework governing Natura 2000 sites. At a broader level, national and EU policy frameworks (e.g. Habitats Directive, CAP) shape the regulatory and financial context, although they do not directly intervene in the operational phase of the conflict.

Within this configuration, regional public authorities emerge as the central conflict party, as they constitute the primary addressees of conflict resolution. The core tension is not primarily between local stakeholders, but between the technical-scientific solutions developed by the project and the administrative and regulatory conditions required for their authorization and implementation. As a result, the conflict is effectively centred on the interaction between project actors and the regional governance system, which ultimately determines whether restoration actions can be operationalised.

D. Dominant Underlying Cause of the Conflict

The prevailing underlying cause of the conflict is rules-based. The core tension arises from inconsistencies, delays, and operational gaps in the regulatory and administrative framework governing Natura 2000 implementation at the regional level. In particular, the absence or postponement of clear and operational guidelines for Appropriate Assessment (VIncA), the lack of formally adopted site-specific conservation measures, and the non-recognition of updated habitat data produced by the project generated a structural misalignment between ecological requirements and the procedures needed to authorize restoration actions. As a result, scientifically sound interventions could not be translated into legally valid and administratively feasible operations, leading to delays or blockage of implementation.

While other types of conflict are present, they remain secondary. Interest-based elements emerge in relation to the limited availability of financial instruments (e.g. CAP/CSR measures) to support farmers in carrying out restoration activities, but these do not represent the primary source of tension. Norms-based aspects can be observed in the low level of trust and engagement among local stakeholders, yet these are largely consequences of the institutional constraints rather than independent drivers of conflict. Power-based dynamics are also relevant, as regional authorities act as gatekeepers of authorization processes; however, their role is exercised within a predefined legal and procedural framework, meaning that the conflict is rooted less in discretionary power struggles and more in the structure and functioning of the rules themselves. Finally, knowledge-based conflict is not dominant, since the scientific basis for interventions is robust and largely uncontested.

For these reasons, the conflict is best understood as rules-based: it is primarily generated by how environmental rules are defined, interpreted, and operationalized, and by the inability of the existing regulatory system to effectively accommodate and implement restoration-oriented actions within Natura 2000 sites.

E. Dominant Conflict Resolution Pathway

The main conflict resolution pathway can be described as a cooperative and adaptive governance approach, based on the development and application of voluntary agreements and technical-institutional support mechanisms. Rather than being resolved through formal legal proceedings or the introduction of new binding rules, the conflict was partially transformed through the implementation of governance instruments designed to operate within existing regulatory constraints.

In particular, the project developed and deployed the Environmental Agreement Model and the broader cooperation framework on grassland management, which enabled the formalisation of agreements between the coordinating body (ARSIAL), local public authorities (municipalities, collective land management bodies), and land users. These instruments provided a structured yet flexible mechanism to support the adoption of conservation practices, facilitate coordination among stakeholders, and progressively align local management actions with Natura 2000 objectives, even in the absence of fully operational regional measures.

Alongside these agreements, a key element of the pathway was the provision of technical-scientific support to regional and local authorities, including the submission of proposals for simplified pre-assessment procedures and conservation measures, and continuous interaction with the regional administration to facilitate the authorisation of pilot interventions. This adaptive process allowed for the testing and partial implementation of restoration actions in selected areas, while simultaneously contributing to the refinement of governance tools and administrative practices.

Overall, the conflict was not resolved through a single decisive instrument, but rather mitigated through a combination of cooperative agreements and iterative institutional support, which enabled limited operational progress and generated a transferable governance framework for future policy integration.

F. Outcome

The conflict was not fully resolved, but rather partially mitigated and transformed through the project's implementation. Structural constraints related to the regional governance framework — particularly delays in the definition of operational conservation measures, gaps in the Appropriate Assessment (VIncA) system, and the absence of dedicated financial instruments — remained largely in place throughout the project duration. As a result, many of the planned restoration actions could not be implemented at the expected scale, and key components such as biodiversity monitoring and stakeholder engagement were delayed or only partially realised.

Despite these limitations, the project achieved concrete but localized outcomes. In specific pilot areas, such as Rivodutri area, restoration interventions were successfully implemented, demonstrating measurable ecological improvements and confirming the technical validity of the proposed management approach. In parallel, the formalisation of cooperation agreements with local authorities and land managers enabled the operational testing of governance tools, providing a practical framework for aligning conservation objectives with land-use practices.

More broadly, the project generated significant institutional and governance impacts. The development of models such as the Environmental Agreement Model and the cooperation framework, together with sustained technical support to public administrations, contributed to strengthening the capacity of regional and local actors to address Natura 2000 management challenges. Importantly, the project also

triggered institutional changes, including the reinforcement of ARSIAL's role and mandate in agriculture–environment relations, creating more favourable conditions for future policy integration and implementation. Overall, the conflict can be considered partially transformed rather than resolved: while the underlying regulatory and procedural issues persist, the project succeeded in demonstrating workable solutions at the local scale and in establishing a governance and knowledge base that may facilitate more effective implementation of restoration measures in the future.

G. Key Lesson

The LIFE GRACE case highlights that rules-based conflicts in nature restoration cannot be effectively addressed without corresponding operational and administrative capacity at the regional level. Even when robust scientific knowledge and well-designed technical solutions are available, their implementation may fail if regulatory frameworks are incomplete, unclear, or not aligned with practical management needs. This suggests that EU nature restoration policy should place greater emphasis not only on setting ecological targets, but also on ensuring that implementation instruments — such as clear conservation measures, streamlined authorization procedures, and accessible funding mechanisms — are fully operational and coherent across governance levels.

A second key lesson is that, in contexts where structural regulatory gaps persist, cooperative and adaptive governance approaches can play a crucial mitigating role. Instruments such as voluntary agreements, technical support to public authorities, and iterative engagement with local stakeholders can enable partial progress and create the conditions for future implementation, even in the absence of fully functional policy frameworks. However, these approaches cannot substitute for systemic solutions: they are effective as bridging mechanisms, but not as long-term replacements for coherent and enforceable rules.

Finally, the case shows that societal conflicts in nature restoration are often not primarily driven by opposition between stakeholders, but by misalignments between different layers of governance. Addressing these conflicts therefore requires strengthening vertical coordination between EU objectives, national regulations, and regional implementation systems, ensuring that scientific knowledge, administrative procedures, and policy instruments are mutually consistent and capable of supporting on-the-ground action.

4.1.6. Interest- and norm-based conflicts as regards the Iberian Wolf and Rewilding in the Greater Côa Valley, Portugal

Author: Laura Guimarães

Main sources: Cadete et al. 2024; Rewilding Portugal; LIFE WolFlux Project REWILDINg EUROPE. 2020.

A. Case Identification

- **Location:** European Union, Portugal, Greater Côa Valley (spanning the municipalities of Almeida, Sabugal, Figueira de Castelo Rodrigo, Pinhel, and Guarda) in northeastern Portugal, south of the Douro River.
- **Ecosystem / land-use type**: Montane Mediterranean scrublands, dehesas (montados), oak woodlands, and abandoned agricultural terraces. The primary land-use is extensive livestock farming (cattle, sheep, and goats) alongside private hunting reserves.

- **Policy context:** Governed by the EU Habitats Directive (Annex II and IV), the European Natura 2000 Network, and Portugal's strict National Law for Wolf Protection (Lei de Proteção do Lobo Ibérico - Law No. 90/88), which totally prohibits the hunting, killing, or capturing of wolves.
- **Timeframe:** 2019-2024 (ongoing)

B. Problem and Proposed Solution

The regional sub-population of the Iberian Wolf (Canis lupus signatus) south of the Douro River is highly fragmented and ecologically isolated from the stable northern populations [LIFE17 NAT/PT/000554]. Decades of intensive hunting caused severe depletion of the wolf's natural wild prey base (roe deer and wild boar) in the region. Consequently, wolves turned to the only available food source: extensive domestic livestock. This caused devastating financial losses for local shepherds, triggering intense human-wildlife conflict, illegal retaliatory poisoning and absolute local resistance to any nature restoration or rewilding actions.

A multi-layered coexistence framework was implemented by the NGO Rewilding Portugal. LIFE Wolflux project was set to support a viable wolf subpopulation south of Douro river, restore natural ecological processes, connectivity and wildlife populations. It focused on promoting the ecological and socio-economic conditions needed, so that the wolf can play its natural function as top predator. The specific aims were: i) to reduce conflicts with the livestock sector, promoting coexistence; ii) reduce poaching and human-caused fires and their impact.

The biological solution was the active reintroduction and population boosting of wild roe deer (Capreolus capreolus) to rebuild the natural trophic web and shift the wolves' diet away from livestock. The social solution was the creation of a localised "Wildlife Ambassadors" network alongside the massive deployment of non-lethal damage-prevention infrastructure (specialised electric fencing and structural herds of indigenous livestock guarding dogs).

C. Conflicting Parties / Stakeholders

Stakeholders: Conservation and Rewilding actors (NGO Rewilding Portugal, international funding bodies such as Endangered Landscapes Programme, and university wildlife ecologists); Agricultural and Pastoral actors (local extensive livestock farmers, regional farming unions, such as Acriguarda, and small-scale private landowners); Hunting Associations (Local hunters who initially perceived the return of top predators and the strict conservation of deer as a direct threat to their recreational quotas and game management); State Regulatory Body (ICNF - Institute for Nature Conservation and Forests, responsible for validating wolf attacks and issuing delayed financial compensation). The conflicts can be framed as Interest-Based (economic survival vs. biodiversity conservation) and Norms-Based (historical/cultural hostility toward a predator).

D. Dominant Underlying Cause of the Conflict

Shepherds faced a direct clash of financial interests, because the costs of losing animals to a strictly protected predator were immediate and individual, while the benefits of a biodiverse mountain ecosystem were abstract and collective. Culturally, deep-seated ancestral norms framed the wolf as an existential threat to rural life, a sentiment highly aggravated by the state's slow, bureaucratic and adversarial process for paying out damage compensations.

E. Dominant Conflict Resolution Pathway

The dominant pathway was Proactive Risk Abatement and Localized Liaison Mediation. The project bypassed the traditional, ineffective top-down state enforcement by using direct, ground-level support. Namely, financial and structural de-risking, and the ambassador model.

Instead of telling farmers to protect their herds, the project directly bought, delivered and integrated over 90 livestock guarding dogs (Castro Laboreiro and Cão de Gado Transmontano breeds) and high-voltage fencing directly to affected properties. Active reintroduction of roe deer to restore the wolf's preferred natural food source, reducing pressure on domestic animals was also begun.

Appointing trusted, bilingual local community members to act as "Wildlife Ambassadors" was highly effective. The project trained respected members of local villages to act as local liaisons. These physically visited farms, helped illiterate or elderly shepherds navigate the complex digital state bureaucracy required to claim ICNF compensation for wolf damages and defused acute hostility through continuous, non-judgmental presence and open communication.

F. Outcome

Wild roe deer populations have successfully re-established across target monitoring sectors, contributing to gradually reducing the wolves' absolute dependence on domestic livestock. Over 80 localised agricultural operations were successfully reinforced with functional protection infrastructure, dropping livestock mortality rates by up to 100% in properties utilising the project's specialized guard dogs. A strategy was developed to promote wolf related added value products (agricultural food production, tourism, etc.) and enhance their market penetration. Overall, the project was able to increase tolerance and positive attitudes towards wolves. Independent social audits noted a measurable decrease in acute anti-predator hostility and a stabilisation of rural tolerance toward expanding wildlife corridors.

G. Key Lesson

Top-down legal protection often needs to be paired with local support to be effective. Otherwise, it forces marginalised rural communities to pay the financial price for global conservation targets. For apex predator or trophic restoration to succeed, the implementing body must act as an insurance buffer, absorbing the community's structural risks through immediate, practical infrastructure and empathetic, localised mediation.

4.2. Forest ecosystems

4.2.1. Implementation of EU's Biodiversity Strategy and EU's Forest Strategy as an Ideological Conflict: Competing Policy Paradigms, Policy Advocacy Coalitions, and Forest Owner Beliefs in Germany, Spain, and Sweden

Author: Metodi Sotirov

Main sources: Beland Lindahl et al. (2026), Fleckenstein et al. (2025), Sotirov et al. (2021), Sotirov et al. (2025), Sotirov et al. (2026); BIOCONSENT project (https://www.bioconsent.eu/) and SUPERB project (https://forest-restoration.eu/).

A. Case Identification

- **Location:** European Union, Germany, Spain, Sweden
- **Ecosystem / land-use type:** Forest ecosystems (protected and managed)
- **Policy context:** EU Biodiversity Strategy 2030 and EU Forest Strategy 2030, in relation to EU Habitats and Birds Directives, and EU Nature Restoration Regulation
- **Timeframe:** 2019-2025 (ongoing)

B. Problem and Proposed Solution

This case focuses on societal conflicts over the knowledge-based policy direction and underlying ideas of EU biodiversity and forest strategies (EU soft law) with links to EU Habitats and Birds Directives, and EU Nature Restoration Regulation (EU hard law). It puts the attention particularly on the conflicts as regards institutionalization of ideological shifts toward (i.) better conservation management and restoration of forest ecosystems, (2.) close-to-nature forest management, and (3.) integration of biodiversity and climate resilience objectives into forest management.

The core problem is knowledge-based and ideological disagreement over (i.) the purpose of forests (economic timber production vs ecological restoration of biodiversity), and (ii.) the appropriate model of forest management (intensive / active forestry vs close-to-nature management / conservation management of forests).

While the other related case study (*see below 4.2.2.*) shows how the EU and MS attempt to resolve conflicts through binding rules and legal enforcement, this case highlights that these rules are rooted in contested ideas and belief systems at the national level in Germany, Spain and Sweden. EU institutions promote new norms and ideas through EU soft law strategies and policy beliefs, but their acceptance varies across actors and countries depending of their ideological fit.

C. Conflicting Parties / Stakeholders

Policy advocacy coalitions at national level

- **Environmental coalitions:** national environmental ministries, environmental NGOs and their national/EU associations, environmental scientists, think tanks and consultants → these actors promote policy beliefs and values of forest biodiversity conservation and restoration, conservation management of forests, and close-to-nature forest management; they support EU-level and national level integration of climate and biodiversity goals for forests; they use conservation biology science and knowledge.
- **Forestry coalitions:** national associations of private and public forest owners, forest-based industries and their EU and national associations, national agricultural and forestry ministries → these actors promote policy beliefs and values of production-oriented forestry and multi-purpose economic use; they defend core values of national sovereignty and existing management practices; they resist competing ideology that would constrain forest use and national responsibilities; use mainly forestry sciences and knowledge.

The differences in relative dominance of these value-driven policy advocacy coalitions have shaped different national policy responses in Germany, Spain and Sweden to non-legally binding soft law norms of the EU Biodiversity and Forest Strategies, and related EU biodiversity policies and laws. Sweden has basically rejected, Germany partly supported and partly contested, and Spain widely supported both EU soft laws.

Ideological diversity of forest owner and managers at regional and local level

At the implementation level, different clusters of forest owners and managers as policy addressees show different degree of support or opposition to EU soft law. “Multifuncationalists” and “Environmentalists” support forest related EU biodiversity and climate resilience policy goals, as formulated in the EU Biodiversity Strategy and EU Forest Strategy. “Multifunctionalists” are represented mainly by public forest managers, and some private forest owners who believe in the rule of law, professional expertise and perceive the need to react to public pressure. “Environmentalists” are mainly small-scale forest owners, and some public and communal forest managers who share core values of biodiversity conservation and restoration, and believe in ecosystem management. On the contrary, “Optimizers” and ‘Traditionalists’ express concerns and opposition to EU soft law. “Optimizers” are represented mainly by large private forest owners, and some communal forest managers who prioritize economically-oriented values and often resist regulatory constraints. “Traditionalists”, mainly represented by small, medium and large private forest owners, and some communal forest owners, follow traditional knowledge, family routines, and established practices who often resist change. These groups differ in their beliefs, values, and interests, leading to heterogeneous behavioral responses to EU soft law at the operational level.

D. Dominant Underlying Cause of the Conflict

Dominant conflict type: Ideological conflict

The conflict is rooted in competing forest policy and management paradigms. At the EU-level, the dominant environmental policy paradigm centers at the biodiversity-first approach, ecosystem restoration and resilience of forests, close-to-nature forest management, and integration of climate and biodiversity objectives into ecosystem management of forests. In Germany, Spain and Sweden, national level environmental policy coalitions as well as regional and local level ecologically-oriented forest owners, and partly multifunctionalists, share this environmental policy paradigm. The national level forestry coalitions as well as optimizers, traditionalists and partly multifunctionlists among the forest owners and managers at the regional and local levels adhere to a competing policy paradigm of sustained yield and timber production; the latter centers at core values and beliefs in active forest management (e.g., clearcutting, replanting), and economic and rural development priorities (e.g. timber production, multipurpose forest uses, jobs, and traditional/professional knowledge).

As these paradigms differ in core values (ecological vs economic priorities), knowledge systems (ecological vs silvicultural traditions), and policy goals (restoration vs production), the resulting ideological tensions lead to divergent interpretations and acceptance of EU policies. This ideological conflict explains why rules-based solutions (e.g., Natura 2000, NRR) face resistance, policy incoherence persists across Member States, and legal enforcement alone cannot ensure implementation (*see below 2.2.2*).

E. Dominant Conflict Resolution Pathway

Dominant conflict resolution pathway includes discursive and political processes. The conflict is addressed through (i.) knowledge-based policy debates, negotiations and persuasion at EU, national and regional levels, (ii.) framing and reframing of win-win and win-loses of forest policy goals at the nexus biodiversity restoration, climate resilience, and timber production, (iii.) beliefs-based coalition-building and advocacy, and (iv.) gradual diffusion of ideas, knowledge and norms through policy-oriented learning.

EU soft law strategies (e.g., Biodiversity Strategy, Forest Strategy) aim to promote new environmental policy paradigms, and influence forestry-dominated national policies and actor beliefs. However, these processes are slow and contested and do not guarantee convergence of ideas over short time, but

policy-oriented learning through ideological contestation and knowledge diffusion (knowledge-based) could be expected over the medium to long run, especially in combination with the use of financial incentives (interest-based) and prescriptive regulation (rules-based).

F. Outcome

In this case, the ideological institutionalization of biodiversity and restoration values in EU forest policy has increased. This has resulted in a partial uptake of some these EU environmental forest ideas in some Member States, like Spain and partly Germany, but not in Sweden und partly not in Germany. However, persistent variation in national policy responses has been visible. Countries differ depending on dominant beliefs-driven policy advocacy coalitions and national policy paradigms. Likewise, this case reveals divergent actor behavior where forest owner and manager types respond differently, shaping implementation outcomes.

A limited paradigm shift in policy and practice can be attributed due to the larger share of production-oriented forestry ideas that remain dominant in many contexts, especially in Sweden, partly in Germany, and less so in Spain. Policy and behavioral change can be achieved through policy-oriented learning based on new knowledge and experience that comes to replace and correct past causal (but not normative) assumptions about how to world works.

Interaction with rules-based conflict also evident: where ideological resistance is strong legal enforcement and policy prioritization becomes necessary. Where ideological and policy alignment exists, implementation of forest related EU biodiversity and climate resilience policy values and ideas is smoother in forestry. Thus, the conflict remains partly ongoing and partly unresolved at the level of contrasting ideas and practices. Partly, the conflict does not emerge due to partly overlapping and supporting ideological fit between national policies and forest owner and manager perceptions and values.

G. Key Lesson

Ideological conflicts underpin and shape rules-based conflicts in EU forest biodiversity policy. Key insights are that beliefs drive policy acceptance where implementation depends on alignment between EU ideas and national actor policy and manager belief systems. Coalitions and target groups are decisive where belief-driven policy advocacy coalitions and forest owner types act as gatekeepers of policy and behavioral change. Legal instruments cannot replace knowledge-based change in actors' ideas and normative frameworks. Rules can enforce compliance but cannot fully resolve ideological disagreement. Transformative policy requires paradigm shifts where long-term success depends on changing how forests are valued and managed. This can be achieved through policy-oriented learning based on new knowledge and experience that comes to replace and correct past assumptions about how to work works. Belief and hence policy and behavioral changes are more likely when external or internal events (e.g., changes in governments, socio-economic conditions, public opinion, natural disasters) reveal anomalies about pre-existing beliefs, and there is a trust-building collaborative process among actors facilitated by independent knowledge brokers and wish to change the status-quo.

4.2.2. Implementation of EU Nature Directives and EU Nature Restoration Regulation in Forest Ecosystems as a Rules-Based Conflict: Legal Enforcement, Policy Incoherence, and Emerging Regulatory Expansion

Author: Metodi Sotirov

Main sources: Sotirov et al. (2021); Fleckenstein et al. (2025); Sotirov et al. (2025); Sotirov et al. (2026); BIOCONSENT project (https://www.bioconsent.eu/) and SUPERB project (https://forest-restoration.eu/)

A. Case Identification

- **Location**: European Union (EU-27)
- **Ecosystem / land-use type**: Forest ecosystems (protected and managed)
- **Policy context**: EU Birds and Habitats Directives (Natura 2000), EU Biodiversity Strategy 2030, EU Forest Strategy 2030, EU Nature Restoration Regulation
- **Timeframe**: 1990s-present (with major expansion since 2020)

B. Subject: Problem and Proposed Solution

This case concerns rules-based societal conflicts over the implementation of forest-related EU biodiversity conservation and restoration policy, including EU's nature conservation policy (EU Birds and Habitats Directives) and EU nature restoration policy (EU Nature Restoration Regulation).

The core problem lies in the rules-based mismatch between legally binding EU biodiversity obligations, and diverse national provisions (e.g., forest laws) regulating management practice. The initial rule-based solution to tackle biodiversity decline in the EU was the adoption and enforcement of the EU's 1979 Birds and 1992 Habitats Directives (EU Nature Directives), which established EU-wide network of protected areas Natura 2000 and imposed legally binding conservation obligations for a variety of habitats and species, including forest ecosystems and forest related species, but without forest specific details. Persistent implementation gaps and policy incoherence led to the development of a new generation of rule-based instruments, most notably the EU Nature Restoration Regulation.

Adopted in 2024, the EU Nature Restoration Regulation) extends and specifies the regulatory obligations beyond Natura 2000 by (i.) introducing legally binding restoration targets across both protected (e.g., restoration of 30% of all Natura 2000 forest habitats and species in non-favourable conservation status by 2030; 30% by 2040, and 90% by 2050) and managed forest ecosystems (30% restoration of all forests outside Natura 2000 sites), and (ii.) requiring improvements in forest biodiversity indicators (e.g., lying and standing deadwood, forest birds, increase of vertical forest structure, more native and diverse tree species, connectivity) which promotes systemic changes in forest management practices (e.g., avoidance of intensive forestry). Thus, the NRR represents a major EU policy change aimed to fix regulatory limitations of the EU Nature Directives by broadening and strengthening legally binding restoration requirements.

C. Conflicting Parties / Stakeholders

- Environmental coalition: many EU institutions (e.g., DG Environment/EU Commission; EU Parliament/COMENVI; EU Environmental Council, EU Court of Justice, EU Court of Auditors), national environmental ministries, environmental NGOs, environmental scientists, think tanks and consultants → these actors use multiple venues in the EU multi-level governance system to support stronger EU wide biodiversity rules.
- Forestry coalition: EU and national associations of private and public forest owners, forest-based industries and their EU and national associations, national agricultural and forestry ministries, some EU institutions (DG Agri/EU Commission; EU Parliament/COMAGRI; EU Agricultural Council) → these actors use multiple venues in the EU multi-level governance system to resist EU rules constraining forest use and upholding a variety of national forestry rules.

While EU institutions including Member States act as regulators and enforcers, supported by NGOs, scientists and consultants, Member States, and policy addressees such as non-state forest owners, public managers and forest-based industries, are targets of compliance pressure.

D. Dominant Underlying Cause of the Conflict

Dominant conflict type: the rules-based conflict is driven by regulatory incompatibilities and evolving legal requirements:

1. Mismatch between EU rules and national laws: national forest laws vary widely and often do not align with EU biodiversity and restoration legal obligations.
2. Policy incoherence across governance levels; vertical: EU biodiversity law vs national forest legislation; horizontal: biodiversity vs forestry and economic objectives.
3. Expansion of EU regulatory scope: the transition from EU Nature Directives/Natura 2000 (site-based protection) to the EU Nature Restoration Regulation (system-wide restoration) intensifies the regulatory mismatch and hence the rules-based societal conflict while offering opportunities for national adaptations.

While economic, ideological, normative and power-related tensions are also present, the conflict is fundamentally driven by binding rules and compliance obligations.

E. Dominant Conflict Resolution Pathway

Dominant pathway: Policy Change and Legal enforcement.

1. Established pathway (EU Birds and Habitats Directives): Policy enforcement

The main conflict resolution mechanism has been top-down policy-making based on (i.) infringement procedures started by the EU Commission and often backed by European Court of Justice (ECJ) rulings, as well as (ii.) legal clarification and legal enforcement of site designation and conservation obligations by national and EU authorities, often based on conservation science rationale.

2. Emerging pathway (EU Nature Restoration Regulation): Policy change

The EU Nature Restoration Regulation represents a new rule-based instrument, but it is recently adopted and still in early implementation stages, mainly developing National Restoration Plans. No significant infringement practice yet exists. Enforcement mechanisms are expected to follow similar patterns as Natura 2000 implementation (e.g., monitoring, infringement procedures, court rulings). It is therefore reasonable to expect a future expansion of top-down legal enforcement once implementation gaps emerge.

3. Political uncertainty: “stress test” of EU Nature Directives: Policy revision

At the same time, EU nature legislation (including the Nature Directives) is currently undergoing a political “stress test” (Omnibus process). This aims to simplify or potentially weaken EU biodiversity regulatory requirements. It reflects ongoing political pressure from competing interests. The review and simplification outcome remains uncertain and not yet concluded. This introduces additional legal uncertainty into the long-term stability of the rule-based framework. Societal conflicts in nature restoration are likely to increase further rather than decrease.

F. Outcome

Over time, a strong expansion of legally-binding EU biodiversity and restoration policy has been observed. The rules-based societal conflict is partially stabilized through legal enforcement and policy changes, but it is re-appearing and evolving due to new rules and political pressures.

Through authoritative legal and administrative decisions in the context of EU Birds and Habitats Directives, with an enforcement system within and beyond the EU-wide network of Natura 2000 sites has been established and strengthened, but it is still not fully effective. This process has often involved interest-, ideas-, rules-, and power-based societal conflicts and their management through institutional choices, stakeholder engagement, funding support, and regulatory coercion. Introduction of the EU Nature Restoration Regulations seeks to solve policy effectiveness issues as a more comprehensive and specific regulatory instrument, with clear legally binding quantitative targets for ecosystems.

However, rules-based conflicts remain dominant due to persistent policy incoherence where for example national forest laws remain only partially aligned with EU biodiversity law requirements. Likewise, incomplete enforcement coverage remains where Natura 2000 forest sites (protected areas) are actively but still ineffectively enforced, and the restoration of forests under the NRR (protected and managed areas) is not yet fully operational in enforcement terms. Ongoing political contestation add fuel to the already existing rules-based conflicts where the EU regulatory framework (EU Nature Directives) itself is subject to political review and possible renegotiation.

G. Key Lesson

Rules-based conflicts in forest-related EU biodiversity conservation and restoration policy evolve over time and require continuous legal and political stabilization. Key insights are that (i.) legal enforcement is central but path-dependent where Natura 2000 demonstrates how infringement and court rulings drive compliance; (ii.) new regulations such as the NRR aim to improve policy effectiveness but often extend and do not entirely resolve rules-based conflicts; (iii.) policy coherence remains a key challenge where rules-based policy alignment across governance levels is essential; (iv.) legal frameworks are politically contested with ongoing efforts to revise or weaken EU nature law to keep rather than adapt national laws highlight the instability of rule-based solutions, and call for the application of other supportive problem solving tools based on knowledge, funding, norms, and power.

4.2.3. Local forest restoration conflicts and solutions in 12 countries in Europe

Author: Lyla O'Brien

Main sources: O'Brien (2025a), O'Brien et al. (2025b); SUPERB project (https://forest-restoration.eu/)

A. Case Identification

- **Location:**
  - Czech Republic, Vysocina and North Moravia
  - Denmark, Thy
  - France, Aquitaine
  - Germany, North Rhine -Westphalia
  - Italy, Po Valley
  - Netherlands, Limburg province
  - Romania, Făgăraș Mountains
  - Sweden, VindelälvenJuhttátahkka Biosphere Reserve
  - United Kingdom, Queen Elizabeth Forest Park, Scotland

  - Serbia and Croatia, Biosphere Reserve Bačko Podunavlje
  - Serbia, Kraljevo
  - Spain, Castilla y Leon
- **Ecosystem / land-use type :** Forests/forestry
- **Policy context:** Various national and regional policies; EU Nature Restoration Regulation and other EU laws and regulations.
- **Timeframe** : These conflicts were identified during the implementation of forest restoration during the SUPERB project from 2022-2023.

B. Problem and Proposed Solution

Several different types of conflicts were identified: interest and ideological conflicts: Conflicts between stakeholder groups rooted in differences in interests and values; Rules-based conflicts: Horizontal and vertical incoherences in forest policy; and power-based conflict: Historical power imbalances between stakeholders. However, the rest of this case study focuses on interest and ideological conflicts as they were the primary focus of the interviews. The following interest and ideological (value-based) conflicts were identified:

- Biodiversity conservation vs. timber production and harvesting
- Forest restoration vs. hunting culture and traditions
- Forest restoration vs. recreation and forest cultural value
- Forest restoration vs. other land-use types

Various solutions were proposed to resolve interest and ideological (value priority) based conflicts:

- Understanding forest restoration perspectives and local contexts
- Tailored communication strategies
- Dialogue platforms and conflict management workshops
- Neutral mediators and science-based focus
- Suitable settings for conflict resolution
- Joint decision-making authority
- Awareness of power dynamics
- Careful zoning and spatial planning
- Compensation and financial incentives for forest restoration

C. Conflicting Parties / Stakeholders

The following conflicting stakeholder groups were identified for each of the interest/ideological conflicts:

Biodiversity conservation vs. timber production and harvesting

- Public environmental stakeholders and environmental NGOs
- Public and private forest stakeholders
- Rural communities who use the forest for subsistence

Forest restoration vs. hunting culture and traditions

- Public environmental stakeholders and environmental NGOs
- Public and private forest stakeholders
- Traditional hunters

Forest restoration vs. recreation and forest cultural value

- Public environmental stakeholders and environmental NGOs
- Public and private forest stakeholders
- Recreationists/local communities

Forest restoration vs. other land-use types

- Diverse stakeholders vs. agricultural and development sectors

D. Dominant Underlying Cause of the Conflict

Ideological and partly interest-based conflicts are the prevailing conflict types. This study still documented various conflict types.

1. Biodiversity conservation vs. timber production and harvesting: This conflict was associated with three different understandings of forest restoration (value-based conflicts). Public environmental stakeholders aligning with the understanding natural forests clashed with forest stakeholders and rural communities, whom they perceived to favour economic and subsistence use of forests over biodiversity conservation. Public and private forest stakeholders aligning with the understanding restoration for economic profitability perceived the opposite, i.e., that public environmental stakeholders value naturalness and biodiversity of forest ecosystems over their economic profitability. A common manifestation of this conflict was disagreements over tree species selection. Public environmental stakeholders favoured diverse native tree species and conflicted with forest stakeholders who were perceived to have preference for economically profitable non-native species.
2. Forest restoration vs. hunting culture and traditions: This conflict was associated with two different understandings of forest restoration (value-based conflicts) with stakeholders aligning with the ecological restoration or socio-economic restoration understandings of forest restoration. Diverse stakeholders perceived that an overpopulation of deer and other browsing ungulates is impeding forest restoration efforts. They believed that this overpopulation is denied by traditional hunting associations to maintain traditional hunting values.
3. Forest restoration vs. recreation and forest cultural value: This conflict was associated with three different understandings of forest restoration (value-based conflicts). Stakeholders perceived that forest restoration induced changes to forest accessibility, recreation, safety, and aesthetics creates conflict with local communities, recreationists, and hunters, especially when forest restoration blocks access to certain recreational paths or hunting areas either through fencing or changes to the water management. Public environmental administrations that perceive forest restoration as natural forests conflicted with recreationists over protection measures, as the approach was seen to increase the risk to recreationists due to the number of aging trees that could fall. Changes to forest aesthetics by altering tree species, water regimes, and forest structure were most prone to conflict because they were thought to damage local communities' emotional connection to the forest and negatively impact forest cultural value.
4. Forest restoration vs. other land-use types: This conflict was unique to stakeholders aligning with restoration for forest cover. Stakeholders from diverse groups perceived conflicts with the agricultural and development sectors which were perceived to value agricultural expansion and infrastructure development over the environment and forest protection. According to stakeholders, this competition for land-use is especially prominent in urban areas. In most cases, stakeholders thought this conflict posed a challenge for expanding forest restoration

because there is currently a lack of available incentives to convince farmers or private landowners in the surrounding areas to engage in forest restoration

E. Dominant Conflict Resolution Pathway

As this case study identified many conflict types, there was not a main policy or governance instrument that prevailed as a solution. The following solutions suggested by stakeholders are described in detail below.

Economic instruments:

- Financial incentives were widely seen by stakeholders as essential for promoting forest restoration on private land, particularly where landowners face potential income losses. Stakeholders across both Swedish and German case studies agreed that compensation mechanisms are key to encouraging restoration aligned with conservation goals. Suggested approaches include adapted state funding, improved market value for habitat-related wood, and payments for ecosystem services.

Informational instruments:

- Tailored, stakeholder-specific communication strategies, as different groups have distinct information needs, priorities, and sources of trust.
- Neutral mediators, particularly scientists or trusted experts to help manage forest restoration conflicts by facilitating communication and providing impartial information.
- Understanding forest restoration perceptive and local contexts: Stakeholders hold different understandings of forest restoration based on how they define forest problems and solutions, shaped by local conditions and underlying values. Some prioritise biodiversity and natural forest development, while others emphasise economic resilience and favour more active management and climate-adapted species to maintain timber production under climate change. When these perspectives clash in specific socio-ecological contexts, they can generate conflict, highlighting the need to identify and account for differing views early in restoration planning.

Procedural instruments:

- Dialogue platforms that bring together stakeholders are widely seen as important for reducing and managing conflicts in forest restoration, as they can clarify misunderstandings and build trust. However, more complex conflicts may require deeper, structured approaches such as facilitated collaborative learning processes, and all such formats need to be repeated over time to have lasting impact.
- Suitable settings for conflict resolution: Stakeholders emphasised that conflict resolution in forest restoration is most effective in informal, in-person settings - preferably in forest environments - and ideally early in the process before formal planning begins, as this helps build trust and prevent misunderstandings.
- Careful zoning and spatial planning can help reduce conflicts between forest restoration and other land uses such as hunting and recreation by separating activities spatially or providing alternative areas.

Institutional instruments:

- Joint decision-making authority: Stakeholders emphasised that effective engagement in forest restoration must go beyond consultation and include real decision-making authority to reduce conflict and build acceptance. Examples show that involving affected groups in designing

restoration measures can prevent opposition, whereas exclusion from decisions can lead to distrust and disengagement, even to the point where restoration may be rejected or relocated.

- Addressing power imbalances: Stakeholders highlighted the need to recognise and address power imbalances in forest restoration processes, as differences in technical knowledge and influence can shape outcomes and exclude certain perspectives. Clear, accessible communication and the use of neutral, locally informed experts were seen as important ways to improve fairness and ensure more balanced participation in decision-making.

F. Outcome

The purpose of this study was to understand which conflicts are present and what are potential solutions, but it was not later investigated if the conflicts were resolved or not.

G. Key Lesson

Investigate stakeholder understandings of forest restoration: It is important to investigate the meaning of forest restoration according to stakeholders before implementing forest restoration in a certain case, and that these diverse perspectives are openly discussed in decision-making processes, especially in conflict resolution processes.

Embrace conflict and strive for stakeholder supported resolutions: Forest restoration conflicts are common. Therefore, when conflict arises in the planning or implementation phase of forest restoration, embrace the opportunity and implement broad, adaptable strategies such as dialogue platforms, shared decision making, and neutral mediators. These tools and strategies are effective across a range of conflict types but should consider the socio-ecological context.

Most conflict management strategies are versatile but local context matters: conflict management strategies may be broadly applicable, but their implementation should consider and adapt to the specific social-ecological context in which restoration takes place.

4.2.4. Interest- and ideological-based conflicts in climate-adapted forest restoration in Natura 2000 sites in North Rhine-Westphalia, Germany

Author: Lyla O'Brien, Priscila Jordão

Main sources: Jordão (2025), Jordão and O'Brien (2025), SUPERB project (https://forest-restoration.eu/).

A. Case Identification

- **Location**: Germany, North Rhine-Westphalia (NRW)
- **Ecosystem and land use-type**: Forests (Norway spruce monocultures), forestry, forest restoration after bark beetle outbreak
- **Policy context**: EU Habitats Directive, Birds Directive, Nature Restoration Regulation, Natura 2000, Reforestation and Silviculture Concept (NRW)
- **Timeframe**: Conflict has existed since establishment of Natura 2000 in the1990s and has become increasingly discussed and debated with increasing impacts of climate change today

B. Subject: Problem and Proposed Solution

The central problem in this case study involves clashing stakeholder interests and perceptions on climate-adapted forest restoration in NRW's Natura 2000 areas following climate-related disturbances since 2018. In one SUPERB forest restoration demonstration areas in a municipal forest, a conflict

arose over how to restore an area damaged by drought and bark beetles. On one side, nature conservation authorities wanted the area replanted mainly with beech trees to match the historically protected forest type and which they argued was necessary to comply with conservation rules. On the other side, the municipality and state forest managers argued for a more diverse mix of tree species, including more drought-tolerant ones like oak, to ensure the forest could survive future climate conditions.

The forestry actors were concerned that planting mostly beech trees would fail because the site was dry, exposed, and lacked the conditions young beech trees need to establish. They proposed a mixed forest adapted to the slope's conditions, with more oak in drier areas and more beech where moisture was higher. However, conservation authorities rejected this plan, as well as a revised version, because it did not include a high enough proportion of beech.

As no compromise was reached, the municipality and state forest administration ultimately abandoned the restoration plan and selected a different site for the project. Although this case focused on a specific restoration site, the study aimed to identify solutions to the general conflict of climate-adapted forest restoration in Natura 2000 forests. The key solution identified was increased interpersonal exchange and interdisciplinary training between stakeholders with differing views. Importantly, stakeholders suggested that this dialogue should take place informally and early, before formal restoration planning begins.

Additional proposed solutions include contract-based conservation agreements and targeted financial incentives. These include public funding schemes that share the risks of failed plantings of climate-adapted species, as well as market-based tools such as carbon storage certificates.

C. Conflicting Parties / Stakeholders

The main stakeholder groups, and the specific actor who became the central conflict, include:

- Nature conservation authorities: this includes both higher and lower nature conservation officers in NRW responsible for Natura 2000 governance and landscape planning (part of the central conflict)
- Environmental groups: These are environmental non-governmental organizations (NGOs) and associations operating at the state and regional levels
- Public Forest Administration: This group represents NRW's state forest administration regional forestry offices, and municipal forest services (part of the central conflict)
- Private Forest and Forestry Sector Associations: These stakeholders represent private forest owners, forestry associations, and forest industry groups at the state and regional levels.

D. Dominant Underlying Cause of the Conflict

The conflict in this case is primarily interest-based, combined with differing value priorities (ideological conflict). On one hand, the public forest organisation and private forest owners are guided by economic interests, aiming to ensure that restored forests remain productive and viable under future climate conditions. This includes a preference for active management and the use of more climate-resilient species. On the other hand, the conflict also reflects contrasting value priorities regarding how forests should be restored after disturbances such as bark beetle outbreaks. Conservation actors tend to prioritize natural processes and the maintenance of historically defined forest types, while forestry actors place greater emphasis on adaptation and long-term resilience.

E. Dominant Conflict Resolution Pathway

In the SUPERB demonstration area in the municipal forest, the conflict was not resolved, and the original restoration plan was abandoned. In the end, a private forest was chosen for restoration. The main instrument that was suggested were informational instruments including increased interpersonal exchange and interdisciplinary training between stakeholders with differing views. Importantly, stakeholders suggested that this dialogue should take place informally and early, before formal restoration planning begins. Economic instruments such as financial incentives to encourage private forest owners to undertake forest restoration that aligns with Natura 2000 habitat type requirements were also suggested. Legal instruments were also suggested which included changes to or flexible implementation of the Habitats Directive.

F. Outcome

The conflict in the SUPERB demonstration area was unresolved. More broadly, the underlying disagreement over how to approach climate-adapted forest restoration in Natura 2000 areas persists in NRW, particularly in the aftermath of bark beetle outbreaks.

G. Key Lesson

Need to take diverging interests and perspectives into account in future decision-making processes: This study found that there are different perspectives on climate-adapted forest restoration across different stakeholder groups that are ultimately shaped by different interests and values. These diverging perspectives and the values and interests that shape them should be openly discussed in decision-making and conflict management processes.

Conflict management should focus on context dependent, desirable, and feasible improvements: A wide array of strategies can contribute to improving conflicts related to climate-adapted forest restoration, including increased interpersonal exchange and peer-to-peer learning, financial incentives, legislative changes, and contract-based conservation agreements. Yet, it is important to highlight that improvements are context-dependent and must be both desirable and feasible to ensure their implementation does not trigger new disputes and contestation.

4.3. Freshwater ecosystems

4.3.1. River restoration in the Deba catchment, Spain: An ideological and knowledge-based conflict over barrier removal, addressed through stakeholder engagement and learning processes

Author: Sebastian Birk, Arturo Elosegi, Miriam Colls

Main sources: Ibrahim et al. 2025, MERLIN project (https://project-merlin.eu)

A. Case Identification

- **Location**: Basque Country, Spain (Deba catchment, Gipuzkoa Province)
- **Ecosystem / land-use type**: River system with multiple historic barriers from former industrial use
- **Policy context**: EU Water Framework Directive; regional river basin management; alignment with EU Nature Restoration Regulation objectives
- **Timeframe**: 2021-2025 (MERLIN implementation phase)

B. Problem and Proposed Solution

The case concerns opposition to the removal of obsolete river barriers, where segments of the local population questioned both the necessity and the benefits of restoration.

The conflict was driven by diverging knowledge systems, perceptions, and value priorities:

- Some residents perceived the existing river landscape as part of their cultural identity;
- Concerns were raised about potential negative impacts, particularly flood risks;
- Scientific arguments for ecological restoration were actively challenged, including campaigns to discredit the evidence base.

This resulted in an ideological knowledge-based conflict, where disagreement was rooted in interpretation, trust, and competing narratives about the river and its future.

The proposed solution relied on informational and procedural instruments, including:

- stakeholder engagement (workshops, meetings, consultations);
- knowledge exchange and awareness-raising;
- mediation and dialogue formats;
- educational activities (e.g. work with schools).

Targeted efforts were made to engage with contested knowledge claims and to openly discuss evidence. Public debates, facilitated by a neutral moderator, helped clarify positions and revealed that opposition was not representative of the majority. This contributed to a reframing of the issue at municipal level and supported a political decision to proceed with partial barrier removal.

C. Conflicting Parties / Stakeholders

- Local stakeholders: Municipalities and residents, with particularly strong and organised opposition in Soraluze
- Environmental authorities and project implementers: Provincial Council of Gipuzkoa (Hydraulic Department), Basque Water Agency, scientific partners

The central conflict emerged between local residents (particularly an active minority) and project implementers promoting restoration. Municipal authorities played an ambivalent role, broadly supportive of restoration but cautious in their public positioning in response to local political dynamics.

D. Dominant Underlying Cause of the Conflict

The dominant cause was ideological / knowledge-based. The conflict was not primarily about material interests or formal rules, but about:

- emotional and identity-based attachments to the existing landscape
- differing beliefs about the role and value of river restoration
- distrust or contestation of scientific evidence
- competing interpretations of risk (e.g. flooding)

Although norms-based elements (e.g. perceived lack of consultation) were present, the conflict persisted mainly because actors interpreted evidence differently and did not share a common understanding of the problem.

E. Dominant Conflict Resolution Pathway

The conflict was addressed through a combination of informational and procedural instruments.

Key elements included:

- dissemination of scientific evidence on restoration benefits;
- stakeholder engagement formats (consultations, workshops, roundtables);
- mediation and dialogue processes;
- educational activities aimed at increasing awareness and long-term understanding.

These approaches aimed to:

- improve knowledge and understanding;
- build trust in scientific evidence;
- reframe the intervention in terms of broader societal benefits.

F. Outcome

The conflict was partially resolved and context-dependent. In most locations, opposition was reduced sufficiently to allow implementation of barrier removal. Increased awareness and engagement led to greater acceptance among parts of the population. However, in Soraluze, strong resistance from a vocal minority persisted, leading to conflict avoidance rather than resolution. Restoration was broadly accepted across sites, with Soraluze representing the main exception, where dams were closely tied to local landscape identity. Overall, engagement and evidence provision contributed to shifts in perception among some stakeholders, although acceptance remained uneven and dependent on local context. This indicates that while informational and procedural approaches can mitigate ideological conflicts, they may not fully resolve deeply entrenched opposition.

G. Key Lesson

Three key lessons emerge. Soft power is essential but not always sufficient: Informational and participatory approaches can reduce conflict and build acceptance, but may not fully overcome entrenched opposition. Evidence alone does not resolve ideological conflicts: Providing more data is insufficient when trust, values, and identity are at stake; interpretation and framing of knowledge are equally important. Acceptance tended to increase where perceived risks (e.g. flooding) made restoration benefits more tangible. Persistence and adaptive engagement are critical: Long-term, adaptive engagement - combining dialogue, education, and continuous interaction - is essential. Keeping the issue from becoming polarised along political lines helped maintain space for constructive debate.

4.3.2. River restoration in the Deba catchment, Spain: A rules-based conflict between cultural heritage protection and ecological restoration, resolved through legal clarification

Authors: Sebastian Birk, Arturo Elosegi, Miriam Colls

Main sources: Ibrahim et al. (2025), MERLIN project (https://project-merlin.eu).

A. Case Identification

- **Location**: Basque Country, Spain (Deba catchment, Gipuzkoa Province)
- **Ecosystem / land-use type**: River system with multiple historic barriers from former industrial use
- **Policy context**: EU Water Framework Directive; emerging alignment with Nature Restoration Regulation; regional cultural heritage protection frameworks
- **Timeframe**: 2021-2025 (MERLIN implementation phase, with earlier legacy conditions)

B. Problem and Proposed Solution

The case concerns the removal of obsolete river barriers to restore longitudinal connectivity and improve ecological status in the Deba catchment. Up to ten barriers were targeted, aiming to restore flow along approximately 25 km of river. The conflict arose because many of these barriers, although no longer functional, were legally protected as elements of industrial cultural heritage. This created a direct tension between environmental restoration objectives and heritage conservation rules. The solution that ultimately prevailed was a legally enabled compromise: barriers were either removed or modified to restore river flow while retaining elements for cultural interpretation. This was made possible through a clarification of legal authority regarding the modification or removal of protected structures.

C. Conflicting Parties / Stakeholders

- Environmental authorities and project implementers: Provincial Council of Gipuzkoa (Hydraulic Department), Basque Water Agency, scientific partners
- Cultural heritage authorities: Basque Government's Department of Culture
- Local stakeholders: Municipalities and residents (with particularly strong opposition in Soraluze)

The central conflict party became the public authorities themselves, particularly between environmental and cultural heritage administrations.

D. Dominant Underlying Cause of the Conflict

The dominant conflict was rules-based. The core issue was not primarily disagreement over cost-benefits (interest-based), but legal and policy incoherence (rules-based). Cultural heritage protection frameworks restricted intervention on historic barriers, and environmental policy (WFD) required restoration of river continuity. This created uncertainty about whether barrier removal was legally permissible. While social resistance (norms-based) and knowledge disputes (knowledge-based) were present, the conflict persisted because institutional rules did not clearly prioritise or reconcile competing policy objectives (rules-based).

E. Dominant Conflict Resolution Pathway

The conflict was resolved through a legal-institutional pathway. A decision by the Basque Parliament clarified that the authority responsible for designating heritage protection could also authorise modification or removal. This effectively resolved the regulatory ambiguity and enabled implementation. The legal clarification was complemented by adaptive technical solutions (partial removal/modification), but the decisive step was the political-legal resolution of conflicting rules.

F. Outcome

The conflict was partially resolved. Barrier removal proceeded in several locations, restoring ~18.5 km of free-flowing river. A compromise approach allowed both ecological restoration and cultural heritage interpretation. However, strong local opposition persisted in parts of the catchment (notably Soraluze), including continued political mobilisation and calls for a referendum. Thus, while the legal conflict was resolved, social conflict (norms- and knowledge-based) remained only partially addressed.

G. Key Lesson

Two main lessons emerge. First, policy coherence is a prerequisite for restoration implementation. Conflicts between environmental and cultural heritage rules can block action even when technical solutions are available. Legal clarification or prioritisation is often required to unlock implementation. Second, legal resolution does not substitute for social legitimacy. Even after regulatory barriers are

removed, local resistance may persist. Early, meaningful engagement and attention to place-based values are essential but cannot replace the need for clear rules and institutional mandates.

4.3.3. Restoring wetlands for reintroducing the European pond turtle in Alsace, France: when opposing viewpoints and contestation delay conservation initiatives and reduce public awareness

Authors: Jean-Yves Georges, Kathrin Theissinger;

Acknowledgements: Rémi Barbier, Carine Heitz, Denis Schwab, François Steimer

Main sources: Barbier et al. (2026), Kuhn et al. (2025), Meyer et al. (2025), Philippot & Georges (2023), van der Zon et al. (2026), Emys-R project (https://emysr.cnrs.fr/)

A. Case Identification

- **Location**: France, Rhine Valley, Lauterbourg, Neu-Woerr site
- **Ecosystem / land-use type**: wetlands / restoration, conservation, monitoring
- **Policy context**: RAMSAR Convention, Natura 2000, EU Birds Directive No 2009/147/EC (as Special Protection Area ZPS) and EU Habitats Directives No. 92/43/EEC (as Special Areas of Conservation ZSP by ministerial decrees)
- **Timeframe**: 2000 - onwards

B. Problem and Proposed Solution

The problem: A conservation initiative in favour of the reintroduction of the European pond turtle in the dedicated restored wetland of Woerr in Alsace, North-East France, led to a contestation by one employee of a local naturalist NGO – a long-standing partner of the territorial council, who also served as an expert on the regional committee in charge of authorising conservation initiatives. The contestation was about the indigenous status of the species and its potential impact on protected amphibians occurring on the site.

The solution: Soft power and project adaptive management, including adjustment of the initial consortium - yet without expelling the contesting partner - permitted the implementation of the initial project, with significant additional administrative procedures and delay, but also with significant benefits including an integrated socio-ecological assessment of the overall initiative that was not initially planned.

C. Conflicting Parties / Stakeholders

Direct concerned parties:

- Conseil Départemental du Bas Rhin (CD67, since 2021: Collectivité européenne d'Alsace CeA) is the territorial council authority, also land manager of the Sensible Natural Area of Woerr (*Espace Naturel Sensible du Woerr*) and initiator of the conservation initiative in favour of Woerr restoration and pond turtles' reintroduction.
- BUFO is a local naturalist herpetologist NGO that aims at promoting the understanding and the protection of reptiles and amphibians in the Alsace Région. BUFO also provides advice and expertise, as experts for the Regional Scientific Council for Natural Conservation (CSRPN, see below). BUFO's employee initiated the contestation against the European pond turtle conservation initiative.

Indirectly concerned parties:

- Regional Scientific Council for Natural Conservation (CSRPN) is the regional body of the Ministry on charge of the environment. This body can be consulted on matters relating to the region's natural heritage. This body comprises specialists appointed on the basis of their scientific expertise, and in a personal capacity – not on behalf of any organisation.
- Institut pluridisciplinaire Hubert Curien (IPHC) is a research laboratory of CNRS based in Strasbourg. Since 2012, IPHC implements scientific monitoring aimed at assessing the overall ecological and sociological consequences of conservation initiative in favour of the European pond turtle on the Neu-Woerr site.
- The inhabitants of both Lauterbourg (FR) and Neuburg am Rhein (DE) are rare but regular visitor of the site for recreative activities.

D. Dominant Underlying Cause of the Conflict

The dominant and initial cause of the conflict was ideological/knowledge based, yet with some power-based decision aspects.

In 2000, CD67 enlisted the European pond turtle (*Emys orbicularis*) in its environmental chart, with the aim to reintroduce 500 specimens on the Woerr site that it manages as a Sensible Natural Area in Lauterbourg (NE of France). The restoration project was contested by at least one employee of the local NGO BUFO, specifically on 1) the indigenous status of the European pond turtle in Alsace – pointing out an introduction of a non-native instead of the announced reintroduction of an extinct species, and 2) its potential impact on local protected amphibians occurring on site. CD67 answered by referring to existing literature mentioning shells of European pond turtles in peat bogs close from Lauterbourg, attesting to the species' presence in Alsace in prehistoric times (~800 BC) – therefore establishing the native status of the European pond turtle in Alsace and assigning its decline and subsequent disappearance primarily to human activities. The status quo continued nonetheless, without blocking the process.

In 2004, CD67 submitted its project to the Ministry of Environment – the protected status of the European pond turtle implying that this national authority is seized first. The project was authorised, with the requirement for a scientific monitoring – by CSRPN – for assessing the success of this initiative. CD67 identified its long-term partner BUFO, some of whose employees are CSRPN experts, as appropriate for ensuring this scientific monitoring. Aside, as part of the standard procedure, the Ministry of Environment transferred the CD67's application to its regional antenna CSRPN for expertise and validation at the regional level.

In 2007, CSRPN's took up on its own initiative the matters of 1) the indigenous status of the European pond turtle in Alsace, and 2) the potential impacts of released turtles on protected amphibians occurring on site, and finally rejected CD67's application. CD67 held its ground based on additional literature supporting the historical occurrence of the European pond turtle in the Rhine Valley (Rhineland Palatinate, Germany and Switzerland). In 2008, CSRPN reiterated its negative evaluation and withdrew from the scientific monitoring of CD67's initiative. In 2012, CD67 proposed IPHC, a research lab based in Strasbourg, to implement the required scientific monitoring – under IPHC's scientific leadership. The same year, CD67 released its first turtles.

E. Dominant Conflict Resolution Pathway

CD67 considered the authorisation by the Ministry of Environment as the highest-level permission regardless the negative regional evaluation (power-based). The main resolution pathway was through

participatory processes involving all parties committed from the start – or later – in the contestation. CD67 resolved the contestation both actively and passively (knowledge-based).

Actively, CD67 has maintained BUFO as partner of the whole initiative, by financially supporting BUFO's long-term activities (e.g., amphibian monitoring – including on the Woerr site). CD67 also extended its network by involving IPHC as an alternative partner for the scientific monitoring of the initiative. It ensured regular interactions with all institutions involved – including BUFO and IPHC – during annual report meetings, and as part of the management plan of the Woerr site. It also extended restoration efforts on the Woerr site, including additional pond creation and restoration, beneficial for both the European pond turtle and amphibians

Passively, CD67 has kept as confidential as possible all (but one) of the 13 release events so as not to reignite any contestation. *Laissé faire*, based on trust in the professionalism of each partner – BUFO for the amphibians, and IPHC for the turtles monitoring, respectively – and the overall initiative's outcomes. CD67 let IPHC extending the initial basic monitoring with additional research approaches, including biodiversity assessment, inter-species interactions and food web, and sociological survey, participatory seminars and workshops. It also benefited from IPHC institutional influence for strengthening its argumentations against any contestations related to the initiative, and for advertising the whole project.

F. Outcome

The contestation is still not resolved, because each party holds on its own ground regarding the indigenous status of the European pond turtle in Alsace. Yet, the fact that CD67-CeA committed BUFO for implementing the amphibian monitoring on the Woerr site permits BUFO to assess by itself the overall benefits of the restoration of wetlands for amphibians.

The major outcomes of this case are: a significant delay in the administrative procedure at the local level, a limited communication of the overall conservation initiative by CD67 toward the local people and stakeholders, leading to a lack of citizen awareness – and consequently of local interest and engagement for the overall initiative. Another pending issue is some detrimental consideration of IPHC people by BUFO due to their respective commitment for the turtle-centered aspects.

Despite these challenges, the European pond turtle has been added on the most updated Red List of reptiles in Alsace, with the neutral status "of uncertain indigenous origin, naturalised", that brings the debate to a coherent equilibrium in line with current scientific knowledge. The extend of environmental concerns to sociological and societal aspects led to a most integrated socio-ecological assessment of the initiative, that are a new baseline for present and future homologous initiatives throughout France and Europe. Another positive development is the labelisation of the Woerr site as part of the Long-Term Study in Ecology and Evolution (SEE-Life) programme of CNRS, on nowadays so-called DE-FR crossbordering Neu-Woerr site. Limited public awareness leads to a limited number of visitors on the Woerr site, making it a sanctuaried area for the European pond turtle and associated biodiversity.

Not directly linked to all above conflicts and solutions, two non-native invasive species have settled since the restoration of the Woerr site: the calico crayfish *Faxonius immunis* and the raccoon *Procyon lotor*, with major impacts on the restored wetlands and their biodiversity including protected amphibians and released turtles. The implication is that adaptive management strategies are presently co-constructed by CeA and researchers for mitigating these impacts.

G. Key Lesson

Nature restoration initiatives are complex, long-term actions that require constant adaptive management for ensuring sustainable partnership and implementation. Leaders of nature restoration initiatives should be prepared for unexpected situations – including diverging/changing viewpoints of

partners – and outcomes – including settlement of non-target species and ecosystem disruption. Soft power can solve stakeholder conflicts, including consortium adjustment with new complementary skilled partners instead of expelling contesting ones. Conservation initiatives targeting umbrella species facilitate socio-ecological approaches, preventing potential individual statement of position (e.g., belief, symbolism) that may raise in one-species-centered conservation initiatives, while providing a most integrated understanding of the overall drivers, triggers, patterns and outcomes.

4.3.4. Stakeholder conflicts around ecological restoration of forested peat mire versus productive use through commercial forestry in Estonia

Author: Juri-Ott Salm, Craig Bullock

Main source: WaterLANDS project (https://waterlands.eu/).

A. Case Identification

- **Country**: Estonia
- **Ecosystems / land-use sectors**:
  - Peatland raised bog, transition mire, peatland (transition fen and bog forests) and other type of wet forested mire (pine forest, spruce forests, mixed species forest)
  - Commercial forestry
- **Policy context**:
  - EU Habitats and Birds Directives
  - EU Nature Restoration Regulation (NRR)
  - EU Forest Strategy
  - EU Climate Act
  - Estonian Nature Conservation Act
  - Estonian Forest Act
- **Judicial institutions**:
  - Environmental Board
  - State Forest Management Centre (RMK)
  - Land and Spatial Development Board
  - Saarde Municipality
- **Timeframe**: 2025 and ongoing

B. Problem and Proposed Solution

Problem definition: The EU WaterLANDS Project is proposing to restore the water regime of wet forests in the conservation area of Kikepera in central Estonia. Although a State Nature Reserve adjoining the Soomaa National Park, the location contains areas of commercial forestry in its “limited management zone”. The State Forest Management Centre (RMK), manages state forest land in Kikepera and is supportive of the restoration, as is the State Environment Board. The restoration will contribute to Estonia’s obligations in relation to the EU Habitat Directive and Nature Restoration Regulation and EU Climate Law (intact peatland are major stores of carbon). It will protect many wildlife species, including declining numbers of capercallie (*Tetrao urogallus*).

However, there are small private forestry companies who are anxious about the impact of the rewetting (raising of the water table through a process of drain blocking) for their forestry activities. It has also been claimed that the rewetting could contribute to an elevated risk of downstream flooding .

WaterLANDS local partner, Estonian Fund for Nature (ELF), has stated that the rewetting is not targeting areas of productive (or profitable) forestry. The proposed restoration is restricted to the "strict conservation zone" and in small parts also to a "Limited management zone". Tangible measures have been taken to ensure that there will be no risk of unexpected flooding. An impact assessment, together with a further study by the Environment Agency, confirmed that this would indeed be the case. Moreover, the area at risk of downstream flooding is located many kilometres away from the area proposed for restoration. It is known that restored peatland is better able to retain water than degraded peatland and, as such, restoration has been used in many countries to mitigate the risk of flooding. Rather, past floods in Estonia coincided with periods of the original drainage works .

Counter arguments have also been made that rewetting is a threat to forestry. It has been claimed that trees will be killed and that this will result in higher emissions of CO2 and methane. Certainly, rewetting is expected to gradually kill trees (ca 4% of the restored forest) in areas of lower land as would be the case for natural wetland areas. However, trees in higher areas will be much less impacted. Where the targeted area adjoins commercial forestry, existing drains can be maintained to ensure that there is no risk to the activity. There is good data to demonstrate that where rewetting occurs there will be gradual transition from the current position of net carbon emissions to one of carbon sequestration, albeit following a possible spike in methane emissions for a brief period until full rewetting is achieved (knowledge-based). Moreover, rewetting could reduce the extent of damage from bark beetles, outbreaks of which have increased in recent years due to more frequent drought. The risk of wildfire would also be reduced by the restoration.

Rather, the opposition is fundamentally motivated by the perception that restoration is a threat to the commercial forest industry. Peatlands in Estonia have been drained for much of the last century (and before) to open up land for commercial forestry so there is a legacy of land use change. Some people perceive restoration as the "thin end of a wedge" that could threaten the long term survival of the industry. There are elements of a power-based conflict around how the land is used or exploited.

Population density in the area is low and only light use is made of Kikepera for recreation. Public surveys undertaken by ELF have demonstrated some support for environmental restoration. However, there is a significantly large segment of the population who are supportive of the forestry sector. As such, the conflict has stimulated a national debate in the media. In this sense, there are elements of a norms-based conflict too.

Matters came to a head when one forestry landowner took legal action against proposals for restoration. A preliminary court decision permitted the restoration works to continue in all but a very small (3%) area adjoining the forester's land. However, the local municipality, in response to forestry lobbying, began demanding that constructions to facilitate the rewetting, e.g. dams of drains, be subject to building permission. There is no precedent for permission to be required for such small structures and this request was eventually reversed.

Proposed solution: To address the competing arguments, WaterLANDS partners (ELF, RMK and University of Tartu) have encouraged debate. They have set out current research demonstrating that the restoration will have a net positive impact on carbon emissions. The impact assessment demonstrated that, with mitigation, the rewetting will have no impact on forestry activities or flooding. However, even within the academic community dissenting viewpoints have been made by the Institute of Forestry and Engineering of the Estonian University of Life Sciences. The WaterLANDS partners

have reached out to the municipality, the local forestry community and local public, with whom they have engaged in dialogue supported by presentations and walking tours of the area. However, some stakeholders have refused to meet to discuss the local issues, except as part of a wider debate over broader conservation policy (knowledge-based).

National judicial institutions have become decisive actors when conflicts escalate; they interpret and enforce legal obligations, supported by scientific experts (rules- and power-based). In several instances, national authorities shift from being intermediaries to becoming the main addressees of legal scrutiny, particularly when courts assess compliance with EU or national law (rules-based, power-based). EU institutions would potentially be involved if issues are not solved at national level. The European Commission and European Court of Justice can assess infringement risk having reviewed regulatory oversight.

C. Conflicting Parties / Stakeholders

Landowners / users:

- State Forestry Management Centre (RMK)
- Forestry sector
- Private Forest owners and forestry interests

Other parties

- Estonian Fund for Nature (ELF)
- Estonian Forest and Wood Industry Association
- Private forestry owners
- University of Tartu (Institute of Ecology and Earth Sciences, Life Sciences Institute of Forestry)

National public authorities:

- Environment Board
- Ministry of Climate
- Saarde Municipality
- Land and Spatial Development Board of Agriculture and Food Board (MaRu)
- National judicial institutions

EU institutions:

- European Commission and European Court of Justice
- EU legislators, EU Parliament and Council of the EU

D. Dominant Underlying Cause of the Conflict

These perceptions are underpinned by elements of each of the four other conflict types identified in this report. A norms-based element arises from a perceived threat to existing land use and is related to ideological or knowledge-based positions as to conflicting understanding of the consequences of restoration and the evidence each side respectively selects with regard to public value perceptions of the naturalness of the landscape (drained or wet forests or mires), flood risk or the net carbon flux, noting that the existing scientific evidence is incomplete at national level. Economic interests reside in the background in that stakeholders' future incomes are perceived to be threatened even though there are no significant economic consequences associated with the restoration that is currently being proposed. Power elements are present too in terms of the parties' varying capacities to pursue representations to local government. Alongside these conflict types, rules-based elements arise from

incoherence between EU environmental policy and national regulatory policy or frameworks with respect to forestry, including their national and local legal interpretation. These are driven by ambiguity in national interpretations of environmental provisions (e.g. conservation status, impact assessments, restoration obligations) and by competing legal logics whereby environmental protection is constitutionally framed as a programmatic objective rather than a directly enforceable right.

In principle, where economic interests, power relations, and ideological differences are present, they are secondary to the central issue of how binding environmental rules should be interpreted and applied. However, provincial governments or municipalities are strongly influenced by local politics and local values towards environment and economic interests.

E. Dominant Conflict Resolution Pathway

Additional research is now being undertaken using a greater level of water monitoring and CO2 modelling. This will support additional communication activities. The dominant conflict element is norms- or interest based, the most promising resolution pathway may be legal and judicial enforcement. Key elements needed will include a judicial review of administrative decisions enabled by transposition of EU Directives into national law. The influence of prescribed or presumed rights of local stakeholders, including economic interests and landowners, will also need to be considered as part of this process. Conflicts at local municipality level depend on interpretation of planning legislation.

Ultimately, a steer will be needed from national government supported by judicial advice. A cooperation board has also been proposed to minimise future conflicts by allowing the municipality to discuss the risk of land-based projects with stakeholders. Although the EU Nature Restoration Regulation does not include a standalone access-to-justice article, its preamble reaffirms obligations under the Aarhus Convention indicating that litigation will remain central during implementation. Improved communication and definition of institutional instruments is needed.

F. Outcomes and Current Status

Conflicts are not resolved once and for all, but become institutionalized through legal processes that provide authoritative decisions and precedents.

G. Key Lessons for Nature Restoration in Europe

Rules-based conflicts require rules-based solutions: courts are often the only actors capable of delivering binding resolution. Judicial institutions become central governance actors in domestic implementation of EU environmental policy and law. Nature restoration will increase legal conflict, particularly in sectors with strong economic interests and power relations leading to a mismatch between EU and national rules. Capacity-building and knowledge development within courts, also through the engagement of scientific experts, is critical for effective implementation of EU Nature Restoration Regulation. Nevertheless, stakeholder engagement is critical at all stages for mutual understanding and identification of avenues to consensus. However, this cannot guarantee consensus if some interests choose not to engage and remain critical. Therefore, progress may ultimately fall back on government leadership backed by judicial decisions.

4.3.5. Restoration of Abbeyleix Bog in Ireland: legal action and the impact of strategic lawsuits against public participation

Authors: Kate Flood, Fiona Dunne, Craig Bullock, Alessandra Accogli, Jim Ryan

Main sources: Fernandez and Crowley (2020), Index on Censorship (2025), Renou-Wilson et al. (2025), Shaw and Kemp (2026), Smith and Crowley (2019), Uys (2023); WaterLANDS project (https://waterlands.eu/)

A. Case Identification

- **Country**: Ireland
- **Ecosystems / land-use sectors**:
  - Peatland Raised bog, cutover bog, transition mire, lagg areas such as petrifying springs, fen and wet woodland.
  - Land use: Forestry (historic); Turf cutting/extraction (historic); Recreation/Education (current); Conservation (current).
- **Policy context**:
  - EU Habitats and Birds Directives
  - EU Biodiversity Strategy
  - EU Nature Restoration Regulation (NRR)
  - EU Climate Law and Irish Climate Act
  - Irish Wildlife Acts
- **Governance**:
  - Board of Trustees which ensures the various aspects of the lease are adhered to
  - Technical Advisory Group (TAG) – multi-stakeholder group advising management
  - ABP is Company Limited by Guarantee with 5 Directors – guided by its Articles & Memorandum of Association.
  - Membership base
- **Timeframe**:
  - 2009 (restoration work began)
  - 2022 (legal action instigated)
  - 2024 (planning permission granted to the quarry company by Laois County Council)

B. Problem statement and Proposed Solution

Abbeyleix Bog and the Abbeyleix Bog Project (ABP) is a Knowledge Site within the EU Horizon 2020 WaterLANDs research project. Abbeyleix Bog is of national conservation value due to the importance of the high bog habitats as well as the presence of rare lagg areas including petrifying springs, fen and wet woodland. The site is of importance at European level for the protection of these habitats not only because of their extent and quality, but also due to its geographical location at the south-eastern limit of raised bog habitats in Ireland. The site has no legal designation at present but is a candidate for national designation (Natural Heritage Area). Restoration work began at Abbeyleix Bog in 2009. Following these interventions, there has been an increase in the area of Active Raised Bog (1.12 ha in 2009 to 13.78 ha. in 2020) and an increase in the extent of the most carbon sink-effective ecotopes. Direct net CO_2 emissions are estimated to have fallen from 443 tonnes per year in 2009 to 210 tonnes per year in 2020. In terms of sequestration, the active area of the bog (sub-central ecotope) was taking in only ca 2 tonnes CO2 per year in 2009, compared to over 25 tonnes per year in 2020 (central and sub-central ecotopes) indicating a clear upwards trend. This demonstrates that the restoration work is

beneficial in terms of increasing the climate mitigation capacity of the bog and fulfilling state obligations under the EU Climate Act and EU Nature Restoration Regulation.

The ABP won a Pride of Place Biodiversity and Climate Action Award in 2024 in recognition of this work. Irish county councils are central to the IPB Pride of Place awards, acting as the official nominating bodies for local community initiatives in biodiversity and climate action. They also won a National Good Causes Award in 2019 for bog restoration and stewardship.

However, in 2022, family directors of a local quarry company initiated legal action against ABP in a private capacity (before the High Court) over alleged impact on their land. They alleged that rewetting of the bog had flooded their land and claimed that this had devalued it. Ecologists who investigated the claim stated that this was an impossibility as the site referenced is uphill from the bog site. The action may have been influenced by previous objections made by ABP who had argued that the quarry activities would have a deleterious effect on the hydrology of the bog.

The ABP were obliged to declare the claim to the insurance company who in response stated its intention to change the mechanism of risk assessment to a 'rate per acre' escalating to €50 per acre over a five year period. The implications of this are that the premium may rise exponentially, making it potentially difficult for the group to operate. Due to the pending legal action, all restoration works have stopped on the site as ABP have been put on notice to refrain from further drain blocking until there is a resolution. The last work to be completed was bunding of part of the cutover delivered under the Government's Peatlands Community Engagement Scheme. The case requires the Board of Directors to engage in ongoing communications to liaise with the legal advisors acting on behalf of the insurance company (BHP) and ABP (knowledge-based). This means their capacity to carry out their other (volunteer) duties for the ABP is limited. A further impact of the litigation on capacity of the group to carry out restoration is the social costs of attracting people to work in the governance structure in a voluntary context (interest-based, norm-based).

As regards the societal conflict resolution, several rules-based and power-based decisions were made. First, planning permission was granted to the quarry company by Laois County Council for a proposed expansion in 2024. Permission was granted without the applicant addressing any of the scientific and physical issues that were raised by members of ABP and a consultant in relation to the impact on the bog. In response, ABP and others made submissions to the planning authority in January 2025. The development consisted of the extraction of sand and gravel, around 1.57 million tonnes in total, at a maximum extraction rate of about 200,000 tonnes per year, over the proposed 10 year permission sought. ABP was informed in Sept 2025 that a decision on the ABP submission would not be made within that timeframe due to heavy backlog. No reference was made to the legal case.

Strategic Lawsuits Against Public Participation (SLAPPs), as a form of legal action, are being used strategically by individuals or companies with the aim of suppressing public participation, public interest litigation and critical reporting of public interest matters. The proceedings taken against ABP can be considered a SLAPP as they reveal a significant power imbalance between the parties, selective targeting of less well-resourced or peripheral defendants, cost and delay tactics, disproportionate, excessive or legally untenable claims and failure to use Alternative Dispute Resolution (ADR) or pre-action procedures, among others (rules-based, power-based).

C. Conflicting Parties / Stakeholders

A variety of public and private actors have been involved in restoration of the site, and the related stakeholder conflicts:

- Abbeyleix Bog Project (ABP)

- Bord na Mona (the former peat extraction company)
- Insurance company (BHP)
- State's National Parks and Wildlife Service (NPWS)
- Ecologists
- Irish county councils (e.g., Laois County Council)
- Environmental Protection Agency (EPA)
- High Court

D. Dominant Underlying Cause of the Conflict

The main underlying cause of the stakeholder tensions is a combination of a power- and rules-based conflict. The rule-based element is a reflection of shortcomings in the land use planning process, particularly around enforcement of environmental law, and a failure of national lawmakers to date to extend the EU Anti-SLAPP Directive beyond the initial target area of freedom of journalistic expression. As things stand, it remains possible to pursue manifestly unfounded legal claims against opposing parties, including community bodies or NGOs who typically have limited resources. In that there are numerous instances where such action could be taken in the area of environmental and land use management, this is a challenge which is likely to emerge in the implementation of the Nature Restoration Regulation even in so far as implementing bodies avoiding restoration of areas where contested rights may apply. . Table 2 below summarized the main explanation of the power-, rules- and interest-based conflicts.

Table 2: Indicia of SLAPPs set out by High Court (https://www.algoodbody.com/insights-publications/the-new-slapp-bill-real-legislative-teeth-or-just-a-slapp-on-the-wrist)

Headings	Indicia
Parties	• significant power imbalance between the parties • defendant's status as a journalist, activist or public interest actor • selective targeting of less well-resourced or peripheral defendants
Subject-matter	• the case has a public interest dimension, , or is likely to have a discourage public participation.
Claims made	• disproportionate, excessive or legally untenable claims
Conduct of the dispute	• failure to use ADR or pre-action procedures • forum manipulation • cost and delay tactics • excessive disclosure demands • multiple lawsuits • intimidating correspondence or PR offensives designed to bully or discredit the defendant

E. Dominant Conflict Resolution Pathway

The restoration conflict has been "escalated", by the planning permission granted to the quarry company by the County Council for a proposed expansion in 2024. Strategic Lawsuits Against Public

Participation (SLAPPs), are a form of legal action towards suppressing public participation, public interest litigation and critical reporting of public interest matters.

Recent SLAPP reform in Ireland only relates to defamation and is not relevant to this case. While there is an anti-SLAPP EU Directive (EU 2024/1069)this currently only applies to cross-border situations, although the Commission has recommended (2022/758) that Member States adopt protection in domestic cases. Another national bill is being discussed which might become law soon (General Scheme SLAPP bill[1]), but various societal groups have expressed concern that the bill fails to include the robust safeguards required to meaningfully protect public interest (Index on Censorship, 2025). The full text of the SLAPP Bill is expected shortly and may be subject to amendments as it makes its way through the legislative process.

Research has found that serious shortcomings persist in environmental enforcement across the EU, including Ireland, which ranks among the worst performers in terms of timely implementation of European Court of Justice judgments and failures to comply with environmental obligations. Local authorities and the EPA have been unable to ensure adequate enforcement of EU Directives and national regulations especially as areas such as quarrying, waste and water pollution).

F. Outcomes and Current Status

The legal process is ongoing. ABP has furnished all outstanding details and their defense has been submitted, but further objections by the plaintiff have delayed proceedings. The project had to stop restoration work and ABP believes this is a test case for climate action and nature restoration. Under the General Scheme Bill that is currently under review, defendants would be able to apply for early dismissal of manifestly unfounded claims, defined as a) no reasonable cause of action; b) amounts to an abuse of process of the court; and c) has no reasonable chance of succeeding.

G. Key Lessons for Nature Restoration in Europe

The situation with power- and rules-based conflict (plaintiff expressing their dominance, will be relevant to many BGOs or community groups across Europe who are often at the front end of restoration being sought by the NRR. The restoration of peatlands is meeting with resistance in Ireland and other jurisdictions. Community groups have place-based knowledge, social networks and local goodwill, but face barriers such as lack of capacity and volunteers, challenges in succession planning, difficulties engaging young people, rising cost of insurance and limitations to hiring staff. Legal action is a barrier that poses a threat to all NGOs and community organisations who are confronted with well-resourced commercial opponents .

The situation facing the ABP is proving to be a critical barrier to peatland restoration on the site and is likely to be experienced in other contexts and at other sites as the NRR comes into effect. Unless these societal issues are addressed, such stakeholder conflicts will continue to hamper efforts to effectively restore landscapes such as peatlands. Knowledge of anti-SLAPP legislation should be shared between restoration and community organisations. More research is needed on this topic in particular, and on generating legal knowledge for restoration in general. Similar recent cases refer to wind farms on peatlands that need climate impact assessments.

[1] General Scheme Strategic Lawsuits Against Public Participation Bill: https://assets.gov.ie/static/documents/57e6d981/General_Scheme_for_the_Strategic_Lawsuits_Against_Public_Participation_Bill.pdf

4.3.6. A rules-based conflict mitigated through adaptive management in Mediterranean forested coastal and freshwater ecosystems, and temporary ponds in Italy and Greece

Author: Vito Emanuele Cambria

Main sources: Cambria et al. (2025), LIFE PRIMED project (https://www.lifeprimed.eu)

A. Case Identification

- **Location**:
  - Italy: Bosco di Palo Laziale in Lazio
  - Greece: Nestos Delta in Eastern Macedonia and Thrace
- **Ecosystem / land-use type**:
  - Degraded coastal and freshwater-linked ecosystems, forests (oak, alluvial, Mediterranean temporary ponds)
  - restoration, management, monitoring
- **Policy context**: Natura 2000 implementation under the EU Habitats Directive and, for Nestos, the Birds Directive, together with the Water Framework Directive, the EU Biodiversity Strategy for 2030, the LIFE Programme, and the forward-looking relevance of the EU Nature Restoration Law.
- **Timeframe**: 2018-2025

B. Problem and Proposed Solution

The dominant conflict emerged more at the Italian site during the design and authorisation of hydraulic restoration works intended to mitigate drought stress and improve ecological resilience. The case was shaped by overlapping nature, landscape, archaeological, hydrogeological, and public-safety rules and permitting procedures. The core problem was not a rejection of restoration as such, but a mismatch between the ecological urgency of intervention and the fragmented legal-administrative framework governing implementation. LIFE PRIMED project proposed low-impact hydraulic systems to retain, store, and redistribute water in order to counter increasing aridity and restore habitat functionality in climate-stressed Mediterranean ecosystems. In Bosco di Palo Laziale, these works triggered a conflict because a single restoration intervention had to satisfy multiple, partly overlapping authorisation regimes and pass through numerous competent bodies. This complexity was compounded by the limited availability of specific administrative guidance and technical expertise for authorising ecological restoration interventions, which often fall between conventional conservation procedures and those developed for standard public works**.** This created delays, extra transaction costs, and a real risk for project delivery. In the Italian case, the central conflict party was effectively the fragmented administrative-authorisation system marked by several public authorities (see below) itself. These actors were not opponents of restoration in principle, but their overlapping mandates made them the decisive addressees of conflict resolution. The Greek case is important as a contrast: there, the competent authority facilitated the process more directly, showing that the conflict was strongly conditioned by governance structure rather than by the restoration idea alone.

The solution that ultimately prevailed was a knowledge- and rules-based adaptative management pathway: technical evidence was assembled, iterative adjustments were made and implementation was phased, joint inspections with the competent authorities were carried out, separate authorisations were progressively secured, and restoration measures were continuously recalibrated in response to

evolving ecological data and administrative constraints, allowing the works to proceed despite the governance bottleneck.

C. Conflicting Parties / Stakeholders

The main stakeholders were:

- LIFE PRIMED consortium and associated restoration practitioners, scientists, and site managers; they designed and promoted the restoration interventions;
- Competent public authorities (e.g., Regional Directorate for Environmental Policies, the Archaeological Superintendence of Lazio, the Military Engineering Corps for ordnance clearing, the Metropolitan City Civil Engineering Department, and the Regional Forestry Command of Carabinieri); they were responsible for reviewing and authorising the proposed interventions;
- Municipality of Ladispoli and the restoration site owners as land-access enablers in Palo Laziale,; and the State Forest Service of Kavala in Greece.

D. Dominant Underlying Cause of the Conflict

The prevailing underlying cause was a rules-based conflict where legal or policy incoherence becomes the main trigger. The main obstacle was the need to reconcile several formal protection regimes and administrative procedures around one restoration intervention, creating legal and procedural incoherence in practice. This was not primarily an interest-based conflict over compensation, nor mainly an ideological conflict over restoration knowledge, rather, the documented evidences indicated that tension laid much more strongly to legal-regulatory overlap, procedural duplication, and uncertainty about how multiple rules should be applied together (with some protection regimes proving more immediately constraining in practice, especially in relation to archaeological checks implications).

A secondary power-related dimension, in the form of institutional fragmentation, was also present, as administrative competences were dispersed across several authorities, but this remained subordinate to the dominant obstacles. The conflict therefore fits best under the rules-based category, with institutional fragmentation (power-based) acting as a reinforcing factor rather than the main source of barriers.

E. Dominant Conflict Resolution Pathway

The dominant conflict-resolution pathway was knowledge- and rules-based adaptive management, best understood as an informational and learning-based governance response. Unlike some other restoration cases, this case did not escalate into court-based enforcement (rules-based, power-based). Instead, the conflict was handled through technical reporting, inter-agency consultation (knoweldge-based) as well as field inspections, separate requests to multiple authorities, and the gradual securing of formal approvals (rules-based). Formal coordination mechanisms, including the Italian *Conferenza dei Servizi*, did not in themselves overcome this fragmentation, and implementation therefore depended heavily on iterative technical interaction with individual competent authorities. While administrative permitting remained an essential procedural requirement (rules-based), implementation ultimately depended on the project's capacity to adapt restoration design, sequencing, technical justification, and operational choices in response to both ecological evidence and administrative constraints (knowledge-based). The documented evidence presents LIFE PRIMED as grounded in collaborative, evidence-based restoration solutions combined with adaptive management of natural resources, with climatic, soil, and ecological analyses used to tailor interventions and inform water management strategies. In case-study terms, the prevailing resolution pathway was therefore not legal enforcement, nor procedural coordination alone (rules-based), but an informational and learning-based

form of adaptive management, supported by interdisciplinary expertise and continuous adjustment in practice (knowledge-based), rather than by a linear design-authorisation-implementation sequence.

F. Outcome

The conflict was partially transformed rather than fully resolved. LIFE PRIMED ultimately succeeded in implementing the hydraulic systems and associated restoration actions, and the project generated positive ecological and operational results across both sites. However, this success did not come because the underlying administrative mechanism became effective; it came because the project coordination team was able to work around and through that mechanism via adaptive management. The structural source of conflict therefore remained in place: the Italian authorisation context continued to be lengthy, fragmented, and costly, exposing the project to risks of delay and failure. The outcome was thus a practical mitigation of conflict at project level, not a structural resolution of the governance problem. In contrast, the Greek case shows competent authority facilitated the process more directly, showing that the conflict was strongly conditioned by governance structure rather than by the restoration idea alone.

G. Key Lesson

The main lesson for EU nature restoration policy is that scientifically sound restoration may be hindered not by direct social opposition (norms-based, interest-based, knowledge-based), but by procedural fragmentation and weak administrative operability (rules-based, power-based). LIFE PRIMED shows that, in highly regulated landscapes such as Mediterranean Natura 2000 sites, the overlap between natural and cultural values, widely recognised as distinctive and identity-forming condition, can become a major obstacle to systematic ecological restoration when authorisation procedures are fragmented, slow, weakly supported, and not matched by sufficient technical guidance or restoration capacity.

The case therefore suggests two closely linked lessons for the implementation of the Nature Restoration Law and related EU policy. First, Member States need more coherent and cross-sectoral authorisation frameworks, with clearer guidance, shared priority-setting schemes, better policy and administrative coordination, and stronger technical support from public authorities. This also requires capacity building on both sides: restoration practitioners need greater familiarity with regulatory and administrative processes, while permitting authorities need stronger ecological restoration expertise to assess interventions that do not fit conventional public-work categories. Second, restoration practitioners need to be better equipped for knowledge-based adaptive management, since iterative, evidence-based adjustment may be what actually allows restoration to proceed where governance systems are rigid or incomplete. As such, LIFE PRIMED illustrates a rules-based stakeholder conflict that was not resolved through the rules pathway alone, but rather with the help of knowledge-based adaptive management of interdisciplinary practice.

4.3.7. Rules- and interest-based conflicts in LIFE Águeda - River Connectivity and Migratory Fish Restoration in the Vouga River Basin

Author: Laura Guimarães

Main sources: Pedro et al. 2022; Campoverde et al. 2026; Life Águeda project; Dam Removal Europe; URBACT. River restoration project; LIFE Águeda Website. Conservation and Management Actions for Migratory Fish in the Vouga River Basin (LIFE16 ENV/PT/000411). https://www.life-agueda.uevora.pt/en/

A. Case Identification

- **Location**: European Union, Portugal, River Vouga Hydrographic Basin (specifically focused along the channels of the Águeda and Alfusqueiro Rivers), located in central-western Portugal
- **Ecosystem / land-use type**: Freshwater lotic (riverine) ecosystem and adjacent riparian forest galleries. The socio-economic land-use is highly fragmented, consisting of intensive commercial and artisanal inland fishing, riverside agricultural irrigation networks, historic milling heritage and municipal river tourism.
- **Policy context**: Water Framework Directive (WFD - Directive 2000/60/EC), Floods Directive (Directive 2007/60/EC), Habitats Directive (Directive 92/43/EEC), EU Biodiversity Strategy & Nature Restoration Law
- **Timeframe**: 2017-2025 (ongoing)

B. Problem and Proposed Solution

The project operates within a highly sensitive freshwater river ecosystem specifically characterised as a diadromous fish migration corridor. The Águeda and Alfusqueiro rivers faced severe fragmentation due to over 140 artificial obstacles (weirs, small dams, and water-intake structures), which blocked migratory fish species, caused population collapses and led to hydromorphological degradation. Specifically the sea lamprey and the critically endangered European eel were highly affected, because they could no longer travel from the Atlantic Ocean to upstream spawning grounds. These structures were historically built for mills, local agricultural irrigation, or river leisure zones. The project addressed this by removing obsolete barriers, constructing nature-like fish bypasses, deploying automated juvenile eel translocation stations, and rehabilitating the riparian gallery.

The system presents high-gradient, dynamic freshwater streams requiring longitudinal continuity (uninterrupted flow from mountain headwaters to the Atlantic Ocean via the Ria de Aveiro estuary). Terrestrial buffer habitats alongside riverbanks are heavily populated by native riverine flora which act as flood plain natural dynamic buffers. Because this aquatic system flows through both urbanised and agrarian zones, its human land-use type is multi-functional and highly dense. The hydraulic infrastructure is obsolete, but still active. The riverbeds were structurally modified by historic stone and wooden weirs (‘açudes’) and small and obsolete dams originally constructed to feed old watermills, secure private agricultural irrigation channels, or pool water for seasonal community river beaches. It supports commercial and artisanal inland fishing. It is a traditional extraction zone heavily targeted by local fishermen for high-market-value migratory species like the sea lamprey (Petromyzon marinus) and allis shad (Alosa alosa). The overarching socio-economic and fisheries management initiatives stretch further to encompass fishermen operating in the adjacent Mondego River basin. The river channels also support recreational tourism and sports. They are active public spaces for recreational angling, swimming and competitive canoeing.

An integrated strategy combining selective barrier removal and nature-based engineering was proposed and implemented. Obsolete, unowned structures were physically dismantled. For active structures or those tied to cultural heritage, engineers built nature-like rock-ramp fish passes that bypassed the weirs without lowering upstream water tables. This was coupled with automated upstream juvenile eel translocation stations and a revolutionary socio-economic rebranding of the local artisanal fishery.

C. Conflicting Parties / Stakeholders

Stakeholders: Project Promoters (University of Évora, MARE - Marine and Environmental Sciences Centre, and the central state water authority APA - Agência Portuguesa do Ambiente); Local Users,

which were 12 local municipal governments along the basin, riverside landowners holding private water rights, commercial and recreational fishers; local tourism operators; and culture heritage advocates (local historic societies protective of ancient stone watermills fed by weirs).

The conflicts may be framed as Rules-Based (historical water rights vs. European environmental laws) and Interest-Based (economic and leisure activities vs. conservation mandates).

D. Dominant Underlying Cause of the Conflict

The strict legal rules of the EU WFD demanded the immediate removal of hydromorphological pressures (dams). However, these legal targets crashed directly into local socio-economic interests. Local communities viewed the physical volume of pooled water behind the weirs as vital property for farming security, fire-fighting reserves and local summer tourism economies. When ecologists proposed removing these barriers, they faced major pushback from local populations who feared losing water access, swimming zones, and cultural heritage symbols. Local communities and small-scale landowners feared losing their recreational swimming spots and historical irrigation reservoirs. Conversely, commercial and recreational fishermen were deeply divided. The former favoured restoration, while those focused on recreation fishery feared changing the hydrology would wipe out specific local fish populations they regularly targeted. There was a bureaucratic disconnect between municipal historical heritage definitions (protecting old mills) and international ecological targets (the EU Water Framework Directive demanding good ecological status).

E. Dominant Conflict Resolution Pathway

Physical, on-the-ground ecological interventions were concentrated along specific interconnected river stretches within the municipality of Águeda (Águeda River, Alfusqueiro River that is a primary mountain tributary flowing from the Caramulo range. Rather than forcing full dam removal through strict legal power (which usually creates lingering resentment), the project adopted a highly structured participatory approach based on technical compromise and community integration. It resorted to co-design over destruction (Nature-Based Engineering), meaning that where removing a historical weir faced total local rejection, engineers built nature-like fish passes (bypasses made of natural rocks that mimic rapids). This allowed the fish to pass safely upstream while successfully maintaining the physical water levels required for local agriculture and community river beaches. Actions also included an economic up-cycling for fishers. To win over the fishing community, the project introduced a traceability and labeling system for local commercial fish catches. A "seal of origin" was created, which legally increased the market value of sustainably caught fish by 25%, turning former critics into active guardians of the river. Another line of action was the integration of Citizen Science. Rather than treating fishermen as an obstacle, the project built a volunteer monitoring mobile application. Over 1,000 recreational fishers were actively trained to use the app to track fish counts and report illegal fishing or ecosystem damage, giving the local population a sense of direct co-ownership over the newly restored river ecosystem.

F. Outcome

The LIFE Águeda initiative cleared obstacles along the Águeda River to allow migratory fish species (e.g. critically endangered European eel, Anguilla anguilla; sea lamprey, Petromyzon marinus) to reach their historical upstream spawning grounds. The project successfully restored over 35 Km of continuous river channel by removing obsolete weirs and installing rocky fish passes, facilitating the return of target migratory species. Traditional water rights and all major community river beaches were successfully preserved. The commercial lamprey fishery experienced a significant economic boost via the premium pricing model, and an interpretation center (C-Rio) was established to anchor eco-tourism. Evidence

shows that overall, 51 km of river stretches achieved an improved ecological status (per EU Water Framework Directive guidelines), 34 km of uninterrupted river corridors were successfully reconnected on the Águeda and Alfusqueiro rivers, eight artificial obstacles (weirs and obsolete small dams) were permanently removed, five prototype fish passages were engineered and deployed (three nature-like rock ramps and two temporary modular vertical-slot passes) to improve target fish transposition rates by an estimated 30% to 75% over historical levels, 68 hectares of riverbed substrate were restored, significantly reducing siltation and successfully returning localised areas to natural lotic (flowing) conditions. To address severe recruitment deficits for migratory fish, targeted bio-engineering protocols were implemented: 500,000 juvenile European eels (Anguilla anguilla) were systematically translocated across a 25 km buffer zone of the Vouga River, bypassing impassable downstream barriers into pristine, upriver nursery habitats. Passive Integrated Transponder (PIT) telemetry antennas were permanently integrated into the upstream fishways to actively monitor and verify the unimpeded migration of tagged sea lampreys (Petromyzon marinus) and allis shad (Alosa alosa). Restoration of the aquatic dynamic also required stabilisation of the terrestrial boundaries to mitigate flood damage. Here, 30 hectares of riparian galleries underwent ecological rehabilitation, which included the manual removal of invasive alien flora and targeted replanting of native trees. Globally, 35 hectares of low-lying agricultural plains along 10 km of riverbank saw improved flood resilience through natural floodplain re-contouring. The co-management framework successfully aligned regional commercial interests with biological targets. The collaborative framework developed alongside state agency Docapesca, and launched a pilot "mobile registration unit" and a formal digital Seal of Origin. This allowed small-scale commercial fishers to capture a 25% price premium on sustainably tracked sea lamprey and shad. Capacity building was achieved by the training of 1,000 active anglers and integration into the project's citizen science initiative via the "Fishing in Portugal" mobile application to log daily catch metrics and report ecological infractions. Over 7,600 citizens participated directly in local stakeholder workshops, volunteer river cleanup initiatives, and educational programmes anchored by the newly constructed River Knowledge Centre (C-Rio) in Águeda.

G. Key Lesson

A key lesson from the initiative is that ecological connectivity must be co-designed with local water-use realities and cultural heritage rather than enforced solely through top-down structural destruction. River restoration must protect both ecological continuity and localised cultural continuity. Forcing the total demolition of historical infrastructure through top-down mandates creates deep public resentment and long-term project failure. By utilising compromise eco-engineering (rock passes), project teams can achieve 100% of their biological goals while respecting the socio-cultural architecture of rural river valleys. A multistakeholder conflict was solved through a collaborative pathway featuring engineering redesigns (like rock ramp bypasses), economic incentive alignment and citizen science integration.

4.4. Coastal and marine ecosystems

4.4.1. Mar Menor and La Manga del Mar Menor Coast, Spain: rules-based conflict over ecological degradation, agricultural pollution, and coastal pressure addressed through legal personality, judicial accountability, and state-led ecological restoration

Author: Katia Hueso-Kortekaas; IPAISAL network
(https://worldwetland.network/profile/ipaisal-institute-of-saltscapes-and-salt-heritage/)

Main sources: UNEP, FAO (2025), UN Decade on Ecosystem Restoration Initiative (https://www.decadeonrestoration.org/spains-mar-menor-lagoon-already-has-legal-rights-it-now-recognized-un-world-restoration-flagship)

A. Case Identification

- **Location**: Spain, Region of Murcia, Mar Menor lagoon and its basin; La Manga del Mar Menor is a 22-km coastal strip with a width between 100 and 1,500 m.
- **Ecosystem / land-use type**: Coastal lagoon, dune systems, wetlands, agricultural basin, mining-affected landscapes, and urbanised coastal tourism zones.
- **Policy context**: Spanish Law 19/2022 on legal personality of the Mar Menor; MAPMM (Marco de Actuaciones Prioritarias para Recuperar el Mar Menor); EU Recovery, Transformation and Resilience Plan/NextGenerationEU funding; EU restoration policy
- **Timeframe**: 2022-2026 and ongoing, pre-history decades earlier

B. Problem and Proposed Solution

Mar Menor has suffered a severe ecological degradation driven by nitrate discharges from intensive agricultural activity, other land and marine pollution, urban and coastal pressure, invasive species, algal blooms, fish kills, mining legacies, and altered basin dynamics. The crisis intensified over decades of land-use pressure with public mobilisation peaking after major ecological crisis episodes. Due to that, Mar Menor case has been considered as a grave socio-environmental, ecological, and humanitarian crisis in which existing legal protection had proved insufficient.

The prevailing solution combines legal, administrative, participatory, and ecological measures, with a priority for rules-based and knowledge-based pathways. Law 19/2022 de 30 de septiembre (entry into force in October 2022) turns the lagoon and basin from an object of protection into a subject of rights. The official Spanish law Ley 19/2022 (para el reconocimiento de personalidad jurídica a la laguna del Mar Menor y su cuenca) grants legal personality to the Mar Menor lagoon and its basin, recognises rights to exist, evolve naturally, protection, conservation, maintenance, and restoration, and grants standing to natural and legal persons to defend the ecosystem. The MAPMM are ongoing and act at the source of degradation through wetlands, green belts, sustainable agriculture, mining restoration, flood-risk management, biodiversity conservation, and social participation. UN flagship recognition was announced in 2025, and La Manga dune restoration works began in February 2026.

C. Conflicting Parties / Stakeholders

Key actors include:

- Citizens, environmental organisations, and neighbourhood platforms (e.g., the Citizens' Popular Legislative Initiative): more than half a million people supported the Popular Legislative Initiative that led to legal personality, and the law's preamble refers to strong mobilisation by citizen platforms and environmental organisations.
- Agricultural, livestock, business, fishing, and tourism actors: These actors are directly affected by nutrient regulation, land-use restrictions, restoration measures, and changes in the social licence of production around the basin. The law's Monitoring Commission includes business, union, fishing, agrarian, livestock, neighbourhood, environmental, gender-equality, youth, and municipal representatives
- Public authorities in Spain: MITECO (Ministry of Ecological Transition), Fundación Biodiversidad (public entity), the Region of Murcia, local municipalities, and administrative and judicial bodies:

they become central conflict-resolution addressees because the resolution pathway depends on law, enforcement, restoration investment, and governance.

- Scientists and technical bodies: Regional and local stakeholders, scientific bodies, environmental organisations, and restoration projects such as MAPMM and RESALAR: the law creates a Scientific Committee involving universities, the Spanish Institute of Oceanography, CSIC, and ecological expertise to advise governance bodies and define indicators for ecological status, risks, and restoration measures.
- The Mar Menor ecosystem as a legal subject: After Law 19/2022, the lagoon and basin become the formal rights-bearing party represented in administrative and judicial processes; it was recognised as a UN World Restoration Flagship in 2025
- International organisations: UNEP and FAO through the UN Decade on Ecosystem Restoration

D. Dominant Underlying Cause of the Conflict

The prevailing stakeholder conflict type is rules-based, with strong interest-based, power-based and norm-based secondary dimensions. The perceived or documented insufficiency of existing legal protection leads to the creation of a new legal subject, the recognition of enforceable ecological rights, expanded standing, and administrative or judicial review of acts violating those rights. Law 19/2022 states that any public-administration act violating the law is invalid and reviewable through administrative or judicial channels, and it allows any natural or legal person to defend the ecosystem in court or before public administration.

Interest-based conflict remains important because agricultural production, urban development, tourism, fishing, and conservation distribute costs and benefits unevenly. Power-based and norm-based conflict is also present because citizen mobilisation and rights-of-nature law changed who had standing, who could speak for the ecosystem, and how accountability could be demanded.

E. Dominant Conflict Resolution Pathway

The main resolution pathway is rules-based solution resting on law, legal proceedings and rights-based governance combined with state-led ecological restoration. Law 19/2022 recognises the Mar Menor's rights to exist and evolve naturally, protection, conservation, maintenance, and restoration. It also creates governance bodies including a Committee of Representatives, a Monitoring Commission or guardians, and a Scientific Committee (power-based).

MAPMM operationalises the restoration side, designed to recover natural dynamics, restore and renaturalise degraded areas, act at the source of problems caused by concentrated and intensified human activities in the watershed, and prioritise nature-based solutions when possible (rules-based), with an investment of 675 million euros (interest-based). The restoration project covers more than 8,770 hectares of actions, 10 lines of action, and 28 measures including artificial wetlands, green belts, mining restoration, agriculture compatible with the lagoon ecosystem, flood-risk management, biodiversity conservation, and citizen and institutional participation.

F. Outcome

The conflict has been partially resolved institutionally, but not ecologically completed. The legal pathway has transformed governance by granting the lagoon legal personality, widening access to legal defence, and creating formal representation and scientific-advisory structures. The restoration pathway is underway and internationally recognised, with the Mar Menor named a UN World Restoration Flagship in 2025.

The ecological outcome remains ongoing because nutrient reduction, hydrological recovery, agricultural transition, mining remediation, coastal restoration, invasive-species control (interest-based), and social trust (norm-based) require long-term implementation. The strongest achieved outcome so far is a governance transformation (rules- and power-based): the conflict moved from fragmented sectoral regulation toward a combined model of legal rights, public accountability, restoration planning, and participatory oversight.

G. Key Lesson

The Mar Menor case shows that agricultural-restoration conflicts may require legal innovation when conventional regulation fails to stop cumulative degradation (rules-based). Rights-of-nature law can change the power structure of conflict by making the ecosystem a represented legal subject and by allowing citizens to act on its behalf (power-based). However, legal recognition alone is insufficient: it must be paired with funded restoration (interest-based), source-control measures in the basin (rules-based), agricultural transition (interest-based), scientific monitoring (knowledge-based), and durable participatory governance (power-based). Restoration in productive landscapes must combine enforceable rules (rules-based) with ecological investment (interest-based) and social legitimacy (norms-based).

4.4.2. Ecological Regeneration of Salinas and Sand Dunes in the Mar Menor, Spain: Interest-based Conflict Management Perspective

Author: Katia Hueso-Kortekaas & IPAISAL network (https://worldwetland.network/profile/ipaisal-institute-of-saltscapes-and-salt-heritage/), RESALAR project (https://www.fundacionanse.org/resalar

Main sources: Ballesteros-Pelegrín et al. (2022), Hueso-Kortekaas (2025), Ibarra-Marinas et al. (2021), Robledano (1995), Sánchez-Balibrea (2022)

A. Case Identification

- **Location**: Spain, Region of Murcia, on the Mar Menor coastline, at the southern tip of La Manga del Mar Menor, with key interventions in the Salinas de Marchamalo, Caleta del Estacio, and Monte Blanco (municipality of Cartagena), one of the Mediterranean's most degraded coastal areas.
- **Ecosystem/land use type**: coastal salinas, dune systems, and Mediterranean coastal wetlands; combined ecological restoration, reactivation of traditional salt production, and long-term stewardship to enhance biodiversity, climate resilience, and sustainable land use
- **Policy context**: EU and national policy context, aligning with the EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC), with the objectives of the emerging EU Nature Restoration Law. It is funded mainly through EU NextGeneration funds via Spain's Recovery, Transformation and Resilience Plan (PRTR), and is embedded in Spain's Framework of Prioriy Actions for the Recovery of the Mar Menor, coordinated by the Ministry of Ecological Transition.
- **Timeframe**: 2022–2026

B. Problem and Proposed Solution

The project focuses on restoring coastal salinas, dune systems, and Mediterranean coastal wetlands, all semi-natural ecosystems historically shaped by traditional management and heavily affected by abandonment and urban pressure.

The RESALAR project was launched in response to a long-standing process of environmental, ecological and heritage degradation along the coast of the Mar Menor, particularly in La Manga and the Marchamalo salinas. The central issue is the loss of natural and cultural values caused by the abandonment of traditional salt-making and intense urban development pressure, which has led to the severe degradation of the historic Salinas of Marchamalo, abandoned for over 25-30 years. With it came the collapse of the saline ecosystem, which depends on continuous human management to maintain its hypersaline biodiversity. Aside from the salinas, the nearby dune systems, one of the key ecosystems for coastal protection, were fragmented and largely destroyed due to tourism pressure. The proliferation of invasive alien species in the dunes and salinas occurred due to a lack of land management. These phenomena led to a loss of coastal resilience in the face of climate change (storms, flooding, rising sea levels). All of this takes place within the broader context of the ecological crisis in the Mar Menor, one of the most degraded areas in the western Mediterranean.

The solution proposed by the RESALAR project to address the identified conflict is not based on a single measure, but on a comprehensive model of ecological restoration combined with active land management, which brings together environmental conservation, heritage restoration and compatible economic use. The key idea behind the project is that salinas should not be left to fall into disuse but should be brought back into operation. To this end, RESALAR aimed at reviving the traditional salt production at the salinas of Marchamalo. An essential aspect needed to restore the salinas was to allow for the controlled circulation of seawater, which is essential for the ecosystem, to the different production ponds. The project uses salt production as a driver of biodiversity, as many species depend on this type of well-managed artificial wetland. Salt production is not envisaged as an industrial end in itself, but as an ecological and habitat management tool, capable of preserving the natural values that are lost through neglect.

C. Conflicting Parties / Stakeholders

The conflict involves multiple stakeholders with different interests in the Mar Menor lagoon coastline:

- Environmental NGOs, led by Fundación ANSE: they act as project promoters and drivers of the ecological restoration project.
- Scientific institutions such as IEO-CSIC: they provide research and technical support to guide evidence-based solutions.
- Public administrations (the Spanish Ministry of Ecological Transition, regional and local authorities): they regulate the territory and provide funding and permits.
- Residents of La Manga and Cabo de Palos: they are directly affected by environmental degradation and flooding risks, posed in turn by urban development interests that represent a structural pressure behind past degradation of the area.
- Traditional salt-production actors trained by the nearby operating salt-making company Salinera Española: they contribute technical knowledge to reactivate salinas sustainably.
- Emerging green economy actors: they benefit from compatible activities like artisanal salt and ecotourism.
- Volunteers and visitors participate through education, restoration, and heritage activities.

D. Dominant Underlying Cause of the Conflict

The prevailing conflict type in the area is an interest-based conflict. At its core, the conflict reflects competing economic models of coastal use: urbanization and abandonment versus active ecological management.

The RESALAR project addressed the conflict as interest-based because the core tension revolves around competing land uses and benefits of the same coastal territory, rather than tensions around rules, norms, ideology, or power relations. At its heart, the conflict is about how the Mar Menor coastline should be used and managed. On one side, there are interests linked to urban development for tourism and recreation, land value maximization, and abandonment of low-profit traditional uses (such as salinas). On the other side, there are interests focused on ecological restoration, biodiversity conservation, climate resilience, and sustainable local economies. These interests collide directly over land use, economic value, and long-term versus short-term benefits, which is the defining feature of an interest-based conflict.

Other conflict types (rules based, norms-based, ideological / knowledge-based, power-based) are considered secondary. While permits, concessions, and regulations (e.g. coastal protection laws) play a role, the main issue is not disagreement over rules, but what actors want to do with the land. Institutions largely enable the project once interests are aligned. Also, there is no fundamental clash of social or cultural norms (e.g. values about legality or morality). In fact, the project works by re-framing traditional practices (salt production) as socially valuable, not by challenging dominant norms. On the other hand, scientific disagreement is limited. The ecological degradation of the Mar Menor and the value of restoration are widely acknowledged. Science supports the solution rather than driving the conflict. Lastly, while power asymmetries exist (developers vs. NGOs, institutions vs. local actors), they are not the primary driver. The conflict persists even when power is balanced, because the underlying interests diverge.

RESALAR addresses a classic interest-based conflict, where different actors seek incompatible outcomes from the same coastal space: urbanization and neglect versus active ecological management and sustainable use. The project succeeds precisely because it realigns interests - showing that ecological restoration and economic activity (through salt production, heritage, and ecotourism) can coexist - thus reducing the conflict at its root rather than imposing a rules- or power-based solution.

E. Dominant Conflict Resolution Pathway

The conflict was mainly transformed through publicly funded partnership of ecological restoration (interest-based) rather than legal enforcement (rules-based, power-based). The key instrument was economic incentives, provided by national and EU public funding programs. These funds made it viable to restore salinas and dunes that had little short-term market value. Funding was combined with delegated land management, giving an environmental NGO responsibility for active site stewardship. This shifted land use away from abandonment or speculative development toward sustainable management.

A multi-actor governance partnership brought together NGOs, scientists, public authorities, and traditional salt producers (power-based). Scientific institutions ensured credibility and adaptive, evidence-based decision-making (knowledged-based), while participatory activities (volunteering, education, public outreach) built local support and legitimacy (norm-based). The instrument worked by aligning interests rather than imposing restrictions or sanctions. Overall, funding and governance transformed the conflict by making ecological restoration the most beneficial and accepted option.

F. Outcome

The conflict addressed by the RESALAR project was resolved through transformation rather than confrontation. Instead of relying on legal disputes or restrictive regulation, the project changed the underlying conditions and cost-benefit structure that had caused the conflict - namely, the abandonment of traditional salinas and the pressure from competing land uses. By restoring active management of

salinas and dunes, supported by public funding and scientific guidance, RESALAR re-established the ecological functions of these systems and demonstrated that conservation could be compatible with productive use. This approach reduced tensions by aligning environmental goals with economic and social benefits, turning degraded or "unused" land into valuable ecological and cultural infrastructure.

However, the resolution was partial and scale-dependent. At the project sites, the conflict between abandonment and restoration was largely resolved: ecosystems were rehabilitated, governance improved, and social support increased. Yet broader structural drivers - such as urban development pressure and the wider ecological crisis of the Mar Menor - remain beyond the project's direct control. As a result, RESALAR should be seen as a successful local conflict management rather than a complete solution, providing a replicable model that contributes meaningfully to change without fully eliminating the larger, regional tensions.

G. Key Lesson

European experience with nature restoration, illustrated by the RESALAR case, shows that restoration policies are most effective when they resolve underlying societal conflicts by aligning interests rather than relying solely on regulation. Many conflicts arise because restoration is perceived as a loss of economic opportunity or control over land. When EU policy combines ecological goals with viable economic activities - such as funding opportunities, traditional practices, green jobs, heritage-based uses - restoration becomes an attractive option rather than an imposed burden. This interest-realignment approach reduces resistance and builds durable political and social support.

A second core lesson is that active management and appropriate governance arrangements are essential for ecosystems that depend on traditional management. Much of Europe's biodiversity depends on semi-natural, human-managed ecosystems that deteriorate when abandoned. Successful restoration therefore requires long-term stewardship, supported by funding, management agreements, or concessions, rather than passive protection alone. Delegating management to trusted actors such as NGOs, local communities, or co-management partnerships - while embedding scientific monitoring - helps depoliticize conflicts, increases legitimacy, and allows adaptive, evidence-based decisions.

Finally, societal conflicts are more easily addressed when restoration is framed as a shared societal project for mutual benefit rather than a narrowly environmental obligation. Public participation, education, and visible benefits (such as risk reduction, landscape quality, or cultural recovery) help shift perceptions from "restriction" to "regeneration." For EU nature restoration policy, this implies treating conflict transformation as a core governance challenge: combining incentives, partnerships, science, and communication so that restoration strengthens both ecosystems and social cohesion across Europe.

4.4.3. Environmental and Social Impacts of Offshore Wind Energy Development: Interest- and Power-based Conflicts in the Gulf of Roses, Catalonia, Spain (NW Mediterranean Sea)

Authors: Josep Lloret, Laura G. Amorós, Josep Vila

Main sources: Garcia et al. (2026), BIOPAÍS project (https://oceanshealth.icm.csic.es/en/biopais.html), Lloret et al (2022)

A. Case Identification

- **Location**: Spain, Catalonia
- **Ecosystem**: Marine

- **Policy context**: EU Habitats Directive, EU Birds Directive, Nature Restoration Regulation Law, EU Multiannual plan for demersal stocks in the western Mediterranean Sea, European Landscape Convention
- **Timeframe**: 2023-2026

B. Problem and Proposed Solution

Problem definition: In Catalonia, the Gulf of Roses and Cap de Creus have emerged as particularly sensitive sites from both ecological and landscape perspectives. The debate around offshore wind development there is therefore unfolding on multiple fronts: social, political, media, and scientific. While some studies frame its development within the urgency of the climate emergency, other scientifict contributions highlight the ecological fragility and biodiversity of the Mediterranean coastline that may be negatively affected by the industry of offshore wind energy, calling for more precautionary approaches.

The expansion of the offshore wind sector increases competition for space with other economic sectors in an already busy Mediterranean Sea. The narrow continental shelf in many places means that where depths are adequate to install offshore wind farms, other human water use activities (fisheries, aquaculture, and marine tourism) are concentrated in a reduced space and projects quickly face opposition from local stakeholders and end users.

Offshore wind farm (OWF) projects in the Gulf of Roses have been strongly rejected by local communities, local governmental agencies, local tourism businesses and environmental NGOs, among others. The OWFs planned in the Gulf of Roses are an example of how ocean industries in the Mediterranean Sea are struggling to harmonize local values and opinions about the use of this space with their own. The intangible qualities of the seascape are a cause of difference of opinion among the local population and planners and decision-makers, who can disregard the symbolic significance of the sea and the role it plays in both the meaning and quality of the place and the well-being of the local population and visitors. Furthermore, OWF can be perceived by residents as an imposition of a large-scale industrial business with the capacity to transform the seascape through a process of industrialization of the sea.

In northern European seas where OWF have been developed, the scientific and policy debate has mainly centered on the impact on fisheries, particularly in the North Sea where there is the greatest spatial overlap between fisheries and OWF. Excluding fisheries from OWF (particularly fishing fleets deploying bottom contacting gears, which are affected the most by the OWF) has a range of negative direct and indirect economic, social and environmental effects on individual fishers, the fishing industry, fishery-dependent coastal communities and wider society. The impact of OWF on Mediterranean fisheries would be exacerbated if we consider the special importance of small-scale fisheries in this region, which have been playing a dominant role in the livelihoods of coastal communities for centuries, and the poorer status of Mediterranean stocks compared to those in northern European Seas. In the North Atlantic, it has been reported that OWF can provide foraging opportunities and shelter for benthic fish in locations previously exposed to fisheries, and particularly bottom trawling.. However, in the Gulf of Roses, OWFs are planned to be built in an area already closed to trawl fisheries since years (after agreement with fishers), where there are already many benefits arising from the prohibition of trawling compared to an analogous open one nearby. Therefore, the construction of an OWF on top of this closed area to fisheries can derail the restoration of the habitat put in place years ago.

Unlike areas like the North Sea, most of the Mediterranean Sea has a relatively narrow continental shelf, meaning that OWF are often projected close to the coast. In the Mediterranean Sea, the debate regarding the potential impacts of OWF on seascape and coastal tourism is particularly intense.

Compared to the North Sea and the North Atlantic, tourism is a major economic driver in the region, where maritime and coastal leisure activities (sailing, scuba diving, swimming and bird and whale watching) take place that are very important for the local economy as ecotourism activities. The OWF may have negative ecological consequences on many vulnerable and threatened species and habitats that are important for leisure activities like scuba diving and bird and whale watching. The seascapes of Mediterranean marine protected areas (MPAs) such as Cape Creus Natural Park provide scenic and subsequently amenity/ socioeconomic value for the local and tourist communities who enjoy their views or whose appreciation together with other leisure and sport activities undertaken in the marine park is enhanced by the surrounding scenery. In the Mediterranean Sea,, there is intense concern that the visual impact of OWFs could jeopardize the recreational value of coastal areas. For example, the impact of OWF projects on beach recreation demand during the summer season. The notion that the visual impacts of wind farms on the ocean horizon will deter visitors to coastal destinations has also been a primary concern for local communities and policy makers in northern Europe and the US. The general public and coastal recreational users are often concerned about potential negative impacts of OWF on the landscape.

Proposed Solution: The BIOPAIS project edited a Guide for Practitioners that suggested several recommendations to policy makers. The Gulf of Roses area should be excluded from the high-potential offshore wind energy zones (ZAPER) (rules-based) due to its ecological fragility and the potential impacts of planned OWFs on the region's high biodiversity and local communities, where fishing and tourism, key sources of livelihood, could be severely affected. OWFs in this area would significantly impact marine biodiversity, including sensitive species, fisheries resources, vulnerable marine habitats, and the landscape (interest-based). The exclusion of this area for ecological and socioeconomic reasons should be addressed for further study in the second cycle of maritime spatial planning. The consideration of LEBA-1 as an area of high potential for biodiversity conservation, as recognized by the Spanish Marine Spatial Plans (POEM) approved in 2023, must clearly take precedence over its designation as a wind energy development zone, given its overlap with or adjacent location to various marine protected areas (including a no-fishing zone) and other areas important for marine biodiversity, its high socioeconomic sensitivity (fishing and tourism), and the unique landscape value of the territory (rules-based, power-based). The exclusion of wind farms in this zone must also extend to experimental (R&D) or pilot projects, since even small-scale projects can generate significant impacts on marine biodiversity, the landscape, and local socioeconomic activities. Furthermore, allowing pilot projects in highly sensitive areas would contradict the precautionary principle enshrined in Law 41/2010 and would open the door to a progressive industrialization of the area, incompatible with its designation as a space of high conservation value in the 2023 POEMs (rules-based).

C. Conflicting Parties / Stakeholders

- Public administrations (European, national, regional and local)
- Economic sectors: offshore wind industry, fisheries and agriculture, other industrial activities (port operations, manufacturing), the coastal / marine tourism sector (e.g. scuba diving centers).
- Scientific and technical community, encompassing research institutions and specialised experts
- Environmental and social organisations: NGOs, Natural Parks and other civil society groups
- Projects and initiatives, referring to specific offshore wind proposals, both private and public.

D. Dominant Underlying Cause of the Conflict

The underlying stakeholder conflict is interest and power based. An Interest-Power Matrix was developed as an analytical tool used to map stakeholders according to two dimensions: their capacity to

influence decision-making processes (power) and their level of engagement in the issue (interest). Stakeholder relevance in the offshore wind energy debate was assessed through an Interest-Power Matrix combining data from the media content analysis and a participatory workshop involving 68 local actors. Workshop participants distinguished three administrative levels (local, regional, national), while the media analysis also incorporated the European administration, represented by institutions responsible for energy and environmental planning. Accordingly, regional and national administrations appeared in the press with high interest but lower power, constrained by European frameworks, whereas in the workshop they occupied the high-power/high-interest quadrant, reflecting their stronger perceived influence at territorial scales.

The offshore wind industry was consistently positioned in the high-power/high-interest quadrant. Conversely, sectors such as commercial and recreational fisheries, local administrations, environmental NGOs, natural parks, and recreational activities clustered in the low-power/low-interest quadrant, reflecting limited visibility and influence. The tourism sector was a partial exception, perceived in the workshop as having slightly greater power due to its economic relevance, yet maintaining low interest in the debate.

The combined analysis thus reveals a highly polarised structure, with no intermediate categories between the high-power/high-interest and low-power/low-interest quadrants. This antagonistic configuration points to an interest-based debate dominated by a small number of powerful actors, in contrast with a broad set of local sectors holding marginal or limited influence.

A particularly notable finding is the limited media presence of the fisheries sector in the Mediterranean case, in stark contrast to other regions where fishers have played a more prominent role in shaping offshore wind debates. This absence points to the structural challenges faced by certain groups in gaining visibility, whether due to limited organisational capacity, resource constraints or exclusion from dominant discourses.

E. Dominant Conflict Resolution Pathway

So far, the BIOPAIS project results and recommendations (rules-based, see above) have been transferred to Spanish marine spatial planners and policy makers. It is hoped the recommendation resulting from the project will be taken into account, that is the exclusion of the offshore wind development in the Gulf of Roses because of the high risk of negative effects on several marine protected areas (passive restoration), a closed area to fisheries to recover fish stocks (passive restoration) and the conflicts arising with local communities (fishers, tourism industry and citizens) from the industrialization of the area by the offshore wind farms

F. Outcome

The stakeholder conflict is not yet resolved. There are plans to build a pilot offshore wind farm in that area (just on top of the closed area to fisheries) and the leases for commercial projects are expected in the near future. However, civil platforms and local environmental NGOs have sued the authorities in charge of the marine spatial planming regarding the development of offshore wind in the Gulf of Roses (rules- and power-based).

G. Key Lessons

Rigorous interest/power-informed stakeholder analysis and rules-based spatial planning hold the potential to prevent socio-ecological damage and stakeholder conflicts. They would avoid irreversible damage to biodiversity, minimize stakeholder conflict, and not compromise the well-being of local communities or society. The ecological and economic benefits of the local factor in planning needs to

be considered. Offshore wind planning should acknowledge environmental and socioeconomic criteria specific to each sea and zone, as well as the choice of the most suitable technology that is economically feasible and minimizes environmental impact (interest-based).

There is also a need for diverse fields of knowledge and stakeholders, independent science, and participation of local communities. This requires the participation of experts from disciplines beyond engineering, such as marine biology and ecology, physical oceanography, technology, geography, economics, social anthropology, and legal sciences, among others (knowledge-based).

Restoration policy and practice has to prioritize the protection of marine biodiversity (rules-based): Offshore wind must be excluded from Marine Protected Areas (MPAs) and their surroundings. It is imperative to exclude and distance wind farms (both commercial and experimental) by at least 10 km (buffer zones) from Marine Protected Areas (MPAs), Natura 2000 sites, Important Marine Mammal Areas (IMMA), Important Bird Areas (IBA), Important Shark and Ray Areas (ISRA), Key Biodiversity Areas (KBA), and SPAMIs (Specially Protected Areas of Mediterranean Importance).

It is also important to apply an ecosystem-based approach and the precautionary principle (rules-based, knowledge-based): These are mandatory at all stages of planning and development (Marine Strategies: Royal Decree 79/2019 and Law 41/2010). In the absence of local scientific studies on potential impacts, no wind farm construction should be authorized until independent studies are completed. Technological solutions do not replace good planning. They can only be applied after proper planning that clearly defines exclusion and inclusion zones. They should never be used as an argument to justify projects in areas of high ecological or landscape sensitivity. There is also a need to exhaustively evaluate the impact on fishing and tourism.

For these recommendations to be truly effective, they must be incorporated into a legal and governance framework that guarantees not only environmental sustainability but also equity, coherence, justice, and transparency (rules-, norms- and power-based).

4.4.4. Ocean Alive: interest- and knowledge-based conflicts over Seagrass “Blue Forest” Restoration in the Sado Estuary, Portugal

Author: Laura Guimarães

Main sources: EU 2024; Urban Nature Atlas; Ocean Alive.

A. Case Identification

- **Location**: European Union, Portugal, Sado Estuary (specifically key hotspots such as Cambalhão Bay, Soltróia, Ponta do Adoxe and Carrasqueira near Setúbal, Portugal)
- **Ecosystem / Land-use Type**: Marine-coastal estuarine ecosystem dominated by seagrass meadows (Zostera marina, Zostera noltei and Cymodocea nodosa).
- **Policy Context**: Heavily governed by the European Union’s Natura 2000 Network (under the "Estuário do Sado" site designation), the EU Habitats Directive, and UN Sustainable Development Goals (specifically SDG 14: Life Below Water and SDG 5: Gender Equality).
- **Timeframe**: 2015- ongoing

B. Problem and Proposed Solution

The Sado Estuary’s vital seagrass meadows were facing rapid, severe degradation. The primary biophysical drivers were mechanical destruction caused by boat anchoring (plowing up root systems), destructive manual shell-fishing techniques, and massive marine litter pollution (specifically thousands

of discarded plastic salt containers used illegally by harvesters to catch razor clams). These “blue forests” serve as a critical nursery habitat for local commercial fish, shellfish, and the main prey of the estuary's resident population of Bottlenose dolphins. The spatial land-use consists of traditional artisanal fishing, intensive shell-fishing (clams/razor clams), maritime tourism, and recreational boating. The loss of these habitats triggered a collapse in local fish stocks, leading to unemployment and social devaluation within the artisanal fishing community.

Instead of pushing for top-down government bans or militarised marine policing, the NGO Ocean Alive deployed a community-led co-restoration framework. The core solution was the creation of the Keepers of the Sea (Guardiãs do Mar) programme, which formally employed and trained local fisher women to act as paid marine guides, scientific meadow monitors, and behavioural change agents within their own peer groups. This was paired with installing eco-friendly mooring floats (built from recycled purse seine fishing gear) to completely eliminate anchoring damage.

C. Conflicting Parties / Stakeholders

Stakeholders: Conservation and Scientific groups (The NGO Ocean Alive, marine biologists, and international partners, such as UNESCO and SeaTrees); Local Marine Extractors (Artisanal fishermen, commercial shellfish harvesters (mariscadores), and bait collectors whose daily economic survival relied on unrestricted access to the shallow waters); Maritime Recreation and Tourism (recreational boaters, maritime-tourism companies and summer tourists who historically anchored freely inside protected shallow bays); Regulatory Authorities (ICNF - Institute for Nature Conservation and Forests, and local port authorities.

D. Dominant underlying cause of the conflict

The conflicts identified may be mapped to Interest-Based and Knowledge-Based Conflict and relate to local fisheries and environmental management. A sharp socio-economic disconnect existed between the immediate, short-term economic survival of local fishers (who viewed environmental restrictions as an attack on their livelihood) and the long-term ecological goals of scientists. Furthermore, there was an initial lack of systemic understanding among tourists and fishers regarding how physically devastating a single dragging anchor or plastic container could be to an entire estuarine nursery network.

E. Dominant Conflict Resolution Pathway

The dominant pathway was collaborative resolution via social innovation and economic incentivisation. The project actively avoided legal conflict by using three integration strategies: peer-to-peer transformation, creation of supplementary incomes, circular material collaboration. By training respected fisher women as the primary conservation monitors, the project bypassed the historic local distrust toward "outsider" enforcement officers; peers corrected peers. The project directly addressed the underlying economic anxiety by turning the most vulnerable segment of the community (fisher women facing declining catches) into paid scientific monitors using GPS mapping technology. Local fishers were engaged to build new eco-friendly mooring grids using their own discarded fishing nets and gear, turning a waste problem into a collective solution.

F. Outcome

The project produced various combined ecological and socio-cultural results, from habitat recovery, to litter removal and socio-economic integration, and gender main-streaming. Over 20 hectares of seagrass meadows were directly restored and actively protected from anchoring damage, with recent mapping data confirming a documented expansion of 35.6 hectares across historically monitored beds. Volunteers and local fishers successfully extracted over 25,000 kg of marine waste, including the

removal of nearly 60,000 toxic plastic salt packages from the critical intertidal mudflats. The program successfully institutionalised new, certified micro-professions for the Keepers of the Sea, transforming them into public ambassadors recognised by UNESCO.

G. Key Lesson

Marine nature restoration benefits from inclusiveness policing and co-design with the coastal community. An effective way to eliminate human threats to an ecosystem is to empower the people causing the threat, transforming them from destructive resource exploiters into paid, scientifically literate guardians of the habitat.

4.5. Urban ecosystems

4.5.1. Normative stakeholders' debates on developing a new urban forest: Parkforest Ghent, Flanders, Belgium

Author: Rik De Vreese, CLEARING House project (www.clearinghouseproject.eu)

Main sources: Schraepen et al. (2019), Van Herzele et al. (2005), Van Herzele (2014), Van Herzele (2006), https://oppla.eu/clearing-house/case-study/parkforest-ghent-belgium

A. Case Identification

- **Location (country, region)**: Belgium, Flemish Region, East-Flandres Province, Ghent Agglomeration
- **Ecosystem / land-use type**: urban ecosystems (forest, meadows)
- **Policy context**: Strategic Spatial Plan for Flanders, Strategic Spatial Plan East-Flanders Province
- **Timeframe**: 1998 - 2025

B. Problem and Proposed Solution

The Province Administration of East-Flanders, the Public Forest Agency and city of Ghent identified 4 locations for developing additional urban forest cover around the city of Gent, mainly from a perspective of recreational needs, and through afforestation. This case discusses the Parkforest, the location which was developed first. The norm-based conflict was mainly between the aforementioned authorities and the farmers (and landowners to a lesser extent) working on the grounds going to be planted. The farmers were supported by the local municipalities on whose territory most of the Parkforest was going to be developed.

The solutions implemented included communication and awareness raising campaigns, consultation, negotiations with the farmers and land owners, compensation (financial, land swap) and a clear time path over a longer time-span

C. Conflicting Parties / Stakeholders

- Supporters/Initiators of the afforestation project: Province Administration of East-Flanders, the Public Forest Agency and city of Ghent, NGO Flemish Forest Association (now BOS+).
- Proponents: farmers (and their organisations), local authorities, land owners
- Other stakeholders: Nature conservancy NGO (Natuurpunt), civil society organisations, Flemish Land Agency

D. Dominant Underlying Cause of the Conflict

The stakeholder conflict was mainly norms-based: farmers and their organisations did not agree with the planned conversion of agricultural land to forested area. They questioned the need, and opposed urban dwellers' need for more recreational space versus farmers economic interests and the need for producing food. Some land owners also questioned the legitimacy and need of converting the land, and the procedural justice for public authorities to acquire the land. The need for more biodiversity (in the form of forests) was also normatively questioned (as the farmers stated they also provided biodiversity as socially accepted norm).

The normative conflict was also axed on an urban-rural societal divide, with farmers and local residents questioning the legitimacy of the claim by "the city" on rural lands. As the land targeted was in active agricultural use, there were also individual financial interests (interest-based).

E. Dominant Conflict Resolution Pathway

Conflict resolution was based on increasing the public approval (norms-based) and political awareness (knowledge-based) on the multiple benefits of afforestation. Hence, a public communication campaign (including working with schools) and individual negotiations with farmers and their associations to identify key issues and find individual and targeted solutions were carried out. Farmers' legitimate needs and concerns were partly recognized and integrated in the plan. Likewise, the social approval of the process was sought to be enhanced with participation of farmers in the planning process, and by activating a land swap mechanism, by a long-term planning that would bring delayed delivery of the plan to take account of farmers careers length, traditional use, etc (norms-based). Some of the initially planned afforestation have been removed from the final plan to reduce impact on particular farmers (interest-based). Some changes to the afforestation plan in favour of agriculture have been imposed by the government to the project team (power-based).

The land swap mechanism was initiated to provide alternative land for affected farmers, mainly for land within the project area being used by farmers from outside the project area. The amendments to the timing allowed farmers to use their land (owned or leased) in traditional, customary or socially acceptable way until they reach retirement age (norms-based). Limited support for alternative land management was provided through facilitating access to information (ideas/knowledge-based) and finances (interest-based), and local farmers have been involved in the land and forest management (power- and norms-based).

F. Outcome

As a result of the process, some of the planned forest locations were been moved to locations that were deemed more suitable for afforestation. The total amount of afforestation has been reduced, limiting the impact on the landscape and on agriculture. Also, the pace of the implementation was adapted to socially accepted norms such as local farmers' careers, and the availability of land for the land swap mechanism.

G. Key Lesson

The socially embedded norms, needs and approval of the local land users and land owners should be considered and acknowledged. They can be seen as less relevant compared to the common needs and normative expectations of society, but their social recognition, approval and collaboration is crucial as land is needed for nature and forest restoration.

4.6. Multiple ecosystems

4.6.1. Courts as Arenas for Resolving Rules-Based Conflicts between Nature Restoration, and Mining and Forestry in Sweden

Author: Metodi Sotirov, Johan Svensson

Main sources: Svensson (2025), Svensson and Jonsson (2025), Svensson et al. (2025), Dahlén and Enkvist (2024), SUPERB project (https://forest-restoration.eu/)

A. Case Identification

- **Country**: Sweden
- **Ecosystems / land-use sectors**:
  - Limestone quarrying (mining)
  - Forests and forestry
- **Policy context**:
  - Swedish Environmental Code (Miljöbalken)
  - EU Habitats and Birds Directives
  - EU Nature Restoration Regulation (NRR)
  - Aarhus Convention (access to justice)
- **Timeframe**: ca. 2010–2025 (with forward-looking relevance for NRR implementation)

B. Problem and Proposed Solution

Problem definition: The core problem in both sub-cases concerns legal and policy mismatches between EU environmental law objectives (EU Nature Directives, EU Nature Restoration Regulation) and national-level implementation in Sweden, particularly when strong economic or sectoral interests are at stake. These mismatches generate stakeholder conflicts that cannot be resolved through negotiation alone (interest-based) and therefore escalate into judicial proceedings (rules- and power-based).

In mining, the conflict emerged around the renewal of permits for limestone quarrying in biodiversity sensitive areas, notably in proximity to Natura 2000 sites under the EU Nature Directives, where environmental impact assessments and legal compliance were contested. In forestry, conflicts increasingly concern the interpretation and application of EU conservation and restoration requirements - first under the EU Habitats Directive and now, prospectively, under the EU Nature Restoration Regulation - within a national forestry regime historically oriented toward intensive timber production and sectoral autonomy.

Proposed solution: In both cases, the prevailing solution pathway is authoritative legal resolution through courts, including judicial review of permits and environmental assessments, interpretation of constitutional and statutory environmental provisions, and enforcement of EU law through binding judgments (rules- and power-based).

C. Conflicting Parties / Stakeholders

- Economic operators and land users:
  - Mining companies (e.g. limestone extraction)
  - Forest owners and forestry industries (e.g., timber use, bioenergy use); they seek legal certainty and continued natural resource use for socio-economic benefits.

- Environmentalists
    - Environmental NGOs, social rights civil society organisations (CSOs), and environmental scientists; they advocate strict application of EU environmental law; they act as watchdogs and frequent litigants
- National public authorities:
    - Environmental agencies, forestry authorities, and the Swedish Government; these public authorities often act initially as intermediaries balancing interests. In several instances, national authorities shift from being intermediaries to becoming the main addressees of legal scrutiny, particularly when courts critically assess compliance with EU law.
- National judicial institutions:
    - Regional Land and Environmental Courts, Land and Environmental Court of Appeal, and Supreme Court / Supreme Administrative Court; these judicial institutions become decisive actors when conflicts escalate; they interpret and enforce legal obligations, supported by scientific experts.
- EU institutions (potentially involved if issues are not solved at national level):
    - European Commission and European Court of Justice; they make use of infringement risk, regulatory oversight
    - EU legislators, EU Parliament and Council of the EU; they can influence the stakeholder conflicts through binding regulations and policy changes such as the NRR

D. Dominant Underlying Cause of the Conflict

The prevailing underlying cause in both sub-cases is a rules-based conflict.

Societal conflicts first arise from legal and policy incoherence between EU environmental requirements (EU Habitats/Birds Directive, Nature Restoration Regulation) and national regulatory frameworks. Ambiguity in interpretation of environmental provisions (e.g. conservation status, impact assessments, restoration obligations) can also lead to policy/legal mismatch and tensions. Competing legal logics, where environmental protection is constitutionally framed as a programmatic objective rather than a directly enforceable right can add to the rules-based conflicts.

While rational economic cost-benefit behavior (interest-based), power relations (power-based), ideological differences (knowledge-based) and social (dis)approval (norms-based) are present, they are secondary to the central issue of how binding environmental rules should be interpreted and applied (rules-based). This places the conflicts squarely within the rules-based conflict category.

E. Dominant Conflict Resolution Pathway

The dominant conflict-resolution pathway is legal and judicial enforcement. Key elements include (i.) Judicial review of administrative decisions enabled by the Swedish Environmental Code, (ii.) Case law development clarifying how environmental rules must be interpreted, and (iii.) Reassertion of legal hierarchy, with EU environmental law constraining national discretion.

The establishment of specialized Land and Environmental Courts following the introduction of the Swedish Environmental Code has been crucial in enabling this pathway. Although the EU Nature Restoration Regulation does not include a standalone access-to-justice article, its preamble reaffirms obligations under the Aarhus Convention, indicating that litigation will remain central during implementation.

F. Outcomes and Current Status

Mining sub-case: In the Cementa process, courts played a decisive role in identifying deficiencies in environmental assessments and enforcing legal standards. Although political intervention temporarily safeguarded cement supply, the case illustrates how judicial decisions can override administrative compromise and force reconsideration of environmentally harmful activities.

Forestry sub-case: In forestry, courts have already become arenas for disputes over intensive forest management practices (e.g., clear-cutting forestry), and habitat protection and conservation status. Looking forward, the implementation of the EU Nature Restoration Regulation is expected to intensify litigation, as domestic implementation of forest restoration targets, non-deterioration obligations, and national restoration plans under the NRR are expected to be contested.

Overall, conflicts are not resolved once and for all but institutionalized through legal processes that provide authoritative decisions and precedents (rules- and power-based).

G. Key Lessons for Nature Restoration in Europe

Rules-based conflicts require rules-based solutions: courts are often the only actors capable of delivering binding resolution.

Judicial institutions become central governance actors in domestic implementation of EU environmental policy and law.

Nature restoration will increase legal conflict, particularly in sectors with strong economic interests leading to a mismatch between EU and national rules

Capacity-building and knowledge development within courts, also through the engagement of scientific experts, is critical for effective implementation of EU nature restoration law.

4.6.2. Policy incoherence in ecosystem restoration: a rules-based conflict between ecological mandates and health safeguards in Europe, and at the international level

Author: Maitane Erdozain

Main sources: Duthie et al. (2025), Kirkpatrick and Jagadesh (2025), RESTOREID project (https://restoreid.eu/)

A. Case Identification

- **Location**: International and European contexts (analysis spans multiple countries; implications for EU Nature Restoration Regulation implementation)
- **Ecosystem / land-use type**: Forests, wetlands, agroecosystems, river systems, and multi-ecosystem restoration landscapes
- **Policy context**:
  - Global frameworks: UN Decade on Ecosystem Restoration, Kunming-Montreal Global Biodiversity Framework
  - EU context: Nature Restoration Regulation (NRR), biodiversity strategies
  - National restoration, reforestation, and agroecology policies
- **Timeframe**: 2015–2025 (policy review period), with conflict persisting into the NRR implementation phase (2024–2030)

B. Subject: Problem and Proposed Solution

The Problem: A rules-based conflict from policy incoherence. The RESTOREID project identified a systemic mismatch between restoration laws and policies focused almost exclusively on ecological outcomes (biodiversity, carbon, vegetation cover, ecosystem services) and the lack of corresponding provisions addressing human and animal health, zoonotic disease risks, and unintended health-related consequences. This policy incoherence creates a rules-based conflict because policies, regulations, and institutional mandates do not align across sectors (environment, health, veterinary, social).

As a result, restoration actions are legally mandated without corresponding legal safeguards for health impacts. Monitoring and reporting frameworks focus on ecological metrics, not socio-health outcomes. Moreover, public health authorities are not institutionally required to participate in restoration planning. Last, but not least, policy instruments acknowledge equity and participation but without enforceable mechanisms tied to health considerations.

Proposed Solution: to mitigate the stakeholder conflict, an integrated "One Health" governance framework embedded within restoration policy instruments (e.g., NRR Articles 5–15) was adopted. This includes (i.) mandatory cross-sectoral coordination mechanisms, (ii.) integrated monitoring of ecological and health indicators, (iii.) health and social safeguards in restoration planning, and (iv.) risk-sensitive decision-making that addresses human-wildlife interfaces, vector dynamics, and vulnerable populations.

C. Conflicting Parties / Stakeholders

- Environmental authorities and restoration policy makers
  - Mandated to deliver restoration targets (forest cover, ecological status, carbon uptake)
  - Operate within policies where ecological recovery is legally prioritized
- Public health and veterinary authorities
  - Generally not mandated nor systematically included in restoration planning
  - Lack institutional mechanisms to address health consequences of ecological interventions
- Other stakeholders affected:
  - Local communities & Indigenous peoples (livelihoods, exposure to wildlife, land tenure implications)
  - Land managers (foresters, farmers)
  - Environmental NGOs and civil society advocating for health-aligned sustainability
  - Research institutions (One Health, ecology, epidemiology)

Although many groups participate, the core conflict is between sectors whose legal obligations and policy frameworks do not align, creating fragmentation in governance.

D. Dominant Underlying Cause of the Conflict: Rules-Based

This case is dominated by a rules-based conflict. Restoration policies legally require ecosystem recovery but do not legally require assessment of health impacts. Only one-third of reviewed policies even mention zoonotic or infectious disease risks; only a small minority operationalize "One Health" through governance or monitoring. Existing legal frameworks (e.g., NRR Articles 5-10) mandate ecosystem-specific targets but omit requirements for evaluating unintended health consequences (vector habitat expansion, human-wildlife interactions, displacement). Monitoring obligations (e.g., NRR Articles 14-15) focus on ecological indicators, not health or equity metrics, creating institutional misalignment. Public health entities appear only symbolically in most frameworks and lack formal

mandates in restoration governance. These rules-based inconsistencies systematically produce friction between sectors, rendering procedural improvements insufficient without legal reform.

E. Dominant Conflict Resolution Pathway

Although the conflict remains only partially resolved, the project documents identify a governance-driven conflict transformation pathway. The conflict is addressed through institutional and regulatory realignment. Firstly, this refers to institutionalizing “One Health” in restoration law and planning frameworks with legal requirements for cross-sectoral coordination and inclusion of health and veterinary authorities in designing and reviewing restoration targets. Secondly, embedding health and social safeguards into restoration regulations is suggested where joint impact assessments (ecological + social + health) and risk-sensitive, ecosystem-specific planning should help further. Thirdly, new monitoring obligations are integrated with indicators for human-wildlife interactions, vector ecology, community health outcomes; this should be further supported by adaptive management triggered when unintended consequences emerge. Fourthly, equity and participation requirements need to be strengthened by ensuring free, prior, and informed consent (FPIC), installing mandatory grievance mechanisms, and addressing vulnerability and land tenure risks.

F. Outcome

The conflict is partially resolved / partially ongoing. The conflict has moved from latent to acknowledged and partially addressed, but is not yet structurally resolved.

What has improved is that RESTOREID produced evidence prompting stronger policy integration. Policy briefs and recommendations now promote explicit “One Health” policy integration. Stakeholder conflicts are increasingly recognized and framed within EU governance debates on the NRR. Some countries policies and frameworks (e.g., Rwanda, Belize, India’s One Health Plan) show emerging models of coherence.

What remains unresolved is that there is no legally binding EU-wide requirement yet; hence, no EU rule exists to integrate health into restoration targets or monitoring. In most Member States, health authorities still lack formal roles in restoration planning. Monitoring frameworks remain ecologically biased. Policy incoherences also continue to generate risks of unintended consequences (vector proliferation, health inequities, human-wildlife conflicts).

G. Key Lesson

Restoration policies can unintentionally create or exacerbate societal and health risks when ecological mandates are not aligned with health governance frameworks. A core lesson from RESTOREID is that ecosystem restoration cannot be effective or socially accepted without integrating human and animal health, equity, and risk prevention into the legal and governance architecture.

This case demonstrates that rules-based conflicts often stem from gaps in policy and institutional mandates, not from opposing interests. “One Health” policy integration is not optional - it is necessary to prevent unintended consequences that undermine restoration goals. EU-level policy and legal frameworks like the NRR must move beyond ecological targets to include risk-sensitive, cross-sectoral governance requirements. Aligning policies across sectors is central to reducing societal conflict in nature restoration and ensuring durable, equitable outcomes.

4.6.3. Rules- and Power-based Conflicts over Land-Use and Conservation in the Serras d'Aire e Candeeiros Natural Park, Portugal

Author: Laura Guimarães

Main sources: ICNF, Diaz & Carreira Dos Santos (2026)

A. Case Identification

- **Location:** European Union, Portugal, Serras d'Aire e Candeeiros Natural Park, located within the Estremadura Limestone Massif (Maciço Calcário Estremenho) in central-western Portugal. The protected territory covers approximately 38,900 hectares across the municipalities of Alcobaça, Porto de Mós, Rio Maior, Santarém, Ourém, Alcanena, and Torres Novas.
- **Ecosystem / land-use type:** Fragile Karst (Limestone) Mountain Ecosystem. Unique surface landforms (poljes, dolines, limestone pavement), rare subterranean cave networks hosting endemic troglobitic fauna and strategic underground freshwater aquifers. The socio-economic land-use is heavily dominated by open-cast mining, serving as Portugal's premier industrial cluster for the extraction of ornamental stone, limestone blocks and cobblestone (*calçada*).
- **Policy context:** National and European Union biodiversity mandates, including Decree-Law No. 118/79 and the Natura 2000 Network. It intersects directly with the Legal Regime for Mass Mineral Quarries (*Regime Jurídico da Exploração de Massas Minerais*, Decree-Law No. 340/2007), which legally mandates environmental landscape recovery plans.
- **Timeframe:** 1979 onwards (ongoing). Active on-the-ground restoration actions underwent a major structural policy pivot in 2007. The policy continues to evolve via public consultation to expand park borders.

B. Problem and proposed solution

The open-cast extraction of limestone created severe biophysical and hydrological degradation. The park contains rich limestone reserves, making it the hub for Portugal's highly lucrative stone quarrying and extraction industry. The conflict emerged when stringent ecological restoration mandates and conservation zoning rules restricted the expansion of mining sites. Active quarrying damaged natural habitats and local water tables, directly contradicting the park's environmental restoration goals. Hundreds of uncoordinated quarries fractured the mountain topography, stripped away native scrublands and left highly hazardous vertical rock faces. Fine limestone particulate runoff (slurry) threatened to infiltrate and clog the underground karst conduits, endangering the regional water supply. Historically, operators abandoned exhausted quarry sites without performing any landscape remediation, passing the ecological debt onto the state. The state seeks to address this through a regulated co-management framework and mandatory ecological rehabilitation plans.

This is a protected area in central-western Portugal that spans approximately 38,900 hectares across the municipalities of Alcobaça, Porto de Mós, Santarém, Torres Novas, and Ourém. The land-use dynamic features an aggressive intersection of two opposing functions: ecological conservations with protection of scrublands, endemic flora, and subterranean cave networks; and intensive industrial extraction in which there is an open-cast limestone quarrying. Conservation actions included the implementation of a legally binding co-restoration architecture. The core structural solution was the institutionalisation of an Environmental and Landscape Recovery Plan ('Plano Ambiental e de Recuperação Paisagística', PARP). Under this framework, any private quarry seeking an initial or renewed extraction license is legally obligated to submit and continuously fund an integrated landscape recovery blueprint. Rather than treating restoration as a post-closure event, extraction and ecological stabilisation (recontouring slopes, backfilling pits with safe inert waste and introducing native, calcicole vegetation) are executed concurrently.

C. Conflicting Parties / Stakeholders

Stakeholders: Conservation groups (ICNF - Institute for Nature Conservation and Forests, regional environmental NGOs, such as Quercus, and speleological/hydrological research groups); Industrial Extraction (private mining corporations, regional stone lobbies, such as ASSIMAGRA - Associação Portuguesa dos Industriais de Mármores, Granitos e Ramos Afins; and heavy machinery operators); local municipalities and communities (local town councils dependent on the quarrying industry for municipal tax revenues, job security supporting thousands of direct rural livelihoods and regional economic growth). The conflicts can be typed and Rules-Based (overlapping, contradictory regulatory mandates) and Power-Based (corporate economic influence vs. environmental law).

D. Dominant Underlying Cause of the Conflict

A structural mismatch existed between national environmental protection mandates (which restricted industrial expansions to preserve geological heritage) and municipal economic goals (which designated areas as future mining reserves). Furthermore, it featured a power struggle over who should absorb the financial liabilities of historical, abandoned extraction pits; the lucrative private mining companies generating the profit or the public authorities managing the park.

E. Dominant Conflict Resolution Pathway

The dominant pathway was Regulated Legislative Integration and Mandatory Co-Management Offsets. The state leveraged its licensing power to force an industrial compromise. A negotiated co-management and structural compromise was brokered, which involved restoration offsets and infrastructure financing. Through the deployment of the PARP mechanism, the legal right to extract became conditional on continuous landscape healing. Mining companies are forced to utilise their own heavy machinery and financial capital to remodel historical degraded sectors adjacent to their active permits. A co-management framework was adopted, transitioning the park's absolute governance into a collaborative council featuring municipal mayors, scientific universities and industrial cluster representatives. This decentralised forum allows for the negotiated zoning of controlled, localised expansions in exchange for binding corporate financing of public ecological infrastructure**.** The financial resources and heavy machinery from the extraction companies were co-opted to help build and maintain public park infrastructure and tourist nature trails, turning an antagonistic corporate force into a funded mechanism for controlled regional management.

F. Outcome

The implementation generated quantifiable ecological recovery and biophysical success. Between 2010 and 2020 alone, the cooperative framework achieved the successful ecological restoration of 87 hectares of heavily degraded, abandoned quarries within the protected zone. Over 47 hectares consisted of historical cobblestone (*calçada*) extraction zones on the highly vulnerable Planalto de Santo António. Reclaimed terrains have been successfully stabilised against soil erosion, and slopes have been re-vegetated using native karst flora, creating a natural aesthetic blend with the surrounding massif. Fine sediment runoff risks to the deep subterranean aquifers have been significantly mitigated.

G. Key Lesson

The approach stresses the need for definition of clear outcomes from local development initiatives. Mega industrial exploitations within high-value protected areas can be co-management by joint efforts combining conservation bodies and established strict legal frameworks that co-opt industrial capital and heavy machinery, transforming the polluter into the primary funded execution mechanism for landscape restoration.

5. Stakeholder Conflicts and Conflict Management in Nature Restoration in Europe: A Historical Perspective

Key sources: Erdozain et al. 2026; Erdozain et al. 2025; Additional sources: Sotirov and Storch 2018; Sotirov et al. 2015; Angelova et al. 2009.

Nature restoration in Europe has never been a purely ecological or technical undertaking. Neither are today's societal conflicts in nature restoration a completely new phenomenon. Over the past two centuries, nature restoration efforts have unfolded within shifting social, economic, and political landscapes, generating recurrent societal conflicts that have shaped both the pace and the direction of interventions. These stakeholder conflicts - rooted in interests, rules, norms, knowledge, and power - have evolved alongside transformations in land use, governance, and social values.

Understanding societal conflicts is essential for explaining why restoration has succeeded in some contexts and faltered in others, and for designing conflict-sensitive restoration strategies today. Tending to forget the distant or recent past can have important implications for the current and future success of nature restoration. The recent past of highly contested and prolonged design and implementation of EU's and national biodiversity policy, mainly through the Birds and Habitats Directives (Natura 2000), is a case in point. It should also serve as a reminder to not only draw lessons to be learned but also mainly avoid past mistakes and anticipate current and future stakeholder conflicts if restoration should have an ecological success and societal acceptance.

5.1. Interest-based Conflicts: Competing Land Uses and Economic Incentives

Many of the most persistent conflicts in European restoration stem from competing economic interests. Historically, agriculture and pastoralism often clashed with afforestation and ecological restoration. In **Greece**, shepherds opposed afforestation of flood-prone watersheds because it threatened grazing areas, while in **Spain** rural communities resisted mid-20th-century reforestation campaigns that reduced access to pasture and fuelwood and contributed to rural depopulation. Similar tensions emerged in **Scotland**, where hill sheep farming and afforestation targeted the same low- and mid-elevation lands. Conflicts also arise between timber production and biodiversity-oriented restoration. In **Finland** and **Sweden**, parts of the forestry sector have opposed the EU Restoration Law, fearing reduced harvests, while in **Belgium** forest owners worry about declining revenues as ecological objectives gain prominence.

Economic crises and poverty have historically intensified these conflicts. After 1989 in **Romania**, newly restituted but economically vulnerable owners turned to illegal logging, while in **the Netherlands** illegal felling surged after WWI due to high wood prices. In most European countries, many forests were converted to cropland to increase food self-sufficiency during or after World Wars.

European countries have relied on "smart mixes" of economic and regulatory instruments to align private land use interests with public restoration goals. These include:

- *Payments for ecosystem services and compensation schemes*: Programmes such as **Finland**'s METSO compensate private forest owners for conserving or restoring ecologically valuable habitats, offsetting the income they would lose from timber harvesting. This has turned potential

conflicts between biodiversity goals and private economic interests into voluntary cooperation, with strong uptake among landowners. **Swiss** forest reserve contracts work similarly, offering long-term payments to owners who commit to strict or special reserves, making ecological restoration financially viable in areas where timber production would otherwise dominate.

- *Subsidies for multifunctional forestry*: Subsidies help shift management away from purely timber-oriented practices. In **Austria**, the Forest Fund requires that more than 75% of planted trees in subsidized reforestation projects belong to native species, encouraging climate-resilient and ecologically appropriate forests. In **Belgium**, landowners who adopt higher ecological standards in their management plans receive compensation for reduced timber income, helping reconcile restoration goals with private economic expectations.
- *Tax incentives*: Tax policy has historically been a powerful tool for mobilizing private investment in restoration. In the **United Kingdom** during the 1960s, generous tax relief for afforestation led to a surge of private planting, particularly in the **Scottish** uplands, reducing conflicts by making forest establishment financially attractive. After WWII in **Poland**, long-term tax exemptions for afforested wasteland encouraged private owners to participate in national restoration efforts despite widespread economic hardship.
- *State-funded restoration programs*: Dedicated public funding has been essential in regions where private investment is unlikely. In **Croatia**, a 1977 law required that 0.05% of the gross income of all economic entities in karst areas be directed to forest restoration, creating a stable, long-term financing mechanism for large-scale afforestation in degraded Mediterranean landscapes. **Romania**'s Forest Conservation and Regeneration Fund similarly reinvests a portion of timber revenues into regeneration and afforestation across all ownership types, ensuring continuity even during market fluctuations.
- *Market-based certification schemes*: private forest certification systems such as FSC and PEFC help reduce market-based conflicts by rewarding sustainable forest management with better market access and, in some cases, price premiums. In countries like **Belgium** and **Sweden**, certification has helped bridge tensions between biodiversity-oriented restoration and the forestry sector by demonstrating that ecological practices can remain economically viable. Certification also responds to societal expectations for transparency, reducing ideological and norms-based conflicts with the public.

5.2. Rules-based Conflicts: Policy Incoherence and Regulatory Rigidity

Conflicts between policies and their legal provisions have repeatedly hampered restoration. For example, in **Romania**, the Forest Code of 1910 prohibited grazing to protect forests, yet the Agrarian Reform of 1920 encouraged the creation of communal pastures, resulting in widespread deforestation. In **Denmark** and **Belgium**, agricultural subsidies continue to undermine afforestation goals by making farming more profitable than forest expansion. In **Sweden**, the liberal Forestry Act (1993) conflicts with the Environmental Code (1995) and EU biodiversity legislation, fueling tensions between the forestry industry and conservationists. Likewise, the **German** Federal Forest Law (1972) makes provisions that allow for clear-cutting of managed and degraded forests (e.g., after climate change impacts) under reforestation obligations but without tree species origin restrictions while the Federal Nature Conservation Law (2009) requests avoidance of clearcutting, and promoted both close-to-nature forests and native tree species.

Countries have attempted to reduce policy incoherence through the creation of dedicated restoration institutions. These bodies provided technical expertise, continuity, and cross-sectoral coordination, functions that helped overcome conflicting rules and responsibilities:

- **Spain**'s Reforestation Commissions (1888) were created to plan and implement large-scale afforestation in degraded mountain watersheds.
- **Slovenia**'s Karst Afforestation Commissions (1881) were tasked with identifying degraded karst areas, preparing an afforestation cadastre, and coordinating restoration across municipalities.
- **Croatia**'s Royal Inspection for Karst Afforestation (1878) coordinated afforestation, erosion control, and flood protection in Mediterranean karst landscapes.
- **France**'s RTM service (Restauration des Terrains en Montagne, 1860) was a specialized corps of forest engineers responsible for mountain reforestation and erosion control.

Strict national forest laws that explicitly define multifunctional forest management have also helped to reduce rules-based conflicts by providing clear, coherent regulatory frameworks. In **Switzerland**, the Federal Forest Law (1991) mandates sustainable forest management that balances wood production, close-to-nature forestry, and the protection of natural and cultural heritage, reducing contradictions between sectoral policies. Similarly, the **German** Federal Forest Law (1972) sets the objective to find a balance between the interests of forest owners and society, and to maintain and sustainably manage forests for economic, environmental and social functions. **Slovenia's** Forest Law (1993) regulates forest protection, cultivation, and use with the explicit aim of ensuring sustainable and multifunctional management. By clarifying responsibilities and harmonizing objectives across sectors, these laws have helped stabilize governance and reduce conflicts rooted in regulatory incoherence. More specifically, and since the 1990s, the previous and current **Bulgaria's** Forest Law (2011) prohibits clear-cutting altogether which is seen as an environmentally hazardous forestry practice.

5.3. Norms-based Conflicts: Cultural Practices, Social Expectations, and Public Perceptions

Restoration often challenges deeply rooted social norms and traditional land-use practices. In **Austria** and **Switzerland**, early bans on forest grazing, litter raking, and firewood collection for the sake of rehabilitation of degraded forest disrupted rural livelihoods and generated social tension. In **Slovenia**, the demarcation of forest and grazing land provoked controversy among local communities.

Public perceptions of natural processes also shape restoration conflicts. In **France, Italy,** and **Spain**, fire, floods, and large herbivores are often viewed negatively, hindering the integration of natural disturbance regimes into restoration strategies. In **France**, strong social pressure to "erase" wildfire traces leads to rapid post-fire interventions that may conflict with ecological objectives.

Legal obligations have historically been used to change entrenched practices that degraded forests. For example, **Austria**'s 1852 Imperial Forest Act, which required reforestation within five years of harvest, gradually normalized the idea that forest use carries long-term stewardship responsibilities. **Switzerland**'s 1902 clearcut ban helped shift public expectations toward continuous-cover forestry, reducing social acceptance of large-scale timber extraction. **Greece**'s constitutional protection of forest land (1975) similarly established strong societal norms against land-use conversion. These regulations did not only enforce rules; over time, they reshaped cultural understandings of what responsible forest management looks like.

5.4. Ideological and Knowledge-based Conflicts: Values, Perceptions, and Awareness

As environmental awareness has grown across Europe, so have ideological conflicts over what restoration should look like and who gets to define it. These stakeholder conflicts often arise not from material interests but from clashing worldviews, ecological philosophies, and interpretations of what constitutes "good" management of natural resources (e.g., forests, grasslands, waters).

In several countries, debates have intensified between advocates of active, climate-smart land use (agriculture, forestry, waters) and groups promoting "hands-off" or wilderness-oriented approaches. In **Italy**, for example, proposals to manage forests more actively to reduce fire risk and increase resilience have been opposed by environmental groups who view interventions as incompatible with naturalness. Similarly, in **Spain**, ecologists promoting functional restoration - focused on processes such as rewilding, natural regeneration, disturbance regimes, or soil recovery - often face resistance from funders or citizens who equate restoration with visible tree planting.

Misunderstandings of ecological processes further fuel ideological tensions. In **Mediterranean** landscapes, where rural abandonment has increased fuel loads, many citizens perceive fire solely as a destructive force, making it difficult to integrate prescribed burning or natural fire regimes into restoration strategies. Likewise, the ecological role of floods or large herbivores is often poorly understood, leading to opposition when restoration projects reintroduce natural dynamics that appear "messy" or risky.

Urban-rural divides add another layer of complexity. Urban populations increasingly demand "more nature," often without understanding the socio-ecological realities of rural landscapes, while rural stakeholders - hunters, livestock farmers, foresters, fishers - feel judged by urban environmentalism. These value clashes can escalate into ideological polarization, making consensus on restoration goals difficult.

Informational and educational instruments have been central to reducing these conflicts by aligning public perceptions with ecological realities and building shared understanding across stakeholder groups. Historical examples include:

- *Training and advisory services*: such as **Sweden**'s extensive education campaigns in the 1980s-1990s, helped private forest owners adopt sustainable forestry practices and understand the ecological rationale behind them.
- *Professional education and research:* forestry schools and research institutes, heavily supported in **Croatia** and **Slovenia** between 1940 and 1990, professionalized forest management and created a shared knowledge base that reduced ideological tensions between practitioners and policymakers.
- *Public awareness campaigns*: such as **Austria**'s late-19th-century education programs or **Hungary**'s afforestation campaigns, helped shift societal perceptions of forests from extractive resources to multifunctional landscapes requiring stewardship.
- *Publicity and mass media engagement*: mass media have played a decisive role in shaping public opinion. Sometimes the impact has been constructive, as in **Germany**'s and **UK**'s related "acid rain" and "forest dieback" debates in 1980s-1990s, which mobilized support for environmental reforms (e.g., clean-air policies, ecosystem management of forests). Sometimes mass media were (mis-)used problematically, as in **Bulgaria** and **Romania**, where sensationalist narratives of "deforestation" and "illegal logging" during the privatization of

agricultural and forest lands in the 1990s-2000s, and accusations of "eco-mafia" during the implementation of EU's and national biodiversity policy (Natura 2000), have fueled stakeholder mistrust and political polarization, often preventing win-win cooperation and leading to nature-destructive practices.

5.5. Power-Based Conflicts: Ownership, Governance, and Decision-Making Authority

Power dynamics have profoundly shaped restoration trajectories across Europe, and multiple conflicts have arisen from who controls land, who makes decisions, and whose priorities dominate**.** These tensions have shifted repeatedly over the last century as governance systems transformed.

After WWII, nationalization in countries such as **Bulgaria, Croatia, Hungary, Poland, Romania,** and **Slovenia** enabled large-scale, centrally coordinated restoration programs. While these efforts expanded forest cover, they also reduced local autonomy and sometimes generated resentment among rural communities who lost control over their land. Conversely, the post-1990 wave of privatization fragmented ownership into millions of small parcels, particularly in **Romania** and **Slovenia**. Many new owners lacked the capacity or interest to manage forests, weakening state authority, slowing and sometimes reversing restoration efforts. This shift illustrates how both excessive centralization and extreme fragmentation can undermine restoration by creating power imbalances or governance gaps.

Expropriation has also been a recurrent source of conflict. In 19th-century **France**, reforestation laws allowed the state to seize degraded mountain lands without compensation, provoking strong local resistance. Similar tensions emerged in **Spain** during early watershed restoration, where state interventions clashed with traditional land rights.

Decentralization further complicates governance. In **Belgium**, **the Netherlands, Spain**, and **the UK**, regionalization has redistributed authority across multiple levels of government, often resulting in uneven capacities, divergent priorities, and spatially heterogeneous restoration outcomes. Power struggles also occur within the state itself; in **Bulgaria** and **Romania**, for example, forest management was subordinated to the centralized forest industry during the communist period, prioritizing timber extraction over ecological restoration.

To navigate these tensions, European countries have relied on a combination of institutional reforms, co-governance arrangements, and long-term contractual tools that redistribute authority and foster collaboration.

- *Institutional reforms and specialized restoration bodies:* Dedicated institutions have historically helped stabilize governance and reduce power struggles by clarifying responsibilities and providing technical leadership. Several historical examples have already been mentioned under Rules- based conflicts.
- *Long-term management contracts and co-governance arrangements***:** Contractual tools help balance state authority with private property rights by creating shared responsibilities and predictable benefits. In **Spain**, *consorcios* (introduced in 1926) allowed the state to reforest private land at no cost to the owner, who later repaid the investment from timber revenues. This model avoided expropriation and resulted in over 3 million hectares being managed under cooperative agreements. In **Sweden**, more than 5,400 Nature Conservation Agreements (1993–2022) have compensated landowners for voluntarily protecting ecologically valuable forests, reducing conflicts between conservation authorities and private owners. These

instruments work because they share power, rather than centralize it, and create stable frameworks for collaboration.

- *Advisory services and capacity-building*: Where ownership is fragmented or governance capacities are uneven, advisory services help reduce power asymmetries. By providing technical guidance, management planning support, or mediation between stakeholders, these services empower small landowners and local authorities to participate meaningfully in restoration decisions.

6. Discussion

The cases examined in this report confirm that societal conflict is not an exceptional or peripheral feature of nature restoration. It is part of the process through which restoration objectives are interpreted, negotiated and implemented. Restoration affects access to land and resources, economic opportunities, legal rights and obligations, socially accepted practices, understandings of nature, and the distribution of decision-making authority. Conflict can therefore arise even where stakeholders agree with the general objective of restoring ecosystems. The relevant disagreement may instead concern what should be restored, where and how restoration should occur, who should pay, which rules should prevail, whose knowledge should count, or who ultimately has authority to decide.

The cross-case evidence broadly supports the central proposition developed in Chapter 2: effective conflict management begins with diagnosing the conflict cause that is producing opposition or implementation blockage. The cases also qualify this proposition in an important way. Restoration conflicts are rarely generated by one cause alone. Interest-, rules-, norms-, ideological/knowledge- and power-based conflicts repeatedly interact, and interventions that successfully address one dimension may leave others intact. The practical task is therefore not simply to classify conflicts, but to identify their **dominant conflict cause at a particular point in time, understand the wider conflict configuration, and select an appropriate combination and sequence of conflict management instruments**. This corresponds to the theoretical and analytical framework established earlier in the report, which explicitly treats the five conflict types as ideal types and allows the dominant mechanism to change as a conflict develops.

A second overarching finding is that conflict management should not be equated with consensus or complete conflict resolution. Across the cases, outcomes include resolution, mitigation, accommodation, institutionalisation and transformation. Some interventions enabled restoration to proceed while disagreement remained. Others changed the institutional or economic conditions underlying the dispute. Still others clarified rules without removing differences in values. In other cases, the conflict has not been managed, but is ongoing. This is consistent with the report's initial understanding of conflict management: the appropriate objective may be to prevent escalation, correct avoidable injustice, establish workable coexistence or transform relationships and institutions rather than eliminate disagreement altogether.

6.1. From historical experience to contemporary restoration conflict

The historical evidence reviewed in Chapter 5 shows considerable continuity between earlier European nature conservation and restoration conflicts and the contemporary cases. Conflicts over competing land uses and livelihoods, contradictory policies, established cultural practices, competing ideas about appropriate management, and unequal control of land and decision-making have accompanied ecosystem restoration for more than a century. European countries have responded through economic incentives, regulation, specialised institutions, education and advisory services, contractual arrangements and different forms of shared governance.

This continuity matters because the EU Nature Restoration Regulation introduces new legal obligations but does not create an entirely new social context for restoration. Many of the conflicts likely to accompany its implementation have historical predecessors. Earlier experience with afforestation, forest restoration and Natura 2000 area designation demonstrates, for example, that imposing public environmental benefits on actors who bear concentrated private costs can generate sustained opposition; that contradictory sectoral rules can frustrate environmental objectives; and that centralised implementation without sufficient local recognition can produce resistance even where ecological objectives are widely supported.

At the same time, contemporary restoration differs from many historical programmes in its scale and institutional complexity. The EU Nature Restoration Regulation requires restoration across terrestrial, coastal, freshwater, marine, agricultural, forest and urban ecosystems and therefore brings biodiversity objectives into direct interaction with agriculture, forestry, fisheries, water management, urban development, infrastructure, energy, climate and other policy domains. National Restoration Plans consequently have to integrate ecological evidence with funding, sectoral policy, property and use rights, socioeconomic conditions and multiple societal values.

The historical lesson is therefore not that particular past instruments can simply be reproduced. Rather, it is that restoration has repeatedly succeeded or become more manageable when governance arrangements were able to **adapt the relationship between ecological objectives and the social institutions through which land, water and resources are governed**. Conversely, conflicts persisted where restoration objectives were treated as technically self-evident while their economic, institutional, normative or political implications remained unaddressed.

6.2. Cross-case patterns: different ecosystems, recurring conflict types

The case portfolio covers agricultural, forest, freshwater, coastal and marine, urban and multi-ecosystem settings. The concrete subjects of conflict differ substantially. Agricultural cases concern farm viability, biodiversity values and the distribution of ecosystem-service benefits; forest cases concern timber production, biodiversity conservation, climate adaptation and competing forest-management paradigms; freshwater cases involve flood control, river connectivity, cultural heritage, wetlands and species restoration; coastal and marine cases involve agricultural pollution, urbanisation, traditional land uses, fisheries, tourism and offshore energy; and the urban case concerns competition between agricultural land use and urban afforestation.

Yet beneath these ecosystem-specific manifestations, the same societal conflict types recur. This is an important cross-case finding. **Ecosystem type influences what is contested, but does not uniquely determine why stakeholders conflict.** Similar underlying mechanisms can occur in very different ecological settings, while different stakeholder conflict types can occur within the same ecosystem. The societal context of ecosystem restoration hence matters and adds important explanations to better understand nature restoration practice.

Agriculture provides a particularly clear illustration. The grassland and pollination cases identify interest-based conflicts where restoration or biodiversity-friendly management generates public ecological benefits but imposes private opportunity costs on farmers. In contrast, the agricultural narratives case is predominantly ideological/knowledge-based, because actors differ in their understandings of what agriculture is for and how biodiversity should be valued, while the ten-country farmer study identifies a predominantly norms-based conflict involving different conceptions of good farming and legitimate biodiversity management. Agriculture therefore cannot be assigned a single characteristic conflict type.

The same is true of forests. Some forest conflicts concern competing policy paradigms and beliefs about whether forests should primarily support timber production, biodiversity restoration or multifunctional objectives. Others arise from inconsistencies between EU biodiversity obligations and national forest rules. Local forest restoration cases additionally reveal material interests, cultural attachments, knowledge differences and historical power asymmetries.

The two Deba river cases provide perhaps the clearest demonstration of why causal diagnosis matters. The physical intervention is essentially the same - removal of obsolete river barriers - but one conflict concerns beliefs, cultural identity, perceived flood risk and contested scientific knowledge, while another concerns a formal inconsistency between environmental restoration and cultural-heritage protection. The former was addressed principally through information, engagement, mediation and learning; the latter required legal clarification. Resolving the legal contradiction enabled barrier removal, but did not eliminate local social opposition.

This suggests that the analytical unit most useful for conflict management is not the ecosystem itself but the **causal conflict configuration** (Table 3). The causal conflict configuration includes the dominating conflict cause, and associated conflict causes that also emerge during the conflict, but are less relevant or less outspoken.

Table 3. Cross-ecosystem synthesis of recurrent conflict patterns

Ecosystem / setting	Recurrent conflict types in the cases	Typical manifestation	Conflict management pathways illustrated
Agricultural	Interest; norms; ideological/knowledge; rules as interacting dimension	Opportunity costs, competing agricultural/biodiversity narratives, different meanings of “good farming”, administrative burdens	Payments and incentives; policy adaptation; co-design; communication and reframing; knowledge exchange
Forest	Ideological/knowledge; interest; rules; power	Timber production vs biodiversity; competing restoration paradigms; climate adaptation; national/EU	Policy learning; dialogue; incentives; legal enforcement; joint

Ecosystem / setting	Recurrent conflict types in the cases	Typical manifestation	Conflict management pathways illustrated
		policy incoherence; unequal influence	decision-making; mediation
Freshwater / peatland	Ideological/knowledge; rules; interest; power	Barrier removal, heritage protection, flood risk, rewetting, species restoration, legal disputes	Legal clarification; scientific assessment; dialogue; mediation; adaptive management; judicial processes
Coastal / marine	Interest; rules; power; norms	Competing land/sea uses, pollution, tourism, fisheries, offshore win energy, development pressure	Legal reform; spatial planning; restoration funding; partnerships; participation; scientific monitoring
Urban	Norms with interest and power dimensions	Urban-rural legitimacy, agricultural land conversion, procedural justice	Negotiation; participation; compensation; land swaps; adjustment of timing and spatial plans
Multi-ecosyst em	Rules and power, with knowledge and interest interactions	Policy incoherence, litigation, cross-sectoral mandates	Courts; legal clarification; policy integration; institutional reform; scientific expertise

Note: the table summarises dominant patterns represented in the purposive case portfolio and should not be interpreted as estimating the frequency of conflict types across European restoration.

The study was explicitly designed to identify illustrative or typical mechanisms rather than estimate statistical prevalence, and the case portfolio is purposive and heterogeneous. We therefore cannot conclude, for example, that rules-based conflicts are intrinsically more common in forests or that norms-based conflicts are more prevalent in cities. What the cases demonstrate is that **all five mechanisms are relevant across restoration governance and that apparently similar restoration interventions can generate fundamentally different conflicts.**

5.3. Matching conflict-management pathways to underlying conflict causes

The cases provide considerable support for the proposition that **conflict management pathways are more effective when they address the dominant conflict cause** (Table 4). The clearest examples involve relatively identifiable interest- or rules-based conflicts.

Where restoration generates private costs while producing broader public benefits, economic instruments can change the incentive structure. The pollination case shows that biodiversity-friendly

grassland management can provide ecological and agronomic benefits while nevertheless remaining privately unprofitable because opportunity costs exceed the additional farm revenue. In such circumstances, communication or consultation cannot remove the underlying economic disincentive; compensation, agri-environment payments or collective landscape arrangements are required. Similarly, the RESALAR case demonstrates how public funding and compatible economic activity can transform an interest conflict by changing the cost-benefit structure of restoration rather than relying exclusively on restrictions.

Rules-based cases display a comparable pattern. In the Deba catchment, restoration was blocked by an incompatibility between cultural-heritage protection and river-continuity objectives. Engagement could help manage associated social concerns, but only a legal-institutional decision could clarify whether modification of protected structures was permissible. The multi-country forest and Swedish mining and forestry cases similarly indicate that where the core disagreement concerns the interpretation or application of binding environmental obligations, judicial and regulatory institutions become unavoidable conflict-management actors. The report's Swedish mining and forestry evidence explicitly concludes that courts provide authoritative decisions and precedents even though they do not necessarily eliminate the wider political conflict.

The evidence for norms- and ideological/knowledge-based conflicts points towards a different logic. The Parkforest Ghent case combined recognition of farmers' concerns with negotiation, compensation, land swaps, participation and changes to implementation timing and location. The eventual outcome was an adapted restoration programme that reduced impacts and better reflected socially accepted practices and restoration interventions. In the Deba ideological/knowledge conflict, information was combined with dialogue and mediation because evidence alone could not address identity, trust and competing interpretations of the river landscape.

Power-based conflicts require a further distinction between being heard and possessing meaningful influence. The forest cases emphasise that consultation may be inadequate where affected actors have little actual decision-making authority. Joint decision-making and explicit attention to power imbalances therefore differ qualitatively from communication alone. The Mar Menor case illustrates an even more structural intervention: legal personality changed who could represent the ecosystem and who had standing to demand accountability, thereby altering the institutional distribution of power itself.

Table 4. Conflict diagnosis and primary conflict management logic (own illustration)

Dominant conflict type	What primarily needs to change?	Primary conflict management pathway	Important complementary conflict management measures
Interest-based	Distribution of costs, benefits, risks or opportunities	Compensation, incentives, benefit sharing, contracts, market mechanisms	Participation, policy simplification, spatial coordination, advisory support
Rules-based	Inconsistent, ambiguous or contested formal rules	Legal clarification, policy integration, regulatory change, enforcement, judicial decision	Scientific expertise, institutional coordination, participation

Dominant conflict type	What primarily needs to change?	Primary conflict management pathway	Important complementary conflict management measures
Norms-based	Perceived fairness, legitimacy, recognition or social acceptability	Meaningful participation, negotiation, mediation, procedural reform, recognition	Compensation where material costs exist; communication; trust-building
Ideological / knowledge-based	Interpretations, beliefs, problem definitions or knowledge claims	Dialogue, learning, joint fact-finding, knowledge exchange, reframing	Mediation, experimentation, long-term engagement
Power-based	Distribution of authority, resources and effective influence	Co-governance, empowerment, institutional reform, redistribution/clarification of authority	Capacity-building, accessible information, procedural safeguards

The evidence nevertheless cautions against turning Table 4 into a mechanical one-conflict/one-instrument prescription. The more important cross-case finding is that **matching matters, but matching is usually necessary rather than sufficient**.

Successful or promising approaches frequently combine several instruments. Grassland restoration requires payments but also simpler rules, farmer networks and local collaboration. Mar Menor combines enforceable law, public investment, scientific monitoring and participatory governance. Parkforest Ghent combined participation with land swaps, compensation and changes in spatial planning, with recognition and dialogue being important to understand the concerns of farmers and landowners . Forest restoration cases call for dialogue alongside incentives, legal clarity and meaningful decision-making authority. The historical evidence similarly records combinations of regulatory, economic and institutional instruments rather than isolated interventions.

The resulting proposition can therefore be formulated more precisely:

Conflict diagnosis identifies the primary conflict cause that must be addressed; effective conflict management then requires a context-sensitive mix and sequence of instruments capable of addressing both that dominant cause and the interacting conflict causes.

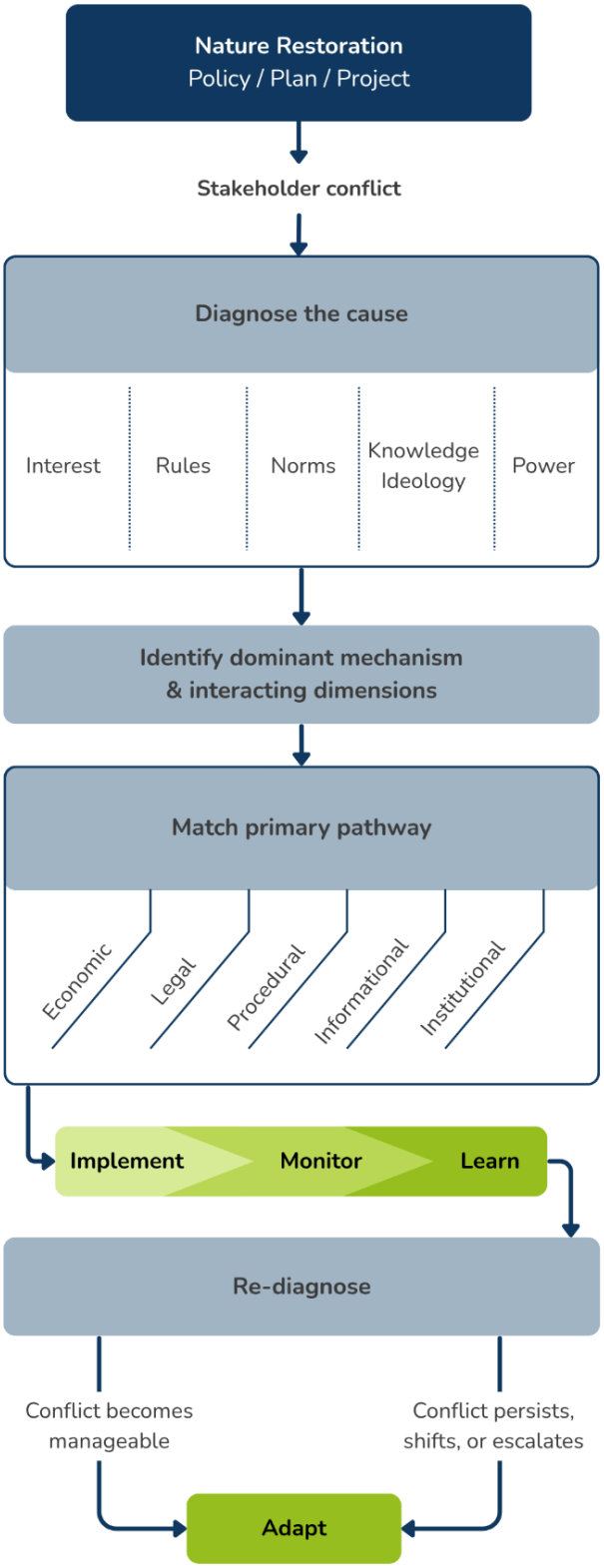


Figure 2. From conflict diagnosis to adaptive conflict management

Figure 2 emphasises two additions emerging from the cross-case analysis: conflict diagnosis should begin *before* opposition becomes entrenched, and re-diagnosis should continue during implementation because the dominant mechanism can change.

6.4. What can be learned from unsuccessful and unresolved conflict management?

The unresolved cases are particularly useful because they reveal why otherwise plausible interventions may fail. Five recurring failure mechanisms can be identified from the case portfolio.

First, conflict management fails when the intervention does not address the dominant cause. Providing additional information cannot solve a substantial uncompensated economic loss; compensation cannot reconcile contradictory legal requirements; and consultation alone cannot redistribute decision-making authority. This was already a theoretical proposition in Chapter 2, but the cases give it empirical substance.

Second, addressing one conflict type may expose rather than eliminate another. The Deba case is exemplary: legal clarification addressed the formal heritage-restoration contradiction, while local opposition linked to identity and interpretation persisted. Rules-based resolution should therefore not be mistaken for comprehensive social resolution.

Third, engagement can come too late. Several cases emphasise the value of informal interaction, stakeholder analysis and dialogue before formal plans become fixed. In the SUPERB forest cases, stakeholders explicitly recommended early interpersonal exchange and informal discussion before formal restoration planning. Once positions become publicly entrenched, participation may function mainly as conflict containment rather than collaborative problem solving.

Fourth, structural power asymmetries can undermine formally participatory processes. The offshore-wind and Estonian (Kikepera) cases show a polarised configuration in which powerful industry and governmental actors coexist with local sectors that possess considerably less visibility and influence. The Abbeyleix Bog case demonstrates an even more severe possibility: legal processes themselves can become instruments through which resource asymmetries affect participation. These cases indicate that procedural inclusion should not automatically be interpreted as effective influence.

Fifth, conflict can be displaced rather than resolved. The climate-adapted forest restoration case in North Rhine-Westphalia provides a particularly clear example. Failure to reach agreement led to abandonment of the restoration plan at the contested municipal site and selection of another site. The immediate project could therefore continue, but the underlying disagreement about climate-adapted restoration in Natura 2000 forests remained unresolved.

Sixth, different conflict types and resolution pathways operate at different temporal scales. While some conflict types may be addressed at relatively short timeframes (e.g., interest-based conflicts with compensation; rules-based conflicts with policy and legal changes), others may require long engagement, trust-building processes, mutual learning and socialization (e.g., knowledge-based conflicts; norms-based conflicts). This can rarely be achieved in the short-term funding cycles that tend to operate restoration projects.

These findings suggest that evaluations of conflict management should distinguish at least four questions: **Was the immediate implementation blockage removed? Was the underlying conflict cause changed? Were interacting conflict dimensions addressed? And was the conflict resolved, transformed, institutionalised or merely displaced?**

This distinction is particularly important for policy learning. A project that eventually proceeds should not automatically be classified as a successful conflict-management case, just as persistent disagreement does not necessarily indicate failure if institutions have established a legitimate and workable way of managing it.

6.5. Contribution to the state-of-the-art knowledge

The findings reinforce several conclusions already established in restoration and conservation scholarship. Existing literature stresses that restoration is a social-ecological process (Maniraho et al. 2023; Tedesco et al. 2023) and that social inclusion, equity, local preferences, knowledge and power influence outcomes (Cortina-Segarra et al. 2021; Löfqvist et al. 2023). The literature reviewed in Chapter 1 similarly argues for inclusion of social sciences throughout conservation planning rather than only after technical plans have been developed (Redpath et al. 2013; Bennett et al. 2017; O'Brien et al. 2025). Conservation-conflict research also recognises that conflict can arise from interests, values, trust, rights, history, institutions and power and that complete consensus is not necessarily achievable (Emborg et al. 2012; Redpath et al. 2013; Winkel et al. 2015; Deuffic et al. 2018; Sotirov et al. 2019; O'Brien et al. 2025; Erdozain et al. 2025; Sotirov and Swedlow 2026).

The present study adds to this literature by placing greater emphasis on **differentiated causal diagnosis**. Much restoration guidance identifies participation, collaboration, co-design and communication as broadly desirable practices (Emborg et al. 2012; Redpath et al. 2013; Winkel et al. 2015; Tedesco et al. 2023; Roitsch et al. 2024; O'Brien et al. 2025). These remain important, but the cross-case evidence indicates that they are not interchangeable with conflict management itself. Participation can improve legitimacy but cannot by itself remove an economic loss. Communication can improve understanding but cannot harmonise incompatible legislation. Scientific information can address factual uncertainty but may have little effect where actors disagree over fundamental values. Consultation can provide voice while leaving the distribution of authority unchanged. Still, participation, co-design and communication have an important role in identifying and discerning (potential) conflicts and finding solutions. This gap between broad recognition of the social dimensions of restoration and differentiated diagnosis was explicitly identified in the report's literature review (see Chapter 2).

The contribution of the theoretical and analytical framework of stakeholder conflict and conflict management in this report can therefore be represented as a causal chain:

stakeholder behaviour → underlying conflict type(s) → dominant conflict type and wider conflict configuration → conflict management pathway(s) → conflict management instrument mix and sequence → conflict management outcome.

This also explains why similar instruments produce different outcomes in different cases. The effectiveness of an instrument depends not simply on whether participation, compensation, information or regulation is present, but on whether the mechanism through which the instrument operates corresponds to the mechanism sustaining the conflict.

A further contribution is the emphasis on **dynamic diagnosis**. Conflict types can evolve. An initially material disagreement may generate perceptions of unfairness; a knowledge disagreement may become politicised; legal clarification may expose a deeper ideological disagreement; or prolonged exclusion may transform a procedural disagreement into a power conflict. Conflict analysis should

therefore be understood as an iterative governance function rather than a classification exercise performed once at the beginning of a project.

6.6. Implications for the EU Nature Restoration Regulation and National Restoration Plans

The cross-case findings have direct implications for implementation of the EU Nature Restoration Regulation. The Regulation considerably expands the spatial and sectoral reach of legally binding restoration and therefore increases the number and diversity of actors whose land uses, economic activities, rights, practices and policy responsibilities may interact with restoration objectives (Orliac et al. 2025; Sotirov et al. 2026). The report's introductory analysis already identifies coordination with agriculture, forestry, fisheries, water management, urban development, infrastructure, climate and energy as a major implementation requirement.

The central implication is that **societal-conflict anticipation and analysis should become an explicit component of** the design and implementation of **National Restoration Plans and restoration projects in the context of the EU's Nature Restoration Regulation rather than a corrective activity undertaken only after opposition appears.**

For proposed restoration measures, planning authorities should therefore assess not only ecological condition, restoration potential and financial requirements, but also:

- who is likely to bear material costs and who receives benefits;
- which EU, national, regional or sectoral rules may conflict;
- whether affected stakeholders consider procedures and outcomes legitimate;
- which competing values, knowledge claims and understandings of restoration are present; and
- how authority, resources and effective influence are distributed among the actors involved.

Such analysis would allow likely conflict configurations to be anticipated before measures are fixed. It would also help authorities distinguish problems requiring compensation from those requiring regulatory coordination, procedural reform, learning or institutional change.

A second implication concerns **policy coherence**. Rules-based conflicts are a recurring phenomenon, appearing both historically and repeatedly in the case portfolio: between environmental and heritage policy, between EU biodiversity obligations and national sectoral policy and legal frameworks, between environmental objectives and other sectoral mandates, and potentially between restoration and health governance. The Regulation cannot achieve its objectives solely by adding another layer of environmental rules if contradictory incentives and obligations remain intact elsewhere. National Restoration Plans therefore provide an opportunity to identify horizontal and vertical regulatory inconsistencies systematically and establish mechanisms for their resolution.

Third, the cases show that **stakeholder participation should be differentiated according to the conflict it is expected to address**. Consultation is valuable for obtaining information, discerning potential conflicts, identifying potential mediation and improving legitimacy, but it should not be used as a substitute for compensation, legal clarification or redistribution of authority. Where the relevant issue is power, meaningful participation may require co-design or shared decision-making rather than consultation. Where values and knowledge are contested, repeated deliberation, trusted intermediaries or joint learning may be more useful than one-off information provision.

Fourth, the implementation architecture needs to be **adaptive**. National Restoration Plans under the EU's Nature Restoration Regulation will operate over long time horizons during which ecological conditions, economic circumstances, governments, stakeholder coalitions, knowledge and policy frameworks will change. The cases show that conflict configurations can likewise change. Monitoring should therefore include socio-economic, policy, legal, cultural and governance indicators capable of identifying emerging conflict, declining legitimacy, non-compliance, litigation, withdrawal or other signs that an intervention needs to be reconsidered.

Finally, conflict should not automatically be interpreted as evidence that restoration objectives should be abandoned. Conflict can reveal hidden distributional effects, contradictory rules, excluded knowledge or unequal power. Properly diagnosed, it can provide useful information that improves policy design and policy implementation. The objective is therefore **conflict-sensitive restoration**, not conflict-free restoration.

6.7. Recommendations for policy and practice

The cross-case synthesis allows recommendations to be differentiated according to the role of different actors (Table 5).

Table 5. Recommendations by actor group

Actor group	Priority recommendations
EU institutions	• Maintain clear and stable restoration obligations; • Improve coherence between EU biodiversity/restoration policy and national agriculture, forestry, fisheries, energy infrastructure (including renewable energy) and other sectoral policies; • Improve coherence between EU biodiversity/restoration and EU agricultural, climate, energy, industry, and trade policies; • Ensure EU financing supports national restoration implementation, and remove biodiversity-harmful EU funding; • Facilitate exchange of conflict-management experience among Member States, ideally supported by social science research expertise; • Monitor the implementation of National Restoration Plans in particular, and the theory of change of EU Nature Restoration Regulation across EU from a societal conflict and conflict management perspective, and link it to an improved ecological monitoring.
National and regional authorities / NRP planners	• Include conflict diagnosis and conflict anticipation in restoration planning; • Map costs and benefits, rules, values, knowledge and power; • Identify regulatory incoherence early;

Actor group	Priority recommendations
	• Improve coherence of national agriculture, forestry, fisheries, energy and other sectoral policies with EU biodiversity/restoration policy; • Ensure national financing supports restoration objectives implementation, and remove biodiversity-harmful funding; • Facilitate exchange of conflict-management experience among Member States and between restoration projects, ideally supported by social science research expertise; • Select instrument mixes appropriate to diagnosed conflicts; • Monitor both societal and ecological implementation.
Landowners, farmers, foresters, fishers and businesses	• Engage early and pro-actively in nature restoration planning; • Articulate material, regulatory and practical constraints explicitly; • Avoid ideological confrontation, and be honest about the diversity of land-owners and land-users, and what society values and needs, and what land-users can provide; • Participate in co-design where available; • Explore contractual, incentive-based, rules-based and collective solutions rather than treating restoration only as regulatory restriction. • Act as knowledge brokers or conveners, ideally with NGOs/CSOs and social scientists where appropriate
Environmental NGOs and CSOs	• Combine ecological advocacy with attention to societal conflict management incl. livelihoods, recognition and procedural justice; • Support underrepresented actors; • Avoid ideological confrontation, and be honest about what society needs and what land and maritime users can provide • Distinguish factual disagreement from value or distributional conflict. • Act as knowledge brokers or conveners, ideally with land-users and social scientists where appropriate;
Restoration project managers	• Undertake stakeholder and (potential) conflict analysis before technical plans become fixed; • Create repeated rather than one-off engagement; • Use neutral mediation and social science research where needed; • Monitor changes in conflict configuration;

Actor group	Priority recommendations
	• Treat adaptation of project design as a possible success rather than necessarily a concession.
Environmental and social scientists	• Work jointly with stakeholders from project design onwards; • Distinguish evidence disputes from value, interest, rules, norm and power conflicts; • Evaluate conflict-management interventions and not only ecological outcomes; • Communicate uncertainty transparently; • Provide independent knowledge and mediation where conflicts become polarised.
Courts and administrative/legal institutions	• Develop capacity to address complex restoration disputes, incl. using stakeholder- conflict management analysis and social science research, not just ecological science; • Clarify competing legal obligations; • Provide predictable legal interpretation and case-law of restoration requirements while recognising that legal decisions may need complementary social, economic and policy measures.

Four principles cut across these actor-specific recommendations.

Diagnose before prescribing. The visible subject of disagreement should not be assumed to reveal its cause.

Use smart mixes rather than universal instruments. Participation is not a universal substitute for economic, legal or institutional action, just as regulation cannot by itself produce legitimacy or learning.

Monitor and re-diagnose. Conflict management is a continuing component of restoration governance, particularly where measures extend over decades.

Apply a stakeholder-based analysis: Anticipate and manage stakeholder conflicts through application of social science informed stakeholder analysis and participatory co-design.

6.8. Research needs and concluding reflections

Several research needs follow directly from both the findings and the methodological limitations of this study. First, a larger and more systematically constructed **comparative evidence base** - potentially as a *stakeholder conflict management observatory for nature restoration* - would be needed to assess the prevalence of different conflict cause types across ecosystems, countries and governance systems. The present purposive portfolio supports cause type-oriented comparison but not statistical generalization, or limited N case-sensitive deeper assessment.

Second, more **longitudinal research** is required. Many cases capture conflict at one stage of an evolving process, while the analytical framework predicts that dominant mechanisms can change. Following restoration conflicts over time would allow stronger analysis of how interest conflicts become

normative or political, how trust develops or deteriorates, and how particular sequences of interventions affect outcomes.

Third, conflict-management instruments themselves require more **systematic evaluation**. Many case studies document stakeholder recommendations or management processes but cannot establish whether a particular intervention caused the observed outcome. Comparative evaluation of compensation schemes, mediation, co-design, legal clarification, joint fact-finding and co-governance arrangements would strengthen the evidence base for choosing among them.

Fourth, future work should integrate **social and ecological effectiveness**. This report deliberately evaluates stakeholder conflict and conflict-management processes rather than ecological restoration outcomes. A socially accepted compromise is not necessarily ecologically effective, while an ecologically successful intervention can remain socially contested. The most important future question is therefore not simply whether conflict was reduced, but whether particular governance arrangements can produce outcomes that are simultaneously ecologically effective, socially legitimate and institutionally durable. An EU-wide framework for monitoring the socio-ecological theory of change of the EU Nature Restoration Regulation could be jointly advanced by involving policy, legal, economic, cultural and ecological scientists.

Finally, **further attention is required to power**. Power appears both as a distinct conflict mechanism and as a condition shaping the management of other conflicts. It determines who can access courts, participate effectively, mobilise expertise, absorb delays, influence policy and define which forms of knowledge are legitimate. More explicit analysis of these mechanisms would strengthen both restoration research and practice.

Conclusion

The central conclusion of this report is straightforward but consequential: **nature restoration is simultaneously an ecological intervention and a process of societal choice and governance**. Societal conflicts are therefore not anomalies that appear when otherwise sound restoration plans encounter difficult stakeholders. They emerge because restoration redistributes costs and benefits, changes rules, challenges established norms, mobilises competing understandings of nature and alters - or reproduces - relationships of authority and power.

The cases show that these **different causes matter for stakeholder conflict management**. Interest-based conflicts require attention to material incentives and distribution. Rules-based conflicts require legal clarity, policy coherence and sometimes authoritative enforcement. Norms-based conflicts require recognition, fair procedures and legitimacy. Ideological and knowledge-based conflicts require dialogue, learning and engagement with competing interpretations rather than simply additional information. Power-based conflicts require attention to who actually controls resources and decisions. Yet these pathways are rarely sufficient in isolation. Real restoration conflicts combine conflict causes and evolve over time, making **smart conflict management instrument mixes, sequencing, monitoring and re-diagnosis** essential.

This finding also changes the meaning of stakeholder participation. Participation remains fundamental, but it is not itself a complete theory or practice of effective conflict management. Its role depends on the conflict being addressed. Sometimes stakeholders need a voice; sometimes they need compensation; sometimes contradictory laws must be changed; sometimes actors need to learn together; and sometimes meaningful participation requires redistribution of actual decision-making authority. Co-design of potential solutions with restoration project managers and involved stakeholders can be a way to resolve conflicts.

For implementation of the EU Nature Restoration Regulation, the implication is that conflict anticipation and conflict analysis should become part of the core infrastructure of National Restoration Plans . Member States will need not only ecological maps, targets, indicators and measures, but also stakeholder mapping with an understanding of the societal configurations through which those measures must be implemented. Anticipating who may lose or benefit, where rules collide, which forms of restoration lack legitimacy, where knowledge is contested and where power is uneven can make conflict manageable before it becomes an implementation crisis.

Historical experience provides a final caution and opportunity. European restoration has repeatedly been shaped by societal conflict, from competing land uses and property rights to policy incoherence, changing cultural norms, ideological contestation and shifts between centralised and decentralised governance. The contemporary restoration agenda does not escape this history; it operates on a larger scale within it. The success of the new European restoration era will therefore depend not only on knowing **what ecosystems need**, but also on developing the institutional capacity to understand **why people disagree, which mechanisms sustain that disagreement, and what combination of governance instruments can increase stakeholder agreement and make ecological recovery socially and politically durable**.

References

Chapter 1

Ballari, S. A., Roulier, C., Nielsen, E. A., Pizarro, J. C., & Anderson, C. B. (2020). A review of ecological restoration research in the Global South and North to promote knowledge dialogue. *Conservation and Society, 18*(3), 298–310.

Bennett, N. J., Roth, R., Klain, S. C., Chan, K. M. A., Clark, D. A., Cullman, G., et al. (2017). Mainstreaming the social sciences in conservation. *Conservation Biology, 31*(1), 56–66.

Orliac, J., Prévost, T., Jullio, C. (2025). *Dialogue on National Restoration Plans and knowledge gaps encountered drafting it*. Biodiversa+ European Biodiversity Partnership: Paris. https://www.biodiversa.eu/wp-content/uploads/2025/10/Biodiversa_D4.12_Dialogue-National-Restoration-Plans.pdf

Castillo, J. A., Smith-Ramírez, C., & Claramunt, V. (2021). Differences in stakeholder perceptions about native forest: Implications for developing a restoration program. *Restoration Ecology*, *29*(1), e13293. doi: 10.1111/rec.13293

Cortina-Segarra, J., García-Sánchez, I., Grace, M., Andrés, P., Baker, S., Bullock, C., et al. (2021). Barriers to ecological restoration in Europe: Expert perspectives. *Restoration Ecology*. *29*(4), e13346. doi: 10.1111/rec.13346

Erdozain, M., Alberdi, I., Aszalós, R., Bollmann, K., Detsis, V., Diaci, J., Đodan, M., Efthimiou, G., Gálhidy, L., Haase, M., Hoffmann, J., Jaymond, D., Johann, E., Jørgensen, H., Krumm, F., Kuuluvainen, T., Lachat, T., Lapin, K., Lindner, M., Madsen, P., Nichiforel, L., Pach, M., Paillet, Y., Palaghianu, C., Palau, J., Pemán, J., Perić, S., Raum, S., Schüler, S., Skrzyszewski, J., Svensson, J., Teeuwen, S., Vacchiano, G., Vandekerkhove, K., Cañellas, I., Menéndez-Miguélez, M., Werden, L.K., Fleckenstein, S., Sotirov, M., Kazungu, M., Hunziker, M., De Keersmaeker, L., Àvila Callau, A., de-Miguel, S. (2026). The role of social, policy and economic forces in shaping forest restoration practices in Europe. *Land Use Policy* 161, 2026, 107876, ISSN 0264-8377, https://doi.org/10.1016/j.landusepol.2025.107876

Erdozain, M., Madrid, V., Àvila Callau, A., Alberdi, I., Cañellas, I., Navarro-Cerrillo, R. M., Palacios-Rodríguez, G., Palau, J., de-Miguel, S. (2026). Forest restoration: One concept, multiple interpretations. *Forest Policy and Economics*, Volume 190, 2026, 103869, https://doi.org/10.1016/j.forpol.2026.103869

Gann, G.D., McDonald, T., Walder, B., Aronson, J., Nelson, C.R., Hallett, J.G., Guariguata, M.R., Gonzales, E.K., Hua, F., Echeverría, C., Eisenberg, C., Liu, J., Decleer, K., Barr, Z.E., Bartholomew, D.C., Best, M., Chazdon, R., Cliquet, A., Cortina-Segarra, J., Kalirai, H., MacCallum, K., Mosyaftiani, A., Pedrini, S., Young, R. and Dixon, K.W. (2026). International principles and standards for the practice of ecological restoration. Third edition. *Restoration Ecology*, 34: e70441. https://doi.org/10.1111/rec.70441

Hobbs, R. J., Higgs, E., & Harris, J. A. (2009). Novel ecosystems: Implications for conservation and restoration. *Trends in Ecology & Evolution, 24*(11), 599–605

Kerr, M. R., Svenning, J.-C., Riede, F., Buitenwerf, R., Abraham, A. J., Marjakangas, E.-L., et al. (2026). The making of novel ecosystems: A process-based framework for measurement, analysis and application. *Methods in Ecology and Evolution, 17*, 683–704.

Löfqvist, S., Kleinschroth, F., Bey, A., de Bremond, A., DeFries, R., Dong, J., et al. (2023). How social considerations improve the equity and effectiveness of ecosystem restoration. *BioScience, 73*(2), 134–148.

Maniraho, L., Frietsch, M., Sieber, S., & Löhr, K. (2023). A framework for drivers fostering social-ecological restoration within forest landscape based on people's participation: A systematic literature review. *Discover Sustainability, 4*, 26.

Peng, J., Xu, D., Xu, Z., Tang, H., Jiang, H., Dong, J., Liu, Y. (2024). Ten key issues for ecological restoration of territorial space. *National Science Review*, *11*(7), July 2024, nwae176, https://doi.org/10.1093/nsr/nwae176

Shen, Z., Tian, Y., Yao, Y., Jiang, W., Dong, J., Huang, X., et al. (2023). Ecological restoration research progress and prospects: A bibliometric analysis. *Ecological Indicators, 155*, 110968.

Sotirov, M., Cambria, V. E., Guimarães, L., et al. (2026). *Safeguarding Europe's Biodiversity Legislation: Scientific Evidence in Support of the EU Birds and Habitats Directives under the 2026 Stress Test*. White Paper. Biodiversa+ European Biodiversity Partnership: Paris. https://www.biodiversa.eu/wp-content/uploads/2026/06/White-paper-Safeguarding-Europe-Biodiversity-Legislation.pdf

Tedesco, A. M., López-Cubillos, S., Chazdon, R., Rhodes, J. R., Archibald, C. L., Pérez-Hämmerle, K.-V., et al. (2023). Beyond ecology: Ecosystem restoration as a process for social-ecological transformation. *Trends in Ecology & Evolution*, *38*(7), 643-653. https://doi.org/10.1016/j.tree.2023.02.007

Chapter 2

Bartos, O., J., & Wehr, P. (2012). *Using Conflict Theory*. Cambridge University Press. ISBN: 9780511613692 DOI: https://doi.org/10.1017/CBO9780511613692

Bernstein, S., & Cashore, B. (2012). Complex global governance and domestic policies: four pathways of influence. *International Affairs, 88*(3), 585–604.

Deuffic, P., Sotirov, M., & Arts, B. (2018). "Your policy, my rationale": How individual and structural drivers influence European forest owners' decisions. *Land Use Policy, 79,* 1024–1038. https://doi.org/10.1016/j.landusepol.2018.08.013

Emborg, J., Walker, G., & Daniels, S. (2012). Forest landscape restoration decision-making and conflict management: Applying discourse-based approaches. In J. Stanturf et al. (eds.), *Forest Landscape Restoration: Integrating Natural and Social Sciences*. Springer.

Kalberg, S. (1980). Max Weber's types of rationality: Cornerstones for the analysis of rationalization processes in history. *American Journal of Sociology, 85*(5), 1145–1179.

O'Brien, L., Konczal, A., Begemann, A., Lovric, M., Lovric, N., Fleckenstein, S., & Winkel, G. (2025). Forest restoration paradigms and conflicts in Europe. *International Forestry Review*, *27*(1).

Redpath, S. M., Young, J., Evely, A., Adams, W. M., Sutherland, W. J., Whitehouse, A., et al. (2013). Understanding and managing conservation conflicts. *Trends in Ecology & Evolution, 28*(2), 100–109.

Sotirov, M., Sallnäs, O., & Eriksson, L. O. (2019). Forest owner behavioral models, policy changes, and forest management: An agent-based framework for studying the provision of forest ecosystem goods and services at the landscape level. *Forest Policy and Economics, 103*, 79–89.

Sotirov, M., & B. Swedlow (2026). Using Cultural Theory to Specify the Policy Actors, Belief Systems, and Sources of Coalition, Conflict, Stability, and Change in Policy Advocacy Coalitions and Environmental Resource Policies." *Policy Studies Journal* 54 (2): e70068. https://doi.org/10.1111/psj.70068

Wehr, P. (1979). *Conflict Regulation* (1st ed.). Boulder, CO: Westview Press.

Winkel, G., Blondet, M., Borrass, L., Frei, T., Geitzenauer, M., Gruppe, A., Jump, A., de Koning, J., Sotirov, M., Weiss, G., Winter, S., & Turnhout, E. (2015). The implementation of Natura 2000 in forests: A trans- and interdisciplinary assessment of challenges and choices. *Environmental Science & Policy, 52,* 23–32. https://doi.org/10.1016/j.envsci.2015.04.018

Chapter 3

No references

Chapter 4

Ballesteros-Pelegrín, G. A., García-Marín, R., Ibarra-Marinas, D., Sánchez-Balibrea, J., Belmonte-Serrato, F., Zamora-López, A., ... & Martínez-Arnal, N. (2022). *Actions for the conservation and restoration of the dunes and wetlands in the Salinas of San Pedro del Pinatar*: LIFE-Salinas project (Murcia, southeast of Spain). Eng, 3(4), 387-399.

Barbier R, Fernando C, Georges JY, Heitz C (2026). Restoring biodiversity in the face of socio-ecological challenges: the case of the reintroduction of the European pond turtle in Alsace. *Développement Durable et Territoires* (accepted, in press).

Beland Lindahl, K., Nilsson, J., Basilicata, A., Sandström, A., Sotirov, M., Pecurul-Botinez, & M., Hajtmarova, S. (2026). To change course or maintain status quo? How and why EU member states respond differently to new EU forest-related policy. *Environmental Policy and Governance* (forthcoming).

Cadete, D., Pinto, S., Ferreira, E., Carvalho, J., Caroliny, A., Severino,P., Echegaray, J., Lino, A., Aliácar, S. 2024. Wolf activity monitoring and feeding ecology analysis post implementation of conservation actions. (p. 130 + Appendixes + Annex) [Technical Report of Action D1, LIFE17 NAT/PT/554 – WolFlux]. ZL Zoo Logical – Associaçãode Inovação para o Conhecimento, Divulgação e Conservação da Fauna.

Cambria, V.E., La Montagna, D., Beccaccioli, M., Cuccaro, V. C., De Filippi, F. M., Fabrini, G., ... & Attorre, F. (2025). Project LIFE PRIMED: Integrating interdisciplinary and ecosystem-based approaches in restoring endangered Mediterranean coastal forests and freshwater ecosystems. *Journal of Coastal Conservation*, 29(4), 33. https://doi.org/10.1007/s11852-025-01116-y

Campoverde MS, Bellou N, Julien E, Oliveira I, Pedro S, Pereira J, Almeida PR, Mateus CS, Boavida-Portugal J. 2026. Labeling for Sustainability: Evaluating a Label-of-Origin Scheme in Diadromous Small-Scale Fisheries in Portugal. *Fisheries Management and Ecology* doi: https://doi.org/10.1111/fme.70093

Dam Removal Europe. LIFE Águeda project, River Vouga basin, Portugal. Multiple barrier removals restore longitudinal connectivity of Águeda and Alfusqueiro rivers. https://damremoval.eu/portfolio/aguedavouga-portugal/

Dahlén, M., & Enkvist, V. (2024). Rights of Nature meets the Swedish Constitution. *Nordisk Miljörättslig Tidskrift* (*Nordic Environmental Law Journal*) 2024; https://nordiskmiljoratt.se/onewebmedia/NMT2024spec_inlaga_publicering.pdf

Diaz MG, Carreira Dos Santos L. (2026). Quarry mining or nature conservation, emerging conflicts in Serra de Aire e Candeeiros Natural Park (Portugal). *Open Res Eur.* 2026 Apr 16; 5:348. doi: 10.12688/openreseurope.19589.2

Duthie, A., Bunnefeld, N., Fell, A., Jagadesh, S. (2025). *D1.2 Policy Review: Systematic Review of International and National Restoration Policies*. Deliverable of the RESTOREID project (Project No. 101134969). University of Stirling (Lead). Submitted 30 June 2025.

European Union, Directorate-General for Environment. 2024. Ocean Alive: Reforesting the sea: conservation and restoration of "blue forests" in the Sado Estuary, Portugal. Factsheet. https://environment.ec.europa.eu/news/reforesting-sea-conservation-and-restoration-blue-forests-sado-estuary-portugal-2024-01-31_en

Fernandez, F. and Crowley, W. 2020. Abbeyleix Bog 2020 ecotope survey report. Abbeyleix Bog Project/Ecology and Environmental Consultants Ireland Ltd.

Fleckenstein, S., Schaub, S., & Sotirov, M. (2025). Forests in the spotlight: Discourse coalitions and storylines shaping the EU Nature Restoration Regulation. *Politics and Governance, 13,* Article 10184. https://doi.org/10.17645/pag.10184

Fundación Biodiversidad / MITECO. (2025). El Mar Menor, reconocido por Naciones Unidas como Iniciativa Emblemática de Restauración de Ecosistemas. https://fundacion-biodiversidad.es/notas_de_prensa_mite/el-mar-menor-reconocido-por-naciones-unidas-como-iniciativa-emblematica-de-restauracion-de-ecosistemas/

Garcia L, Vila-Subirós J, Lloret J, Sardá R, & Wawrzynkowski R. (2026). Stakeholder mapping and early detection of tensions in offshore wind development: A press analysis in the Gulf of Roses and Cap de Creus (NW Mediterranean). *Marine Policy* 185. https://doi.org/10.1016/j.marpol.2025.106978

Gorris P., Bodin Ö., Giralt D., Hass A.L., Reitalu T., Cabodevilla X., Hannappel I., Helm A., Prangel E. & Westphal C. (2025a). Social-ecological perspective on European semi-natural grassland conservation and restoration: Key challenges and future pathways., *Biological Conservation*, 304, 111038. https://doi.org/10.1016/j.biocon.2025.111038

Gorris, P., Bodin, Ö., Hannappel, I., Westphal, C., Hass, A. L. (2025). Of Unsung Heroes in Biodiversity Conservation and Restoration: A Typology of Pastoralists based on Drivers of Engagement and Social Capital (November 20, 2025). Available at SSRN: http://dx.doi.org/10.2139/ssrn.5886742

Hueso-Kortekaas, K. (2025). Restauración ecológica de salinas: Análisis del estado del arte en Europa y el Mediterráneo. WWF-España / Fundación ANSE, Madrid, Spain, 85 pp.

Ibarra-Marinas, D., Belmonte-Serrato, F., García-Marín, R., & Ballesteros-Pelegrín, G. (2021). Analysis of Replicability of Conservation Actions across Mediterranean Europe. *Land*, 10(6), 598.

Ibrahim, A., Gray, R., Marshall, K., Blackstock, K., Rodríguez-González, P.M., Birk, S., Ojanen, M., Trandziuk, P., Stelmaszczyk, M., Penning, E., Schwerk, A., Colls, M., Elosegi, A., Rudziński, J., Siuta, M., Lubowiecka, K., Kempter, I., Kaufmann, A., Drexler, S.-S., Kajner, P., Gruber, T., Lourenço, F., Henriques, V., Neary, C., Lawrie, E. (2025). *Just transformations – embedding stakeholder engagement in mainstreaming nature-based solutions within freshwater ecosystems*. EU H2020 research and innovation project MERLIN Deliverable D4.9, 49 pp. https://doi.org/10.5281/zenodo.17105029

Index on Censorship. 2025. Ireland's Defamation (Amendment) Bill fails to protect public interest speech: More than 30 organisations call on the Seanad to take action over anti-SLAPP measures, calling it a missed opportunity to protect freedom of expression. https://www.indexoncensorship.org/2025/07/irelands-defamation-amendment-bill-fails-to-protect-public-interest-speech/

Jefatura del Estado. (2022). Ley 19/2022, de 30 de septiembre, para el reconocimiento de personalidad jurídica a la laguna del Mar Menor y su cuenca. Boletín Oficial del Estado. https://www.boe.es/buscar/act.php?id=BOE-A-2022-16019

Jordão, P., 2025. Adaptive ecosystems or victims of climate change? An analysis of conflicts around climate-adapted forest restoration in North Rhine-Westphalia's Natura 2000 sites. MSc Thesis. The University of Edinburg, Edinburg.

Jordão, P. & O'Brien, L. 2025. Climate-adapted forest restoration in Natura 2000 areas - Stakeholder perceptions and conflicts in North Rhine-Westphalia, Germany. European Forest Institute, Bonn, Germany. Pp 24.

Kirkpatrick, L, Jagadesh, S. (2025). *D6.6 Policy Brief 1: Policy Recommendations Collecting Evidence from RESTOREID*. Deliverable of the RESTOREID project (Project No. 101134969). University of Antwerp (Lead). Submitted 23 December 2025.

Klebl, F., Parisi, A., Häfner, K., Adler, A., Barreiro, S., Bodea, F. V., Brönnimann, V., Reinier de Vries, J. P., Dos Santos, A., Hood, A. S. C., Melts, I., Popa, R., Vajna, F., Velado-Alonso, E., & Kernecker, M. L. (2024). How values and perceptions shape farmers' biodiversity management: Insights from ten European countries. *Biological Conservation*, 291, 110496. https://doi.org/10.1016/j.biocon.2024.110496

Kuhn IM, Quintard B, Theissinger K, Georges JY (2025). Trophic interactions between the European pond turtle (*Emys orbicularis*) and invasive non-native species. *Neobiota* 100: 281-303. https://doi.org/10.3897/neobiota.100.147371

Life Águeda project. Conservation and management actions for migratory fish in the Vouga River Basin, Deliverable - Action C2: Assessment of project's socioeconomic impacts, 24 pp. https://www.life-agueda.uevora.pt/uploads/6c45bcf4834c9761f9d508297ad2dfb0.pdf

LIFE Águeda Website. Conservation and Management Actions for Migratory Fish in the Vouga River Basin (LIFE16 ENV/PT/000411). https://www.life-agueda.uevora.pt/en/

LIFE GRACE Project. (2025). LIFE GRACE Layman's Report: GRAsslands Conservation Efforts through usage. European Commission / Comunità Ambiente. https://lifegrace.eu/en/the-meat-supply-chain/news-and-events/354-life-grace-is-coming-to-an-end-the-layman-s-report-summarizes-the-project-s-experience-and-results

LIFE WolFlux Project on LIFE Public Database: Decreasing socio-ecological barriers to connectivity for wolves south of the Douro river. Reference: LIFE17 NAT/PT/000554 | https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE17-NAT-PT-000554/decreasing-socio-ecological-barriers-to-connectivity-for-wolves-south-of-the-douro-river

Lloret J, Turiel A, Solé J, Berdalet E, Sabatés A, Olivares A, Gili JM, Vila-Subirós J, Sardá R. (2022). Unravelling the ecological impacts of large-scale offshore wind farms in the Mediterranean Sea. Sci Total Environ. 824:153803. doi: 10.1016/j.scitotenv.2022.153803

Meyer A, Grac C, Labat F, Meka J, van der Zon KAE, Theissinger K, Georges JY (2025). Testing the optimal foraging theory in a generalist feeder: the case of reintroduced European pond turtles and its impact on macroinvertebrates communities. *Ecology and Evolution* 2025, 15: e71823. https://doi.org/10.1002/ece3.71823

Ministerio para la Transición Ecológica y el Reto Demográfico. (2026). Marco de Actuaciones Prioritarias para recuperar el Mar Menor. https://miteco-map.gob.es/marmenor

Ministerio para la Transición Ecológica y el Reto Demográfico. (2026). El MITECO inicia las obras de restauración dunar en seis áreas del norte de La Manga del Mar Menor. https://www.miteco.gob.es/es/prensa/ultimas-noticias/2026/febrero/el-miteco-inicia-las-obras-de-restauracion-dunar-en-seis-areas-d.html

National Institute of Nature and Forests Conservation, https://www.icnf.pt/conservacao/rnapareasprotegidas/parquesnaturais/pnserrasdeaireecandeeiros

O'Brien L, Konczal A, Begemann A, Lovrić M, Lovrić N, Fleckenstein S, & Winkel G. (2025a). Forest restoration paradigms and conflicts in Europe. *International Forestry Review*, *27*(1), pp.8-26.

O'Brien L, Blaauw S, Haase M, Jordão P, Granberg Å, Hunziker M, Kazungu M, Svensson J. (2025b). Deliverable 5.2. *Restoration governance challenges and solutions report*. Horizon 2020 Project No. 101036849, European Commission, 16 pp.

Ocean Alive. Keepers of the Sea: women of the fishing community who protect the seagrass meadows. https://www.ocean-alive.org/en/keepers-of-the-sea

Philippot, V. & Georges, JY. (2023). Reintroducing a forgotten species in an area neglected by the public: the case of the European Pond Turtle in Alsace (Northeastern France). *Natures Sciences Sociétés* 31(1): 18-30. htpps://doi.org/10.1051/nss/2023018 (in French)

Pedro, S., Alexandre, C. M., Mateus, C. S., Quintella, B. R., Lança, M. J., Belo, A. F., Pereira, E., Rato, A. S., Oliveira, I., Silva, S., & Almeida, P. R. (2022). LIFE Agueda—Gaining Habitat for Migratory Fish in the Vouga River Basin. Biology and Life Sciences Forum, 13(1), 118. https://doi.org/10.3390/blsf2022013118

Prangel, E., Kasari-Toussaint, L., Neuenkamp, L., Noreika, N., Karise, R., Marja, R., ... & Helm, A. (2023). Afforestation and abandonment of semi-natural grasslands lead to biodiversity loss and a decline in ecosystem services and functions. *Journal of Applied Ecology*, 60(5), 825-836. https://doi.org/10.1111/1365-2664.14375

Renou-Wilson, F., Wilson, D., & Flood, K. (2025). *Peat Hub Ireland*. EPA Report; Environmental Protection Agency, Johnstown Castle, Co.: Wexford, Ireland.

Rewilding Portugal. 2020. LIFE WolFlux - Improving connectivity South of the Douro River. https://rewilding-portugal.com/life-wolflux/

REWILDINg EUROPE. 2020. Living with wolves: new Rewilding Portugal study gives cause for optimism. https://rewildingeurope.com/news/living-with-wolves-new-rewilding-portugal-study-gives-cause-for-optimism/

Robledano, F. (1995) Bases para la conservación de humedales en el área del Mar Menor (Murcia, Sureste de España): Criterios para la Regeneración y Restauración. In: Montes, C. Oliver, G., Molina, F., Cobos, J. (Coords.) Bases ecológicas para la restauración de humedales en la cuenca mediterránea. Consejería de Medio Ambiente, Junta de Andalucía, Sevilla, Spain, pp. 251-263.

Sánchez-Balibrea, J. M. & Martínez-Arnal, N. (Coord.) (2022). Custodia del territorio en explotaciones salineras. Asociación de Naturalistas del Sureste, Murcia, Spain. 108 pp.

Scheper, J., Badenhausser, I., Kantelhardt, J., Kirchweger, S., Bartomeus, I., Bretagnolle, V., Clough, Y., Gross, N., Raemakers, I., Vilà, M., Zaragoza-Trello, C., & Kleijn, D. (2023). Biodiversity and pollination benefits trade off against profit in an intensive farming system. *Proceedings of the National Academy of Sciences*, 120(28), e2212124120. https://doi.org/10.1073/pnas.2212124120

Schraepen, P., De Rynck, F., & Voets, J. (2019). The impact of collaborative networks on city-regional governance in Flanders: an assessment of spatial programs in the urban region of Ghent. *EGPA Conference 2019*. European Group for Public Administration (EGPA), 2019.

Shaw, J., & Kemp. R. (2026). *Analysis: The new SLAPP Bill – real legislative teeth or just a SLAPP on the wrist?* Irish Legal News website:

https://www.irishlegal.com/articles/analysis-the-new-slapp-bill-real-legislative-teeth-or-just-a-slapp-on-the-wrist

Smith, G.F. and Crowley, W. (2019) *Abbeyleix Bog Ecological Surveys of Cutover*. Report prepared for the Abbeyleix Bog Project.

Sotirov, M., Fleckenstein, S., Cordova, D. (2025). Policy maps of national forest biodiversity conservation and restoration related policy and implementation in Europe. BIOCONSENT project deliverable. *Zenodo*. https://doi.org/10.5281/zenodo.14949521

Sotirov, M., Winkel, G., Eckerberg, K. (2021). The coalitional politics of the European Union's environmental forest policy: biodiversity conservation, timber legality, and climate protection. *AMBIO: Journal of Environment and Society, 50*(12), 2153–2167. https://doi.org/10.1007/s13280-021-01604-7

Sotirov, M., Cambria, V. E., Guimarães, L., et al. (2026). *Safeguarding Europe's Biodiversity Legislation: Scientific Evidence in Support of the EU Birds and Habitats Directives under the 2026 Stress Test*. White Paper. Biodiversa+ European Biodiversity Partnership: Paris. https://www.biodiversa.eu/wp-content/uploads/2026/06/White-paper-Safeguarding-Europe-Biodiversity-Legislation.pdf

Sotirov, Metodi, Nilsson, Jens, Beland Lindahl, Karin, Pecurul, Mireia, Niedzialkowski, Krzysztof, Uhan, Zala, Aquilue, Nuria, Nabau, J., Roux, Jeanne-Lazya, Mielewczyk, Marcin, Basilicata, Antonio, Pezdevšek Malovrh, Špela (2026). How policy addressees intend to respond to EU policy change? A cross-country survey analysis of forest owner behavioral types and responses to EU biodiversity and climate objectives. *Land Use Policy* (accepted, in press).

Svensson, J. (2025). Written personal communication (email dated 15.09.2025).

Svensson J., Jonsson, B.G. (2025). New opportunities for sustainable forestry. NR 1 2025 | ÅRG 30 (sida 1). https://biodiverse.se/artikel/new-opportunities-for-sustainable-forestry/

Svensson, J., Jonsson, B.G. & Ebenhard, T. (2025). The EU Nature Restoration Regulation offers new opportunities for resilient forests and sustainable forestry. *Ambio*. https://doi.org/10.1007/s13280-025-02309-3

UN Decade on Ecosystem Restoration. (2025). Spain's Mar Menor lagoon already has legal rights. It is now recognized as a UN World Restoration Flagship. https://www.decadeonrestoration.org/spains-mar-menor-lagoon-already-has-legal-rights-it-now-recognized-un-world-restoration-flagship

URBACT. River restoration project. Life Águeda, Promoting the ecological rehabilitation of the river area. https://urbact.eu/good-practices/river-restoration-project

Urban Nature Atlas. Ocean Alive: seagrass meadow in Cambalhão Bay. Naturescapes project (Understand, Imagine, Transform). https://una.city/nbs/lisboa-fua/ocean-alive-seagrass-meadow-cambalhao-bay

Uys, C. 2023. Briefing document for WaterLANDS project.

Van Gossum, Peter et al. (2009). New environmental policy instruments to realize forest expansion in Flanders (northern Belgium): A base for smart regulation? *Land Use Policy* 26.4, 935-946.

Van Herzele, A., (2006). A forest for each city and town: story lines in the policy debate for urban forests in Flanders. *Urban Studies* 43.3 (2006): 673-696.

Van Herzele, A. (2014). A genealogy of urban forest discourse in Flanders. *Urban Forests, Trees, and Greenspace*. Routledge, 47-60.

Van Herzele, A., Collins, K., & Tyrväinen, L. (2005). *Involving people in urban forestry - A discussion of participatory practices throughout Europe*. Urban forests and trees: A reference book. Berlin, Heidelberg: Springer Berlin Heidelberg, 207-228.

van der Zon KAE, Grac C, Theissinger K, Paidere J, Brakovska A, Pupiņš M, Škute A, Razafindralay L, Georges JY, Combroux I. (2025). Environmental and spatial processes structuring macrophyte metacommunities in restored pondscapes. *Ecological Engineering* 222 (2026) 107789. https://doi.org/10.1016/j.ecoleng.2025.107789

Velado-Alonso, E., Kleijn, D., & Bartomeus, I. (2024). Reassessing science communication for effective farmland biodiversity conservation. *Trends in Ecology & Evolution*, 39(6), 537–547. https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347(24)00032-6

Chapter 5

Angelova, E., Irimie, D., Sotirov, M., & Winkel, G. (2009). Bulgarien und Rumänien in der Europäischen Union: Forstpolitische Herausforderungen [Bulgaria and Romania in the European Union: Challenges for forest policy]. *Swiss Forestry Journal, 160*(1), 15–22. file:///C:/Users/Metodi%20Sotirov/Downloads/szf_toc_2009.pdf

Erdozain, M., Alberdi, I., Aszalós, R., Bollmann, K., Detsis, V., Diaci, J., Đodan, M., Efthimiou, G., Gálhidy, L., Haase, M., Hoffmann, J., Jaymond, D., Johann, E., Jørgensen, H., Krumm, F., Kuuluvainen, T., Lachat, T., Lapin, K., Lindner, M., Madsen, P., Nichiforel, L., Pach, M., Paillet, Y., Palaghianu, C., Palau, J., Pemán, J., Perić, S., Raum, S., Schüler, S., Skrzyszewski, J., Svensson, J., Teeuwen, S., Vacchiano, G., Vandekerkhove, K., Cañellas, I., Menéndez-Miguélez, M., Werden, L. K., Àvila, A., & de Miguel, S. (2025). The Evolution of Forest Restoration in Europe: A Synthesis for a Step Forward Based on National Expert Knowledge. *Current Forestry Reports*, 11: 4. https://doi.org/10.1007/s40725-024-00235-3.

Erdozain, M., Alberdi, I., Aszalós, R., Bollmann, K., Detsis, V., Diaci, J., Đodan, M., Efthimiou, G., Gálhidy, L., Haase, M., Hoffmann, J., Jaymond, D., Johann, E., Jørgensen, H., Krumm, F., Kuuluvainen, T., Lachat, T., Lapin, K., Lindner, M., Madsen, P., Nichiforel, L., Pach, M., Paillet, Y., Palaghianu, C., Palau, J., Pemán, J., Perić, S., Raum, S., Schüler, S., Skrzyszewski, J., Svensson, J., Teeuwen, S., Vacchiano, G., Vandekerkhove, K., Cañellas, I., Menéndez-Miguélez, M., Warden, L., Fleckenstein, S., Sotirov, M., Kazungu, M., Hunziker, M., De Keersmaeker, L., Àvila Callau, A., & de-Miguel, S. (2026). The role of social, policy and economic forces in shaping forest restoration practices in Europe. *Land Use Policy*, 161, 107876. https://doi.org/10.1016/j.landusepol.2025.107876.

Sotirov, M., & Storch, S. (2018). Resilience through policy integration in Europe? Domestic forest policy changes as responses to pressures to integrate biodiversity conservation, bioenergy use, and climate protection in France, Germany, the Netherlands, and Sweden. *Land Use Policy*, 79, 977–989. https://doi.org/10.1016/j.landusepol.2018.07.043

Sotirov, M., Lovric, M., & Winkel, G. (2015). Environmental governance between Europeanization and domestic politics: Analyzing the implementation of EU biodiversity conservation policy in Bulgaria and Croatia. *Environment and Planning C: Government and Policy*, 33(5), 986–1004. https://doi.org/10.1068/c1338r

Chapter 6

Bennett, N. J., Roth, R., Klain, S. C., Chan, K. M. A., Clark, D. A., Cullman, G., et al. (2017). Mainstreaming the social sciences in conservation. *Conservation Biology, 31*(1), 56–66.

Deuffic, P., Sotirov, M., & Arts, B. (2018). "Your policy, my rationale": How individual and structural drivers influence European forest owners' decisions. *Land Use Policy, 79,* 1024–1038. https://doi.org/10.1016/j.landusepol.2018.08.013

Emborg, J., Walker, G., & Daniels, S. (2012). Forest landscape restoration decision-making and conflict management: Applying discourse-based approaches. In J. Stanturf et al. (eds.), *Forest Landscape Restoration: Integrating Natural and Social Sciences*. Springer.

Castillo, J. A., Smith-Ramírez, C., & Claramunt, V. (2021). Differences in stakeholder perceptions about native forest: Implications for developing a restoration program. *Restoration Ecology*, *29*(1), e13293. doi: 10.1111/rec.13293

Cortina-Segarra, J., García-Sánchez, I., Grace, M., Andrés, P., Baker, S., Bullock, C., et al. (2021). Barriers to ecological restoration in Europe: Expert perspectives. *Restoration Ecology*. *29*(4), e13346. doi: 10.1111/rec.13346

Erdozain, M., Alberdi, I., Aszalós, R., Bollmann, K., Detsis, V., Diaci, J., Đodan, M., Efthimiou, G., Gálhidy, L., Haase, M., Hoffmann, J., Jaymond, D., Johann, E., Jørgensen, H., Krumm, F., Kuuluvainen, T., Lachat, T., Lapin, K., Lindner, M., Madsen, P., Nichiforel, L., Pach, M., Paillet, Y., Palaghianu, C., Palau, J., Pemán, J., Perić, S., Raum, S., Schüler, S., Skrzyszewski, J., Svensson, J., Teeuwen, S., Vacchiano, G., Vandekerkhove, K., Cañellas, I., Menéndez-Miguélez, M., Warden, L., Fleckenstein, S., Sotirov, M., Kazungu, M., Hunziker, M., De Keersmaeker, L., Àvila Callau, A., & de-Miguel, S. (2026). The role of social, policy and economic forces in shaping forest restoration practices in Europe. *Land Use Policy*, 161, 107876. https://doi.org/10.1016/j.landusepol.2025.107876.

Orliac, J., Prévost, T., Jullio, C. (2025). *Dialogue on National Restoration Plans and knowledge gaps encountered drafting it*. Biodiversa+ European Biodiversity Partnership: Paris. https://www.biodiversa.eu/wp-content/uploads/2025/10/Biodiversa_D4.12_Dialogue-National-Restoration-Plans.pdf

O'Brien, L., Konczal, A., Begemann, A., Lovric, M., Lovric, N., Fleckenstein, S., & Winkel, G. (2025). Forest restoration paradigms and conflicts in Europe. *International Forestry Review*, *27*(1).

Redpath, S. M., Young, J., Evely, A., Adams, W. M., Sutherland, W. J., Whitehouse, A., et al. (2013). Understanding and managing conservation conflicts. *Trends in Ecology & Evolution, 28*(2), 100–109.

Roitsch, D., da Schio, N., Krajter Ostoić, S., Zivojinovic, I., Vuletic, D., Armstrong, A., Czaplarska, A. et al. (2024). Co-production of urban forests as nature-based solutions: Motivations and lessons-learnt from public officials. *Environmental Science & Policy* 157 (2024): 103764.

Löfqvist, S., Kleinschroth, F., Bey, A., de Bremond, A., DeFries, R., Dong, J., et al. (2023). How social considerations improve the equity and effectiveness of ecosystem restoration. *BioScience, 73*(2), 134–148.

Maniraho, L., Frietsch, M., Sieber, S., & Löhr, K. (2023). A framework for drivers fostering social-ecological restoration within forest landscape based on people's participation: A systematic literature review. *Discover Sustainability, 4*, 26.

Sotirov, M., Sallnäs, O., & Eriksson, L. O. (2019). Forest owner behavioral models, policy changes, and forest management: An agent-based framework for studying the provision of forest ecosystem goods and services at the landscape level. *Forest Policy and Economics, 103*, 79–89.

Sotirov, M., & B. Swedlow (2026). Using Cultural Theory to Specify the Policy Actors, Belief Systems, and Sources of Coalition, Conflict, Stability, and Change in Policy Advocacy Coalitions and Environmental Resource Policies." *Policy Studies Journal* 54 (2): e70068. https://doi.org/10.1111/psj.70068

Winkel, G., Blondet, M., Borrass, L., Frei, T., Geitzenauer, M., Gruppe, A., Jump, A., de Koning, J., Sotirov, M., Weiss, G., Winter, S., & Turnhout, E. (2015). The implementation of Natura 2000 in forests: A trans- and interdisciplinary assessment of challenges and choices. *Environmental Science & Policy, 52,* 23–32. https://doi.org/10.1016/j.envsci.2015.04.018

Sotirov, M., Cambria, V. E., Guimarães, L., et al. (2026). *Safeguarding Europe's Biodiversity Legislation: Scientific Evidence in Support of the EU Birds and Habitats Directives under the 2026 Stress Test*. White Paper. Biodiversa+ European Biodiversity Partnership: Paris. https://www.biodiversa.eu/wp-content/uploads/2026/06/White-paper-Safeguarding-Europe-Biodiversity-Legislation.pdf

Tedesco, A. M., López-Cubillos, S., Chazdon, R., Rhodes, J. R., Archibald, C. L., Pérez-Hämmerle, K.-V., et al. (2023). Beyond ecology: Ecosystem restoration as a process for social-ecological transformation. *Trends in Ecology & Evolution*, *38*(7), 643-653. https://doi.org/10.1016/j.tree.2023.02.007