

Policy Brief

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Unlocking EU-wide uptake of Nature-based Solutions on private land

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Land4Climate



Highlights

- ◆ Despite high EU ambition, **Nature-based Solutions (NbS) uptake on private land remains sluggish**. Their deployment often requires high implementation costs. As a result, the private sector is hesitant or even reluctant to engage, stance that is transmitted to landowners as well.
- ◆ Experience from **LAND4CLIMATE*** regions shows that **neglecting communication with landowners and making top-down decisions can undermine interest in implementing NbS**. If benefits for the landowner are not clearly defined and **communicated**, resistance to NbS implementation is likely to arise.
- ◆ NbS implementation on private land is hindered because **NbS occupy a grey area between public benefit and private property**. This leaves landowners without clear incentives and authorities without clear mandates.
- ◆ **Financial tools remain short-term and unpredictable**: most NbS provide long-term public benefits, while landowners face short-term costs, unclear compensation, and complex administrative requirements.
- ◆ Policy recommendations for **EU leaders include**: **(1)** integrate ecosystem resilience into core economic and sectoral policies; **(2)** make NbS financially competitive through long-term incentives and new funding models; **(3)** clarify legal conditions for restoration on private land; and **(4)** invest in regional capacity for co-design, advisory services and participatory governance.

Context: Aligning EU policies to unlock NbS on private land

NbS are “actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits”¹.

A growing body of international and European policy - such as the European Union (EU) Biodiversity Strategy for 2030², the EU Soil Strategy³, and the Nature Restoration Regulation⁴ - recognises **NbS as essential for delivering climate resilience and ecosystem restoration targets**, supported by major EU directives including the Water Framework Directive, Floods Directive, Birds and Habitats Directives. **Member States must now deliver measurable restoration outcomes within clear timeframes**. This shifts the policy challenge from goal setting to delivery, exposing whether existing governance, funding, and regulatory frameworks are fit for implementation at scale.

Despite strong EU policy endorsement, NbS deployment continues to lag⁵, particularly on privately-owned land, which constitutes a vast majority of Europe’s landscape and is predominantly managed by farmers, forest owners, infrastructure operators, real-estate owners, and utilities - yet remains only partially addressed by existing public funding and regulatory framework.

¹ United Nations Environment Assembly (UNEA 5.2). (2022). Resolution on Nature-based Solutions for Supporting Sustainable Development. United Nations Environment Programme.

² European Commission. (2020). EU Biodiversity Strategy for 2030: Bringing nature back to our lives (COM(2020) 380 final).

³ European Commission. (2021). EU Soil Strategy for 2030: Reaping the benefits of healthy soils for people, food, nature and climate (COM(2021) 699 final).

⁴ European Parliament & Council of the European Union. (2024). Nature Restoration Regulation (Regulation (EU) 2024/...).

⁵ IEEP, ICLEI, IUCN, UNEP-WCMC, & Biodiversa+. (2024). NetworkNature Nature-based Solutions Policy Screening and Analysis of Needs and Gaps for 2024–2030: Six Priority Policy Themes (HORIZON-CL6-2022-BIODIV-01, Project ID 101082213).

*Methodological Note

LAND4CLIMATE is a four-year Horizon Europe Innovation Action running from 1 September 2023 to 31 August 2027, funded under the call “HORIZON-MISS-2022-CLIMA-01-06 – Testing and demonstrating transformative solutions on climate resilience, mainstreaming nature-based solutions in the systemic transformation”. The project aims to increase the resilience of landscapes and urban settlements in the continental biogeographical area and beyond by accelerating the large-scale implementation of nature-based solutions (NBS), an approach that is still at an early stage of adoption. LAND4CLIMATE is part of the [EU Mission on Adaptation to Climate Change](#) and of [NBS4EU](#), a cluster of seven sister projects funded under the same Horizon Europe topic.

These findings draw on LAND4CLIMATE’s [reflexive monitoring](#)⁶, case-study documentation, landowner interviews, municipal workshops, semi-structured interviews, and technical assessments conducted between 2023 and 2025 across Austria, Czechia, Germany, Slovakia, Romania, and Italy. Evidence was triangulated across regions to identify common constraints and enabling factors.

Systemic barriers to scaling NbS on private land

- ◆ **Policy misalignment.** NbS intersect multiple policy domains - biodiversity, agriculture, water, climate, and land use - but these remain institutionally siloed⁷. As a result, policies can pull in different directions and potential synergies between sectors are not fully realised. While the Water-Energy-Food-Ecosystem nexus offers a conceptual base for integrated management, it has yet to meaningfully inform the Common Agricultural Policy (CAP)⁸ or national subsidy schemes.
- ◆ **Absence of coherent incentives.** NbS generate broad public goods - such as water regulation, biodiversity enhancement, and carbon sequestration - but these benefits rarely translate into direct returns for private landowners. Traditional funding mechanisms still favour grey infrastructure or intensive land uses, while market mechanisms for ecosystem services remain underdeveloped. As a result, landowners face financial uncertainty and are often disincentivised to act without long-term, predictable support.
- ◆ **Governance fragmentation and legal uncertainty.** The regulatory environment for implementing NbS on private land is often unclear. In many Member States, landowners must navigate complex approval processes involving multiple agencies, especially for water-related or cross-sectoral projects⁹. Uncertainty about land tenure rights, eligible funding uses, and maintenance obligations adds further risk and delays implementation.
- ◆ **Successful NbS implementation depends on technical guidance, stakeholder coordination, and long-term stewardship.** Yet many regions lack tailored advisory services, harmonised standards, and capacity-building programmes that address the specific needs of private landholders, especially awareness/knowledge of the performance (effectiveness) and cost-efficiency of natural/nature-based solutions. This limits both uptake and the quality of implemented solutions.

Together, these barriers show that **scaling NbS on private land requires a more coherent enabling framework** - one that aligns incentives, clarifies responsibilities, and equips national and regional authorities with the institutional and technical tools needed for effective implementation.

⁶ Note on Data Availability: Large-scale analysis of private land ownership in Europe is currently limited due to non-harmonised cadastre systems, legal restrictions on ownership data, and lack of interoperable land and commercial registries.

⁷ European Environment Agency. (2023). Scaling nature-based solutions for climate resilience and nature restoration. <https://www.eea.europa.eu/en/analysis/publications/scaling-nature-based-solutions>

⁸ https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-glance_en

⁹ Almenar, J. B., Pinto-Correia, T., Davies, C., & Madsen, A. L. (2025). Enabling the implementation of nature-based solutions in rural private land: Insights for overcoming barriers in the EU context. *Journal of Environmental Management*, 348, 119320. <https://doi.org/10.1016/j.jenvman.2024.119320>.



Policy recommendations

Integrate ecosystem resilience into core EU economic and climate policy

To scale NbS on private land, ecosystem health must be treated as a structural condition for Europe's long-term competitiveness, food security, and climate resilience.

- ◆ **Ensure that restoration commitments and ecosystem targets remain protected within the next Multiannual Financial Framework**, including through ring-fenced and minimum allocation thresholds for NbS implemented on private land, as well as safeguards against dilution.
- ◆ **Require high-dependency sectors (Water–Energy–Food–Ecosystems nexus) to embed ecosystem restoration integrate, nature-related risks, harm-reduction responsibilities** and dependencies into their national and sectoral plans, supported by binding guidance on how NbS must be reflected in these instruments.
- ◆ Ensure that the National Restoration Plans under the **Nature Restoration Regulation** are supported by predictable, multi-annual EU funding, with clear eligibility for direct investment on privately owned land, rather than fragmented project grants.
- ◆ Integrate **Nature Restoration Regulation targets** into CAP Strategic Plans, River Basin Management Plans, and national adaptation strategies to ensure consistent implementation on private land.

Make NbS on private land economically viable and competitive

Landowners adopt NbS when economic signals align with long-term land stewardship.

- ◆ **Introduce outcome-based incentives into CAP** and cohesion funds that reward measurable environmental and social benefits, including improvement in soil health, water retention, biodiversity gains, flood-risk reduction and community well-being.
- ◆ **Develop long-term Payments for Ecosystem Services and blended finance models** that reduce opportunity costs, compensate for land-use changes, and provide security beyond CAP cycles.
- ◆ **Enable and support public-private co-financing arrangements**, including Environmental, Social and Governance¹⁰ - driven partnerships and sector-based contributions.
- ◆ **Learn from and replicate large-scale initiatives** such as Slovakia's 488 retention projects (2010–2012), which combined public investment and employment programmes and continue to be maintained by communities thanks to visible local benefits.

Provide clear legal pathways and governance alignment for NbS on private land

Legal uncertainty remains one of the biggest barriers across regions.

- ◆ **Provide EU-level guidance to harmonise and clarify rules for public investment and interventions on private land**, including ownership, landowner rights, maintenance, monitoring, and liability under the **Nature Restoration Regulation**.
- ◆ **Support Member States in simplifying multi-authority permitting**, reducing delays like those observed in Slovakia, the Czech Republic, and Italy pilots.
- ◆ **Encourage national and regional authorities to set up cross-sector coordination platforms** (e.g., regional climate councils, watershed partnerships), ensuring that water, soil, forestry, agriculture, and spatial planning authorities operate with aligned procedures.

¹⁰ GEP Environmental. (n.d.). Environmental, Social and Governance (ESG) Strategy. <https://www.gepenv.co.uk/services/environmental-social-and-governance-esg-strategy>

- ◆ **Accelerate the phase-out of subsidies that undermine ecosystem resilience and redirect funding** to restoration-compatible land-use systems, including agroecology, agroforestry, and sustainable water management.

Strengthen regional capacity, technical support, and co-design with landowners

NbS succeed when local institutions and landowners share ownership of the process.

- ◆ **Mandate early, continuous co-design with private landowners** and local actors, supported by EU funding for participatory governance, conflict mediation, and facilitation.
- ◆ **Provide technical resources to existing regional advisory services and competence centres that provide hydrological, agronomic, legal, and participatory-planning expertise** - addressing gaps repeatedly identified in Romania, Slovakia, Czechia, and Austria.
- ◆ **Develop EU-level technical standards and easy-to-use tools** (contracts, templates, monitoring indicators, benefit calculators) tailored to NbS on private land.
- ◆ **Expand peer-to-peer learning networks and early-adopter support**, leveraging examples such as HUMUS+ in Austria, water councils in Slovakia, and the County Farmers Association partnership model in Germany.

Evidence and analysis

Evidence from **LAND4CLIMATE's** Front Runner Regions¹¹, paints a consistent picture: implementing NbS on private land is not solely a technical challenge but a systemic one. **Acceptance of NbS varies widely, depending on local governance arrangements, perceived fairness, and clarity of benefits**¹². Many landowners do not directly benefit from interventions such as river restoration, peatland rewetting, tiny forests planting, or retention ponds, even though their land is being used in the long-term and economic trade-offs arise¹³.

Governance fragmentation remains a primary obstacle. Responsibilities for water, soil, agriculture, forestry and climate adaptation are still distributed across separate authorities, with limited coordination between them. This fragmentation restricts the ability of local governments and regional agencies to deliver coherent, place-based agreements with landowners. Similar coordination problems in **Slovakia** meant that technically mature designs could not proceed until multiple authorities approved them, stretching timelines and increasing uncertainty for landowners.

Financially, NbS are still perceived as “optional” rather than necessary investments, partly because their benefits are not monetised or linked to long-term incentives. Negotiations in **Romania's Upper Timiș region** faced delays and difficulties because participant selection was not transparent, compensation terms remained unclear, and long-term incentives were uncertain. Interest increased only once a structured landowner call was prepared. Across the consortium, teams attempted to combine funding from LIFE, CAP agri-environment schemes, LEADER/EAFRD¹⁴, EMFAF¹⁵ and ESF+¹⁶, but this bundling remains fragmented and administratively heavy, offering little predictability for landowners.

¹¹ Front Runner Regions of the Land4Climate Project: County of Euskirchen (DE), Lafnitz Catchment (AT), Bohemian Switzerland National Park & Krásná Lípa (CZ), Emilia-Romagna Region (IT), Upper Timiș River Catchment (RO), Ronava River Catchment (SK). (2023–2025). Regional project documentation. (Additional information: <https://land4climate.eu>).

¹² Hălbac-Cotoară-Zamfir, R., Santos Ferreira, C. S., Kalantari, Z., Giorgi, S., & Hartmann, T. (2025). NBS strategy and implementation plans for front-running regions (Deliverable 4.1). LAND4CLIMATE. Retrieved from <https://land4climate.eu/documents/deliverable-41-nbs-strategy-and-implementation-plans-front-running-regions>

¹³ Hartmann, T., Slavíková, L., & McCarthy, S. (Eds.). (2019). Nature-Based Flood Risk Management on Private Land. Springer. https://doi.org/10.1007/978-3-030-23842-1_4

¹⁴ https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/european-agricultural-fund-rural-development-eafnd_en

¹⁵ https://oceans-and-fisheries.ec.europa.eu/funding-and-investment/emfaf_en

¹⁶ https://employment-social-affairs.ec.europa.eu/policies-and-activities/funding/european-social-fund-plus-esf_en



Slovakia illustrates the structural vulnerability of NbS financing. Following the 2010 floods, the Slovak government and ESF financed 488 local water-retention projects (€25m state budget + €17m ESF), employing 7,800 long-term unemployed people. Although widely supported by communities, political disagreements halted the programme after two years, despite plans to run it for six. Many measures still function, but the case demonstrates how progress often depends on political continuity rather than stable institutional frameworks.

Legally, many landowners face complex rules when public funds support interventions on private land. **Slovakia** provides a clear example: where land was partly leased from the Slovak Land Fund, even willing landowners could not move forward without additional permissions, adding months of administrative delay. In **Austria's Lafnitz catchment**, dozens of municipalities were informed and engaged, yet competing mandates and fragmented ownership slowed progress. In **coastal Italy**, agreements for NbS such as protective dunes and salicornia plantations were slowed by inheritance issues and the need to reconcile public-works procedures with privately owned land, showing how NbS occupy a grey zone between public benefit and private property.

Socially, trust emerged as a decisive factor across all regions. Landowners often feared losing control over their land, facing new restrictions, or taking on hidden obligations. Similarly, in **Euskirchen County (Germany)**, a “**de-sealing partnership**” enabled municipalities to collaborate directly with landowners. The region's reflexive monitoring notes that the use of **targeted surveys, open-format workshops, and 1-on-1 farmer/landowner dialogues** helped reduce resistance and ensured landowners could shape planning outcomes.



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LAND4CLIMATE Partners

The LAND4CLIMATE consortium brings together five universities, six authorities at local, regional, and state levels, as well as non-governmental organisations, representatives from national parks, and stakeholders in community development and urban planning.

Partners:



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