The Agile Initiative

The Challenge: Effective policy and world-class science are both needed to prevent catastrophic environmental degradation on a global scale, yet science and policy often operate in different worlds and to different timelines.

The Solution: Fast-paced **Sprint research projects** mobilise the best interdisciplinary research teams at the University of Oxford to co-create solutions-focused science with and for stakeholders to provide the information decision makers need, when they need it.

In this poster we highlight two of our Sprint research projects which have used IPBES assessments in their critical environmental research.

How can the UK implement the Global Biodiversity Framework's finance goals?

IPBES output highlighted: IPBES (2024) *Thematic Assessment Report on the Interlinkages among Biodiversity, Water, Food, and Health (Nexus Assessment)*. **Jimena Alvarez,** Emma O'Donnell, Juan Sabuco, Lydia Marsden, Isobel Hawkins, Sarah Gall, Mattia Troiano and Sophus zu Ermgassen

Finance is a major structural driver of biodiversity loss but potentially could also be a big part of the solution.

Realigning financial flows is vital as global nature negative financial flows (~$7 trillion annually) are more than 30 times greater than current annual funding on nature-based solutions ($200 Billion) (UNEP, 2023). Nature negative financial flows are the outcome of an economic system that explicitly and implicitly subsidises activities harmful to nature. Realigning these flows into nature positive activities is not simply about reallocating capital but also about reshaping the underlying incentives that guide economic behaviour. Policy responses aim to reduce demand for nature-damaging goods and services, and to change the incentive structures within key sectors so that producers are rewarded for adopting practices with lower environmental impact (**IPBES Nexus Assessment, 2024**). In essence, public policy is seeking to align private finance with nature positive objectives, encouraging "economic activity done differently," rather than redirecting financial flows. In this Sprint, we aim to address three major evidence gaps, through high-impact, novel research with direct policy relevance, conducted in collaboration with policymakers.

(A) understanding how to reduce the biodiversity impacts of UK foreign investments and align UK international financial flows with the ambitions of the GBF through greening finance

(B) understanding how to scale up private finance for financing green to help close the 'nature-finance' gap and achieve these overall goals

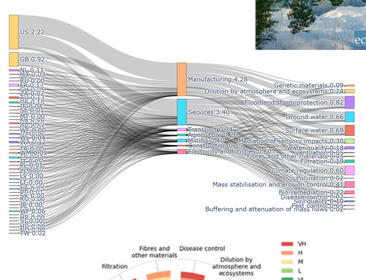
(C) understanding how interventions aimed at greening finance and financing green can work synergistically together to achieve overall goals of the Kunming-Montreal agreement.

In response to (A) and (C), our recent report assessed the impact of privately UK-financed activities (UK supply chains, overseas financing and foreign direct investment) on biodiversity and the potential impacts of interventions to align the UK's international finance flows with the GBF. This task is achieved through the following five key objectives, focused on:

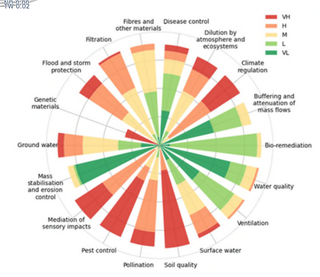
1. Mapping international financial flows of the six largest UK banks by country and sector.
2. Assessing the portfolio dependencies and risks from global ecosystem degradation.
3. Evaluating portfolio impacts on ecosystem services worldwide.
4. Exploring scenarios of nature action and geopolitical dynamics affecting financial flows.
5. Testing policy interventions — such as subsidy reform— and their influence on nature-related financial outcomes.

RESULTS

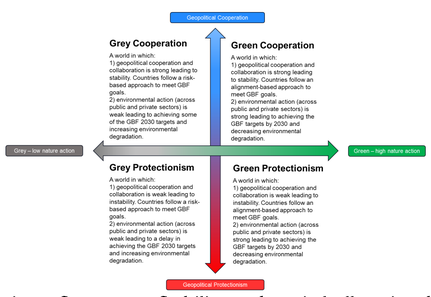
2 **Dependencies and Risks from Ecosystem Degradation.** Using the ENCORE database, we assessed how strongly different sectors depend on various ecosystem services, and we overlaid these dependencies with country-specific hazard and vulnerability indices. This allowed us to distinguish between dependency (exposure) and risk (hazard, vulnerability and exposure). **Financial flows depend heavily on mass stabilisation and erosion** control, but since those ecosystem services remain relatively intact in many regions, the associated financial risk is low. In contrast, we found **the highest nature risk stemming from flood and storm protection, surface water, groundwater, and climate regulation**.



3 **Portfolio Impacts on Ecosystem Services.** UK-financed activities significantly affect ecosystems already heavily degraded. **Soil quality, pest control, climate regulation, mediation of sensory impacts,** and other key ecosystem services are being undermined by sectors financed by UK banks. Across ENCORE's thirteen environmental pressure categories, the most significant pressures from UK-financed activities include **noise and light disturbance, toxic pollution to soil and water, water extraction, greenhouse-gas emissions, and land conversion.** Continued financial support for damaging activities threatens to accelerate biodiversity loss while simultaneously increasing the financial system's exposure to those risks.



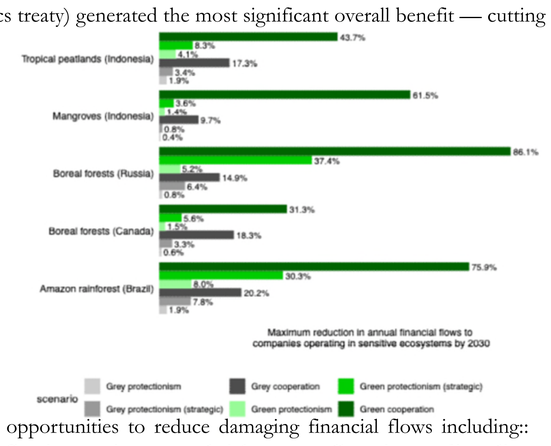
4 **Explorative scenario Analysis: Nature Action and Geopolitics.** An exploratory scenario analysis assessed potential future dynamics under four combinations of nature action and geopolitical cooperation: **green cooperation** (coordinated, alignment-based nature action), **grey cooperation** (coordinated, risk-based action), **green protectionism** (fragmented, alignment-based action) and **grey protectionism** (fragmented, risk-based action). Guided by the 23 GBF targets, researchers identified **90 interactions** between finance and biodiversity goals, grouped into **30 intervention clusters.** These span direct (e.g. financing conservation), indirect (e.g. influencing supply chains), and mixed roles for finance. The interconnections underscore that only a systemic, multi-sectoral approach can meet GBF objectives.



5 Under the 'green cooperation' scenario and assuming that public-finance shifts affect private-finance profitability and capital allocation by sector, the study modelled the impact of four interventions using ENCORE:

- **Fossil fuel subsidy reform**, modelled as reduced demand for coal and boosted renewable energy investment, lowering freshwater use for direct operations and decreasing abiotic resource extraction for upstream value chain. However, renewable expansion increases demand for critical minerals, posing new risks of deforestation linked to mining.
- **Fertiliser subsidy reform** reduced nutrient emissions by around **0.75%** (direct and upstream) across portfolios (maximum of ~2%, bank 6), with greater direct reductions in the UK and largest upstream impacts in the US, China, India, and Indonesia — regions with high fertiliser overuse.
- **Fisheries subsidy reform**, yielded the largest declines in **biotic resource extraction** by around 0.5% (direct) and 1.45% (upstream), curbing overfishing pressures. Most impacts occurred indirectly through retailers and distributors financed by UK banks. Major exposure reductions occurred in China, Indonesia, the UK, and Norway.
- **Plastic-pollution reform** (modelled through the introduction of a Global Plastics treaty) generated the most significant overall benefit — cutting **solid-waste generation by 13% (direct).**

Disclosures, capital requirements, collateral requirements and quantitative credit policies. An analysis (led by Lydia Marsden) on how financial and monetary policies to actively 'green' private financial flows – as opposed to the impact of real economy measures to deliver the GBF on the composition of the UK lending could evolve under different scenarios of environmental ambition and geopolitical cooperation. To illustrate this, it utilises a granular dataset of international financial flows to companies associated with land-use pressures in five globally important ecosystems – the Amazon rainforest in Brazil; boreal forests in Canada and Russia; and mangroves and peatlands in Indonesia (Marsden et al. 2024; 2025).



RECOMMENDATIONS

Based on our analysis, we argue that the UK government has several concrete opportunities to reduce damaging financial flows including:: **mandatory nature-related disclosures; capital and collateral requirements reflecting environmental risk; green allocative credit policy steering private lending away from activities damaging nature; harmful subsidies reform and fiscal incentives to discourage environmentally harmful activities and reallocate funds to biodiversity protection.** Whilst acknowledging the UK may have limited direct agency on the enabling environment of countries where its international financial flows are allocated, pursuing international coordination on these interventions would also be beneficial given that half of its nature-related financial risk originates abroad.

In sum, our results show that the UK's financial system exerts significant global ecological pressure. Yet the same system, if steered through smart regulation, could become a driver of the transition toward the ambitious goals of the GBF.

How can we deliver place-based environmental governance for transformative change?

IPBES output highlighted: IBPES (2024) *Transformative Change Assessment: Underlying Causes of Biodiversity Loss and Options for Achieving the 2050 Vision.*

Sprint project team(UK): University of Oxford: Mark Hirons, **Caitlin Hafferty**, **Charlotte Boddy**, John Lynch. Scotland's Rural College: Rosie Gearey. Natural Resources Wales: Luke Maggs, Richard Cardwell, Russell Elliot.

1. Why transformative change (and place) matters

Societies worldwide face a deepening polycrisis of biodiversity loss, climate change, and widening social inequalities. There is growing recognition that incremental policy reform is insufficient. The IPBES Transformative Change Assessment (2024) argues that halting and reversing biodiversity loss requires systemic change in governance systems, values, decision-making processes, and underlying power dynamics – not only new targets, financing mechanisms, or technical solutions.

However, many sustainability and system—thinking approaches struggle to translate these ambitions into on-the-ground practice. In addition, calls for 'deep' systems change often overlook contingency and the role of individual agency. A central challenge remains: **how can transformative change be enacted within real-world governance systems that are regulated, target-driven, and capacity-constrained? How are actors working in the institutions governing these changes *already* contributing to transformative processes and outcomes that might not be seen?**

'In Wales we are doing things differently. We have a law in Wales that helps us all work together to improve our environment, our economy, our society and our culture. For people, for our planet. For now, and for our future. This is called the Well-being of Future Generations Act.'. (source: https://www.gov.wales/well-being-of-future-generations-wales)

2. Rethinking place-based governance

Place-based approaches are increasingly adopted in environmental policy because they emphasise local knowledge, relational understandings of place, and integration across social, ecological, and economic dimensions. In principle, they promise more just, legitimate, and effective outcomes. In practice, however, tensions persist. Place is often treated as a bounded, measurable unit (e.g., catchments or administrative areas), rather than as a dynamic outcome of ongoing social, ecological, and institutional relationships. As a result, place-based approaches risk being reduced to another policy delivery mechanisms rather than enabling genuinely transformative forms of governance. To address this, the project moves beyond simplified binaries such as top-down versus bottom-up or market-based versus community-based approaches. **Instead, it examines how different forms of coordination coexist, overlap, and are reshaped in practice within existing governance systems, and how actors across public, private, and civil society sectors are *already experimenting* with transformative change in their everyday work.**

3. Wales as a key site of experimentation

Wales provides an internationally significant test case for place-based transformative governance. The Well-being of Future Generations (Wales) Act and the Environment (Wales) Act embed long-term well-being, equality, resilience, and global responsibility into domestic law. Together, they mandate integrated approaches to sustainability, cross-sector collaboration, and the development of Area Statements to translate national ambitions into locally grounded action.

Wales is the first country to place the UN Sustainable Development Goals into domestic legislation. However, implementation has been uneven. Area Statements have progressed at different speeds and spatial scales, and misalignments have been identified between legislative frameworks, raising important questions about how place-based policy is interpreted and enacted within governing institutions such as Natural Resources Wales (NRW).

4. Research approach and emerging findings

This project examines how place is understood and operationalised within state environmental governance, using NRW and Area Statements as a focal case. Following a relational perspective, we view organisations not as fixed or purely top-down, but as dynamic spaces shaped by relationships, norms, histories, and everyday practices. **Emerging findings suggest that transformative change often occurs beyond formal policy instruments, through less visible, everyday practices inside institutions:**

- **Place is enacted relationally** through ongoing socio-ecological and political relationships, not as a fixed spatial unit. Organisations themselves function as spaces where transformation is negotiated and enacted.
- **Individual actors matter.** Small, discretionary, and informal actions by staff significantly shape how place-based policy is implemented and experimented with.
- **Transformation occurs 'between the cracks'** of formal institutional systems, and experimentation is already happening in diverse ways within existing constraints.
- **Informal spaces of innovation are crucial.** Learning and adaptation often occur in interstitial or 'shadow' spaces rather than through formal programmes.
- **Cross-boundary translation is key.** Relational, place-based ideas gain traction when translated into the language and requirements of technocratic policy systems, gradually enabling change to these systems from within.

5. Key emerging messages for transformative change

Transferrable insights from Wales include:

- Embed place-based working as a core governance and delivery approach for broader transformation.
- Recognise and support everyday institutional agency. Transformative change often emerges through small, informal, and contingent practices within institutions.
- World-leading or national legislation is not sufficient on its own. Greater alignment is needed across policy frameworks, institutional cultures, incentives, and operational mechanisms to enable transformation.
- Create protected spaces for experimentation and learning. Transformative outcomes are nurtured in spaces where agents can take risks, experiment, adapt, and learn, and leadership is essential in enabling this.
- Draw on transferrable lessons learned from the on-the-ground delivery of transformative change, including emerging sites of experimentation, to enhance international leadership and strategy.

References: Boddy, C., Hafferty, C., Hirons, M., Lynch, J., Gearey, R., Maggs, L., Cardwell, R., Elliot, R. (forthcoming) Everyday practices of transformation inside policy institutions: Embedding relational, place-based nature recovery governance in Wales.

Hafferty, C., Tomude, E.S., Wagner, A., Mcdermott, C. and Hirons, M., 2025. Unpacking the politics of Nature-based Solutions governance: Making space for transformative change. Environmental Science & Policy, 163, p.103979.

The Agile Initiative at the Oxford Martin School, University of Oxford

Revolutionising how research responds to the urgent needs of policymakers on critical environmental issues through rapid research projects called Sprints.

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