

Barriers to tree planting for net zero in the UK: a policy perspective

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Abstract

Tree planting is a central strategy for the United Kingdom to achieve net-zero emissions, but efforts to expand treescapes face persistent barriers. This paper uses a policy stages model to explore why key barriers occur and how they are connected to the wider policymaking process. We specifically examine different stages of policy development, agenda setting, formulation, and implementation, to understand where and why challenges arise. We conducted a content analysis of grey literature in England and Wales from 2009 to 2025. Treescape policy is shaped by multiple overlapping agendas, including agricultural reform, biodiversity protection, and ecosystem restoration. This creates tensions between objectives, which can slow implementation. Our analysis shows that the implementation gap begins early, as problem definitions are often contested and policy priorities unclear. Treescape policy is caught in a ‘complexity trap’, inheriting past challenges in forestry whilst interacting with current land-use pressures. Organizational arrangements in both England and Wales are insufficient to manage these complexities, and trade-offs between objectives are rarely prioritized. These findings highlight that effective treescape expansion requires integrated governance that recognizes trade-offs and aligns policy objectives. Understanding these barriers can help design interventions that improve policy delivery and support net-zero goals and thus policy recommendations are provided from the paper’s findings.

Keywords: net-zero; tree planting; policy stages; governmental organisations; implementation barriers; trade-offs

Introduction

The ambition to address climate change is often expressed as a specific target date for reaching net-zero greenhouse gas (GHG) emissions, typically linked to the peak temperature goals of the Paris Agreement. The United Kingdom (UK) net-zero policy encompasses a range of sectoral specific plans aimed at achieving net-zero by 2050. Expanding tree cover is one mechanism for meeting climate change commitments. This paper examines the implementation of treescape expansion from a policy perspective, rooted in understanding the context in which policy has evolved, how challenges emerge and can be addressed. Policy implementation involves more than executing previously arrived at decisions or matching goals with means, capacity, and resources. Rather, it is embedded in the wider policy framework and linked to earlier ‘stages’ of the policymaking process. Policymaking is constructed through several stages: from agenda-setting, policy formulation and decision-making, policy implementation and evaluation (Adeniran et al. 2023).

This research forms part of a wider project exploring how treescape expansion can be designed and governed to enhance benefits to people and nature. The project limited its focus to England and Wales, where current planting rates are falling short

of government targets (Westaway et al. 2023). A UK wide examination was complicated by the fact that most policy related to land-use and forestry is devolved to Scotland, Wales, and Northern Ireland, forming a system of multi-level governance (MLG), each having different policies, strategies, and funding schemes, as well as treescape expansion targets.

The role of treescape expansion in UK net-zero policy

Treescape expansion is a key element of the net-zero strategy, whilst forming part of a broader set of policies dealing with land-use change, including post-Brexit agricultural reforms and ecosystem enhancement through habitat restoration. Treescape expansion means increasing tree cover through woodland creation, tree and hedgerow planting, and agroforestry. Goals include planting at least 30 000 hectares of trees annually across the UK by 2025, with the Welsh setting an aspiration of 100 000 hectares of new woodland by 2030 (Ares et al. 2021). The UK is not alone in using tree planting as a mechanism for supporting net zero emissions commitments. The European Union (EU) revised Regulation for the Land Use, Land Use Change and Forestry sector (LULUCF) (European Commission 2018) sets legally binding removal targets

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across land, forests and wetlands, making carbon sinks an explicit part of policy implementation in Member States (EFTA 2024). In addition, the EU's (2024) Nature Restoration Law (Regulation (EU) 2024/199) uses forest measures and peatland rewetting as central mechanisms. The EU also makes use of payment schemes to farmers, where Common Agricultural Policy (CAP) funding sees Member States use eco-schemes to pay farmers for tree belts, hedgerows and agroforestry (EU, DG-Agri 2025). Globally, countries including Canada, India and Australia make use of tree planting specifically tied to commitments under the Paris Agreement (Stanturf and Mansourian 2020).

UK wide policies aimed at treescape expansion have a long history that predate current climate change commitments (Raum and Potter 2015). Whilst there is some divergence in approach in England and Wales, forestry policy increasingly focuses on contributing to combating climate change through carbon sequestration (Forestry Commission 2023). The 2024 UK Biodiversity Framework and related Biodiversity Action Plans (BAPS) target treescape expansion for both ecological and environmental purposes (JNCC 2024a). Net-zero policy is well aligned with the UK's 25-Year Environment Plan, (25YEP), which utilizes tree planting for biodiversity and net-zero (HM Government 2018). This aligns with the UK Woodland Carbon Code (2011) that supports finance for woodland creation and carbon sequestration through credit systems (Scottish Forestry 2019). The related UK Environment Act 2021, for revision sets out measures for treescape expansion, with Local Nature Recovery Strategies (LNRS) established in England. This local spatial planning strategy feeds into the Nature Recovery Network to combine environmental protection with restoration measures (UK Government 2025).

In England, the Forest Commission has a woodland creation offer and the current Environmental Land Management (ELM) scheme, which replaces the CAP, providing basic payments plus financial incentives for landowners to plant and manage woodlands (DEFRA 2024a). The Sustainable Farming Incentive (SFI), part of the ELM scheme, offers financial incentives for landowners to plant and manage treescapes (DEFRA 2024b). Similarly, the Nature for Climate Fund (NCF) addresses climate change and biodiversity decline through treescape expansion (Forest Research 2024a). The England Trees Action Plan 2021–2024 provides a strategic framework for implementing the NCF in England (UK Government 2021a). In Wales, the Sustainable Farming Scheme (SFS) due to be finalized in 2026, supports tree planting on farms. The Woodland for Wales (WfW) strategy (Welsh Government 2018) builds on woodland strategies of 2001 and 2009 and calls for a 50-year implementation timeframe including for woodland owned and managed by Natural Resources Wales (NRW) [see Supplementary Material A]. Tables 1 and 2 summarize these key developments for the UK and Wales, respectively.

Treescape expansion policy brings several policy advantages. Tree planting is low-cost, making it an accessible climate mitigation strategy adaptable at the regional and local levels. It has the potential for community engagement through planting projects, as seen in the Bannau Brycheiniog National Park in Wales, which in turn, helps raise awareness and stimulate social action on climate change (Ceiniog'r Coed/Stump Up For Trees 2025). However, present-day UK treescape policy sits on an already crowded policy arena, with a plethora of policies and plans formulated, implemented, and adjusted over time dealing both directly and indirectly with the issue area. By entering a crowded arena, current policy inherits negative legacies. This can lead to repeating the previous approaches, which may or may not have served policy

well (Hoonbeek and Peters 2017). Parliamentary and independent third-party reviews reveal that treescapes policy has not always garnered the greatest level of confidence. The legacy of past policies, which prioritized conifer monocultures for timber production, is difficult to dismantle, with added barriers created by asset forest management that seeks quick and low risk returns. Tensions occur at the organizational and community levels, between those supporting timber production, trees for carbon, or the provision of wider environmental and social benefits (Nijnik, et al. 2016). There is an established mistrust of new policies, often having teething problems and seen as vulnerable to short political cycles before longer-term learning can be used (Gibbs and Mutebi 2025). Except for Scotland, planting rates are falling short of targets (House of Commons Environment and Rural Affairs Committee 2022, Forest Research 2025a). The more developed forestry industry, combined with the larger amount of land in private ownership, has enabled woodland expansion, whilst also facilitating natural regeneration of woodlands in Scotland (Burton et al. 2019, Bowditch et al. 2023). At the UK level, the Climate Change Committee (CCC), the government's statutory adviser for climate change, has found slow progress to date, arguing that the UK 'will have to act fast to hit the country's commitments' (CCC 2024). Limited progress makes it clear that, whilst treescape expansion is portrayed as key, its effectiveness as a tool for achieving net-zero emissions is questionable.

Whilst the barriers to treescape expansion are well documented in the literature (Staddon 2021), including financial and cultural barriers, they are not systematically treated, often presented as mere listings. Furthermore, discussions tend to be descriptive, mainly focusing on implementation. The effectiveness of policy is not only an issue of implementation barriers, as problems are connected to issues arising upstream in the policy process (Wildavsky 1973). To address this, we employ the policy stages model as a heuristic device to categorize barriers across different stages in policymaking. This will allow examination of the cumulative effects of the various actors, forces, and institutions that interact across the policy process and shape its outcome(s). In turn, this will help provide a means by which interventions to overcome barriers can be better targeted and thus, a set of policy recommendations stemming from our findings are suggested at the end of this paper. Using the classical 'stages model,' (Hoefer 2021) we detail the institutional barriers to treescape expansion, within agenda setting, policy formulation, and implementation. The evaluation stage is not covered in this paper because net zero, treescapes policy is still at a relatively early point of development. Forest Research published a 2022 review on public perspectives of treescape creation, management, and maintenance, but this is not an evaluation of policy outcomes per se (Hall, et al. 2022). In the Welsh case, an interim evaluation of the National Forest for Wales was undertaken, but whilst some progress on connectivity, conservation quality, and community involvement was evidenced, it is currently too early to evidence broader impacts (Parkinson 2025).

We acknowledge that using the stages model sets aside wider, more complex discussion of issue selection, negotiation, interest group mediation, and political culture. The stages model is used to categorize barriers according to what stage they occur. These results are presented in tabular format. The Discussion returns to the conceptual framework, highlighting the usefulness of the stages model as a tool for understanding treescape expansion policy in the UK, detailing the methodological contribution of the paper.

Table 1. Key UK government policies.

Policy	Description	Date
Climate Change Act 2008 (Amended 2019)	Legally commits UK to achieving net-zero GHG emissions by 2050	Originally enacted 2008; amended 27 June 2019 to include net-zero target
Net Zero Strategy: Build Back Greener (2021), (HM Government (2021)	Sets out series of policies and commitments designed to reach net zero by 2050	October 2021
Land use: Policies for a Net Zero UK (CCC 2020)	Sets out policies needed to deliver the land sector's contribution to the UK's new 'net-zero' emissions target	January 2020
Carbon Budget Delivery Plan, (Dept for Energy Security and Net Zero 2023)	Provides detailed policies and commitments to meet emissions reductions required for carbon budgets (2023 to 2037)	March 2023
Woodland Carbon Guarantee, (Forestry Commission 2019)	£50 million scheme to encourage farmers and landowners to plant more trees and create new woodland in return for payments	November 2019
England Tree Action Plan 2021–2024 (DEFRA 2021)	Consultation launched to expand and connect trees and woodlands across England leading to an action plan	May 2021
Great British Energy Act (2025)	Establishes publicly owned energy company to accelerate development of clean, domestically produced energy, supporting net-zero commitments	May 2025
Climate and Nature Bill (2024–5) UK Parliament (2025)	Private member's bill to integrate climate and nature policies, setting binding targets for emissions reductions and nature restoration	October 2024

Table 2. Key Welsh Government (WG) policies.

Policy	Description	Launch date
Climate Change Act 2008 Climate Change (Interim Emissions (Wales) (Amendment) Regulations 2021	Establishes statutory framework for achieving net-zero emissions by 2050 in Wales, with interim targets and sectoral pathways	Originally enacted 2008; amended on 29 June 2021 to include net-zero target
Woodlands for Wales Strategy (Welsh Government 2018)	Strategy to increase tree planting to at least 2000 hectares per year from 2020, integrating trees into farming systems	April 2018
National Forest for Wales (Welsh Government 2025)	Long-term forestation programme to create network of woodlands throughout Wales, contributing to carbon sequestration and biodiversity	12 April 2020
Net Zero Strategic Plan (2021–2025) (Welsh Government 2022)	Five-year plan shaping next stage of Wales's pathway to net zero by 2030, responding to advice from the Climate Change Committee	September 2022
Woodland Investment Grant (TWIG) Scheme (Welsh Government 2021)	Provides financial support to landowners and farmers to facilitate tree planting, to increase woodland cover and support net-zero goals	July 2021
Woodland Creation Grant [including Small Grants for Woodlands (Welsh Government 2022)]	Announced £32 million to support farmers and landowners in planting 86 million trees by end of decade, contributing to Wales's net-zero commitment	September 2022

The policy stages model

The analytical goal of the 'policy stages' model, [see [Fig. 1](#)] is to simplify the complexity of public policymaking by identifying its fundamental processual nature ([Howlett 2019](#)). It extends the study of the policy process to include earlier stages of agenda setting and policy formulation ([Lasswell 1956, 1971](#)), with implementation problems seen as having their origins in these earlier stages. This emphasizes feed-back loops operating between stages, whilst turning attention to issues of power relation, values, and interests. Whilst there are different variations of the model and well-recognized limitations, the differentiation between agenda-setting, formulation, implementation, and evaluation has become the convention to describe the chronology of a policy process ([Werner and Wegrich 2007](#)). The model has been used to structure empirical inquiry and guide analysis of complexity in policy making in relation to land policy ([Rugema et al. 2022](#)),

health system reform ([Cheng 2018](#)), urban transit ([Eger and Marlowe 2006](#)), and environmental regulation ([Mazmanian and Sabatier 1980](#)), to name a few. It has already been applied to the case of ecological restoration ([Baker and Eckerberg 2013](#)), but the application in this paper moves from general discussion to empirical investigation of a particular policy at the sector-specific level in two constituent countries of the UK.

Policymaking presupposes problem recognition, that is, identification that a problem is defined as such and necessitates state intervention ([Cairney 2012](#)). Agenda setting is the result of a combination of systematic forces, political processes, institutional influences, rivalry amongst groups, and elite preferences ([Birkland 2017](#)). It is inherently a political process, wherein different interests and actors, from both within and outside government, seek to influence and shape the agenda ([Lindblom 1968, Wildavsky 1973](#)). However, whilst issue selection is decisive, our

Table 3. Agenda setting.

	Approach	Policy problem	Consequences
1	Net-zero	• Difficult to realize, given problems measuring 'net' • Arbitrariness in calculating number of trees to plant, and setting planting schedules • Unclear criteria of success	• Increases uncertainty in measuring policy outcomes • Risks loss of policy legitimacy
2	Addressing climate change through carbon storage by trees	• Assumes nature's capacity to compensate for continued fossil fuel emissions • Slow to produce results • Difficult to scale-up given land required • Tree vulnerability to climate change	• Diminishes sense of urgency • Temporal displacement of responsibility • Breaches principle of inter-generational equity • Bequeaths negative legacy to future generations • Treats nature as repository for societies' negative environmental externalities
3	Adoption of an end-of pipe approach	• Imposes opportunity costs	• Diverts efforts from systems solutions, (cleaner production; lower consumption) • Moral hazard
4	New approach to land use	• Ignores historical and cultural land use and practices • Competing landscape values • Conflicting perceptions of value of trees in landscape	• Existing contribution of traditional land use practices ignored in face of new objectives • Presents problems of interest mediation • Reduces community and stakeholder acceptance

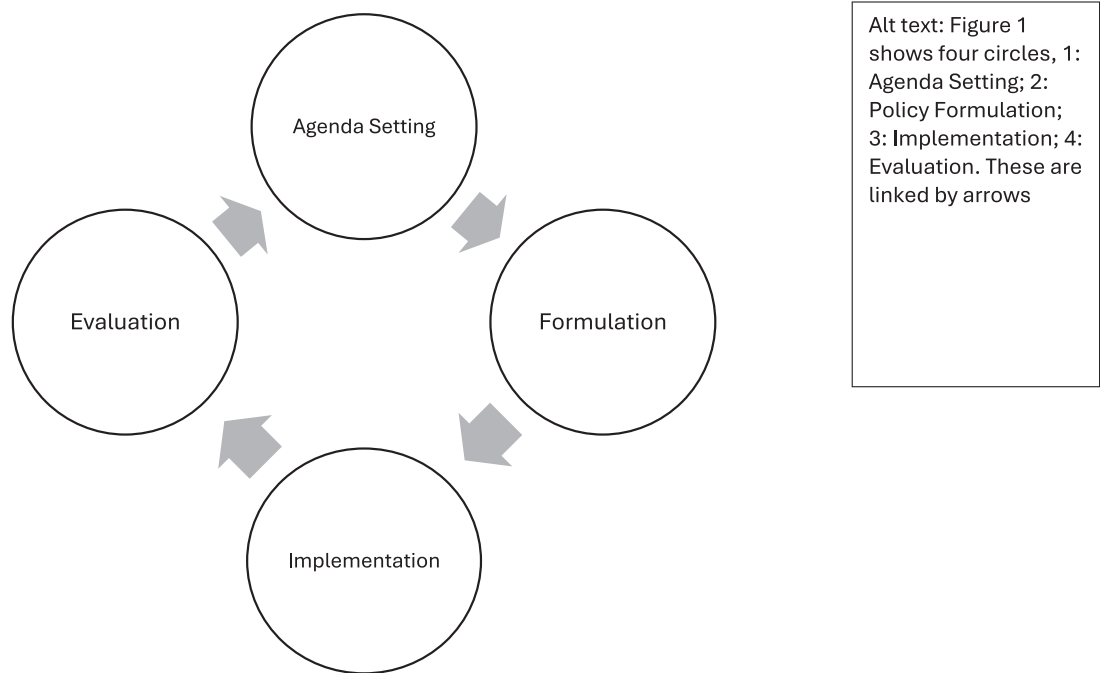


Figure 1. The classic policymaking stages.

focus is on the more formal aspect of the policy process, when the recognized problem is put on the agenda for public action. This stage is critical, as here policy problems and solutions are articulated, defined, framed, and contested (Bali and Halpin 2021). Agenda setting plays a critical role in ‘attaching’ a particular solution to a problem (Baumgartner and Jones 1993).

Policy formulation sees the creation of government response, which includes defining goals, estimating costs, and assessing the specific outcomes a policy will produce. Policy instruments, such as regulations or finances, are selected (Adeniran, et al. 2023). The effort, knowledge and resources devoted to translating policy decisions into action is commonly described as the ‘implementation stage’ (Pülzl and Treib 2007). The decision on a specific course

of action and the adoption of a programme does not guarantee that the action on the ground will strictly follow policymakers’ aims and objectives. At this stage, policies and their intentions will often be changed, distorted, delayed, or even blocked. The central role of implementation agencies and their personnel in shaping the actual policy outcome is now well acknowledged (Ahrum and Brewer 2022).

Methods

This research is based on a content analysis of grey literature, an established method in qualitative research. Grey literature

from public sector organizations involved in treescape expansion policy in England and Wales, and in relation to land-use planning, agriculture, environment, and rural development policies, were analysed.

Using policy documents involves three main steps: (i) identification of potentially relevant document types and sources; (ii) accessing, collecting and sampling of the documents; and (iii) conducting the content analysis (see [Altheide and Schneider 2013](#)).

- i) This step was guided by a stakeholder and actor mapping exercise (see [Syder et al. 2025](#)). The exercise identified the relevant governmental bodies, organizations and organized interest groups. Interest groups were stakeholders that have a current or future stake in land-use management decisions in the study areas and have a place-specific attachment through living or working in the region. Groups were identified through a desk-top review, and visits to relevant organization/department websites. The wider research project conducted 15 interviews with key policy actors within the system of public administration in England and Wales, and the information gained from these interviews helped inform the document search (Footnote 1).

Within the UK, most of the relevant policy areas are devolved, with the Welsh Government having legislative competencies in relation to environment, economic development, land-use planning, and agriculture. Thus, publications from the Welsh Government and Senedd Cymru (Welsh Parliament) were included.

The investigation reached down through the system of MLG to local bodies and authorities, and expanded outwards to quasi-state agencies and actors, especially given the operational structure of DEFRA (the Department for Environment, Food, and Rural Affairs) and NRW, as discussed below. Designated landscapes, such as National Parks and National Landscapes (former Areas of Outstanding Natural Beauty), cover around 26.4 per cent of the land area in England and 29.4 per cent of Wales as of 2024 ([JNCC 2024b](#)). They have a relatively important role in landscape management and were therefore included in the scope. Quasi-governmental agencies and organizations were included, such as NRW, a governmental sponsored body; *Dŵr Cymru* Welsh Water, a not-for-profit, non-shareholder company subjected to statutory regulations and legislation; Nature England, a non-departmental public body; and Forestry England, part of the UK Forestry Commission. The mapping exercise revealed that conservation and environmental NGOs who own land have highly relevant strategies, especially at the local level. This includes the RSPB, Woodland Trust, and National Trust, the latter being the UK's largest private landowner.

- ii) The mapping exercise identified the key organizations involved in shaping policy and action on treescape expansion. A web-based search uncovered a wide range of tree planting/tree expansion documents, including white papers, research and evaluation reports, working papers, documents from consultation and committee processes, partnership projects, UK Acts of Parliament and Senedd Cymru (Welsh Parliament) legislation, regulations, funding programmes, policies, strategies and action plans, alongside woodland creation and nature recovery strategies, and consultations. A range of regulatory and statutory documents on UK forestry standard and legislation for land-use planning and tree planting were identified. Nature recovery and tree planting strategies from local authorities

were collected. Closely related climate change action plans, and the proposed Sustainable Farming Scheme (Wales) and current Environmental Land Management Scheme, which includes the Sustainable Farming Incentive (England), produced relevant documentation (see Supplementary Material A).

In all, 86 documents were identified, and a sampling strategy used to select documents for detailed analysis. The typical strategy of limiting analysis to key events and thus a particular time frame was employed ([Karppinen and Moe 2019](#)), with the period 2009 to 2025 selected. However, where necessary to understand policy context, including issues relating to path dependencies and prior controversies, we referred to earlier policies. Given the focus of the paper, documents related to post-Brexit agricultural reforms were considered beyond the scope of this paper. The analysis was limited to documents dealing with those aspects of agricultural policy that related to tree planting. Similarly, we focused on the role of treescape expansion in net-zero policy, rather than the full range of UK climate mitigation and adaptation policies.

- iii) These documents served as the sources of data and were the subject of document content analysis. Content analysis looked at what is explicitly stated but requires understanding of the administrative competencies of the author, the context in which the document was created, the author's purpose, and the target audience. Analysis required scrutiny of the document context, text, and consequences (see [Cardno 2018](#) for further details). Policy context relates to the background, including values that drive policy, the wider socio-political environment, and the pressures that gave rise to a need for the policy in the first place. This can help understand how the new policy relates to previous policies and their legacies ([Cardno 2018](#)). Text refers to the content of the policy document and required deep, detailed, textual analysis ([Silverman 2011](#)). Posing questions about why a policy is structured or framed in a particular way and the purposes and values that underpin the policy helped yield information about policy construction, interpretation and implementation. Content analysis also sought constraining factors, related to structures, values, norms and attitudes, that acted as implementation barriers. Policy consequences related to the way in which a policy is implemented or plans to be implemented, including guidance and signs of likely challenges relating to resources, processes, or structure, alignment of responsibility and competences.

Coding was a critical part of the context analysis, as a key purpose of such analysis is to organize information ([Kohlbacher 2006](#)). Coding was used to identify categories and themes, enabling the analysis to be undertaken in a structured way. The thematic codes used in the content analysis drew deductively upon two main sources. To begin with, established concepts and categories from the literature on policy analysis within Political Science and Public Administration provided the theoretical foundation. In addition, empirical insights from the literature on treescape expansion were used, ensuring sensitivity to the specific dynamics of the case. This dual grounding strengthened both the analytical rigour and contextual relevance of the coding scheme (see Supplementary Material B).

An iterative approach was used in analysing the documents that combined this deductive approach with inductive methods.

Using the inductive method close reading and re-reading of the documents revealed repeated word patterns, similar phrases, and ideas. In short, whilst the context analysis was undertaken using codes, at the same time it tacked back and forth, allowing data to emerge through in depth reading.

Below, the findings are grouped into where they fit into the different policy stages, where, at each stage we identified barriers to achieving treescape expansion, the policy problem generated, and consequences and are presented in tabular format, one for each policy stage. An issue was treated as a finding either when it was raised in several documents, suggesting a shared concern across the policy set, or when it was mentioned in a single document but offered particularly insightful content or originated from a high-level or influential source. This dual criterion ensured that the analysis captured both commonly recurring themes and unique but significant perspectives.

Results

The results are presented in tabular format, where the first and second columns in each table present empirical findings drawn directly from the document analysis. The third column provides a critical interpretation of these findings, highlighting their implications for treescape expansion policy.

Agenda setting

Turning to [Table 3](#), the difficulty in measuring net-zero (Row 1) makes this target problematic to evaluate from a policy perspective. Sometimes, net-zero is used simply to describe emissions trajectories consistent with 1.5°C ([Science Based Targets 2025](#)). Alternatively, it can mean net-zero CO₂ -equivalent emissions, which cannot be related unambiguously to any temperature outcome, due to the different atmospheric behaviour of short- versus long-lived GHGs. Additionally, to turn net-zero into a useful frame of reference for decision-makers, global carbon budgets need translation into individual decarbonization pathways for nation states, sub-national entities, companies and other organizations ([Fankhauser et al. 2022](#)). This requires navigating ethical and political judgements, not fully brought to the forefront in discussion of what appears, at first reading, to be a merely technically determined target ([Fankhauser et al. 2022](#)).

Furthermore, (Row 2) understanding of the sequestration potential of different tree species, under different habitat and climatic conditions, is limited, making it difficult to operationalize policy at the project level, such as calculating how many trees need to be planted and where. The administrative protocols for monitoring, reporting and verification of removed carbon are yet to be developed, with the existing UK Woodland Carbon Code seeing as having several limitations ([UK Government 2021b](#)). Considering policy legitimacy, if measuring carbon storage is problematic, how do the public know that treescape expansion policy has contributed towards net-zero? Policy legitimacy is an important rule of liberal democracies and a required virtue of public institutions. Public support is, in part, dependent upon legitimacy. This puts at risk so-called 'output legitimacy', related to performance criteria that encompass policy effectiveness and outcomes ([Schmidt and Wood 2019](#)).

The adoption of a net-zero target brings many policy advantages. Setting targets and timetables can serve to direct effort and resources, including funding streams, whilst acting as a symbolic statement of commitment. Stretch targets can be technology forcing and stimulate market developments. However, targets and timetables that are unrealistic can have the opposite effect,

leading to cynicism about government commitment and actions. Reaching net-zero through tree planting brings additional concerns given time lags between tree planting and required carbon sequestration outcomes. This makes tree planting a long-term strategy, not necessarily an effective approach for addressing climate change as a policy emergency. This points to the disjuncture between the short-term nature of the policy cycle, including issue salience, budget and funding, and the longer-term scale at which ecological and ecosystems operate ([Büntgen et al. 2019](#)). Additional risk is that tree planting may give the impression that the problem of climate change is not urgent, nor does it require immediate action. This displacement activity risks pushing the responsibility and problem to future generations, or to later in the electoral or budget cycles. Yet, key scientific evidence points to the need to act now to avoid catastrophic warming ([IPCC 2022](#)).

Climate change itself will impact upon tree health and the resilience of forest ecosystems, making trees vulnerable to extreme weather, and changing growing conditions that alter their carbon capture potential. As the UK becomes warmer and drier, the risk of wildfires increases, which could, in turn, devastate newly planted forests and release stored carbon back into the atmosphere. Here, there is the potential for leakage and reversibility ([UK Government 2021b](#)). Ensuring the permanence of forests is a major challenge, which, whilst recognized, is not well addressed in the policy programmes and funding schemes and makes 'the right tree in the right place' an uncertain guide. Carbon is not stored in trees forever ([Brunner et al. 2024](#)) and the use of tree planting as a climate policy tool require continuous cycles of tree planting, bequeathing a negative legacy to future generations—a burden of having to continuously allocate resources and efforts to initiatives over the longer term. Tree planting regimes may shift depending upon the objectives and management system in place ([Mason 2015](#), [Pommerening 2023](#)). Accounting for cross-generational responsibility and management should be a part of the approach, including dealing with the difficult dynamics of soils, species use, and leakage as trees become older and begin to emit carbon ([Lezaun et al. 2021](#)). Approaches that pass on negative legacies are with the UK commitment to the promotion of sustainable development, embedded in the devolved constitutional arrangements of the Welsh Government. The core sustainable development principle of inter-generational equity is at stake here. Additionally, the policy can become a moral hazard, where an actor adopts riskier behaviour once they have transferred risks to others, including to future generations. As is well known, land-use change policies cannot compensate for delayed emissions reductions in other sectors ([IPCC 2022](#)).

Even when tree planting can be an effective tool, the amount of CO₂ that trees can absorb is limited, compared to the scale of anthropogenic emissions ([Bradfer-Lawrence et al. 2021](#)). To make a significant impact vast areas of land are needed. This can conflict with other land-uses, such as food production or biodiversity conservation, and most UK land is already under agriculture or important for semi-natural open habitats. Despite this, a multi-functional land use framework is strongly promoted in the UK, as seen in the Net Zero Strategy ([HM Government 2021](#)) and UK Climate Change Committee (CCC) (2020), but without due consideration given to trade-offs. Issues of land availability and competition act as a barrier to treescape expansion, with limited solutions on the policy table aimed at balancing tree planting with other land-uses, especially agriculture and conservation. Furthermore, farmers may be reluctant to risk income reduction by converting productive land to woodland. At the same time,

this needs to be traded-off with calls to increase domestic timber supply, given that the UK is heavily import-dependent (Forest Research 2024b), and this trade comes at a cost to the environment in other countries (Cerullo et al. 2023). Similarly, tensions can arise between net-zero goals and other conservation goals like rewilding that prioritize restoring natural ecosystems or letting ecosystems recover naturally. This speaks to the lack of policy integration, and the failure of treescape policy to confront the presence of multiple trade-offs between different land-uses.

End-of-pipe solutions (Row 3) address pollution after it has been created, rather than preventing it at source. For example, planting trees to capture carbon can help absorb emissions, but it does not replace the need to reduce GHG release directly. This approach 'can impose opportunity costs', because resources devoted to compensating for pollution could otherwise be invested in measures that prevent emissions in the first place. Relying heavily on tree planting may, for example, divert effort from accelerating energy efficiency, or demand reduction. What is at stake here is a 'wicked' policy problem, speaking to underlying conflicts about values, interests, and perspectives, not readily amenable to simple policy solutions (Head 2023). The final row (4) explains that an approach that integrates tree expansion with broader land management and climate policies is not easily achieved. Different policies related to land-use each have complex designs, and integration requires co-ordination across multiple governmental departments, operating at multiple governance levels, within different policy contexts holding diverse goals (Howlett and Del Rio 2015). Integrating policies is further complicated by cross boundary and cross sectoral issues (Trein and Maggetti 2020). Due to this complexity, failure in policy integration across stages in the policy process is all too common and has been well addressed in the literature (Vince et al. 2024). How to overcome this failure is not well understood (Laferty and Hovden 2003). Considerable responsibility lies at the agenda setting stage, where the need for addressing policy coherence arises. It is somewhat unfair to lay blame, for the failure of policy integration at the door of treescapes policymakers given the wider systems-level barriers that exist. Many other contemporary policy problems like health and migration are boundary-spanning and have not led yet to robust integration strategies. This leaves a strong sense in which treescapes policy has become caught in a complexity trap, where the rise in the number of issue-based interlinkages increases the space for incoherencies (Starr 2023). This risks treescape policy falling short of expectations because, as shown in other related sectors, instead of moving to an integrated state, policies from different sectors conflict or even cancel each other out, thereby limiting policy effectiveness or feasibility (Bolognesi, et al. 2021). The Royal Society (2023) found that existing policy commitments, including for net-zero and biodiversity, risk land being 'overpromised'. Decision-making on multifunctional landscapes is disadvantaged by the failure of policy integration at the organizational level and between national, regional and local governments operating across scale (House of Lords 2023).

Policy formulation

Turning to policy formulation, in Table 4, the problem of organizational complexity, (Row 1) sees responsibility for climate change policy in the UK spread across several governmental departments, agencies, and so-called arm's length bodies (ALBs). The Supplementary Material A demonstrates the crowded policy terrain and gaps in replacement policies. For example, the Wales

Woodland Strategy (Welsh Government 2018), has become somewhat lost amongst more recent government policy, shifting attention away from long term delivery and implementation of existing policy commitments. In relation to treescape expansion, DEFRA is a critical player, with primary responsibility for land-use, biodiversity, and nature-based solutions. However, overlapping responsibilities with other Departments have led to fragmentation and inefficiency (DEFRA 2018a and b), making both horizontal policy integration (HPI) (between different departments and/or professions in public authorities) and vertical inter-governmental integration (VPI) (between different tiers of government), difficult to achieve. Furthermore, DEFRA's focus on environment and agriculture may not fully align with broader energy and industrial strategies across other Departments. Although DEFRA only operates directly in England, it works closely with the devolved administration in Wales and generally leads on post-Brexit negotiations and climate change. DEFRA's work intersects with the devolved administration in Wales, which have their own environmental and agricultural policies and related agencies and bodies, such as NRW, which have a key role in treescape expansion policy. Whilst policymaking at devolved scales can serve local interests better, this MLG can lead to inconsistency and inefficiency when judged at the UK level (Regan, et al. 2021). This is not helped by the fact that NRW has been plagued by problems of organizational coherence and task overreach, resulting in low staff moral (NRW 2023a).

In relation to implementation, Table 5, DEFRA is widely regarded as overly fragmented in structure and operations (Corry 2025). Breakdowns between agencies can slow down decision-making and reduce effectiveness (DEFRA 2024a). Fragmentation can lead to uneven implementation, particularly at the local level, where collaboration is not always seamless (House of Commons 2025). DEFRA operates through a network of executive agencies, public bodies, and partners, including several ALBs, such as the Forestry Commission and Natural England, with considerable duplication (DEFRA 2022). Whilst this allows specialization, it can create silos and difficulties in coordination.

DEFRA also operates under considerable resource constraints (Row 2) which, when combined with organizational cumbersome-ness, makes for difficulty in responding to crises (Climate Change Committee 2023). A similar problem haunts NRW, which operates under considerable financial constraints, leading to concerns about increasing inability to carry out its duties and to function effectively (Senedd Research 2024).

DEFRA policy has been reproached for giving insufficient attention to the wider contexts of policy implementation (Rothstein and Downe 2012). Organizations often respond to policy initiatives in ways that preserve pre-existing values, beliefs, and ways of working (Hasanoff 1990). Studies of DEFRA have found that approaches to risk are organizationally filtered in ways that reinforce rather than challenge entrenched policy practices (Rothstein and Downe 2012). Its risk adverse culture means that DEFRA has difficulty meeting the organizational adjustments needed to address climate change, with regulation, especially of the farming sector, seen as far too inflexible (Corry 2025). Similarly, NRW, is viewed as a cautious organization, with slow and bureaucratic decision-making leading to difficulty in addressing cross cutting problems (Kirsop-Taylor and Hejnowicz 2022).

Policy style (Row 3) refers to the interaction between the government's approach to problem-solving and the relationship between government and other actors in the policy process (Richardson 2013). Research points to a shift towards the imposition end of the spectrum, with emphasis on top-down

Table 4. Policy formulation.

	Organizational factors	Policy problem	Consequences
1	Complex and fragmented structures	• Different organizational status and power to act • Divided competencies across organizations and MLG system • Unclear competences and undue overlap • Limited potential for Vertical and HPI	• Policy integration hampered • Reduction in policy coherence • Reduction in governance accountability and transparency
2	Risk adverse culture	• Lack of flexibility in policymaking	• Unwillingness to take risks • Difficulty managing change
3	Policy making style	• Elite styles • Absence of traditions of transparency and participation • Risks capture by established interests	• Policy conflict • Lack of trust amongst/across interest groups and within society, • Limited stakeholder 'buy-in' particularly at local level • Loss of policy legitimacy
4	Path dependencies	• Crowded policy terrain • Tendency to promote incremental changes • Lack of innovative thinking to address complexity of climate change	• Inherits unresolved challenges and problems of past forestry policy • Undermines potential for transformative change
5	Aspiration for multiple benefits	• Mixed motivations surround land use conversion • Conflicting priorities in policy and plans	• Interest group conflict • Failure to acknowledge trade-offs between different land use and formulate policies responses • Net-zero policy complexity trap

Table 5. Policy implementation.

	Implementation factors	Policy problem	Consequences
1	Regulation and planning Conservation and protection status	• Felling licences restrict conversion to broadleaf • Tree planting must align with original designation purposes • Limits where trees can be planted, e.g. peat or bird habitat • Restricts use of tree protection methods, e.g. fencing on commons • Can take land out of a tenancy	• Availability of land significantly reduced • Climate adaptation through land use change blocked
2	Economic	• Reduction in land value through conversion to woodland • Locks up potentially economically productive land • Limits economic gain beyond initial payments • Economic returns not guaranteed • Market uncertainty (carbon credits and trading) • Perceived loss of control over future land use • Uncertainty about reverting to original land use/shifting to alternative land use	• Conflicts with delivery of multiple benefits • Raises issue of trade-offs without redress mechanisms • Maldistribution of opportunity costs • Points to requirement for economic/business case
3	Monetary support mechanisms	• Complex range of short-term funding schemes • Application process seen as overly bureaucratic • Schemes not easy to access or comprehensive in coverage • Long-term maintenance funding limited	• Undermines credibility of treescape expansion for net-zero policy • Reduces priority given to alternative approaches, e.g. natural regeneration

policymaking (Richardson 2018). Here there is emphasis on elite rather than participatory democracy and a notion that 'government knows best' (Marsh et al. 2016). The style is noted for its incrementalism, a cautious approach that favours small, gradual changes rather than sweeping reforms. Ad hoc problem-solving is another key feature, making policymaking somewhat reactive, focusing on immediate problems rather than long-term strategic planning for climate change policy. Consultation

with stakeholders has been criticized for excluding marginalized voices or opinions that lie outside the traditional norms, with overreliance upon elite networks, particularly in Westminster and Whitehall, which may not always represent broader societal interests and can hinder responsiveness to complex and evolving issues. Furthermore, whilst the limited nature of public participation in UK policymaking is well recognized, and the UK has a vibrant civil society and charity sector, efforts to address the

barriers to participation, including lack of capacity, capability, and resources, continue to lag (Levin et al. 2024). Whilst both DEFRA and NRW regularly conduct public consultations, they operate within broader government priorities, which can limit the scope of public influence. Consultations see over-representation of well-funded organizations and underrepresentation of marginalized communities. The exclusion of small-scale farmers in the formulation of the ELM scheme is a case in point (Little et al. 2024). This leads to a lack of public trust, especially in relation to the introduction of new policy initiatives (Row 3).

Much is made in the literature of path dependency (Row 4) which at one level is simply another way of describing the incremental, adaptive nature of much policymaking that consists of patching and repairing, building on and learning from experience (Heclo 1974). However, the fact that policymakers tend to draw on an established repertoire of tools reinforces the bias of public policy against radical innovation (Fox et al. 1989).

The final row (5) addresses the aspiration to provide multiple benefits from policy. Perceptions of land-use value amongst different interests are not well serviced by existing policy commitments. Many farmers believe that existing farming practices are already providing multiple benefits (Food, Farming and Countryside Commission 2023). Landowners and farmers may view tree planting as a disruption to traditional farming or local identities (Syder et al. 2025, Mabbett 2023). The Welsh uplands have seen local communities engage in cultural practices that have, historically, formed beneficial socio-production landscapes, bringing both high cultural and environmental values (Baker and Durance 2018). Cultural attachment to farming and scepticism of forestry as an economic activity can form barriers to widespread adoption of tree planting schemes. Managing trade-offs between multiple land-uses is also blocked by the system of financial support, which does not explicitly incentivize the delivery of non-marketable benefits and is not yet locally adjustable to reflect the varying suitability of land to different functions (Royal Society 2023). This has led to calls for administrative reform, including for a new land-use framework, with the House of Lords pleading for the establishment of a land-use commission.

Policy implementation

Policy implementation requires clear policy goals and plans. The present uncertainty over post-Brexit agricultural policies, including the ELM scheme, does little to reassure landowners that may hesitate to plant trees. Whilst post-Brexit policy has shifted towards rewarding environmental outcomes, uptake is slow. Moreover, the lack of local coordination can serve as a barrier. Implementation requires collaboration with local councils, conservation groups, and community organizations. However, DEFRA's centralized approaches can overlook local priorities or knowledge, and fragmented responsibilities lead to inefficiencies in delivering projects on the ground. NRW is open in its collaborations, especially given the importance of the foundational Well-being of Future Generations (Wales) Act (2015), which stipulates specific 'ways of working' that including open, long-term, and integrated approaches to public policymaking.

Regulatory frameworks (Row 1) are critical, and the complex regulations governing environmental, and agricultural land-use can be time-consuming for landowners wishing to convert land to woodland. The approval process can be slow, particularly in sensitive areas, making navigating the planting of trees burdensome. Although the England Tree Action Plan 2021–2024 advocates co-operation between tenants and landowners in support of tree

planting, 'Tenant farmers can face challenges when establishing trees and woodland, due to timescales of tenancy agreements and impacts on the land holding's status for agricultural use. This complex issue has not yet been confronted in policy implementation' (DEFRA 2021:25). Whilst economic barriers (Row 2) can be inhibiting, monetary support mechanisms can also be a barrier. Securing ongoing funding and managing newly planted forests over the long-term requires sustained government and private sector support. Planting trees is just the first step; ensuring they grow to maturity requires ongoing care, such as protection from pests, disease, wildfires, and harsh weather conditions. Managing these threats requires long-term resources, a recurring theme in the policy documents (Row 3). Whilst incentives form an important part of current implementation strategies, including England's Woodland Creation Offer (EWCO) and Countryside Stewardship grants in England and the Woodland Creation Grant in Wales, (NRW 2023b) these are predominantly for the short-term planting costs, although the problem is less acute in England. Further financial incentives in Wales include The Woodland Investment Grant (TWIG) 2022–2024 (Welsh Government 2022) and the *Coetirorch Bach*—Tiny Forest Scheme to establish 100 tiny forests by 2025 and support individuals and communities to expand and care for their forest/woodland (Welsh Government 2023). However, NRW has insufficient resources to guarantee long-term monitoring of these schemes (Senedd Research 2024). Furthermore, lack of local advisors to navigate complex and overlapping grant schemes can make landowners hesitant in the face of perceived bureaucratic hurdles. Administrative inefficiencies and delays in funding disbursement further discourage participation.

Smaller landowners may struggle to navigate the application process, reducing overall uptake, which is important for Wales, where landholdings tend to be below the UK average size. However, the Wales Small Grants Woodland Creation scheme is specifically designed to support small-scale woodland creation outside protected areas (Welsh Government 2023), although this grant is due to cease in 2026. Similarly, the locally based Farming in Protected Landscapes grants have been particularly successful in England (UK Government 2025) but are also due to cease in 2026.

The involvement of multiple agencies can lead to misaligned goals or delays, particularly when there is no clear lead organization or streamlined decision-making process. The lack of practical advice or guidance given to ensure compliance with new policy developments is a hinderance (DEFRA 2018b). Private sector investment is pushed through incentives and regulatory frameworks, where green finance and investment is expected to play a key role, as seen in the launch of green bonds and investment schemes (House of Commons Environmental Audit Committee 2023). However, there are high upfront costs, as establishing new forests can be expensive, with limited support for long-term maintenance. Furthermore, there is a long payback period, as it takes decades for forests to sequester significant amounts of carbon, making it potentially less attractive compared to short-term agricultural uses.

Efforts are being made to promote sustainable forestry management, but current practices are not well geared towards maintaining the long-term environmental, economic, and social benefits from woodland expansion. Knowledge and experience needed for sustainable forest management is lacking, including for example, tree species selection. Education and training skills are lagging (Bowditch et al. 2022). Public participation is key, with campaigns like the Nature for Climate Fund designed to engage the public in tree planting, but need financial and staffing resources, particularly for supporting community-led projects. However, as

the policy style of NRW is governed by specific 'ways of working', it is seen as having greater capacity to support integrated efforts, including from the bottom-up (Kirsop-Taylor and Hejnowicz 2022).

Discussion and conclusion

This paper offers a novel contribution to the literature by embedding the classical stages model of public policymaking within the empirical context of UK treescape expansion. Using this model contributes a diagnostic framework that identifies how barriers accumulate and interconnect within the policy making system. To date, literature on the barriers to treescape expansion emphasize financial, cultural, aesthetic, or behavioural barriers. Staddon (2021), for example, identified insufficient financial incentives, farmer identity, lack of confidence and expertise, issues of land-ownership succession, and loss of sense of place as barriers to woodland creation. However, the review is largely descriptive, synthesizing barriers and enablers from across the literature, but does not systematically trace how those factors map onto distinct stages of the policy cycle. Fitzgerald et al. (2021) revealed that, although stakeholders widely supported woodland expansion, in this case in Dartmoor the UK, barriers—including insecure land tenure, agricultural policy legacies, landscape aesthetic/heritage concerns and financial and practical costs—prohibit progress. Whilst insightful, these findings focus on specific local constraints and overlook broader systemic issues, such as the misalignment between how policy goals are framed and the practice of policy implementation on the ground.

Whilst these studies have advanced our knowledge of stakeholder values, landscape contexts, and public acceptability in relation to treescape expansion, there remain critical gaps in understanding how higher, systems-level institutional factors shape the outcomes of treescape expansion aspirations. Syder et al. (2025) shows how local values and regulatory frameworks (land-use policy and financial instruments) influence stakeholder preferences and limit ambitions when national targets or schemes do not align with place-based factors. Westaway et al. (2023) land-use policy insights emphasize tensions between land-for-food and land-for-trees and call for multifunctional integration of policy objectives. However, these studies do not explore how institutional arrangements (e.g. which agencies hold power, how mandates overlap, conflict or are fragmented) or resource allocations (staff, budgets, monitoring capacity) systematically affect problem identification, formulation, and implementation. The result is that many studies enumerate financial, cultural, aesthetic, or behavioural barriers but without mapping when, by whom, and through which mechanisms those barriers become policy blockages. In contrast, this paper treats barriers not as isolated listings but the components of a broader policymaking trajectory and demonstrates how conflicts manifest in unclear policy mandates and fragmented governance structures. In so doing, the paper identifies a stage-sensitive framework pinpointing intervention points that could be used to enhance responsiveness, inclusivity, and robustness in UK treescape expansion policy.

Deconstructing the policymaking process into several discrete stages, corresponding to the sequence of tasks involved in conceptualizing the outputs of government (Howlett et al. 2009, Lasswell 1956), has served a diagnostic purpose, helping to simplify the complexity of public policymaking. The model provides a useful heuristic device that enables us to categorize, rather than merely list, barriers as they operate across stages of the policy process.

This shows the accumulation of barriers across stages, feeding across the policy system to outcome failings and contestations. At the agenda setting stage, strong potential for policy failure was embedded in the approach. As policy formulation progressed, the risk of social conflict began to emerge. The implementation gap was already visible at the onset of efforts, with barriers shown to extend backwards in the policy process to agenda setting and policy formulation. This highlights the close links between earlier stages in decision-making and how implementation is influenced by complex preconditions. It helps reveal the accumulation of uncertainties within each stage and how they feed into poor policy outcomes. Furthermore, attention is drawn to the fact that policy does not feature clear-cut beginnings and endings, which is why a deeper reach into historical context is needed. This revealed how new policy initiatives modify, change, or supplement older policies, or more likely, compete with them or contradict each other.

Furthermore, the stages model offers a perspective against which the democratic quality of policymaking can be assessed. Even where there is broad agreement about the need to promote net-zero, there is continuing negotiation about how the problem is understood, the specific proposals and solutions that are best needed, and how benefits and losses are distributed. This deeper examination of interest politics can support more targeted and effective interventions to improve policy outcomes by addressing their origins in policy initiation. It reminds us that promoting net-zero through land-use change—with the aspiration that additional, wider co-benefits can be obtained—does not involve the application of a neutral, technical policy instrument (Baker and Eckerberg 2013). Rather, it shows that the policymaking process needed to govern the effective use of treescape expansion for net-zero is inadequate, and the required integrated governance framework has yet to be developed. UK treescape policy suffers from 'design faults' (Richardson 2018), unwittingly built at the design phase, through poor problem definition and the making of policy plans leading to unintended consequences or missed targets. At the heart of this is the failure to acknowledge trade-offs and design new ways in which they can be understood and confronted. Nevertheless, we recognize that a simplified and ideal-type model sets aside discussion on how policy is constantly meshed and entangled in an ongoing process (Hogwood and Peters 1983). Empirical reality does not fit within any neat classification of the policy process into discrete, sequential stages (Werner and Wegrich 2007). The model's flexibility is evident, but, as is the case in the use of any model, the ability to capture the complexity of real-world policy processes is limited. Policy processes are rarely as linear or orderly as the model implies. They are typically layered onto existing arrangements, often through incremental adjustments, making it difficult to identify where one stage ends and another begins. Moreover, policy development and implementation are mediated by institutions operating across multiple levels of government, with outcomes shaped by institutional dynamics and resource capacities, rather than by a discrete 'implementation step'. Applying the stages model to UK treescape expansion policy highlights several of these challenges. The policy arena around treescapes is far more fragmented and layered than the model suggests. Different actors emphasize different agendas: for example, tree planting is promoted as a climate change mitigation measure by the UK Government through the England Trees Action Plan (DEFRA 2021), but it is also framed as a biodiversity intervention in initiatives such as the Wales National Forest programme led by NRW. These ambitions intersect with long-standing regulatory frameworks, such as the Forestry Act

1967, as well as newer legislation like the [Environment Act 2021](#), creating overlapping mandates and requirements. Moreover, the governance of treescapes spans central and devolved administrations, with diverging priorities and institutional capacities. For instance, agricultural subsidy under the Environmental Land Management Schemes (ELMS) in England differs from Wales's Sustainable Farming Scheme, shaping the incentives available to landowners in distinct ways. As a result, there is no single, standalone 'treescapology policy', but rather a shifting assemblage of post-Brexit agricultural, climate, and biodiversity policies that complicate any straightforward application of the stages model.

By demonstrating the limitations of the stages model through its application to UK treescapology expansion, this paper makes a methodological contribution. It highlights the need to account for overlapping policy agendas, MLG, and incremental policy developments when using the model, showing how these factors can complicate the identification of discrete stages in practice. Similarly, regarding the methods, even in countries with relatively open and transparent governance structures, documents available may provide a selective picture of the policy process and present only those facts that are favourable to their authors (Karppinen and Moe 2019). None of these challenges, however, are reasons to avoid using documentary sources to help improve understanding of the barriers to treescapology expansion in the UK. On the contrary, whilst most scholarly work relies heavily on peer-reviewed sources or formal policy documents, this study also captures the tacit, operational knowledge from stakeholder grey literature. This approach uncovers discursive and institutional mismatches, such as the misalignment between biodiversity and climate agendas, that are underrepresented in more traditional analyses. By synthesizing this broader evidence base, the paper provides a more dynamic and practice-oriented view of policy evolution. Such research can support efforts to treat barriers to treescapology expansion as challenges to be overcome, not simply impediments to progress. To support such endeavours, the following recommendations are suggested from the paper's findings:

Policy recommendations for treescapology expansion

1) Strengthen governance and coordination.

- Establish a clear lead agency for treescapology policy to reduce fragmentation across DEFRA, local councils, and regional bodies.
- Define roles and responsibilities across governance levels to avoid overlap and delays.
- Support cross-sector coordination mechanisms to align agriculture, environment, and land-use policies.

2) Integrate policies and manage trade-offs.

- Develop integrated land-use strategies that explicitly address trade-offs between agriculture, biodiversity, carbon, and community priorities.
- Avoid 'complexity traps' by streamlining policy interlinkages and ensuring sectoral policies reinforce rather than undermine each other.

3) Review regulatory frameworks.

- Review environmental and agricultural land-use regulations to rationalize barriers to woodland creation.

- Accelerate and standardize approval processes, particularly in sensitive areas, whilst maintaining safeguards.

4) Secure long-term funding and support.

- Move beyond one-off planting grants towards sustained funding for long-term forest management.
- Strengthen performance and accountability mechanisms in tree planting initiatives by emphasizing long-term outcomes, such as tree survival, ecological resilience, and community stewardship, which are supported by adaptive funding structures.
- Provide advisory services on grant support and ensure timely disbursement of funds to landowners and community groups and advisory services.
- Leverage private investment alongside public finance to share risks and responsibilities.
- Provide compensation mechanisms for income forgone, including for tenant farmers.

5) Build capacity and skills.

- Invest in education, training, and advisory services on sustainable forestry, tree species selection, and woodland management.
- Support knowledge exchange between practitioners, researchers, and communities.

6) Empower local and community action.

- Provide financial and staffing resources for community-led woodland projects.
- Enable local councils to tailor national strategies to place-based needs and lead net zero efforts effectively.
- Strengthen public participation in woodland planning and management.

7) Ensure long-term stewardship.

- Design policies that incentivize not just tree planting but ongoing care and resilience measures (against pests, disease, wildfire, and climate impacts).
- Promote monitoring and adaptive management frameworks to safeguard woodlands over time.
- Strengthen performance and accountability mechanisms in tree planting programs by emphasizing long-term outcomes such as tree survival, ecological resilience, and community stewardship that are supported by adaptive funding structures.

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Supplementary data

Supplementary data are available at *Forestry* online.

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Data availability

See Supplementary Material A & B.

Footnote

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