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Land Use Policy

Glocal woodlands – The rescaling of forest governance in Scotland

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ABSTRACT

As a response to global crises of climate change and biodiversity loss, the UN has called for restoring a billion hectares of land. In recognition, both governments and the private sector have pledged to restore landscapes through planting millions of hectares of forests. Private sector investment is to play a critical role in meeting these goals, through instruments such as biodiversity offsetting, philanthropy, voluntary carbon markets, sustainability funds, and climate bonds. Such instruments allow for the value of place-based ecosystems, such as standing forests, to be circulated globally. No longer are forests horizontal (in terms of their extent on a map); they are also vertical, in terms of their entanglements with institutions, and actors, operating at various scales. An overarching emphasis on the private sector however obscures the role of state institutions in engaging these multi-scalar institutions and actors. Bringing the dimension of scale to tree planting, we examine the ways in which woodland creation, a 'national' policy priority for the Scottish government, brings together actors, both 'local' and 'global', in an unequal context. Our analysis uncovers that in retreating from directly creating and managing woodlands to playing a supportive regulatory role, Scottish Government's forest policies increasingly rescale forest and landscape governance to private and non-profit sectors, and to individual landowners and communities. These actors, who are differently endowed in terms of resources, participate in forestry developments on an uneven playing field. Moreover, questions around power and distribution of benefits arise as woodland expansion increasingly becomes part of green investment portfolios, environmental, social, and corporate governance (ESG) commitments, offsetting, and individual philanthropy. A relational view of scale that examines prevailing relations of power and resources in given socio-political contexts can both animate and inform current discourses and policies on tree planting for climate change mitigation.

1. Introduction

Nature based solutions (NbS) are an important development within climate policy and sustainable development agendas (Cohen-Shacham et al., 2019; UN Environment Programme, 2019). Defined as ways of working with nature to deliver social, economic, and environmental goals, they include interventions such as afforestation for flood management, peatland restoration for climate mitigation, and creating green roofs as cooling systems (IUCN, 2020; Seddon et al., 2020). Forestry and Landscape restoration is the crown jewel of NbS, with the UN declaring 2020 as the UN Decade of Restoration and calling for the restoration of one billion hectares of land (UN Environment Programme, 2021). In recognition, national governments have made tree planting commitments (IUCN, 2011; New York Declaration on Forests, 2014), and rolled-out large projects such as Pakistan's 10 Billion Tree Tsunami, the

Sahel's Great Green Wall Initiative, and Ethiopia's record-setting planting of 350 million saplings (UNCCD, 2020; UNEP, 2019, 2021). The private sector has also made commitments to plant trees. At COP 26 in November 2021, the Glasgow Financial Alliance for Net Zero, comprised of 450 firms managing 40% of global financial assets, made the announcement to achieve zero carbon emissions by 2050 (Glasgow Financial Alliance for Net Zero, 2021; WEF, 2021). One of the ways in which this will be achieved is through forest restoration, where companies and investors can buy carbon credits (generated by forests) to compensate for their emissions.

An increasing focus in discussions on NbS is the prominent role of private sector investments (UNEP, 2020). It is estimated that investments in NbS need to increase by USD 4.1 trillion by 2050 if climate, biodiversity, and land degradation targets are to be met, with the majority of this increase coming from the private sector (Bridge et al., 2020;

UNEP et al., 2021; Zhan and Santos-Paulino, 2021). Private sector investment in in-situ ecosystems can be in the form of biodiversity offsetting, philanthropy, voluntary carbon markets, sustainability funds, climate bonds, and mitigation banking (Faruqi et al., 2018; UNEP et al., 2021). Such instruments can allow the value of place based ecosystems, such as standing forests, to be circulated globally (Büscher, 2013). No longer are forests horizontal (in terms of their extent on a map); they are also vertical, in terms of their entanglements with institutions, and actors operating at various scales. Despite the implications of these entanglements for issues of transparency, power and authority (Başkent, 2022; Biermann and Gupta, 2011; Osborne et al., 2021), scant attention has been paid to the scalar implications of restoration in particular contexts.

Much of the grey literature, we contend, frames the win-win scenarios that tree planting can achieve – for the planet, for businesses, and for local communities (The Nature Conservancy, 2008; Ware, 2020; Weeden, 2020). Moreover, the emphasis on both private sector engagement and local communities, relegates the state to the background and embraces what the rescaling literature refers to as "state denialist" approaches (Brenner, 2019). In this paper, we seek to problematize both these assumptions.

We do so by examining how the nation state's role in forestry, a popular NbS (Holl and Brancalion, 2020), has changed over time, to bring together global and local non-state actors in forestry governance. Using the case of Scotland, we underpin our approach by focusing on scale as a geopolitical level (global, national, and local), and rescaling (i. e., shifting configurations of power and authority to non-state actors) Brenner (2004a); Cohen and McCarthy (2015a); Neumann (2009); Swyngedouw (2004)). Scale is a concept rigorously debated by scholars of critical geography (Jones et al., 2017; Neil Smith, 2008), and their conceptualization offers analytical pathways to examine how the "small world" of a forest may be a "meeting place" of complex networks and social relations extending outwards to a global level (Anon, 2010; Massey, 2008). This vertical understanding of forests can open questions on the range of actors that influence a place, their relative power and resource potentials, and long-term policy implications of restoration. In our case, we seek to understand the process of rescaling of forestry governance: the changing constellation of state and non-state actors in tree planting in Scotland. We do so to open lines of inquiry on the following questions: What is the role of the state in rescaling of forestry to the private and non-profit sectors? How does this rescaling affect actors who may have differential access to resources and power? And what does this mean for the future, where land use policies are increasingly coupled with environmental outcomes (and global commodities such as carbon and biodiversity)?

We find that forests in Scotland have become 'glocal' where actors, both global and local, converge. In tracing how the public sector has shaped this landscape, we find un-evenness in power and access to resources of these actors. Furthermore, an increase in private investment and engagement in restoration has important consequences on land markets, and related fiscal and regulatory policies. Through this research, we hope to highlight the wider social implications of tree planting, and consequently, inform public policies on the recent push to plant forests for carbon offsetting and restoration (Bastin et al., 2019; IUCN, 2011; New York Declaration on Forests, 2014).

2. Theoretical frame – rescaling

Scholars from Marxist and Human geography have problematized seemingly neat and nested hierarchies of scale and argued that there is nothing inherent or static about them (Blakey, 2021; Christopher Brown and Purcell, 2005; Jones et al., 2017). They contend that scales are produced, constantly shifting, interconnected, and are both an outcome of material processes and power, and sites of contestation (Brenner, 1998, 1999; Cohen, 2012; Cohen and McCarthy, 2015b; Smith, 1992; Swyngedouw, 2004). Adding a processual dimension, and

foregrounding the national scale, scholars of neoliberalization have focused on the "hollowing out" or the rescaling of the welfare state (Brenner, 1999; Cox, 2009; Jessop, 1993, 2000, 2013; R. Johnson and Mahon, 2005) and dispersal of its functions to citizens, private and non-profit actors (Brenner and Theodore, 2002; Castree, 2008; Fletcher, 2010; Raco, 2014a, 2014b). Relatedly, the rescaling literature, rather than analysing changes in governance of natural resources as a zero-sum game, where state authority is simply transferred to other actors, draws attention to the changing policy arrangements instead (Brenner, 2004b), especially the increase in regulatory roles of the state (Raco, 2014b).

Within environmental governance, authors have examined scale as a process, and examined implications of the expanded role of nonstate actors (Apostolopoulou et al., 2014; Tan-Mullins, 2007). Researchers have argued that this form of governance-beyond-the-state (Swyngedouw, 2000) can lead to political exclusion. For example, Apostolopulou (2016), in her work on biodiversity offsetting in England examines how rescaling of biodiversity to the private sector can exclude local people from negotiations between landowners, industry representative, and consultants. Cohen and McCarthy (2015b) contend that rescaled environmental governance can both modify and produce its own objects of governance, and the resulting configuration is both materially and politically consequential. For example, certified commodities such as timber involve the engagement of non-state actors, transnational networks and local communities (Cohen and McCarthy, 2015b). These actors will be different in terms of power and access to resources, and rescaling therefore may not only reinforce existing inequities, but also lead to uneven outcomes (Brown, 2011). Lastly, socioeconomic and political context play an important role in how rescaling of environmental governance unfolds in a given place (Apostolopoulou et al., 2014).

Other scholars have focused on a relational view of scale, challenging a Russian doll type understanding of scale, where global, national, and local are nested and discrete categories. They treat scales as interconnected and networked, calling attention to cross-scalar relations between actors and institutions that allow for conflict or cooperation (Bouzarovski and Haarstad, 2019). For example, Kern and Bulkeley (2009) demonstrate how a network of pioneering municipalities are steering urban climate change initiatives at the EU level, supplementing direct relations between nation-states and European institutions. They also find that within these networks, some cities hold more influence than others and can leverage the network to their advantage (Kern and Bulkeley, 2009). Underscoring this networked view, Neumann (2009) suggests paying attention to power relationships embedded in networked relations both *between* and *within* (our italics) scales.

Questions around rescaling of environmental governance have been asked of water (Cohen, 2012; Swyngedouw, 2013), pollution, waste and ozone depletion (Andonova and Mitchell, 2010), community based resource management (Tan-Mullins, 2007; Zulu, 2009), carbon markets (Bumpus and Liverman, 2008; Lohman, 2006), and sustainability (Cowell et al., 2017), but not for a global programme underpinning the SDGs: restoration (UN Environment Programme, 2019). Inspired by this body of work, we focus on the rescaling of the forestry sector in Scotland. We examine the case of Scotland and trace the changes in forestry policy and governance over the last 30 years and draw attention to the ways in which forestry has been rescaled to private and non-profit sectors. While commercial forestry (for timber production) has been, since 1919, under the purview and management of the state, over time, especially since the eighties, it has also involved greater statutory control, regulation, and fiscal incentives to engage non-state institutions and actors (Mather, 1991). We situate these changes within the development of emergent rationales for tree planting – offsetting, environmental, social, and corporate governance (ESG) commitments, and production and circulation of 'natural capital'. Paying attention to the ways in which land is increasingly part of these global agendas and investment portfolios can inform both regulatory and fiscal policies related to land.

3. Background – Woodland creation in Scotland

With currently one of the lowest forest covers in Europe, Scottish policy for climate change has a strong agenda to promote woodland expansion (Scottish Government, 2020). We begin by briefly reviewing forestry policy in Scotland.

3.1. History

The Forestry Commission (FC) for the UK was established in 1919 with powers to acquire and plant land, promote timber supply and forest industries, undertake education and research, make grants and give advice to woodland owners (Aldhous, 1997). FC initially played an active role in sustaining populations in the Scottish Highlands (Gambles, 2019; Wonders, 1990). It invested in 'forest villages', constructed 1400 forester homes and employed 13,200 people by 1949, establishing, for instance, the village Ae in Dumfries and Galloway (Spaven, 1960; Stebbing, 1949). Following election of the Conservative Party in 1979, cost benefit analyses determined that creation of state forests was un-economic, and the burden of planting was switched to the private sector (Mackay, 1990). The 1981 Forestry Act sought to reduce the Commission's dependency on government funding and mandated a sale of some of its land. As a result, 180,000 ha of land were sold, reducing the proportion of state-owned woodlands from 50% to 37% in the UK (Gambles, 2019, p. 72). Increasing opposition to selling off public lands halted this trend in 1994, but the Commission still disposes of land parcels though open market sales to private parties, or to communities through community asset transfers (Community Empowerment (Scotland) Act 2015, 2015).

While tree planting targets have been set since the inception of the Forestry Commission, and incentives for private landowners have been in place since 1947, it wasn't until the 80s when private plantings increased due to income tax benefits offered to high-net-worth individuals (Aldhous, 1997; Johnson and Nicholls, 1991; Oosthoek, 2013). Afforestation by individuals to offset personal income taxes was opposed by conservation interests, especially during the 1970s and 1980s, when concern was focused on extensive monoculture plantations of lodgepole pine and Sitka spruce on sensitive peatland habitats.[1]

The UK government abandoned income tax incentives it had in place in 1988 and introduced grant schemes encouraging greater environmental outlook in both commercial forestry (mainly conifers such as Sitka Spruce) as well as non-commercial woodlands (mostly broadleaf) forests. While conifer plantings fell steeply after this period, from almost 24 thousand hectares in 1989–0.5 thousand hectares in 2010, they have now bounced back to 7.4 thousand hectares in 2020 (Forest Research, 2020). The price of timber fell between the early 90s to 2003, and, bar the dip during the recession in 2008, has continued to increase steadily (Forest Research, 2021a). Broadleaf plantings overtook conifer plantings between 2000 and 2017, but since 2014, government grants (as part of Scottish Rural Development Programme) were changed to encourage conifer plantings which overtook broadleaf plantings since 2017 (Environment, Climate Change and Land Reform Committee 11 December, 2018, 2018; Forest Research, 2020). Opposition to commercial forestry continues, especially from conservation groups that highlight biodiversity deficits in commercial woodlands (Forest Policy Group, 2018; Warren, 2000; Woodland Trust Scotland, 2019).

3.2. Present goals and strategy

Forestry was devolved from UK to Scotland under the Scotland Act 1998, and in 2003, following Forestry Devolution Review, Forestry Commission Scotland (FCS) and Forest Enterprise Scotland (FES) were formed. Full devolution to Scotland came into effect in April 2019, and FCS was replaced by Scottish Forestry (SF), and FES was replaced by Forestry and Land Scotland (FLS), who are both now directly accountable to Scottish Ministers (Yang, 2020). FLS are responsible for managing national forests to "*enhance biodiversity, support tourism and increase access to green spaces that will help improve Scotland's physical and mental health and well-being … provide vital timber supplies to support the rural economy*"(Forestry and Land Scotland, 2021). Of the 1.4 million hectares of forests in Scotland, a third is owned by the public sector, managed by FLS. SF is the government agency responsible for forestry policy, support and regulations (Scottish Forestry, 2021).

3.2.1. Presently, three important issues mark Scottish Forestry policy

First, paralleling the global push for tree planting for Carbon storage and sequestration, woodland creation is part of Scotland's strategy for achieving net-zero emissions of greenhouse gases (GHGs) by 2045 (Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, 2019). Scotland was also the first European country to sign up to the Bonn Challenge, a global goal to bring 500 million hectares of landscapes into restoration by 2030 (IUCN, 2011), pledging 2.16% of its area for restoration. The government's Climate Change Plan (2020) includes commitments to incrementally increase annual woodland creation from 10,000 to 15,000 ha per year by 2024/25 (Scottish Government, 2020). The government has increased grants for plantings, in addition to continuing a favourable tax regime with relief on income, inheritance and capital gains taxes (Scottish Government, 2019; Scottish Woodlands, 2019).

Second, framing woodlands as natural capital, the Scottish Government encourages private and public investments in multi-purpose forestry to deliver a range of private and public goods. These include income, carbon storage and sequestration, biodiversity, water quality, as well as socio-economic outcomes for communities, such as employment generation, and well-being (Scottish Government, 2019). Within the context of post Common Agricultural Policy (CAP) arrangements following Brexit, there has been renewed interest in decoupling farm payments from production, towards supporting public goods through public and private finance (Harvey, 2019; Scottish Environment LINK, 2011). The government's climate change plan also emphasizes the need to leverage private investments in *net-zero markets such as natural capital and biodiversity* (Scottish Government, 2020).

Third, in the context of highly unequal land ownership, where it is estimated that 432 private individuals own 50% of private land in rural Scotland (Scottish Government, 2014; Wightman, 2015), there has been a range of initiatives to engage local communities in decision-making (Community Engagement in Decisions Relating to Land, 2019). In terms of forest ownership, the data are somewhat unclear but indicate that woodlands in community ownership are small compared to other ownership types, with communities owning about 2.7% of Scottish land of which only a small proportion is wooded (Lawrence and McGhee, 2020). Within this context, the Scottish Forestry Strategy, as one of its priorities, identifies the engagement of communities in creation, management and use of woodlands to "*foster community cohesion and help people feel they have control over the decisions that shape their lives and the environment in which they live.*" (Scottish Government, 2019, p. 12).

While the state's direct engagement in productive forestry has eroded, most significantly since the Conservative government, forestry has become part of new state agendas. In seeking to use woodlands for climate change mitigation, encourage private investment in the provision of public goods, and providing new opportunities for community empowerment, the Scottish government has rescaled forest governance to private, non-profit and community sectors. This implicates a range of

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[1] While forestry is supported at present by a favourable tax regime, until 1988, any forestry investment could be written off against personal income taxes. This led to extensive tree planting in environmentally fragile areas such as the Flow Country, an area of deep peat soils and an internationally important area of biodiversity (UNESCO World Heritage, 2012).

actors who have access to varying levels of capital, resources, and power. In our results section we trace how the state, through its regulations and incentives favours a certain group of actors over others.

4. Methods

Using document analyses and semi-structured interviews, we take a qualitative case study approach to understand ways in which forestry policies and governance have changed over time in Scotland. Research objectives were informed through in-person discussions over the course of 2019 with various organizations engaged in tree planting in Scotland, and through in-person attendance at related meets and events related to land reform, farming, forestry, and conservation. These discussions often highlighted ways in which offsetting had come to dominate recent imperatives for tree planting, and the stellar growth of forestry more generally. We wanted to situate this turn within the wider governance of forests in Scotland – significant developments within the sector, changes in policy, and changes in actors involved in forestry. Several of the interviewees for this paper were identified through these discussions. As a result, purposive sampling was used, since interviewees were selected based on their relevance to our research (Denscombe, 2017; Tessaro and Kepe, 2014).

We conducted 22 semi-structured interviews with key actors (Table 1). Lawrence and Edwards (2013) and Stubbs (2011), identify three categories of stakeholders that influence woodland outcomes in Scotland: 1) owners, 2) agents and advisors, and 3) regulators and consultees. Owners include landowners, farmers, investors, NGOs, and community groups. Regulators and consultees include Scottish Forestry, Scottish Environmental Protection Agency (SEPA) and National Park Authorities. Lastly, agents and advisors include forest management companies, NGOs, independent agents, and agricultural advisory bodies.

Our interviewees include two of the three categories identified by Lawrence and Edwards (2013) – agents and advisors, and regulators and consultees. We did not interview private or community landowners directly, as they can be highly heterogeneous within the Scottish context (Glass and Price, 2013). Instead, our interviewees work across various owners - resident and absentee landowners, tenant farmers and crofters, institutional and individual investors, and communities. This allows our interviewees to talk to a breadth of emergent issues related to tree planting, and how policy developments may influence different owners differently. Instead of organizing our interviewees based on categories

Table 1
Interviewees.

Code	Expertise
PVT1	Investment forestry, commercial forestry
PVT2	Carbon markets, forest certification
PVT3	Grant applications, woodland creation
PVT4	Forestry policy, commercial forestry
PVT5	Carbon markets
PVT6	Forestry policy and regulations
PVT7	Investment Forestry, grant schemes, woodland creation
PVT8	Woodlands on farms, agroforestry
PVT9	Investment Forestry
PUB1	Forestry Policy
PUB2	Grant applications, woodland creation
PUB3	Forestry Policy, Community woodlands
PUB4	Conservation, native woodlands, rewilding
PUB5	Woodland Carbon Code, forest certification
PUB6	Forestry policy and regulations
NGO1	Restoration, Conservation, native woodlands
NGO2	Woodlands on crofts and farms
NGO3	Forestry Policy, regulation and conservation
NGO4	Restoration, native woodlands
NGO5	Community, farms, and native woodlands
NGO6	Rewilding, conservation, native woodlands
NGO7	Community, Policy, native and commercial forestry

identified by Lawrence and Edwards (2013), we organize our interviewees as being from private (9 interviewees), public (6 interviewees), and non-profit (7 interviewees) sectors. The interviewees represent the most significant bodies engaged in forestry in Scotland. Private sector interviewees included representatives from three of the largest forestry management companies in Scotland, member organization representing UK wide forest industries, and independent consultants with expertise on commercial forestry, carbon (native woodland establishment), grant applications, and investment forestry. Public sector interviewees represented Forestry and Land Scotland, Scottish Forestry, The Woodland Carbon Code (WCC) Secretariat that functions on behalf of all devolved governments in the UK, and one of two National Park authorities in Scotland. Lastly, NGOs included two of the largest tree planting charity organizations in Scotland engaged in native woodland establishment and rewilding, largest member organization for community woodlands in Scotland, environmental charities working on landscape restoration, and Scotland's largest member organization for protection of natural and cultural heritage. For the purposes of results and discussions, quotes are labelled PVT for private, PUB for public, and NGO for the charity sector. These are further individualized by numbers.

Grant schemes geared towards environmental goals were introduced in 1989, and therefore our interviews focus on how woodland creation has changed over the last 30 years. This was also the period following austerity and privatization reforms of the Thatcher government, and what is referred to as rescaling of the welfare state (Brenner, 1999; Jessop, 1993, 2013) and dispersal of its functions to citizens, private and non-profit actors (Brenner and Theodore, 2002; Castree, 2008; Fletcher, 2010; Raco, 2014a, 2014b). The main interview questions focused on: 1) changing policy landscape and role of SF and FLS; and 2) changes in actors engaged in – and drivers of – woodland expansion in Scotland. Each interview lasted between 45 and 90 min. Interviews were transcribed (using otter.ai) and open-coded (using QRS NVIVO) through inductive analysis (Chandra and Shang, 2019). Strauss and Corbin (1998) describe inductive analysis as a process where "the researcher begins with an area of study and allows the theory to emerge from the data" (page 12). Following this approach, we repeatedly examined interview transcripts and compared them with each other to identify common, emergent topics. Our process sits within reflexive thematic analysis, where themes are produced by organizing codes around a relative 'central organising concept' that the researcher interprets from the data (Braun and Clarke, 2019; Byrne, 2022). Quotes from transcripts were first categorized or open-coded (Kyngäs, 2020) in QRS NVIVO under "drivers of forestry", "role of the public sector", and "challenges for woodland creation" etc. We then re-examined the transcripts and codes, and derived themes reported as part of our results such as "changes in role of FLS", "challenges facing communities", "natural capital drivers", etc. We did not use autocode functions or other analytical functions of NVIVO, because computer assisted qualitative data analysis (CAQDAS) may not be reliable for analysing semi-structured interview data, as the "existence of multiple synonyms" in the text may lead to erroneous analyses (Welsh, 2002). We therefore manually retrieved, interpreted, and analysed the text, but used NVIVO to organize quotes alongside their respective codes and themes.

We triangulated the findings through desk research of publicly available documents and data. We scanned these documents for resonance of themes identified in the interview transcripts. These included, for example, the Scottish government's support of natural capital markets, challenges facing local authorities due to budgetary cuts, and present goals of the public sector. These documents included Scotland's Forestry Strategy, the Scottish Government's Climate Change Plan, reports by the Scottish Land Commission, Mackinnon Report, Forestry Statistics, and Audit Scotland (2020) overview of local government in Scotland. Topics and open codes derived from interviews were also used to search parliamentary briefings, written submissions, minutes of committee meetings, and 'Motions, Questions and Answers' on the parliament.scot website for triangulation.

This work was undertaken under ETH Zürich's ethics guidelines and confirmed by an approval of the university's Ethics Commission (EK 2020-N-35). Informed consent was given by all participants at the beginning of each interview. Interviews were conducted over phone during the Covid-19 pandemic between June and August 2020.

5. Results and discussion

We present results in three sections – we first trace changes in the state's role in forestry governance, highlighting its transformation from an implementing agency to a regulating one. We then move on to present the results on how forestry governance has moved to local levels – to landowners and communities, and then to global actors such as multinational companies and green investors. We frame these changes as part of rescaling of forestry governance to private, non-profit, and individual actors.

5.1. Public sector forestry has moved from implementation to regulation

The literature on rescaling emphasizes the changing role of the state, away from its redistributive social welfare functions to creating a conducive regulatory and fiscal environment for delivering capital investments and growth (Brenner, 2004a). We see this within the Scottish context. While selling of Forestry Commission's land, its housing stock, and reduction of the Commission's workforce (Gambles, 2019; Meeting of the Parliament, 2002) have reduced the size of the public body, the government takes an active role in providing certainty and confidence to the private sector. The private sector on the other hand, takes an active role in shaping forestry policies.

Interviewees described how FLS **"*have moved from* [primarily] *being timber producers, which is what brought them into existence after the war* …** [to] *sequestering carbon, providing places for people to cycle, biodiversity*" (NGO6). These descriptions are confirmed for Scotland where the share of softwood production attributed to FLS has declined over the last 30 years – from almost 70% of total softwood in 1991–35% in 2019 (Forest Research, 2020).

While FLS has slimmed down, it continues to deliver a steady supply of timber to support the forestry sector, and sells almost 60% of this through long-term contracts (Forest Enterprise Scotland Marketing Plan, 2018, 2019; Forestry and Land Scotland, 2020; Forestry Commission Scotland, 2013). In doing so, while the state provides certainty to the forestry sector (Meeting of the Parliament, 2009), long-term contracts also affect its revenue stream. As one employee of FLS stated –.

"One of our objectives is to support the timber industry. So, we commit to felling 3 million tons of timber a year for Scotland…. Whereas the private sector, they can cut when they want, you know, they just wait for the timber prices to be high. in some cases, we're probably selling it lower than the market price. that's because we set up what we call long term contracts". (PUB3)

As FLS has retreated its role of timber production relative to the private sector, SF has advanced its regulatory role. An ex-employee at Scottish Forestry summed up this shift –.

"When I joined [in the late 80s], the private forestry sector [in the UK] was very small and most of the action on harvesting and timber production was within the Forestry Commission. Everything was dominated by the public sector. The training, the context, the timber harvesting … That all was transformed, particularly in Scotland. The big shift. public sector dominance to private sector dominance. meant that the significance of the regulator and the role of the regulator increased. so the establishment of the new arrangement has really put a good focus on the role of regulator." (PUB6)

The relationship between the private and public sector was also complex, marked by close cooperation between the regulator and the regulated (Levi-Faur and Gilad, 2004). Interviewees alluded to the role of the private sector in "*lobbying for changing the grant support*" (PUB1) and the change in the grant approval process to make it more efficient (through pushing for a process review known as the Mackinnon Report (Mackinnon, 2016)[2]). These recommendations have "*sped up the process and made it easier to access public funds for woodland creation*" (PUB4). Additionally, the role of Scottish government in providing softer forms of support to the forestry industry were also highlighted. For example, the support and leadership of the former Cabinet Secretary for Rural Economy from 2016 to 2021 was often mentioned as being instrumental in driving up commercial tree planting in Scotland. The Confederation of Forest Industries (UK) (CONFOR) has praised the outgoing secretary's '*powerful legacy*' for the forestry sector recently (CONFOR, 2021). Another individual from the private sector referred to this and the public sector's wider support for forestry as providing '*mood music*' favourable to tree planting. S/he continued "*I can't think of an English forestry minister that's been photographed in a sawmill*" (PVT4).

The forest industry is currently engaging with the Scottish government on land use strategies to propose that subsidies designed post-Brexit are based on environmental outcomes (CONFOR, 2020). Conservation charities have also joined in with their submissions to the parliament (Scottish Environment LINK, 2017; WWF Scotland, 2020). This has consequences for the ways in which regulations may favour certain set of actors over others, especially actors that have the means to table these suggestions and form strategic alliances with each other as opposed to those who do not. Furthermore, payments based on environmental outcomes are likely to favour larger estates, an issue we discuss later.

5.2. Rescaling forestry to 'local' actors (landowners and communities)

The rescaling literature identifies engagement of communities and private landowners within the domain of nature conservation as a form of rescaling (Apostolopoulou et al., 2014; Holstead et al., 2018). While the Scottish government has called for greater management and ownership of woodlands by communities (Scottish Government, 2019), interviewees highlighted differences between 'local' actors, in terms of their decision-making powers over land use, and their ability to access public grants for woodland creation.

While respondents acknowledged availability of generous grants for planting, applicants "*really struggle to get their capital upfront to pay for a scheme because the woodland grant is paid in arrears*" (NGO2), making the initial costs of applying for grant schemes out of reach for communities and individuals with smaller means. So, while governments grants may be available to all, communities or individuals with access to finance, land, and resources are privileged over others that lack such resources. As a representative from a charity organization stated -

"If you're a big landowner… then you can kind of make money out of planting trees. The grants for woodland creation are very, very generous… It's much harder to make the scheme profitable if it's a very small scheme. So, communities … or individuals who want might want to plant up little areas of land, have to more or less go through the same bureaucratic process … it costs as much in terms of transaction costs… it's not just the economies of scale that matter, but your ability as an applicant to cash flow the process… these things aren't always available to communities". (NGO7)

Aside from woodland establishment, there was concern that transaction costs and risks of managing woodlands is also higher for communities, particularly in times of austerity and budgetary cuts (Audit Scotland, 2020; COSLA, 2020). Referring to social programmes that

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[2] Jim Mackinnon has undertaken a similar report for Ireland, commissioned by The Department of Agriculture, Food and the Marine (Mackinnon, 2019), and CONFOR has recommended a similar review for England (Written Evidence Submitted by Confor (TPW0003), 2020).

community woodlands support, such as mental health or providing rehabilitation for previous criminal offenders, communities are "*dependent on someone in ultimately in government* [local authorities] *deciding that they want to carry on funding these things*" (NGO7). The loss of local authority support in terms of advice and funding for community woodlands has also been raised in parliamentary discussions (Environment, Climate Change and Land Reform Committee, 2018). The impacts of local government austerity are also reported to be uneven across communities (Gray and Barford, 2018; McKendrick et al., 2016), and may further limit the ability of vulnerable communities to gather resources for woodland acquisition and management.

When it came to discussing plantings done by private landowners, respondents alluded to high profile rewilding and restoration projects being undertaken in the Highlands. There was a belief across most interviewees that large-scale native woodland plantings were being done for philanthropic purposes. It was seen as doing "*the right thing*" (PVT5) and "*inspired and enlightened landowners*" (NGO4) were planting native woodlands and "*making a decision on the basis of something a little bit more altruistic than just the bottom-line figure*" (PVT2). They were looked at positively for being "*conservation minded (NGO2)* and as having *better affinity to the land than more traditional owners*" (PUB1), but also relative to long drawn community discussions, they had the "*ability to make an instant decision… I want 5 million trees in the ground by the end of the year, and it happens*" (NGO6). These responses not only indicate that landowners planting native woodlands were looked upon favourably by the interviewees, but also the power they had over land use decisions.

Linking this to the land reform movement, another private sector respondent stated –.

"I'm concerned about some of the rhetoric within the Scottish Government over … landownership in Scotland … these individuals … are spending a huge amount of money sustaining economies, sustaining life in the Glens, sustaining schools, sustaining local shops, building companies, planting contracts, planting squads, and civil engineering contractors. In some cases, they are a one-person economic development organization … flooding cash into some of the areas of Scotland that require the most amount of cash and of doing it out of their own pocket". (PVT1)

The ability of unelected and unaccountable landowners to make decisions for large areas of land challenges recent emphasis by the Scottish government on democratization of land based decision-making (Community Engagement in Decisions Relating to Land, 2019). Furthermore, normative ideas of equating woodland establishment with doing the right thing, or indeed contributing to social ends, are important ways in which it becomes harder to oppose such trends. More importantly, relations within 'local' actors, in terms of power and material resources, and across to other scales (communities and local or national governments) are important in understanding who benefits from public investments in forestry. Communities seem to face additional challenges in owning and managing woodlands due to wider changes arising from public sector austerity. Local development agendas that emphasize the role of forestry in regenerating rural areas need to account for these.

5.3. Rescaling forestry to 'global' actors (green investors and multinational companies)

As forestry becomes part of green investment portfolios and offsetting strategies, it also brings together a new set of actors, some of whom operate at global scales. The use of market-based instruments, private capital, and the greater role of businesses and NGOs within the environmental sector has been described as a form of rescaling of governance (Apostolopoulou et al., 2014; Swyngedouw, 2000, 2005). The role of these actors in shaping growth of the sector, policies and land markets was identified by the interviewees as an important development that has consequences for both the land reform and post Brexit land use policies.

Interviewees confirmed an increase in interest by multinational companies and international investors "*particularly since the net zero targets have come in*" (PUB5). According to one representative from the industry, "*I can't think of any forestry business which hasn't tried to increase its staff levels during the last few years… Gresham House, Tillhill, Scottish Woodlands, Savills have all bolstered their investment teams in recent years.*" (PVT6). Forest assets of the largest commercial forestry asset manager in the UK, for example, increased 36% from 2019 to 2020 (Gresham House, 2020, p. 8), with forestry funds generating an average return of 15% (ibid, p. 7). There was also recognition that forestry offered a means to not only make an attractive financial return, but also contribute to green credentials of wealthy individuals, fossil fuel and mining companies. As a private sector respondent stated –.

"What we are seeing at the current time is ESG drivers for corporates, personal green credentials … a lot of the investors that we have want to come into the native woodland just have a real heartfelt desire… they have money to invest, … and they feel that native woodland is an attractive thing to do. And then there's the, you know, the very cold blooded ESG if we do this, it's going to make us look good approach". (PVT1)

Interviewees also noted an increase in the role of wealth management companies (*intermediaries*) who would liaise between FM companies and investors. As one employee of a forest management company put it, "*we might rarely meet the investor because we deal with the agent who reports on to the invest*or" (PVT7), bringing anonymity to the process.

Governments, through regulation and policy mechanisms, play an instrumental role in facilitating and regulating markets for carbon and biodiversity (Lederer, 2012; Scottish Government, 2020). While Carbon was framed as "*a new driver*" (PVT7) for woodland creation, 'natural capital' was mentioned as an increasingly important rationale for investment in forestry. For instance, between 2017 and 2021, projects registered with the Woodland Carbon Code, the government backed voluntary standard for UK's woodland creation projects (The Woodland Carbon Code, 2022), have increased by almost threefold in the UK, with Scotland taking a lion's share of the projects in terms of hectares (Forest Research, 2021b). As a public sector employee framed it –.

"Natural capital is a big issue for us … woodlands … deliver all sorts of benefits not just in terms of climate change, but in terms of flood prevention, recreation, mental wellbeing, biodiversity … I think that … raised the profile of funds we spend". (PUB5)

Echoing ongoing conversations around post-Brexit CAP reform, one interviewee indicated that "*…maybe in the future subsidies will be tied to environmental outcomes*" (PUB1). Another noted that, "*The English mantra of public money for public goods in supporting farming and forestry in the future*" (PUB5) may provide direction for post-Brexit reform of agricultural payments (Department for Environment Food and Rural Affairs, 2021) in Scotland.

According to Scotland's Nature Agency areas of high wildness are located mostly in the North and West of Scotland (Scottish Natural Heritage, 2014), an area that overlaps with large estates (Housing and Social Justice Directorate, 2020). If payments are to be based on natural capital outcomes, these estates are likely to gain the most, especially for Carbon related services (Atkinson and Ovando, 2020).

While respondents recognized that agricultural subsidies inflate land values, forestry grants were also driving prices up, with a "*big differential between the land price for forestry and the land price for farming*" (PVT9). This is particularly the case in the uplands and hill areas where there is evidence of both grants and natural capital increasingly taking an important role in estate sales and purchase of land by 'green buyers' or 'green lairds' (Scottish Community Alliance, 2021). As reported by estate agents Strutt & Parker -

"With the support on offer from Scottish Government to plant more trees, we are seeing increasing prices paid for hill ground, which is suitable for commercial scale afforestation. In only a few years the fierce competition seen amongst forestry investors and individuals wishing to join the booming woodland sector have almost tripled the values achieved for hill ground". (Scottish Farmland Market Review, 2020)

This is also supported by recent reports that link investor speculation in natural capital markets, particularly carbon offsetting, to increases in land prices in Scotland (Hollingdale, 2022; McMorran et al., 2022). This has often meant that communities or individuals cannot compete in the land market. This issue was raised in the parliament, where even the doubling of the land fund available to communities to acquire land will be insufficient to meet land prices (Community Land Scotland, 2021; Scottish Parliament, 2021). Therefore, access to land for woodlands is increasingly price prohibitive for communities, especially as they compete alongside well-resourced green investors.

6. Considering rescaling of forestry governance– synthesis and analysis

While much of restoration's success has been touted in terms of the growth of private and non-profit sectors engaged in tree planting (Faruqi et al., 2018), we have drawn attention to the instrumental role of the public sector in directing and shaping this growth. While earlier research on rescaling and neoliberalization of governance focused on the receding of the state (Jessop, 1993, 1996), later scholarship has emphasized a process where hollowing out of traditional forms of state powers is accompanied by expansion of regulatory institutions and practices (Braithwaite, 2008; Peck and Theodore, 2019; Raco, 2014a; Shaw and MacKinnon, 2011). We have been able to use this process-based view of scale to locate the changes in forestry in Scotland, focusing on the role of the state. The Forestry Commission's direct role in employment generation, infrastructure investment, or rural economic development through public forests has been "hollowed out" (Jessop, 2002). Since the 80 s however, as the regulating side of the Commission gains prominence, we observe a "filling in" of the public sector with new functions of encouraging private sector growth and investment within the Scottish territory – through greater environmental regulations, higher fiscal incentives, and other forms of support. More recently, these are geared towards environmental commodities. For example, the Scottish National Investment Bank, a publicly owned bank has recently invested GBP 50 million into Gresham House, UK's largest commercial forestry manager to support new planting and generate Carbon credits (Scottish National Investment Bank, 2021). These new forests, *albeit* planted by private and non-state actors, are incentivized, regulated, and rescaled by the national government, and supported by the public exchequer.

Using a relational view of scale, and in line with Neumann (2009), we have been able to shed light on power asymmetries both between and within global and local levels, and shed light on emergent "trans-territorial spaces of contemporary climate change governance"(Nel and Hill, 2014). While growth in ESG and carbon markets is bringing large corporate actors and investors to buy and plant forests, their purchasing and decision-making power is greater than that of local communities (McMorran et al., 2022). Relatedly, we have also problematized win-win scenarios that tree planting can achieve for businesses, and for local communities (The Nature Conservancy, 2008; Ware, 2020; Weeden, 2020). We do so by highlighting how public policies can help create an uneven playing field. While governance is rescaled to local scales for more participatory forms of decision-making (Cohen and McCarthy, 2015b; Holstead et al., 2018; Community Empowerment (Scotland) Act 2015, 2015), we have shown that at local levels, communities and larger private landowners have different capabilities to access government grants or indeed benefit from ongoing developments on payment for

ecological goods and services (even as we briefly set aside the evidence regarding tenuous links between nature based commodities and ecological outcomes (Fletcher and Büscher, 2017)).

The Scottish government's push for growth in natural capital markets also raises questions around access to these environmental incentives. Researchers have documented the risks of these incentives going to larger landowners or more powerful actors in the Global South (Duong and de Groot, 2018; Pascual et al., 2014). Land based payments (or speculation) based on natural capital could further exacerbate inequalities, especially within the Scottish context where land ownership is highly skewed (Atkinson and Ovando, 2020; Hunter et al., 2013). For example, while smaller parcels of woodlands in the form of hedgerows can contribute to habitat, they are no match for 'habitat services' that can be provided by projects such as Cairngorms Connect, a project to restore 60,000 ha of native woodlands within the largest national park in Europe. The largest private landowner in Scotland, NatureScot, RSPB, and FLS are part of the project consortium. With communities owning less that 3% of rural land (Rural and Environmental Science and Analytical Services, 2020), the distribution of such benefits is likely to be skewed towards larger landowners in the first place.

Relatedly, we also bring to light some of the unintended consequences of the growth in restoration on the land market, and how that also undermines the government's agenda to encourage communities to own and manage woodlands. While there are grants available for communities to acquire land (and existing woodlands) via the Scottish Land Fund, forests are currently being sold 30–70% over their asking price (Savill's Research, 2021), making woodland acquisition prices prohibitive for communities. For land for planting, there is evidence of natural capital increasingly taking an important role in estate sales and purchase of land by 'green buyers' or 'green lairds' interested in afforestation in uplands and hill areas (Scottish Community Alliance, 2021). It is estimated that between June 2021 and January 2022, the price of nature-based offsets such as those from tree planting schemes has trebled (Hodgson and Noonan, 2022). The Scottish Land Commission, in recognizing the increase in land values due to natural capital markets, recommends taxation as an instrument to balance public and private benefit (Scottish Land Commission, 2022). Therefore, while communities are recognized in their ability to generate employment, social cohesion, and local opportunities for recreation (Scottish Government, 2019), they have difficulties accessing woodland and land markets. This is in line with the experience of other community organizations in the UK, while touted for their ability to achieve non-economic outcomes, must compete on economic terms (Di Domenico et al., 2009; MacLeod and Emejulu, 2014). Lastly, within the wider context of rescaling, studies on engaging the third and voluntary sectors to deliver services in a post-welfare and austerity context, bring to light the contradictions of such developments (Coulson and Sonnino, 2019; Power et al., 2021). Our interviews indicated that communities tend to depend on local agencies for funding, and austerity can impact their ability to function. These wider changes in public sector emphasize the importance of policy realignment between community empowerment, net zero targets, and other arenas of governance, such as public finance.

7. Conclusion

Our research cautions against blanket calls for private finance in restoration and tree planting,[3] and more widely in NbS. While there is much optimism attached to tree planting for climate change, there is a need to examine contexts within which this happens, where existing inequities can be exacerbated through rescaling of environmental

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[3] "Stimulating private finance is a major factor to meet the objectives under the Bonn Challenge and restore 350 million hectares forests by 2030," said Svenja Schulze, German Federal Minister for the Environment, Nature Conservation and Nuclear Safety (UN Environment Programme, 2020)

governance to the private sector, and especially through proliferation of ecological commodities (Nel and Hill, 2014). These ecosystems (and related commodities) are incorporated within existing private property regimes and land ownership that can be unequally distributed and spatially uneven to begin with. Therefore, while mobile commodities suggest a borderless world of flows (carbon or biodiversity credits, off-setting, or green capital), they are situated in particular places, and a 'global' framing can obfuscate these differences across and within nation states. Likewise, a focus on 'local' can obfuscate power symmetries and contradictions at global scales – for example, when land for conservation is controlled by powerful fractions of capital that exploit natural resources elsewhere (Andreucci et al., 2017). With a growth in forestry, biodiversity and carbon funds, these complexities are likely to increase, with greater anonymity and distance between questions over land – who owns it, who benefits from it, and who manages it. As we have shown for Scotland, these 'glocal' forests cannot be abstracted from their place specific socio-political contexts, and there is a need to situate political scales within the restoration agenda. The entanglements of forests at several scales challenge the in-situ appearance of forests, and it becomes harder to meaningfully designate or fix local scales of land use governance by either communities or regional models of landscape governance. Scales of governance are relational in nature (Brenner, 2004a; Gough, 2004), and it is through working out these relations, both within and across scales, that we can identify power asymmetries, differences in capabilities and resources of various actors, and ways in which public policies, such as land based subsidies, may privilege one over the other.

Declaration of interest statement

We have no conflicts of interest to disclose.

Data Availability

Data will be made available on request.

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