



Land tenure models for carbon positive land use: comparative case studies between Scotland and New Zealand

Theme I ‘Managing Natural Capital’

OECD Cooperative Research Programme: Programme:
Sustainable Agricultural and Food Systems (CRP)

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*I confirm my consent to this report being posted on the Co-operative Research Programme’s website.

1. Rationale for Research and Objectives

(i) Introduction

It is argued that private property regimes in many global North countries present a structural challenge to the transformation of food systems through sustainable agricultural production, and that there has been insufficient attention by policymakers in addressing land tenure issues (and in identifying innovative opportunities) in order to affect critical changes in land use (Calo et al., 2021). A similar case can be made for the necessary shift to reduce carbon emissions, and to mitigate for and adapt to climate change. Whilst policymakers appear to act slowly, international land markets are responding rapidly to the opportunities of carbon trading, especially in neoliberal societies such as the United Kingdom and New Zealand. The Scottish Government are alert to this challenge and continue to implement a programme of land reform measures.

This project aimed to explore the implications of the growing carbon market on property regimes and land governance in Scotland and New Zealand, to share knowledge between research and policy in both countries, and to identify a framework of land tenure solutions to mitigate the environmental and social risks of land use change for carbon, whilst maximising opportunities.

(ii) Background

The Scottish Government has committed to becoming a net-zero society by 2045, and that the transition to a low carbon economy is ‘just’, conducted fairly and inclusively (Scottish Government, 2021). This means that the changes required to reduce our reliance on fossil fuels and to achieve the carbon emissions targets set out by the Government will be undertaken with social justice in mind. The ‘just transition’ aligns with a societal and political shift to rebalance the power of private landownership in Scotland to ensure greater public access to the benefits arising from landownership, and that land ownership and management contributes to the public good. The Scottish Government has advocated for a greater diversity in the types of landowners, the scale of land holdings, and the range of tenure availability. Subsequently there exists a suite of land reform legislation in Scotland, a national land commission that seeks to advance land reform, and ongoing consultation regarding ‘land reform in a net zero nation’ (Scottish Government, 2022).

Critically, meeting the Scottish Government’s net zero target will require significant change in land use and land management practices. There is policy and funding support for considerable woodland expansion and the restoration of peatlands as important carbon sinks. The expansion of renewable energy generation has implications for Scottish land use, management, and ownership. The growth of the market for carbon sequestration and ecological restoration has implications for land value and use, and it has led to an increased demand for land ownership for these purposes. There has been a notable recent rise in companies and individuals seeking to buy land in Scotland to benefit from the ‘offsetting’ potential of the land resource. These owners range from multi-national corporations seeking to offset (or ‘inset’) the carbon emissions from their business activities, to individuals and companies wishing to undertake regenerative land management.

The pace and scale of land use change due to the carbon market is both a potential opportunity (i.e. to achieving net zero, and community wealth building) and a key challenge (i.e. to the ‘just transition’), with risks visible in the parallels to international contexts of land financialisation (Fairbairn, 2020) and arguably ‘land-grabbing’ (van der Ploeg et al., 2015). A recent evidence review has found that large scale private acquisitions of land for natural capital may bring real risks, including potentially concentrating the distribution of benefits associated with natural capital, and conflicting with wider policy ambitions around diversifying landownership and increasing opportunities for communities to influence decisions around land use (McMorran et al., 2022b; Atkinson and Ovando, 2021). There is evidence of significant impacts on the land market, with poor livestock grazing land rising in price by 60% during 2021 (Mc Morran et al., 2022a; Mc Morran et al., 2022b), reportedly pricing out individual farming businesses from expansion, new entrant farming land access, and community organisations utilising right-to-buy mechanisms (Daniels-Creasey and McKee, 2022). The rise of carbon value in the

land market has become a key policy area for the Scottish Land Commission, and they have recently published a protocol on ‘responsible natural capital and carbon management’ for landowners and land managers, within the Good Practice programme. A new land reform bill is anticipated to include measures to limit scale and concentration of landownership, to exclude non-EU/UK entities owning land in Scotland, and to enforce compliance with the Scottish Land Rights and Responsibilities Statement (Scottish Government, 2022). Policymakers are aware of the need for a range of non-legislative tools that can be implemented to mitigate the risks of the carbon market and maximise the environmental and social opportunities.

A similar process of land use change is occurring in New Zealand, with a shift from a solely productivist approach to hill country pastoral farming to a greater attention to the regeneration of native bush land and conservation management. Recent developments have created serious pressures on community confidence in such strategies. In particular, developing carbon markets through a national GHG Emissions Trading Scheme combined with a highly liberalised land market has permitted land acquisition and management by external investors focussed on commercial exotic pine afforestation, with negative impacts on biodiversity and landscape, and an escalating sense of cultural crisis about the resulting rapid decline in pastoral farming in some regions. Large-scale land management by corporations such as ‘Pāmu’, the state-owned farmland enterprise that adheres to the Maori land management principle of *kaitiakitanga*, appear to be well equipped to transition to climate-positive farming. On the other hand, there remains a lack of opportunity and policy structure for individual farmers to access carbon markets, and a reluctance to interfere in private property rights and/or explore communal land management as a response to climate and biodiversity needs. Nonetheless, the implementation of ‘QEII covenants’ to maintain environmental protection despite landownership change, and the reclamation and acquisition of land by Maori communities, offer valuable models for land governance that can facilitate the transformation of agriculture in the face of the climate and biodiversity crises, contributing positively to rural sustainability in New Zealand.

(iii) Research objectives

This fellowship research therefore aimed to:

- (i) Explore the implications of the developing carbon market on land use and governance in Scotland and New Zealand.
- (ii) Develop understanding of alternative models of land tenure in New Zealand and other examples of hybrid land tenure in Scotland, that may be best suited to transition to carbon positive and socially-just land use and agriculture.
- (iii) Identify land tenure solutions to mitigate the environmental and social risks of land use change for carbon, whilst maximising opportunities.
- (iv) Share knowledge between researchers and policymakers between Scotland and New Zealand.
- (v) Build relationships between researchers and share ideas for future collaborations.

2. Fellowship achievements

(i) Achievement of research objectives

The Fellowship has involved an extensive policy and literature review (including academic and grey literature) to understand the current and historic context of the carbon market and its influence on land use and land governance in New Zealand. This has been assisted by the Host Supervisor, connections made at the Centre for Sustainability, and with key stakeholders involved with land use change in New Zealand. The literature and policy reviews are ongoing as key documents continue to be published relevant to this fellowship research project (e.g. Climate Change Commission, 2023). In Scotland, the Scottish Government is preparing a new land reform bill (anticipated in Autumn 2023) that will seek to tackle implications of the natural capital market on land reform objectives, including a proposed ‘public interest test’ for those acquiring land in Scotland.

Interviews have been undertaken with eleven ‘key informants’, identified through the literature and policy review, as well as in conjunction with the host supervisor, and through snowball sampling. Interviewees included multi-disciplinary researchers working on issues relating to land governance, land use change, and climate change, including Māori researchers. Other interviewees included representatives of key New Zealand land institutions, companies focussed on carbon sequestration, representatives of agricultural industry bodies, as well as members of policy teams within relevant Government departments. Interviews were held in person and online, lasted around one hour, were recorded by digital Dictaphone and verbatim transcribed. Interview transcripts are undergoing anonymisation prior to analysis, and all interviewees will remain anonymous in research reporting.

Most interviewees gave their consent for extracts of their interview recording to be used in a later podcast on the topic of this Fellowship, on the condition that they can check and confirm extracts to be used in the podcast. The planning of this podcast is occurring concurrently with data analysis, with the goal of having a preliminary podcast to share with interviewees in Autumn 2023.

Analysis of the interview data is ongoing, as transcriptions are received from a professional transcriber. Thematic qualitative analysis using Nvivo software aims to draw out key themes relevant to the research objectives, including the different perceptions of the risks and opportunities of the carbon market on land governance in New Zealand, and options for alternative land tenure models that contribute to the ‘just transition’. These findings from New Zealand are being compared with policy development in Scotland.

(ii) Major achievements

I am delighted that the Fellowship objectives have been largely fulfilled, although more time is required to finalise data analysis and the development of research outputs (e.g. a collaborative journal article with the Host Supervisor, and the podcast based on recordings made in New Zealand). Three major achievements of the Fellowship are:

- (i) Exceeding the target set for key informant interviews and undertaking interviews with key individuals within the land use sector in New Zealand, including Māori researchers.
- (ii) Providing a seminar on my research in Scotland and New Zealand to policy teams at the Ministry of Primary Industries, facilitated through connections with the Global Research Alliance (Friday 28th April 2023).
- (iii) Providing a seminar of research findings from New Zealand to policy teams at the Scottish Government (seminar planned for 23rd August 2023).

(iv) Follow-up work

As described in the Fellowship proposal, the key findings from this research project will form the basis for a journal article, to be co-authored by the Fellow and Host Supervisor. This will be prepared in Autumn 2023, with the goal of publishing in an open access journal by the end of 2023/early 2024. The process of paper development will also provide a forum for finalising a collaborative research plan, including future proposal ideas and funding strategies, between the Fellow and Host Supervisor (and other colleagues at the University of Otago), and the James Hutton Institute and Centre for Sustainability.

In conjunction with the planned seminar for the Scottish Government to be held in August 2023, a policy brief will be prepared outlining the key findings and implications for Scottish land policy. This policy brief will be published online (via the [project webpage](#)) and emailed directly to key national advisors and policymakers (e.g. Scottish Government civil servants and Scottish Land Commissioners).

As mentioned above, a podcast episode or mini-series is also under development (with assistance from the professional podcast producers ‘[Research Podcasts](#)’) based on key research findings. This podcast will be linked to the Scottish Government-funded research project ‘[Scotland’s Land Reform Futures](#)’.

3. Fellowship impacts

1. Policy relevance in Scotland and New Zealand

Initial analysis of the key informant interviews has identified several critical themes relevant to forestry, agriculture, and climate change policy in New Zealand, as well as providing a valuable comparative case for Scottish land policy development. The key informant interviews in New Zealand have highlighted the importance of:

- Recognising geographical specificities and regional differences, to support science-led land use planning, working across landscape or catchment scales, and over long timescales (i.e. at least 100 years).
- Ensuring that land use change is ‘human centred’, including ‘empathy mapping’ to understand and learn from perceived/lived experiences of different communities to reach agreements on land use plans.
- Exploring diverse legal tools to ensure long term land management (e.g. covenants) or to decouple ownership of natural capital (e.g. carbon sequestration) from land, to allow for wider access to the market.
- Developing high integrity voluntary markets for carbon and biodiversity ‘credits’ (e.g. premium prices paid for credits from native, regenerating forest).
- Partnership working for policy development, including integrating indigenous values in policy design (at all scales).

Analysis of the qualitative data collected in New Zealand also provides a valuable illustration of the challenges surrounding a ‘just transition’ to low carbon economies. For example, some Māori land trusts, who were granted ownership of ‘high country’ (upland) areas, as a result of post-colonial resettlement and compensation programmes, are considered to be well positioned to benefit from land value increases associated with the carbon market around forestry. Other Māori tribes (iwi), however, may be less able to benefit from the potential economic and social benefits of this land use change, as a result of land fragmentation (due to individualised ownership), lack of resources and governance, as well as limitations on small-scale, and long-established native forestry in the New Zealand Emissions Trading Scheme. This influences land that was retained by Māori, much of which incorporates native forestry. Without coordination support and political will for these Māori iwi to form new land governance structures (e.g. land trusts), and for policy review that considers how best to incorporate native forestry, it is likely that inequalities will persist as a result of New Zealand’s colonial history.

2. Relevance to the Cooperative Research Programme

Through international collaboration, the Cooperative Research Programme aims to “*aims to strengthen scientific knowledge and provide relevant scientific information to feed into future policy decisions related to the sustainable use of natural resources, in the areas of food, agriculture, forests and fisheries*” (OECD, 2023). The research project undertaken as part of this Fellowship is fundamentally about mitigation and adaptation to a changing climate through land use and land governance change. It has sought to identify possible and optimal land tenure options for sustainable land use (e.g. food production that contributes positively to both reduce carbon and protect biodiversity), aligning closely with Theme I ‘Managing Natural Capital’ of the CRP Research Themes. The research findings provide valuable insights into perspectives and experiences regarding land use and land governance systems in New Zealand, the key issues and drivers of change (e.g. the carbon market, policy change, and other factors), as well as the impacts of land use and land governance change on different rural groups (e.g. livestock farmers and Māori communities) in New Zealand, providing lessons for Scotland. The Fellowship has also facilitated knowledge exchange directly with policy makers in New Zealand and Scotland, where policy development continues to improve social and environmental outcomes from land management and to support sustainable agricultural production.

3. Personal impacts

I have been extremely fortunate to be awarded this Fellowship and the experience has exceeded my expectations. Without this travel funding I would not have been able to undertake this timely and important research, with considerable relevance to Scotland. The Fellowship has enabled me to make valuable new connections within and outwith academia with individuals and organisations concerned with land policy and governance in New Zealand, considering themes of power, equity, and justice in the context of a growing ‘natural capital’ market. This is a fruitful area of research for my developing career, and there are many opportunities for future collaborations and knowledge exchange (e.g. facilitating discussions between Scottish and New Zealand policy makers). I am confident that the experience will directly benefit my career, not least through publications relating to this research that will raise my profile with other academics, research funders, and with policy makers.

In addition to the Fellowship award, the open and willing nature of the Host Supervisor and Host Institution was critical to the success of this Fellowship experience. I am hugely grateful to Professor Campbell for supporting my application and visit to the Centre for Sustainability, including facilitating meetings with relevant researchers in different parts of the University. He provided valuable advice on the policy landscape prior to travelling to New Zealand and connected me with key informant interviewees. I anticipate that the ongoing success of the Fellowship will be related to his support for a co-authored journal paper and other associated outputs. I am also grateful to Dr Caroline Orchiston, Director of the Centre for Sustainability, for her warm welcome and providing flexible access to workspace at the Centre.

I did not encounter any practical problems, but I was also assisted in my Fellowship experience through having the opportunity to stay with family members for much of the period I was in New Zealand. I am doubtful that the grant awarded would have been sufficient to cover the full costs of international flights, accommodation, subsistence, and research costs (including internal travel, transcription, etc.). It may be that future Fellowship award values should be increased, in particular due to increasing costs related to inflation. Relatedly, if the Fellowship award could also cover research time, this could help to facilitate longer visits and foster rich collaborations.

4. Advertising the Co-operative Research Programme

I learned about the Co-operative Research Programme through a direct email from the Programme Coordinator, as well as having had previous experience as a Fellowship recipient in 2016. The main suggestion I have for enhancing the visibility of the CRP would be to consider creating a social media presence that is separate from the main OECD accounts. There could be more interaction between Fellowship recipients for instance if there was a common Twitter handle or hashtag that could be used when sharing social media posts relating to the Co-operative Research Programme. I will continue to share information about the Programme with my networks in Scotland and encourage early and mid-career researchers to apply.

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