

Land Use in Tairāwhiti & Financing Biodiversity – Briefing Paper for Mana Taiao Tairāwhiti

Dr David Hall, March 2023

Context

1. In the aftermath of Cyclone Gabrielle, there is an opportunity for land-use change to positively contribute to a variety of community and government objectives, including climate adaptation, biodiversity improvement, catchment resilience, and long-term carbon storage.
2. Ultimately, there can be no predetermined spatial solution, because land-use decisions should reflect the risks and opportunities of specific sites, as well as the aspirations of landowners, land managers, tangata whenua and the wider community. However, to support the above objectives, land use change in the East Coast should exhibit several trends in the near future:
 - A shift from pastoral agriculture on highly erodible soils to vegetation and forest, especially in upper catchments.
 - A shift from clear-fell harvesting of plantation forests to less intensive forest management systems, such as continuous cover forestry, or unharvested biodiverse forest for carbon farming.
 - A shift from the use of exotic even-aged monocultures for carbon farming to the use of biodiverse, uneven-aged forests – with a strong preference for native species dominance over time.
 - A greater integration of wetlands, floodplains, riparian margins and estuarine ecosystems throughout catchments to manage flood risk and flood-related impacts.
3. Current policy settings are not well-suited to delivering these outcomes. In particular, the monetisation of carbon sequestration through the Emissions Trading Scheme creates strong incentives which is inconsistent with these objectives:
 - Averaging accounting creates an incentive to convert pastoral land to exotic plantation forestry for clear-fell harvest.
 - Stock change accounting in the Permanent Forest Category creates an incentive to convert pastoral land into unharvested exotic forests for carbon farming.
 - A combination of high carbon prices and increased regulatory stringency on clear-fell harvesting is likely to incentivise the transition of even-aged exotic

forests into the Permanent Forest Category for carbon farming, even though these forests are likely to lack resilience to climate-related events.

4. To facilitate change toward improved land use in the East Coast, coordinated reform is needed across multiple policy instruments, especially the Emissions Trading Scheme (ETS) and National Environmental Standards for Plantation Forestry (NES PF). However, an effective policy mix also needs new economic or policy instruments to enable and incentivise nature-positive activities that the present economy is currently failing to deliver.

Proposal: Options for a Biodiversity Payment

5. A biodiversity payment has the single greatest potential to improve land use outcomes in the East Coast and elsewhere. This is because a biodiversity payment, by creating liquid cashflow for biodiversity improvement, facilitates the creation of markets that can match demand for regenerative activities with supply.
6. A biodiversity payment supports nature-positive land uses by reducing or neutralising the opportunity cost between more and less intensive land uses, and especially the opportunity cost between native forest and faster growing exotic forest. Consequently, a biodiversity payment creates an incentive for landowners not otherwise motivated to restore biodiversity, but also enables landowners who are motivated to restore biodiversity to do more of what they already want to do.
7. The aftermath of Cyclone Gabrielle creates an opportunity to pilot a biodiversity payment through disaster recovery funding. This would deliver on two critical objectives: (1) enhancing regional resilience to future climate-related disasters and (2) creating regional economic opportunities to address the long-run economic effects of Cyclone Gabrielle. Lessons learned from the application of a regional biodiversity payment could be applied elsewhere in Aotearoa New Zealand to drive better land-use outcomes.
8. A biodiversity payment could be delivered by a number of different instruments, which range from voluntary to compliance-based.

Biodiversity credits

9. A biodiversity credit is a tradeable unit which represents a standardised improvement to biodiversity. Through the issuance of biodiversity credits, there is an opportunity to create biodiversity markets that serve to complement and counterbalance existing markets for carbon credits.
10. Currently, two major constraints for biodiversity credits are (1) a lack of appropriate methodologies for the issuance of biodiversity credits in Aotearoa and (2) uncertainty around the scale of voluntary demand for biodiversity credits:

- Internationally and domestically, there is already progress underway to develop appropriate methodologies for biodiversity credits. A critical platform is the Biodiversity Credit Alliance, led by the UNDP and UNEP, which counts at least three New Zealand-based organisations among its members. Also, Australia has now introduced the Nature Repair Market Bill into parliament to establish a legislative framework for a biodiversity market. Methodological constraints are on the way to being overcome.
 - Achieving scale in voluntary demand is likely the greater challenge, because of the significant market education involved. This is beginning to occur, especially through the adoption of reporting and disclosure frameworks for climate and nature-related risks, which are designed to motivate companies to invest in biodiversity and ecosystem-based adaptation to reduce the risks identified. Similarly, impact frameworks like Science Based Targets for Nature encourage companies to address biodiversity impacts throughout their value chain. Nevertheless, voluntary demand is only likely to increase gradually, with an initial focus on where biodiversity impacts are material to the company.
11. To overcome uncertainties around voluntary demand, governments might implement compliance markets for biodiversity, analogous to what the Emissions Trading Scheme enables for greenhouse gas emissions. One way to achieve this is biodiversity offsetting requirements, which are currently being developed for the Natural and Built Environment Act. However, internationally, there is an emerging consensus that biodiversity credits should not be used for offsetting, but rather as proof that the credit holder has contributed positively to biodiversity goals or objectives. In this vein, an alternative structure for a compliance market would instead require participants to meet annual quotas in biodiversity improvement. As such, participants would be required to surrender a certain volume of biodiversity credits each year to achieve a pre-agreed quota, with credits being purchased directly from suppliers or via secondary markets.

Direct payments for biodiversity

12. Direct payments are simply a financial transfer in exchange for the production of biodiversity value. Ideally these are designed as results-based or outcomes-based payments, which reduce the risks to funders that intended impacts are not achieved. While the issuance of a credit is not necessary to support direct payments, a methodology for monitoring, reporting and verification of various indicators will still be critical for establishing a high-integrity outcomes-based funding system.
13. A direct payment for biodiversity and landscape resilience is one way that disaster recovery funding could be deployed by government to stimulate the regional economy, while also contributing to policy objectives for climate adaptation and biodiversity. The Jobs for Nature programme is a recent example that could be improved upon. In the post-disaster context of the East Coast, the payment could be earmarked for the

creation and management of nature-based solutions, such as native forests on erosion prone slopes, or wetlands in flood prone catchments. By shifting to paying for outcomes, moreover, a payment scheme might reduce its overall administrative costs.

14. Direct payments are vulnerable to fiscal unsustainability and changes in government priorities. However, as a time-limited use of recovery funding, a direct payment scheme might serve to demonstrate the impacts that biodiversity payments has on land use outcomes.
15. Over the longer term, a direct payment scheme in the East Coast could serve as a pilot for revenue-neutral schemes that use a levy to fund the protection, restoration and creation of native biodiverse ecosystems. In accordance with the polluter-pays principle, the levy might be imposed on activities that threaten or degrade biodiversity. This corresponds with the Tax Working Group recommendations to explore a natural capital enhancement tax, complemented by biodiversity tax credits, over the next 10–30 years. The intent is to expand the tax base and to improve market functioning by ensuring that people and companies better understand and account for the impact of their actions on natural ecosystems.
16. A natural capital enhancement tax could be implemented by a national land-use intensity (LUI) indicator, which involves a measure of human activity concentrated per unit area and time. This might be measured as inputs (e.g. amount of fertiliser), outputs (e.g. yields), emissions (e.g. nitrogen, phosphorus, E. coli, air emissions), efficiencies, frequencies (e.g. cultivation), or densities (e.g. housing density). Basically, this would involve a transfer of capital from areas with the most intensive land uses (i.e. urban areas, followed by intensive agriculture and forestry) to land areas with less intensive or more regenerative land uses. In turn, this might improve the acceptability of the levy by increasing the social solidarity between urban and rural communities.

Resilience bonds

17. Bonds are certificates of debt issued by a government or corporation that promise payment of the borrowed amount, plus interest, by a specified future date. Green, social and sustainability (GSS) bonds have emerged in recent years as a family of bonds which require that bond proceeds are strictly used for projects with positive environmental and social outcomes across various sectors, including energy, transport, built environment, waste, water, land use, agriculture, adaptation and resilience. Resilience bonds are simply a species of GSS bond that focus on the latter themes of adaptation and resilience.
18. Bonds create the capacity to spread the costs of investment across multiple generations. This is appropriate when future generations are beneficiaries of that investment, such as long-lasting infrastructure which contributes to future wellbeing and economic productivity. The same economic logic applies to the natural infrastructure of nature-

based solutions, such as native forests or wetlands in strategic sites. In the context of global heating, these land-use changes can reduce risks and vulnerabilities, and therefore result in avoided losses and damages. It also reduces the forward liabilities to government which would otherwise carry the costs of repairing or replacing infrastructure, as well as assisting communities in the event of disasters. From the perspective of the Crown's balance sheet, nature-based solutions will often be a highly cost-effective way to manage those forward liabilities. Also, in the context of high inflation, debt is potentially more politically acceptable than new levies or taxes that create revenue in the present.

19. The purpose of a use-of-proceeds bond, such as a resilience bond, is to ensure that bond proceeds are directed toward pre-specified outcomes and activities. Biodiversity payments, supported by impact verification, is one way to ensure that bond proceeds are being used to achieve social and environmental objectives. For instance, bond proceeds could be used to fund a region-wide pest and predator control programme, which facilitates natural and assisted regeneration in upper catchments that most need forest canopy cover.
20. The potential for impact can be further enhanced by designing a sustainability-linked bond, which reduces interest rates if pre-agreed sustainability performance targets, or KPIs, are achieved. For instance, Uruguay has issued a sovereign sustainability-linked bond which tracks KPIs on emissions reductions and also the maintenance of native forest area. If both KPIs are exceeded, then interest rate is reduced, thereby reducing the costs of servicing the debt.