Te Uru Rākau
Forestry New Zealand

ONE BILLION TREES FUND
Report on Policy and Design Recommendations

6 November 2018

Table of Contents

INTRODUCTION

Overview of the report

1. This report accompanies a briefing to Forestry Ministers [B18-0744 refers] which seeks agreement to the One Billion Trees Fund design. It provides a detailed summary of the analysis completed by Te Uru Rākau to inform the programme. Where decisions are required by delegated Ministers, Te Uru Rākau has included a recommendation in this report; these are reflected in the recommendations section in the covering briefing.
2. The report begins with an overview section which outlines the key outcomes the Government is seeking to achieve through the One Billion Trees Fund, and explains drivers and barriers to tree planting. The section describes the proposed integrated fund design, and proposes an investment policy statement which will be used to inform Te Uru Rākau's funding priorities.
3. The next three sections cover:
    a. partnerships (including eligibility and assessment criteria, and the transition of current applications to the new Fund);
    b. grants (including recommended options for grants categories, criteria, and funding rates); and
    c. how the integrated fund will work (including administrative design, fund governance, monitoring and review, and implementation).
4. The last section also proposes the activities that could be prioritised in order to sustainably build momentum towards achieving the programme's goals over the next 10 years.
5. The proposed approach outlined in the report reflects extensive discussion and consultation with stakeholders and other government agencies, starting in early 2018. A summary of this consultation is in *Appendix 1: Stakeholder engagement.*

OVERVIEW OF THE ONE BILLION TREES FUND

6. The Government's vision for the One Billion Trees programme is a sustained land use change that integrates forests and trees into the landscape to achieve improved environmental, economic, social and cultural outcomes.

7. In August 2018, Cabinet agreed in principle, subject to decisions from delegated Ministers, to establish a new grants scheme and partnership fund to support the programme, and established a tagged contingency of $234.373 million for the purpose [CAB-18-Min-0379.01 refers].

8. The contingency was projected to fund grants ($103.068 million[1]), partnership funding ($111.480 million), and administration costs ($19.825 million). In the event that the funding is not fully allocated to suitable projects, it will be available to the Provincial Growth Fund for opportunities elsewhere. See *Allocation of funding* for more details.

9. Te Uru Rākau has designed an integrated fund (collectively referred to as the One Billion Trees Fund) which is outlined in detail in this report. This Fund will support a scale-up of planting in the early years of the programme, including funding of an estimated 60 million trees over the next three years, while also investing in a range of areas to support the legacy of the one billion tree programme.

10. Once Ministers have agreed to the fund design, Te Uru Rākau will complete operational planning (e.g. scale-up staffing, produce collateral, finalise administration systems) in order for the Fund to open in late November this year.

11. We have had stakeholder feedback that suggests that some landowners are preparing to apply for grants when the fund opens and will begin planting in 2019. However, given the long lead-in time for seedling orders and production, there will be some constraints on uptake of the new fund for planting in 2019 for landowners who have not already planned or contracted planting.

12. There is an immediate opportunity to grow extension and decision-making support to landowners, scale-up training and seedling production, and identify strategic planting projects e.g. at a catchment level. There is also an opportunity to develop efficiencies in the establishment of indigenous forest, and also to build greater evidence of the role of transitioning from exotic to indigenous forest cover over the longer-term.

13. Collectively, these activities will help build a foundation for increases in tree planting in the following 2020 season and beyond.

14. Te Uru Rākau is working closely with key partners to establish a strategic plan and a pipeline of projects to support the One Billion Trees programme. We will prioritise early investment in projects that will have maximum impact, while creating the platform for longer-term work.

[1] This includes the potential costs associated with New Zealand Emissions Trading Scheme (ETS) decisions.

Key outcomes sought for the One Billion Trees Fund

15. The purpose of the One Billion Trees Fund is to establish trees in partnership with others to achieve a wide range of social, cultural, environmental and economic benefits.

16. As noted in previous advice to Cabinet, a significant proportion of the one billion trees target can be achieved through business-as-usual commercial radiata pine planting, based on current investment. A further key assumption is that changing regulatory settings, including improvements to the Emissions Trading Scheme (ETS), the Overseas Investment Act, and regulatory changes to improve water quality, will drive large amounts of planting from 2021 onwards. While there is likely to be a mix of species planted because of these regulatory drivers, commercial radiata pine will again make up a significant proportion of these trees.

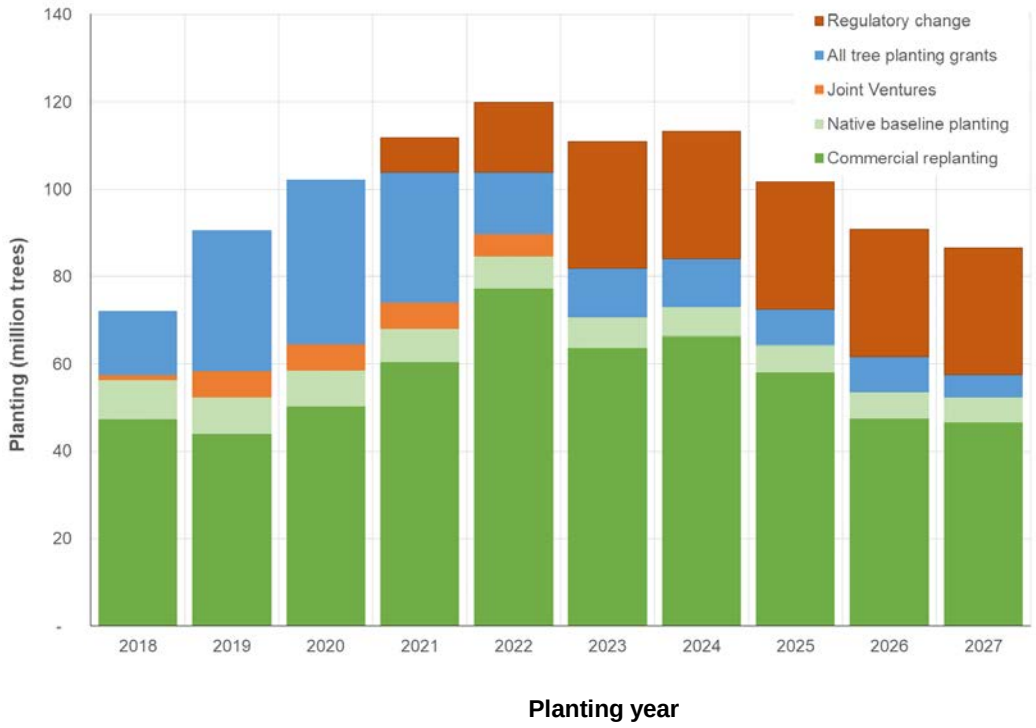


Figure 1: Scenario of planting over time and the contribution of different drivers

Note: not all grant-funded planting will occur in the year in which funding is committed.

Ensuring additionality

17. There is a case for the One Billion Trees Fund to focus on incentivising activity that is unlikely to occur anyway or that will not deliver benefits at the desired scale or rate without government intervention. There is a particular case to incentivise activities in the first three to four years of the programme, ahead of regulatory changes having an impact (see Figure 1 above).

Diversity of species to enhance environmental outcomes and improve farm and landscape resilience

18. The Fund is intended to incentivise planting a broad range of trees, and to accelerate planting to deliver particular objectives, such as improving sediment levels in an identified catchment, restoring lowland native forest, absorbing carbon, and boosting employment outcomes in marginalised communities. Greater integration of trees in our landscape will increase resilience to a changing climate.

19. As noted in further detail in *Grants for tree planting* below, the mix of species that the government incentivises involves trade-offs between short-term and longer term outcomes. For example, faster growing species such as radiata pine will absorb carbon more quickly and can make a greater contribution towards New Zealand's 2030 commitments under the Paris accord, but slow-growing species and permanent forests will continue to absorb carbon over a longer time period, and may produce broader bio-diversity benefits.

20. As the grants framework has been developed, Ministers have indicated that, given the large proportion of business-as-usual trees that will be radiata pine, they are interested in incentivising trees planted to deliver a broader range of benefits, such as biodiversity enhancement, cultural and amenity values.

21. The target of two-thirds of trees funded through the grants being indigenous species reflects this goal. It is driven by a focus on minimising crowding out of private sector investment and delivery of wider benefits

Sustainable land use transition

22. The Productivity Commission's recently released final report *Low-emissions economy* notes that in order to transition to a low-emissions economy by 2050, approximately 1.3 million to 2.8 million hectares of trees need to be established over the next three decades. The One Billion Trees Fund has a role to kick-start this effort.

23. The programme aims to build the foundations for a sustainable land use transition that can continue beyond the 10-year one billion trees target period. Examples of this include improved decision support and spatial tools, and building knowledge and experience around alternative forest management regimes and technologies.

Māori landowners

24. A key outcome being sought through the Fund is Māori development. In particular this means supporting Māori aspirations for development of their lands, including through broader economic development, and recognising the role and importance of indigenous species.

Support for broader government goals and strategies

25. To maximise impact, the criteria and delivery of funding through the One Billion Trees Fund will closely align with other key government priorities, for example,

workforce development within the forestry sector, New Zealand Biodiversity Strategy, Predator Free 2050, and government work on at-risk catchments.[2]

26. The funding programme should also align with and support other regulatory and non-regulatory drivers of integrated land management, to support the right species to be planted in the right place and for the right purpose.

Drivers and barriers to tree planting

27. The majority of trees planted through the One Billion Trees programme will be on private land, and will rely on landowners choosing to plant. A range of regulatory and non-regulatory settings will have a role in influencing these planting decisions, along with broader social and economic factors, and individual landowner interests and motivations.

28. *Appendix 2: Regulatory and non-regulatory drivers that influence tree planting* provides more information on the regulatory and non-regulatory drivers that influence tree planting.

Groups crucial to the success of the programme

29. Te Uru Rākau has identified the following key groups of landowners, organisations and interest groups:

    - Farmers and farming sector groups looking to plant to control erosion, manage riparian zones, and develop an asset on their land consistent with integrated land management. This may be consistent with their farm environment planning and regional resource management priorities e.g. around water quality.
    - Landowners with existing land in forestry or tree cover, who are looking to expand their forested area, or landowners who are seeking to manage wilding trees.
    - Māori landowners and entities (e.g. trusts, incorporations and iwi organisations) looking to improve the environmental and productive capacity of their lands.
    - Community groups, foundations, and environmental non-governmental organisations looking to undertake or support discrete restoration, rehabilitation and environmental enhancement projects.
    - Multi-stakeholder projects at a catchment or large landscape level looking to build connectivity in their landscape and enhance indigenous biodiversity.
    - Groups in at-risk catchments, particularly where sediment is an issue, that are looking to undertake tree planting to help achieve land management

[2] The Land and Water Forum recommended the identification of 'at-risk' catchments, ensuring plans are in place for those catchments and taking action where necessary. 'At-risk' catchments are defined as those where there is clear decline in water quality or ecosystem health, or where the water resource is under pressure from existing or anticipated land use change, leading to a likely decline in water quality, or where the waterbody is vulnerable to irreversible detrimental change, and urgent action is needed. These catchments are currently being identified.

and water quality objectives. These projects may target multiple landowners.

- Investors looking to partner with government or other organisations to deliver tree planting with carbon sequestration, biodiversity and/or regional economic development objectives.
- Agriculture and forestry consultants, land advisors and regional council staff advising land owners and managers.
- Schools, tertiary providers and industry training organisations that have an interest in tree planting, or in related forestry activities.

30. To be effective, the programme will need to respond to the varying interests, motivations and factors that influence these different groups. This suggests a design for the One Billion Trees Fund that is flexible, with multiple methods for providing support and information and with a close strategic alignment to the broader environmental and economic settings that impact on decision-making.

Barriers to tree planting

31. Previous studies of landowner decision-making, as well as anecdotal advice from landowners and fund managers, suggests that there are a range of barriers that different groups experience to successful tree planting and establishment. These include:

    - *Financial impediments* (e.g. limited access to capital, lack of income as the crop grows, long lag to an economic return, market uncertainty for products, and having marginal land with higher establishment costs).
    - *Insufficient labour (capacity and capability) to plant seedling*s and maintain trees.
    - *Uncertainty about best land use options* – this can include limited technical expertise or decision support, regulatory uncertainty (e.g. concern about future restrictions under the Resource Management Act, policy uncertainty around the ETS, concern that tree planting will limit future land use options and flexibility.
    - *Negative perceptions* about tree planting and forestry (e.g. concerns about health and safety, concerns about the impact on rural communities and jobs).

Lessons from MPI's previous experience administering tree planting grants

32. Based on MPI's experience administering tree planting grants and stakeholder and applicant feedback, we are aware of barriers to the uptake of existing afforestation schemes, in particular the Afforestation Grant Scheme (AGS). These barriers include:

    - Limited awareness of the schemes among landowners.
    - Limited support with decision-making and capability.

- Complex fund administration processes (complex application forms; lag between submitting an application and signing a contract; multiple different grant funds each with different criteria and timeframes).
- Negative perceptions of Government intentions and intervention.
- High financial risks (landowners carrying the full risk of the trees failing to establish).
- Tight and complex eligibility criteria (e.g. land that does not meet the post-1989 ETS eligibility criteria is excluded).

Other problems with the status quo

33. In addition to the barriers identified above, there are a number of factors that mean that existing grants and partnerships for tree planting do not deliver the full range of benefits and outcomes that they could.

34. For example, current schemes generally operate with a model where there is a limited window in which to apply for funding and then complete contracting. This has worked well for highly motivated and well-resourced landowners (i.e. commercial foresters looking to increase their planting, or farmers with existing forestry experience). It works less well for Māori land trusts who need longer to get agreement from multiple stakeholders to apply for funding, have less access to technical expertise to assist in decision-making, and who may find it harder to access the capital needed to cover the upfront planting costs.

35. Current grants provide a flat-rate for planting, regardless of the species of tree, and contract for planting that will occur in the following season. As the cost structure and potential economic benefits to a landowner vary considerably depending on tree species, this has had the effect of encouraging cheaper and faster growing radiata pine and mānuka, and discouraging mixed indigenous species, which are more expensive, and need to be ordered up to two years in advance.

36. A further challenge is that decisions about what trees to plant, and where they should be planted, are not made in a strategic manner. At present, planting decisions at a local or regional level are made by individual landowners and organisations. These decisions may be informed by a range of factors, including regional council rules and regulations, the technical information available (e.g. about tree species and local conditions) and the personal preference of the landowner.

37. Successful establishment of trees relies on good knowledge of local conditions and site specific information, and these factors will continue to be an important driver for planting decisions. However, there are opportunities to take a more strategic approach to make sure that we best target government funding to where it will make the biggest difference, and to align with broader government objectives.

An integrated fund design

38. To address the challenges outlined above, it is proposed that One Billion Trees grants and partnerships funding be managed and delivered in an integrated way as the One Billion Trees Fund (see Figure 1 below).

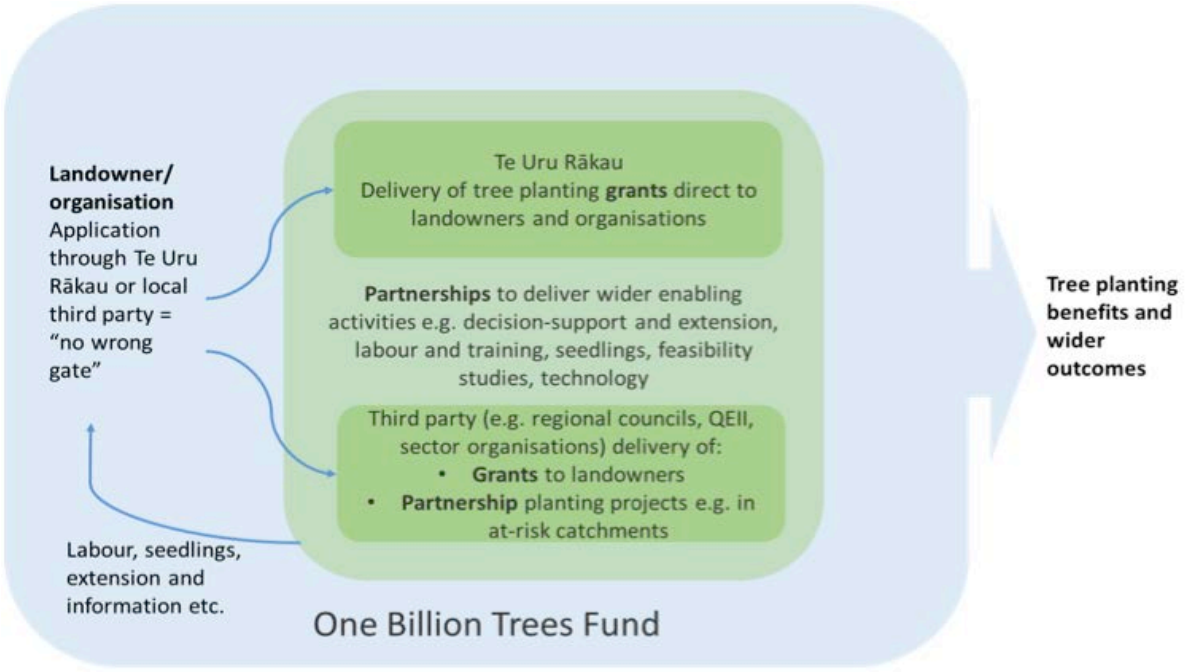


Figure 1: One Billion Trees Fund - Integrated Design

39. The integrated One Billion Trees Fund incorporates two main ways to address the barriers and challenges identified with the status quo:

    - providing direct financial incentives through grants for the establishment of trees; and
    - investing in enabling activities that can help improve the ability of landowners or organisations to make decisions to plant trees and ensure the best outcomes from the trees that are planted.

40. Together these components provide a landowner-focused programme, where there is no wrong gate to accessing funding and support. There is a focus on a simple and easily accessible service design and a high level of integration between the direct incentives for trees and the enabling activities that will support them (see *Appendix 3: The landowner view of the One Billion Trees Fund*).

41. The integrated approach also reflects that there are multiple audiences for the One Billion Trees Fund, each with different objectives and needs, and that a variety of approaches will be required.

Te Uru Rākau tree planting grants direct to landowners and organisations

42. We propose that Te Uru Rākau make grants available direct to landowners, including Māori landowners, and organisations with the right to plant on land. As

with current grants such as the AGS, Te Uru Rākau will receive and process those individual applications.

Delivery of grants through third parties

43. Te Uru Rākau will not be the preferred delivery channel for all landowners to access a grant. We are working with regional councils (see paragraph 48 below) to develop a model for delivery of grants through regional councils.

44. Some landowners, particularly Māori landowners, may prefer to work with yet other organisations. Te Uru Rākau will also consider working with other third parties to deliver grants, to reflect what will work best for particular communities. Examples include environmental non-governmental organisations such as QEII National Trust, and sector organisations such as DairyNZ.

45. Further information about the proposed grant categories, grant rates and eligibility criteria are outlined in *Grants for tree planting* below.

Partnerships

46. In addition to direct-to-landowner grants, working with partners will be critical to building the scale, targeted approach and coordination necessary to achieve the objectives of the One Billion Trees Fund.

47. Depending on the project, potential partners could include regional councils; sector organisations; environmental non-governmental organisations; researchers; training organisations; Māori entities; community groups; and key government agencies, for example, the Department of Conservation (DOC), the Ministry for the Environment (MfE) and Te Puni Kōkiri.

Regional councils

48. Regional councils are a critical partner in delivering the One Billion Trees programme, given their existing capability and networks. They can support development of a strategic planting plan for their regions, scaling up tree planting to deliver regional priorities, and engage with a range of landowners.

49. Te Uru Rākau is currently working with regional councils to identify their capacity and capability in relation to tree planting and land management, and their ability to scale up over a three- and 10-year horizon. This work will form the basis for strategic national and regional planting plans.

50. Subject to the outcomes of this regional council work, Te Uru Rākau proposes to ring-fence a proportion of the one billion trees grant funding to be delivered through regional councils to landowners. We will work through the details of a proposed one billion trees funding agreement with councils and will brief Ministers on this in early 2019.

51. The Ministry for Primary Industries' (MPI) Hill Country Erosion (HCE) programme has a $34 million funding round open for application from regional councils during October. This funding will support councils to work with landowners on planting highly erodible land and riparian areas over the next four years. Decisions to ring-

fence additional money for councils to support tree-planting grants will build on and complement the HCE funding model. This could include a combination of additional funding that individual councils could apply for to extend their HCE work, combined with more strategic approaches to build capability across the sector (e.g. by targeting gaps in technical advice or information).

Larger scale and complex projects, involving tree planting and enabling activities

52. Partners will be well-placed to support more complex planting initiatives, larger scale activity at a catchment or landscape scale, and delivery of projects related to a range of enabling activities, including extension, applied research, and labour and training.

53. Grant funding will assist with direct costs of tree planting within the standard rate ranges. Partnership funding can support the wider costs and benefits associated with delivering a project, for example, a feasibility study, provision of technical advice, and development of training opportunities. The required level of co-funding will be determined on a case-by-case basis (see *Assessment criteria* below).

54. Partnerships can also support areas of research and science, or labour, skills and workforce development that will set the foundations for a sustainable and enduring programme, beyond the short-term grant funding cycle. An example is research that will improve our understanding about mixed tree planting or sustainable and optimal land use decisions.

Recommendation:

Te Uru Rākau recommends that Ministers **note** that Te Uru Rākau:

- proposes an integrated fund design for the One Billion Trees Fund;
- will work with a range of partners to achieve the objectives of the Fund; and
- will report back to Ministers in early 2019 on a proposed one billion trees funding agreement with regional councils.

Proposed investment policy statement

55. The proposed investment policy statement for the One Billion Trees Fund is below. It sets out the principles underpinning the fund design, the partners Te Uru Rākau will likely work with, and the outcomes we are seeking to deliver through the funding. The principles build on the one billion trees criteria for the Provincial Growth Fund (PGF).

56. The investment policy statement will be used to guide investment priorities for Te Uru Rākau's One Billion Trees Fund, and to communicate these priorities to potential investment partners.

Investment policy statement

Purpose statement

To establish one billion trees in partnership with others to achieve a broad range of social, cultural, environmental and economic benefits.

Principles underpinning the One Billion Trees Fund

- *Land-manager focus* – for fund design and support to enable land-managers to make improved decisions about the integration of trees into the landscape.
- *Support integrated land management and greater resilience in landscapes and communities* – the right species planted in the right place and for the right purpose to enhance land management outcomes and build resilience, particularly to environmental shocks and a changing climate.
- *Facilitate a significant increase in indigenous forest cover to restore our natural forest heritage* – the target of two-thirds of trees established as a result of grant funding are indigenous species helps to turn the tide on biodiversity loss.
- *Effective and flexible fund management* – flexibility for funds to be targeted to projects that will accelerate planting to deliver wider outcomes, and avoid competition with private investors.
- *Take a strategic investment approach* – target investment to projects that establish the foundations for the 10-year programme e.g. building a skilled workforce, taking a catchment-level view, and including projects that become self-sustaining beyond the short-term funding cycle.
- *Leverage partnerships and co-investment* – work with partners with existing relationships, expertise, resources, and funding in order to deliver more efficient and effective outcomes that are aligned with local priorities.
- *Build on successful models* – support and build on existing successful models and projects that are aligned with broader government priorities and initiatives, such as Hill Country Erosion programme, Biodiversity Strategy, Freshwater Improvement Fund.
- *Deliver the core objectives of the Provincial Growth Fund (PGF)* – align with the PGF criteria and projects spanning both the One Billion Trees programme and the wider PGF to deliver regional development.

Risk management approach: There are natural environmental risks, project delivery and governance risks, and wider systemic risks, such as labour and seedling supply, to successful programme delivery. We will seek to manage these risks through sound fund management, a diverse project portfolio and the strategic use of funding to address barriers to success.

Our partners: regional councils, non-government organisations, researchers, training organisations, businesses, Māori entities, community groups, key government agencies, landowners and organisations with a right to plant trees on the land.

Te Uru Rākau will prioritise projects that contribute to at least three of these outcomes:

- Increased sustainable regional development through forestry and tree planting activities.
- Increased productivity and innovation in forestry and related sectors.
- Improved support of Māori aspirations to utilise their land and resources through trees and forestry.
- Enhanced environmental sustainability through the establishment of trees and forests, in particular:
    - Reduced erosion and improved water quality, particularly in at-risk catchments.
    - Enhanced indigenous biodiversity through restoration of natural forest.
- Increased employment, training or work readiness for the sector's workforce for forestry and land management.

We will also consider a project's contribution to:

- New Zealand's ability to meet its climate change obligations through the establishment of trees.
- Better-informed tree planting decisions, through improved information, advice and support for landowners.
- Diversification of productive land uses, including indigenous forestry and continuous canopy forestry.

Recommendation:
Te Uru Rākau recommends that Ministers **agree** to the proposed One Billion Trees Fund investment policy statement.

Developing a strategic plan for planting

57. It is estimated that the funding tagged for grants could deliver the establishment of an additional 60 million trees through planting and assisted reversion. Depending on the planting and establishment regimes that are delivered, this will equate to around 50,000 hectares under new or enhanced tree cover.

58. Te Uru Rākau proposes a strategic planting plan, that involves the following:

- Working with regional councils to identify priority areas for planting within their regions to achieve erosion control and water quality objectives in particular. Appropriate regimes on land with very high risk of erosion are likely to involve some form of permanent forest cover, e.g. reversion to permanent indigenous forest cover.
- Prioritising planting programmes in identified at-risk catchments, working closely with MfE, where planting is consistent with other catchment-level risks e.g. in dry or low-flow catchments.
- Working with DOC, the QEII National Trust, and Trees That Count (an early strategic partner) to identify programmes of planting to enhance biodiversity. These will include landscape scale restoration projects further to those already approved in Te Waihora, Motutapu, and Punakaiki.
- Supporting the development of Māori-owned land as a priority. The MPI Māori Sector Strategy and Partnerships team is building relationships with landowners and will be promoting opportunities through regionally-based staff. This will support a focus on surge regions where planting opportunities are greatest, and the development of productive and sustainable use of less-productive land.
- A proactive and strategic approach to developing partnerships will build greater momentum early and support a more strategic use of funding to lay the foundations for an enduring programme.

59. This targeted approach will enable greater realisation of benefits, for example, through avoided costs of erosion (these are estimated at around $200 million annually),[3] and building greater capability in extension delivery and forest management. There is considerable potential to increase uptake of good practice and integrated land management by aligning with the farm environment planning process.

[3] Dymond *et al.* 2012. Trade-offs between soil, water and carbon – a national scale analysis from New Zealand. *Journal of Environmental Management*. 95, 124 – 131.

PARTNERSHIPS

Funding enabling activities through partnerships

60. Cabinet has agreed to set aside funding to support a range of activities that enable increased tree planting, including landscape restoration.

61. We propose that the Fund focus investment on five key enabling activities, each of which is supported by a strategic plan or alignment to broader Government work:

    - ***Labour and workforce development*** – enhanced availability of labour to establish, plant and maintain trees, and an upskilled workforce. This includes improving employment conditions, supporting more young people into forestry sector employment, and building a stronger skills pipeline for the industry.
    - Work in this area will be informed by the broader forestry workforce strategy (a Cabinet paper is currently being developed). It will also align with the Provincial Development Unit's work on taking a regional, prioritised approach to skills and employment initiatives through the PGF, with a particular focus on support for those not in education, employment or training.
    - ***Advice and support for landowners*** – improved information, technical advice and extension services to support landowner decision-making, as well as communications to build understanding of and support for the multiple values of forests and different species options.
    - This will build on the work that is currently delivered by a range of parties (including Te Uru Rākau regional staff, regional councils, sector organisations and environmental non-governmental organisations). We will seek opportunities to improve resources and information, reach more landowners and ensure co-ordination between delivery partners.
    - ***Catchment-based or landscape scale tree planting and restoration projects*** – to deliver improved environmental outcomes in relation to erosion control, freshwater quality and biodiversity.
    - As noted above, Te Uru Rākau is working with regional councils to identify their capacity and capability needs to scale-up planting efforts. Prioritisation of key catchments and areas for large scale planting will be aligned with regional council plans. We are working closely with MfE to ensure that we also align with work underway on 'at-risk catchments'.
    - DOC is already working with a range of partners on landscape scale biodiversity restoration projects, and will support larger scale and complex biodiversity projects.
    - Funding can support the delivery of catchment-based or landscape scale grant-funded establishment of trees by contributing to associated costs.

- ***Science and innovation*** – including modelling tools to support decision-making around land use change and optimal land use, methodologies to increase seedling production and improve seedling quality, and research into overcoming social barriers to tree planting. Short-term operational research will complement that funded through other avenues.
- Based on information from a science workshop earlier this year, and a currently-underway stocktake of the state of forestry science in New Zealand, Te Uru Rākau has developed a science plan to identify the critical short-term, medium-term and longer-term science needs to support the One Billion Trees programme. The recommended focus for short-term (three years) operational research is improving information on alternative exotic species and indigenous trees.
- This plan can be used to prioritise applications for funding, to discuss and plan future projects with key providers, and to commission work where there are particular immediate gaps.
- ***Supporting the scaling up of seedling and nursery production*** – up-scaled and more efficient production relative to demand, support for initiatives that will deliver the diverse range of tree species required for the programme.
- Te Uru Rākau is working closely with the nursery sector to develop a strategy that will support longer-term industry good goals, such as improvements in best practice, training, communication and biosecurity.

62. In the short-term, to help scale-up planting and build a sustainable foundation for the programme, particular priority will be given to projects within these five enabling areas.

63. Over time, the relative priority of different activities may change as the portfolio of approved projects grows and new priorities emerge.

Eligibility criteria

64. Te Uru Rākau proposes that the eligibility criteria for applications to the Fund to deliver enabling activities align with those for the broader PGF:

- Any individual, non-government organisation, Māori organisation, company, charity, research organisation, or council can apply for funding.
- New Zealand companies, including those that are foreign-owned, may be eligible if they are looking to make investments in New Zealand.
- Central government organisations may be a partner to a project, but not the applicant or direct recipient of funding.

Assessment criteria

65. The proposed criteria for assessing applications are set out below. Applications will be assessed for their:

    a. Contribution to the One Billion Trees outcomes as set out in the investment policy statement, and to strengthening key enablers of planting;

    b. Links to PGF and wider government outcomes, including increased employment and productivity, and the enhancement of natural capital;

    c. Connections to regional networks and stakeholders;

    d. Additionality, that is, the project will deliver clear benefits but there are barriers to undertaking the activity without assistance;

    e. Demonstration of suitable governance, risk management (including health and safety risks), project execution (including having appropriate project delivery and financial planning documentation and relevant expertise within the project delivery team), and the appropriate standing of applicants;

    f. Demonstration of compliance with relevant good practice e.g. biosecurity, good employer, financial management; and

    g. Value for money, including meeting co-funding requirements as relevant, and the provision of benefits commensurate to the level of funding sought.

66. Where the partnership project includes tree planting, applicants will have to meet the applicable criteria, as set out in *Eligibility criteria for grant funding*, below.

67. As with the broader PGF, partners will typically be required to co-fund at least 50 percent of commercial projects. The ratio of co-funding for commercial and non-commercial applications will be negotiable where applications demonstrate the ability to deliver strong social and environmental benefits that would not be achieved without a greater level of public investment. An assessment framework tool is being developed to guide this process.

68. Te Uru Rākau will assess how strongly the application is likely to contribute to One Billion Trees outcomes. Projects may or may not be directly connected with a tree planting project, but it will be favourable when they do. Projects do not need to undertake a priority enabling activity but will receive a higher weighting if they do, as will cross-cutting projects which seek to achieve three or more priority outcomes.

Applications to the Fund

69. We propose to accept and assess applications using a similar expression of interest and application process as are used by the PGF, and outlined in further detail at *Administrative design* below.

70. There is also an opportunity to work proactively with potential partners, to develop projects that align with the identified priority areas. This can help ensure

a more strategic set of funding decisions. An example of this could be working with the nursery sector to identify and support projects that are linked to improved practice across the sector, rather than benefiting one single commercial operation.

Transition of current applications to One Billion Trees Fund

71. To date, a number of One Billion Trees projects (totalling approximately $25.35 million in funding) have been approved by Ministers and senior regional officials through the PGF process.

72. In addition there are approximately 35 applications or expressions of interest for funding that have been submitted to the Provincial Development Unit or Te Uru Rākau and that relate to the One Billion Trees programme. A number of applications are on hold, awaiting decisions about the final Fund design. These applications will be processed using the eligibility and assessment criteria outlined above.

73. Further information on the implications for the allocation and phasing of funding is set out in *Allocation of funding*, below.

Recommendation:

Te Uru Rākau recommends that Ministers **agree** to the proposed eligibility (see paragraph 64) and assessment criteria (see paragraph 65) for funding enabling activities through the One Billion Trees Fund.

GRANTS

Grants for tree planting

74. As noted in paragraph 8, Cabinet has tagged funding of $103 million for grants to increase tree planting. The following sections outline the role grants can play in incentivising new afforestation, and provide recommendations on grant design options.

Costs and benefits of tree planting options

75. Different species provide a different mix of private and public benefits (including employment and regional development), and have different up-front and ongoing costs to the landowner/manager and the Crown. Table 1 compares at a glance the benefits and trade-offs for different types of planting.

Table 1 - Comparison of benefits and trade-offs for different types of planting

Type of planting	Biodiversity	Carbon Sequestration	Erosion	Regional development/ employment	Commercial returns	Establishment risk
Mixed indigenous	High	Low (short-term High (long-term)	Low (short-term) High (long-term)	Low/moderate	Low	Moderate/high
Indigenous reversion	High	Low (short-term High (long-term)	Low (short-term) High (long-term)	Low	Low	Moderate
Mānuka/kānuka plantations	Low/moderate	Low (unless transitions to forest)	Moderate (short-term) Management dependent (long-term)	High	Moderate/high	Moderate
Radiata pine	Low	High (short-term) Moderate (long-term)	High (short-term) Management dependent (long-term)	High	High	Low
Alternative exotics	Low	High (short-term) Moderate (long-term)	Moderate (short-term) Management and species dependent (long-term)	High	High	Low/moderate

76. More detailed information on the costs and benefits of different types of tree planting is provided in *Appendix 4: The costs and benefits of tree planting.*

Trade-offs between outcomes

77. All tree planting will contribute to the same broad range of outcomes. The extent to which tree planting contributes to the different outcomes varies, however, with species, location and management.

78. In general, planting indigenous species or supporting natural reversion will provide the highest biodiversity and landscape outcomes, and indigenous species are effective as a catalyst for engaging corporates and the public in tree planting.

79. Indigenous trees are very effective over the long-term at fixing carbon and reducing erosion but slower establishment and initial growth rates mean there are

longer time lags than for their exotic tree counterparts. This means it may take longer to achieve carbon and sediment reduction objectives using indigenous trees.

80. Carbon sequestration by regenerating indigenous species averages approximately 160 tonnes of carbon dioxide per hectare over 20 years. Indigenous species will continue to sequester carbon over the long-term, reaching up to 1000 tonnes per hectare, if natural conditions and management facilitate succession to tall forest species.[4] There is considerable variation in growth rates between sites and indigenous forest types.

81. Indigenous forests generally have low commercial returns, the exception being mānuka and kānuka which have average returns from honey production that match or exceed many exotic trees. Planting of high forest species such as kauri and tōtara for timber production will likely have only modest commercial returns but are attractive to some landowners when considered as a package with their other benefits.

82. Mixed species indigenous forests create high levels of employment during their intensive establishment phase and a lower level of on-going employment for pest control and fence maintenance. However funding this on-going employment can be challenging as income streams are often limited. A high carbon price will assist with funding on-going maintenance. Multipliers are generally limited to the employment and economic activity associated with producing the inputs needed for the planting and maintenance activities.

83. Mānuka and kānuka are effective contributors to employment and regional development with higher multipliers generated by processing and distribution of honey and oil.

84. Plantation forests generally have the strongest commercial returns and the biggest impact on employment and regional development. They also generally have the strongest multipliers associated with more intense management and off-forest activities.

85. Plantation forests also have faster rates of short-term carbon sequestration reaching approximately 600 tonnes per hectare over 20 years,[5] roughly the long-term average carbon stock of rotational radiata pine.

86. Rotational plantation forests have mixed attributes for erosion control. Their ability to quickly reach close canopy is beneficial for erosion control. Soil stabilisation and erosion control varies with stocking rate and root strength, and increases over time.[6] However when the forest is harvested, there is a window of vulnerability which covers about 25 percent of the rotation length, and has

[4] Estimated carbon stock of pre-1990 natural forest: tall forest in the national greenhouse gas inventory.

[5] Sequestration over 20 years for both exotic and indigenous species is from the LUCAS look-up tables used for our national inventory and target reporting.

[6] Marden, M. and Rowan, D. (1984), Protective value of vegetation of tertiary terrain before and during Cyclone Bola, East Coast, North Island, New Zealand.

potential impacts including high sediment losses and slash mobilisation. These potential impacts can be reduced by changes to forest management such as better slash management, improved location of roads and landings, smaller-sized clear-felled areas and a smaller proportion of the catchment harvested during any one period.

87. A more radical change would be to implement continuous canopy mixed aged plantation forestry approaches where, once forests mature, small groups of trees are harvested at more frequent cycles. This minimises land being exposed to rainfall events and can provide long-term stabilisation of highly erosion-prone land.

Additionality

88. If the sole goal of the programme was to maximise the number of trees planted towards the one billion tree target, then the most cost-effective trees to incentivise would be radiata pine. For example, if all grant funding was applied to planting radiata pine at $1,500 per hectare we could achieve nearly 70 million trees (70,000 hectares), assuming 100 percent uptake.

89. Conversely, a much higher grant rate would be needed to incentivise indigenous tree planting, and would result in fewer trees planted overall. For example, a $6,000 per hectare grant, combined with excellent risk management and high levels of co-funding, could drive planting of an estimated 25 to 35 million trees (on 15,000 hectares, noting the higher stocking rate for indigenous species).

90. However, given the current high carbon price, regulatory drivers and relative economic benefits of pine, a high proportion of the radiata pine trees in the scenario above may have been planted by landowners even without the grant funding. Given the much higher barriers to establishment, it is more likely that the grant for mixed indigenous trees will incentivise planting that would not otherwise occur.

91. Te Uru Rākau's assessment is that there is a clear case for supporting a range of different types of trees, with a balance between short-term and longer term public benefits, and a focus on maximising planting that is additional. The target set by Ministers that two-thirds of grant-funded trees are indigenous can be justified based on this approach.

Proposed grant categories

92. We propose the categories for grants and objectives, as set out in Table 2. These categories will allow base grant rates to be set that are appropriate to drive a broad range of different types of planting in order to meet the multiple environmental and economic outcomes sought through the programme.

Table 2: Proposed grant categories

Category	Objective
Indigenous species	To establish indigenous forest to enhance biodiversity, to develop corridors and connectivity, and restore degraded ecosystems. To establish indigenous species for timber production, amenity values, and riparian planting along waterways.
Mānuka/kānuka	To provide tree cover for erosion control and/or a nurse crop for indigenous forest. Honey production can occur but the planted area should be managed to reach five metres in situ.
Assisted reversion (indigenous species)	To support reversion to indigenous forest cover on marginal or highly erodible land, and to enhance indigenous biodiversity.
Exotic species, including predominantly commercial species (radiata pine and Douglas-fir) and alternative exotics (e.g. cypress, eucalypts, redwoods)	To stabilise erosion-prone land, support development of alternative species, and support regional development particularly in surge regions and of Māori land. Where administered by councils, this category may also fund space (pole) planting of poplars and willows, where that is an appropriate treatment of erosion.

Riparian planting

93. Establishing trees to stabilise erosion-prone land, reduce sediment and improve water quality, is a key element of the One Billion Trees programme. Landowners and organisations will be able to apply for grant funding to support a riparian management plan, or a wider catchment-level planting project. As riparian planting can involve exotic and commercial species, applications will be assessed and funded at the relevant grant category as outlined in the table above.

Mixed species planting or planting permanent exotics to transition to natives

94. There is growing interest in the idea of planted exotic forest as a transition to indigenous cover, and Te Uru Rākau has considered whether a specific grant category targeting this is appropriate.

95. With a suitable seed source, unharvested exotic forests could eventually become dominated by indigenous species that re-establish naturally. However, work on this approach has been limited to date, and there is a need for further research to see if this is an effective and cost-effective way of establishing native forest, and in what circumstances.[7]

96. There would be some complexities in a separate grant rate for exotics transitioning to native, as this would involve determining and paying based on landowner intentions (which could change), or developing a mechanism to lock in the planting choice (which would likely disincentivise many landowners to access it).

97. For these reasons Te Uru Rākau proposes that applicants establishing a permanent exotic forest with the intent to transition to indigenous forest be funded at the relevant exotic species rate.

[7] For example, see discussion in Kerr, S. and Carver, T. 2017, *Facilitating carbon offsets from native forest*. http://motu-www.motu.org.nz/wpapers/17_01.pdf

98. A variation on this idea is the inter-planting of exotic and indigenous species to deliver more rapid rates of early carbon sequestration or quicker canopy closure for erosion control, and the stated intention to transition to indigenous forest cover over time. For applicants looking to plant a mix of exotic and indigenous species, applications will be considered on a case-by-case basis. This can be reviewed, depending on demand for this type of planting.

99. The Productivity Commission's report recommends that research in this area should be reviewed to understand the potential and conditions under which this transition could reliably and economically occur, commissioning further research to resolve any doubts. Te Uru Rākau will be looking into this in the short-term, and this programme has the potential to build greater evidence in this area.

Recommendation:

Te Uru Rākau recommends that Ministers:

a. **agree** to the proposed grant categories and objectives as outlined in Table 2, and

b. **note** that riparian planting projects and planting exotic species to transition to natives will be funded at the appropriate planted species rate.

Setting grant payment rates and ranges

100. Te Uru Rākau identified the following principles to inform the approach to setting grant payment rates:

a. Grant rates should be set at a level to promote additional planting and accelerate progress towards government objectives. For indigenous trees, a higher rate is required to drive increases in planting, given the relatively high costs of establishment and limited commercial incentive to plant.

b. Grant rates should be aligned with the public benefits of the trees planted. Public benefits include regional development and employment, water quality, sediment control, carbon sequestration, and biodiversity. It is not possible to provide a monetary value for all public benefits (e.g. biodiversity benefits).

c. However, a grant should not 'pay twice' for benefits (e.g. a grant should not pay for benefits that are also being paid for through ETS participation), and should not pay for activity that is required through regulation (e.g. riparian planting or fencing that is already required under local regulation).

d. Grant rates should take into account other private benefits. Where the landowner is undertaking an activity that will generate a private profit (e.g. timber), a lower grant rate is appropriate.

e. Grants should not crowd out or disincentivise private funding or investment in establishing trees.

f. The grant rate should not pay for full establishment costs and ongoing maintenance, as it is important that landowners have some 'skin in the game' and an incentive to ensure the success of the tree planting.

Payment structure

101. Based on these principles, we propose:

- a base rate for each of the proposed grant categories;
- top-up rates that can be applied to an application, or the relevant portion of land within an application, to help drive specific priority outcomes; and
- a grant rate range up to a maximum level, to provide flexibility for funding particular targeted outcomes.

102. This will mean a relatively low cost grant rate that is easily accessible to all landowners, with an increased level of targeting to support planting where there is a particular barrier to this occurring, or a particularly high public benefit. Setting a grant range rather than a single rate will also provide for adjustments to be made more quickly to grants to respond to the level of uptake or demand, or to reflect changing Government priorities.

103. There are four key top-up categories identified in Table 3 below, and these could be added to or adjusted over time.

Table 3: Proposed grant top-up categories

Top-up category	Rationale
Land of high priority for planting for regional development	To address upfront cost barriers where there are high establishment costs (as evidenced by quotes) and land is in a surge region. A particular focus for this top-up payment will be multiply-owned Maori land.
Land with high or very high erosion risk	To incentivise planting on highly erosion-prone land where the proposed activity is an appropriate land use. A higher rate can be justified by the greater benefits of an appropriate forest cover on this land, and will help address the potentially higher establishment costs.
Biodiversity and ecological restoration	Achieving a high standard of ecological restoration can be more expensive as it requires more intensive planting or higher cost plants, and more weed and pest control and maintenance over a longer period of time. Top-up funding to support this could be applied to partnership projects that meet the additional criteria for ecological restoration. This assessment process will ensure that priority and support is given to those plantings with greatest ecological benefits e.g. restoration of ecosystems that are locally threatened or scarce.
Fencing	Fencing can be critical to success of plantings, but can be very expensive. This should be available where required for assisted reversion and other indigenous species.

Recommendation:

Te Uru Rākau recommends that Ministers **agree** to the proposed grant top-up categories as outlined in Table 3.

ETS Participation

104. Whether landowners can immediately register a grant-funded forest in the ETS, if it is eligible,[8] has a significant impact on overall incentives to plant trees. This section summarises analysis of key factors that impact whether the One Billion Trees grants should allow grant-funded forest to immediately earn carbon income, if eligible.

Existing grants and their relationship to the ETS

105. The Afforestation Grant Scheme first ran from 2008-12 and was designed to enable landowners undertaking small-scale afforestation to overcome the capital cost barrier to planting. It did this by providing an upfront payment that was, in effect, equivalent to the discounted value of 10 years of carbon revenue. ETS participation was prohibited for the first 10 years after planting to ensure that landowners weren't 'paid twice' for the carbon sequestered in their forest.

106. AGS land eligibility criteria were closely linked to ETS eligibility criteria to increase the likelihood that grant-funded forest could be registered after the 10-year contract expired. This design feature carried over into the current AGS (2015 to present).

107. By contrast, the HCE and the ECFP place no restriction on ETS participation of eligible forests, reflecting that these grants are primarily paying for erosion control rather than carbon. Similarly, Crown Forestry joint venture arrangements do not generally include restrictions on ETS participation, with the focus instead being on the Crown and landowner reaching an agreement on acceptable commercial terms.

[8] A forest will be eligible if it meets the definition of post-1989 forest land in the Climate Change Response Act. Criteria are complex but primarily relate to whether the land was forest land on 1 January 1990 and whether the forest that has been established meets particular criteria e.g. around minimum area, width and canopy cover.

Value of carbon income

108. The potential value of carbon income from a forest varies significantly depending on the species, as illustrated in Table 4.

Table 4: Value of carbon income

Species	6 years			10 years			20 years		
	Number of units	Absolute value	NPV	Number of units	Absolute value	NPV	Number of units	Absolute value	NPV
Pine average	77	$1,929	$1,442	169	$4,233	$2,872	456	$11,423	$5,736
Douglas-fir	4	$100	$75	50	$1,253	$759	286	$7,164	$3,184
Exotic hardwood	98	$2,455	$1,855	251	$6,288	$4,199	526	$13,176	$7,109
Exotic softwood	45	$1,127	$841	95	$2,380	$1,621	249	$6,237	$3,170
Indigenous	12	$303	$232	40	$1,007	$658	159	$3,975	$1,861

Note: These are based on the default yield tables, which are used for areas less than 100 hectares in the ETS; return under the default yield tables will vary from that for landowners with more than 100 hectares registered in the ETS and thus use the Field Measurement Approach to determine their unit entitlement. The default yield tables are appropriate to use given grant recipients typically plant less than 100 ha. The pine figure is a straight line average of the regional look-up tables. The current $25.05 carbon price (as of 11 October 2018) and a six percent discount rate are used.

109. This means that the proportion of tree planting costs that an upfront payment for carbon could cover also varies according to the type of tree planted. For example, the net present value (NPV) of approximately six years' worth of carbon would cover the initial establishment costs of many pine forests, but the equivalent of approximately 20 years of carbon income would be required to cover the costs for a mānuka plantation.

The role of grants vs. carbon income

110. A lack of income as trees grow and, for commercial plantations, the long time to receive income at harvest is a barrier to afforestation for some landowners.

111. Generally, grants have been more effective at incentivising planting than the ETS. Partly due to historically low carbon prices, the complexity of the ETS and policy uncertainty, but also likely due to landowner preferences for a grant that assists with costs soon after establishment of the forest vs. the longer-term payment horizon for carbon units. However, recent increases in the carbon price have seen some larger-scale AGS applications withdrawn, stating a preference for the higher income from carbon unit sales (i.e. the carbon income ended up being much greater than the grant).

112. With continued high carbon prices in the ETS, we can expect increases in planting over coming years. Proposed improvements to the ETS are likely to further increase new planting. Planting increases are likely to be predominantly radiata pine, because of the market opportunities for this species and its more rapid rate of carbon sequestration, particularly compared to indigenous species.

113. There is less likely to be increases in planting:

- of slow-growing species, particularly indigenous species, which earn less carbon in the short term;

- where there are capital constraints to forest establishment; and
- where land is not ETS-eligible, or where a landowner does not wish to register in the ETS.

114. For many Māori landowners in particular, lack of income as the trees grow and lack of upfront capital main remain barriers to significant new planting.

Extending grant funding to non-ETS eligible land

115. As noted above, there are a range of benefits from forests, over and above carbon sequestration, that could justify a grant payment. For example, improvements in water quality, reduced erosion, and improvements in social or cultural outcomes could all be considered reasons for incentivising additional tree planting. Given this, there is a case to fund tree planting on non-ETS eligible land.

116. There is also a case to justify funding some planting projects on existing forest land or land with some indigenous scrub cover, in particular circumstances, for example, the planting of indigenous species on forest land where wilding conifers have been or are to be treated.

117. Restricting ETS participation while funding forests on non-ETS eligible land increases the likelihood that landowners assume that their forest is ETS eligible. It will need to be very carefully communicated to applicants that receipt of a grant does not guarantee ETS eligibility of the forest once established (see eligibility criteria at paragraph 151 for more detail).

Should grant-funded trees be able to enter the ETS?

118. Te Uru Rākau has considered two options in relation to carbon benefits and ETS participation:

    a. *Option A: All eligible forest can be registered in the ETS immediately after planting*. This allows landowners to monetise the value of carbon sequestration, where eligible through the ETS, and the Government provides a grant for non-carbon benefits.

    b. *Option B: Restrict grant funded forests from entering the ETS for a set time period.* This in effect provides an upfront grant payment with a proportionate restriction on ETS participation, with the Government able to provide a top-up to the grant to drive planting for other non-carbon benefits.

119. Assessment of these options is summarised in Table 5 below.

120. Under Option B, there are a number of sub-options whereby payment is only front-loaded for particular species, or if planting is registered in the proposed permanent post-1989 forest category. The assessment below assumes that where there is a restriction on ETS participation, it is the same length regardless of the species. A further series of sub-options would involve varying the length of ETS restriction depending on the species or type of planting. These have been excluded as they would add considerable complexity to the process.

Table 5: Options analysis for ETS eligibility

Increasing restrictions on which forest can be immediately registered in the ETS →					
Options	*Option A: All eligible forest can be registered in the ETS immediately after planting*	*Option B1: Restriction only for radiata pine* *Indigenous and alternative exotics can be registered immediately*	*Option B2: Restriction only for rotational species* *Forest can be registered immediately if permanent cover*	*Option B3: Restriction for all exotic species* *Indigenous can be registered immediately*	*Option B4: All grant-funded forest is restricted from being ETS registered for a specified period.*
Addresses barriers to planting alternative and non-commercial species, in particular indigenous	✓✓ Significant incentives (grant + ETS) for exotic species lead to greater challenges ensuring we fund planting that is additional. More complex criteria and fund management to ensure planting delivers clear non-carbon benefits.	✓✓✓ Increased incentives for faster-growing (and more expensive to establish) alternative exotic species that often have longer rotations relative to pine and favourable characteristics on erosion-prone land, but also slower growing indigenous species.	✓✓✓ Increased incentives for permanent or very long rotation exotic forest which delivers greater erosion control benefits, but also slower growing indigenous species.	✓✓✓ Provides early access to carbon income for indigenous forest only. This is not a significant amount in the early years, but could contribute to ongoing maintenance costs.	✓✓✓ Consistent approach; depending on the rate provided upfront and if this is consistent between species, there may be a relative advantage to indigenous species, where there is less foregone carbon income.
Fiscal impact of ETS participation	✓ Estimated value of 10 years of NZUs allocated to grant-funded forest ~ $88 million over 12 years.	✓✓ Estimated value of NZUs allocated ~ $20-$88 million over 12 years.	✓✓ Estimated value of NZUs allocated ~ $20-$88 million over 12 years.	✓✓ Estimated value of NZUs allocated ~$20 million over 12 years.	✓✓✓ Fiscal impact only if restriction on ETS participation is reduced to less than 10 years of the AGS.
Simple for landowners to understand	✓✓ With land eligibility criteria that are delinked from ETS eligibility criteria, keeping grant payments delinked from the ETS is simple and avoids confusion. However, more complex eligibility criteria for exotic species will be more difficult for applicants to understand.	✓✓ If this broader land eligibility criteria is offered and if the grant reflects carbon benefits, then we need to accept that we will be paying for carbon benefits of forests that are not ETS eligible nor contribute to our nationally determined contributions (NDC). There is increased risk that grant recipients assume that they will be ETS eligible. Eligibility criteria are relatively simple to understand, though linkage to ETS may increase complexity.			
Incentives are aligned across programmes	✓✓✓ Consistent with other afforestation schemes (HCE, ECFP, Crown Forestry), which do not restrict ETS.	✓ Inconsistent with other afforestation schemes (e.g. HCE and ECFP).	✓✓ Consistent with PFSI[9] and proposed new post-1989 forest category in the ETS. Inconsistent with other afforestation schemes (e.g. HCE and ECFP).	✓ Inconsistent with other afforestation schemes (e.g. HCE and ECFP).	✓ Inconsistent with other afforestation schemes (e.g. HCE and ECFP).
Operationally feasible	✓✓ More complex criteria for exotic species will be more difficult for administrators. Increased demand for ETS = increased ETS administrative costs for MPI.	✓✓ More complex contracting and monitoring for a proportion of applicants (see paragraphs 136-8 below)			✓✓ More complex contracting and monitoring (see paragraphs 136-8 below), but consistent treatment of species within scheme.

[9] The Permanent Forest Sink Initiative is an alternative to the ETS. Consultation has just closed on a proposal to disestablish the PFSI and create a permanent post-1989 forest category in the ETS. If these changes go ahead the grant could be linked to this.

Option A

Allow all eligible forest to be registered in the ETS immediately after planting, but provide tighter criteria on when radiata pine will be funded.

121. If all grant-funded forest can be immediately registered in the ETS if eligible, the significant increase in incentives for planting exotic species may result in a large surge in demand for grants for exotic species, and pine in particular.

122. This would support increased rates of planting towards the one billion trees target, but it would create challenges in ensuring that the scheme incentivises indigenous species and less-commercial plantings, and does not crowd out business-as-usual private sector investment.

123. This risk could be managed by ensuring that grant-funding for exotic species is targeted to deliver non-carbon benefits, by putting greater restrictions on where radiata pine can be funded. Grant funding would be restricted to planting:

    a. On highly or very highly erodible land, that is, orange or red zone under the Erosion Susceptibility Classification, subject to meeting relevant regulatory requirements under the National Environmental Standard for Plantation Forestry (NES-PF) and local plan rules.[10]

    b. In an identified 'at-risk catchment', where planting is consistent with any other catchment-level risks e.g. in dry or low-flow catchments.

    c. To recognise that this land faces unique capital and administrative barriers to investment, on land that:

        i. has the status of Māori customary land, Māori freehold land or general land owned by Māori, or Crown land reserved for Māori (as defined under Part 6 of the Te Ture Whenua Māori Act 1993); or is land that was transferred pursuant to a Treaty settlement; or is land that was reserved, granted or otherwise provided under the South Island Landless Natives Act 1906; and

        ii. has multiple owners (legal or beneficial).

124. Under this option, Te Uru Rākau would monitor initial demand for grants for exotic species, and if high demand is a concern, consider options to ensure funding decisions maximise benefits while remaining consistent with the indigenous species target. This could include conducting annual assessments of exotic species applications to enable prioritisation by benefits, reducing the exotic species grant rate and/or restricting the maximum area of exotic species

[10] The NES-PF will apply if the area is intended for harvest, and the restricted discretionary consent status for afforestation of more than 2 hectares of red zone land in any calendar year may lead towards more establishment of permanent cover in these areas. Over 350,000 hectares of private land are categorised as highly erodible (orange zone) under the Erosion Susceptibility Classification and potentially suitable for production exotics (exclusions have been applied relating to environmental and ecological factors that mean an area isn't suitable for production forestry). A further 129,000 hectares on very highly erodible (red zone) land are suitable for tree species, but not production exotics.

per application that can be funded per year e.g. from 300 hectares to 200 hectares.

125. Erosion susceptibility can be determined through an online spatial tool as part of the NES-PF. Work is still underway to identify 'at-risk catchments', but it is moving at pace and, if you prefer this option, while we recommend the inclusion of a criterion b. above, we would not promote this criterion until the catchments are confirmed and we have a clear approach for landowners to determine whether they fall within these catchments. These additional criteria will introduce some up-front complexity into the scheme for landowners in determining whether or not their land is likely to meet the eligibility criteria, as well as being more time-consuming for Te Uru Rākau to assess. This is likely to work against Te Uru Rākau's broader goals that the grants are simple, accessible and easy for landowners to understand.

126. Allowing ETS participation of all grant-funded forests has the highest fiscal impact of all options. This could be justified if the grants are clearly purchasing wider non-carbon benefits.

Option B *[Te Uru Rākau preferred option*]

Allow grant-funded indigenous forests and exotic species other than radiata pine to immediately be entered into the ETS, if the forest meets ETS eligibility criteria; and

Restrict the entry of grant-funded radiata pine forests into the ETS for six years.

127. Monetising the net present value of a set number of years of carbon income through a grant could overcome the upfront costs that are a barrier to planting for some landowners. In effect, the upfront payment acts like a loan, which is paid back as the forest sequesters carbon.

128. The main benefit of an approach that encourages EITHER immediate ETS participation OR a grant is that it will likely improve the additionality of funding, and focus funding on addressing upfront capital barriers. It will also result in a lower fiscal impact to the Crown.

129. However, as different species have very different rates of sequestration and planting costs, one time period restriction will not cover an equivalent proportion of the upfront planting costs of all species. For example, if ETS participation is restricted for six years, the net present value of foregone carbon income at current prices would effectively cover the full costs of planting radiata pine, but only the partial costs of planting alternative exotic species and a minimal amount of the costs of planting indigenous species.

130. This issue could be addressed with variable ETS time period restrictions for different species, but this would result in a significantly more complex system to administer. With a trade-off between accuracy and simplicity, we recommend an approach that is simple to understand and administer.

131. In addition, as the sequestration rate of indigenous species is so much lower than radiata pine, an upfront payment would need to equate to many more years'

worth of carbon income in order to pay for, or make a substantive contribution to, establishment costs. However, this would remove carbon income for far longer, when this income could be of particular importance to assist landowners with the costs of maintenance (on average $200 per hectare over 20 years at $25/NZU).

132. On balance, given current strong market incentives to plant radiata pine, there is a case to restrict ETS participation of radiata pine and provide an upfront grant payment broadly equivalent to the value of foregone carbon income. This will help improve the additionality of grant funding, encourage ETS participation for those that can afford the upfront costs, while addressing capital barriers for those who can't. A top-up grant for other non-carbon benefits (e.g. erosion control) may still be justified.

133. However, given the relatively limited or uncertain market incentives for indigenous species and alternative exotic species, it is recommended that immediate ETS registration of eligible forest of these species be allowed (Option B1 in Table 5). The grant for these species will encourage non-carbon benefits (biodiversity, diversification of the estate, erosion control).

134. The estimated fiscal impact of allocating NZUs under this approach (compared to the current AGS which has a 10-year restriction on ETS participation) is $53 million out to 2030.

135. Paying the value of carbon upfront to a landowner introduces some price risk to the Crown. There are other potential mechanisms that could be more directly linked to price to bring forward payment of some carbon revenue to assist with upfront cost barriers (e.g. through an upfront payment equivalent to the value of units auctioned into the ETS, if an auctioning mechanism is introduced into the ETS as recently consulted on). Further work could be undertaken to explore these options, once final decisions have been made on broader ETS changes.

136. There are also some operational challenges with enforcing a restriction on ETS participation for grant-funded forests. This is because the Climate Change Response Act 2002 does not provide for receiving an afforestation grant as a valid reason to decline an ETS registration. It also has confidentiality provisions that prevent the free flow of information from ETS operations to grant scheme administration. This means that ensuring a grant recipient does not enter the ETS ahead of the restriction period ending relies on enforcing grant contract provisions to either stop ETS registration or, if unsuccessful, recover the grant funding.

137. Further to this, under the AGS, the 10-year restriction on ETS registration in practice only delivers a 6- to 10-year restriction on access to New Zealand Units for the carbon sequestered in that forest. This is because, once registered in the ETS, a forestry recipient is required to claim units back to the start of the five-year Mandatory Emissions Return Period (MERP). For example, if grant-funded forest were to be registered in the ETS in the year that their grant contract ended, and that year was the final year of the MERP, units representing five years of carbon sequestration would be allocated to that participant.

138. If Ministers prefer Option B, then Te Uru Rākau will look into options to improve the effectiveness of the ETS restriction and provide further advice on regulatory options as part of the operational improvements to the ETS.

139. The key trade-offs for the two options are summarised in Table 6.

Table 6: Key trade-offs for ETS decision around funding of pine

	Option A	Option B
Outcomes	Pine funding is targeted to areas that will deliver clear non-carbon benefits. Grant more likely to fund planting that would happen anyhow.	Pine funding is less targeted to non-carbon outcomes. Grant more likely to address capital barriers to planting.
Simple for landowners to understand	Eligibility criteria to drive planting for non-carbon benefits introduce complexity for applicants.	ETS linkages introduce some complexity for applicants.
Fiscal impact	Cost of policy change to allow all grant-funded forest to be immediately registered in the ETS (i.e. cost of allocated units) is $88 million over 12 years at $25.05/NZU.	Cost of policy change to allow greater ETS participation in first 10 years (i.e. the cost of allocating units) is $53 million over 12 years at $25.05/NZU.
Alignment with other afforestation incentives	Consistent with other afforestation schemes (HCE, ECFP, Crown Forestry), which allow immediate ETS participation.	Inconsistent with other afforestation schemes (HCE, ECFP, Crown Forestry), which allow immediate ETS participation.
Administrative ease	More complex grant assessment due to additional eligibility criteria.	More complex grant monitoring and ETS administration.

Recommendation:

Te Uru Rākau recommends that Ministers **agree** to:

EITHER

Option A

a. All grant-funded forests can be registered in the ETS immediately after planting, if the forest meets the ETS eligibility criteria; and
b. To manage demand and achieve a diverse mix of species, restrict grant funding for exotic species to planting on the following:
    i. On highly or very highly erodible land, that is, orange or red zone under the Erosion Susceptibility Classification, subject to meeting relevant regulatory requirements under the National Environmental Standard for Plantation Forestry (NES-PF) and local plan rules.
    ii. In an identified 'at-risk catchment' where planting is consistent with any other catchment-level risks, e.g. in dry or low-flow catchments.
    iii. (To recognise that this land faces unique capital and administrative barriers to investment) on land that:
        1. has the status of Māori customary land, Māori freehold land or general land owned by Māori, or Crown land reserved for Māori (as defined under Part 6 of the Te Ture Whenua Māori Act 1993); or is land that was transferred pursuant to a Treaty settlement; or is land

that was reserved, granted or otherwise provided under the South Island Landless Natives Act 1906; and,

2. has multiple owners (legal or beneficial).

OR

Option B [Te Uru Rākau preferred]

a. Allow grant-funded indigenous forests and exotic species other than radiata pine to immediately be entered into the ETS, if the forest meets the ETS eligibility criteria; and

b. Restrict the entry of grant-funded radiata pine forests into the ETS for six years.

Proposed grant rates and ranges

140. The proposed grant rates will depend on the decision that is made about ETS participation. Two options have been developed guided by the principles for setting grants rates as set out in paragraph 100.

Option A: All grant-funded forest can be immediately registered in the ETS

141. If you agree to Option A, then we recommend the grant rates set out in Table 7. Under this option:

a. If immediate ETS participation is allowed, we suggest that the government should be willing to pay for non-carbon benefits of exotic species (erosion control, Māori development, water quality) as criteria are clearly linked to delivery of these benefits. $1,300 per hectare is considered to be justified and sufficient to drive planting and assist with upfront cost barriers. This would also align with market expectations of a grant of at least that value, in line with the rate under the AGS.

b. For indigenous species, a relatively high value is placed on biodiversity benefits, though the grant rate can be lower for mānuka/kānuka and reversion due to lower establishment costs.

Table 7: Base grant rates (Option A)

Category	Rate
Indigenous species	$4,000/ha
Mānuka/kānuka	$1,800/ha
Assisted reversion	$1,000/ha
Exotic species	$1,300/ha

Option B: A six-year restriction on registering radiata pine forests in the ETS

142. If you agree to Option B around ETS participation [Te Uru Rākau preferred option], then we recommend the grant rates set out in Table 8. Under this option:

a. The rationale for setting the grant for indigenous species is the same as in Option A. The grant for alternative exotics places a high value on the non-carbon benefits of these species, in particular diversification of the forest estate.

b. The grant for pine is broadly equivalent to the discounted average value of six years of carbon income ($1,442 per hectare at current prices).

c. We suggest that the Government could still be willing to pay more on top of this rate to drive planting to deliver non-carbon benefits, such as erosion control. This can be provided through top-up categories, as shown in Table 9, which would apply to all species.

d. If Option B is preferred, we suggest monitoring uptake initially and additional top-up categories (e.g. water quality improvements, Māori development) could be introduced if required to achieve the desired outcomes.

Table 8: Base grant rates (Option B)

Category	Rate
Indigenous species	$4,000/ha
Mānuka/kānuka	$1,800/ha
Assisted reversion	$1,000/ha
Radiata pine	$1,500/ha with a six-year restriction on ETS registration
Other exotic species	$1,500/ha

143. We propose several top-up categories that offer funding over and above the base grant:

a. For both Options A and B, we propose that top-up categories 1, 3 and 4 in Table 9 are available to applications that meet additional criteria.

b. For Option B, we propose an additional top-up category for erosion-prone land (category 2 in Table 9). Landowners who plant on land which is both in a surge region with high establishment costs, and highly or very highly erodible, will be eligible for a top-up for either category 1 or 2, but not both.

Table 9: Top-up categories and rates

Top-up category	Rate per hectare
1. Land of high priority for planting for regional development OR 2. Land with high or very high erosion risk	Up to $500/ha where land is in a surge region and has high establishment costs (as evidenced by quotes) relative to a benchmark. OR Up to $500/ha where land is orange or red zone under the Erosion Susceptibility Classification.
3. Biodiversity and ecological restoration	Negotiated top-ups for planting indigenous species of up to $2,000/ha where applicants meet additional ecological restoration criteria.
4. Fencing	For reversion and planted indigenous species, excluding riparian planting, up to 50 percent of the actual reasonable cost of fencing that is suitable for the terrain and the exclusion of stock, but no more than $500/ha.

144. The indigenous species maximum rate will only be used for applications that meet stringent additional criteria for ecological restoration (see paragraph 178), as part of a partnership application. The extent to which this rate enables

ecological restoration projects, noting the potential role of one billion trees partnership funding and co-funding by third parties, will be monitored closely.

145. Te Uru Rākau proposes that the total per hectare payments (including both base grant payment and top-up payments) are capped at the maximum rate of:

    a. $6,000 per hectare for mixed indigenous species.

    b. $2,500 per hectare for mānuka/kānuka, assisted reversion and exotic species.

146. These maximum rates allow Te Uru Rākau to adjust rates within this range if required, following assessment of other options to enhance uptake.

147. The table in Appendix 5 outlines one scenario for allocating funding to different categories of planting. Te Uru Rākau will monitor categories and rates to ensure they are operating as intended and to incorporate improvements as we monitor uptake, and data on the costs and benefits of planting improves.

148. For applications potentially eligible for a grant valued at more than $500,000 or greater than 300 hectares in area, the assessment panel would be used and lower rates may be negotiated (see *Administrative design* below for detail on the panel process).

Recommendation:

Te Uru Rākau recommends that Ministers **agree** to:

a. the proposed base rates for grants, as outlined in tables 7 and 8 (depending on your decision on the previous recommendation); and

b. the proposed top-up rates for grants as outlined in Table 9; and

c. the proposed maximum payments (including both base grant payment and top-up payments) of:

    i. $6,000 per hectare for mixed indigenous species.

    ii. $2,500 per hectare for mānuka/kānuka, assisted reversion and exotic species.

Eligibility criteria for grant funding

149. The following section proposes eligibility criteria relating to who can access funding, what land is eligible, and how to ensure the right tree in the right place. Eligibility criteria need to support the broader objectives of the grant and target funding towards activity that will deliver clear benefits. They also need to be simple to understand and apply consistently, and practical to administer. Eligibility criteria should help to drive land use decisions that are consistent with integrated land management and good forest management practice.

150. The same criteria will apply for direct-to-landowner grants and those administered through third parties.

151. The eligibility criteria for grant funding is listed here, and explained in more detail in the paragraphs which follow:

- The application must be from or on behalf of an individual or organisation who owns the land or has the right to plant on the land.
- For grants for exotic species and mānuka/kānuka plantations, land must not be 'forest land' at the time of application and must not have been forest land for the last five years.
- A grant application will be considered for planting indigenous species or encouraging reversion on existing forest land.
- A minimum planted area of one hectare for indigenous species, and a minimum of five hectares for other species.
- Funding applications to establish more than 300 hectares in one year will be considered on a case-by-case basis.
- Plantings/ establishment must have an average minimum canopy width of 30 metres.
- Plantings/ establishment must meet minimum requirements for stems per hectare of tree species, which are consistent with good practice and planting objectives.
- Tree species must be capable of growing to at least five metres in height at maturity where they are located, and not grown or managed primarily for the production of fruit or nut crops.
- Plantings/ establishment must not receive other one billion trees funding for the same tree planting activity.

Who can apply for a grant?

The application must be from or on behalf of an individual or organisation who owns the land or has the right to plant on the land

152. This aligns with the eligibility requirements under the AGS, which offer sufficient flexibility for a range of planting scenarios and entities. This includes the use of forestry rights.

153. Crown agencies would not be directly eligible for funding, although a larger or more complex project with a Crown agency as one partner would be eligible.

What land is eligible?

For grants for exotic species and mānuka/kānuka plantations, land must not be 'forest land' at the time of application and must not have been forest land for the last five years

154. 'Forest land' is defined in the Climate Change Response Act 2002 as land that is at least one hectare that has, or is likely to have, tree crown cover from forest species of more than 30 percent in each hectare. The definition includes land that does not currently have the required tree crown cover, because of human intervention or natural causes, but is likely to revert to land that meets that requirement.

155. Under the current AGS, land is only eligible to receive grant funding if it was not forest land at 31 December 1989, at any time in the five years prior to application, and at the point of application. When the AGS was designed, a key driver was to incentivise trees for carbon sequestration, and this land eligibility criteria provides greater certainty of funding ETS-eligible forests.

156. We propose to remove the 'post-1989 forest land' test and allow land to be eligible for a grant simply if it is not forest land at the point of application and has not been for the five years prior to application. This change reflects the multiple objectives of the One Billion Trees programme which justify land eligibility criteria broader than those of the ETS. It will also simplify application processes for applicants, and will increase the amount of land that is eligible for a grant.

157. The five-year restriction will avoid funding going to replanting of existing forest land with commercial species – it is unlikely that a forester would convert to another land use and wait five years to access a grant payment. As with the existing AGS, land that is to be planted as 'pre-1990 offsetting land' under the ETS will not be eligible to receive a grant.

A grant application will be considered for planting indigenous species or encouraging reversion on existing forest land

158. Because the forest land definition includes land with vegetation which may become forest in future, we propose some discretion to consider applications to plant indigenous species or encourage reversion on land which may meet that definition, where it is consistent with planting objectives and there are likely to be sufficient benefits. Examples of this approach are restoration planting based around remnants of indigenous forest and reversion of erodible farmland with existing scrub cover.

159. These broader land eligibility criteria mean that not all grant-funded forest will be eligible for the ETS.[11] New Zealand can still receive credit for the carbon sequestered in its international account, provided the planting meets the forest definition once the forest is established, though it will not all count towards New Zealand's 2030 target.

160. This change will require careful communication to avoid grant recipients assuming that their forest will be ETS-eligible, particularly if there is any restriction on ETS participation of grant-funded forests. At application for the grant, a check for forest cover at 1990 could provide applicants an indication of future ETS eligibility, but would not be definitive. The proposed land eligibility map in the ETS changes (currently being consulted on) would also provide better clarity.

161. With broader eligibility criteria and uncertainty about uptake of different grants, it is difficult to project what proportion of applications are likely to be ETS-eligible

[11] For example, land which received an exemption from deforestation liabilities (of pre-1990 forest) has additional conditions before being eligible for ETS registration as post-1989. The deforestation may have happened many years ago.

and contribute towards the 2030 target. This will be monitored and reported on over time.

A minimum planted area of one hectare for indigenous species, and a minimum of five hectares for other species

162. Lowering the minimum area that can be funded (the current AGS has a five hectare minimum) will provide greater access to grants for a wider group of landowners. However this has to be balanced against the higher administrative costs. Analysis suggests that a grant would need to have a total value of at least $4,000 to justify the time and resources required to process, administer and monitor the payment.

163. This means that a lower hectare limit of one hectare could be applied for indigenous planting ($4,000 per hectare) but that at least five hectares would still be required for the mānuka/kānuka, exotic and reversion grant categories.

164. For mixed plantings of less than five hectares, at least one hectare of indigenous trees would be required. For example a landowner who wanted to plant three hectares of radiata pine and one hectare of indigenous could apply for a grant.

165. A more risk-based approach to monitoring will be adopted in order to manage increased administrative costs associated with funding smaller areas. Third parties may administer grants for smaller areas.

Funding applications to plant more than 300 hectares in one year will be considered on a case-by-case basis

166. The maximum area that a single landowner or organisation with the right to plant could be funded to plant in one year may exceed the current AGS cap of 300 hectares, where there are significant wider benefits. Applications for more than 300 hectares will be assessed by a panel, and lower per-hectare rates may be negotiated. This will provide flexibility but help manage allocation of funding over the three-year lifetime of the fund.

Plantings must have an average minimum canopy width of 30 metres

167. A minimum average width for the planting will maximise the likelihood of the area counting towards New Zealand's climate change targets. This provides some flexibility for landowners with planting layout, while managing the administrative complexity of appropriately assessing and monitoring an application.

168. An exception would be tree planting in riparian areas, which may be narrower than 30 metres, when supported by a credible riparian management plan, or equivalent.

Plantings must meet minimum requirements for stems per hectare of tree species, which are consistent with good practice and planting objectives

169. This requirement mirrors the current grant scheme and increases the likelihood of the planting achieving its intended objectives.

Tree species must be capable of growing to at least five metres in height at maturity where they are located, and not grown or managed primarily for the production of fruit or nut crops

170. Non-tree species (e.g. shrubs) will be an accepted component of mixed indigenous plantings, where that is consistent with good planting practice.

Plantings must not receive other one billion trees funding for the same tree planting activity

171. Funding from other sources is allowed (e.g. regional councils, philanthropic or other central agency funding), provided it is declared at application and funding does not exceed the cost of the activity.

Ensuring the right tree in the right place for the right purpose

172. For an application to be successful, Te Uru Rākau must be satisfied that the proposal:

    a. will deliver benefits consistent with grant objectives, and will minimise the likelihood of negative consequences;

    b. is a suitable land use for the area and is consistent with good forest management and environmental practice;

    c. is aligned with local regional development and resource management priorities and initiatives, as relevant;

    d. demonstrates a level of management planning and capability that is appropriate to the size and risk of the project, and will enable successful establishment of trees and delivery of intended outcomes; and

    e. declares other sources of funding either received or sought.

173. Grant applicants will need to submit information with their application to support technical assessment of the suitability of the planting for the site. This will include information about the intended location of planting and a management plan appropriate to the scale and purpose of the planting. For example, a management plan for reversion funding must demonstrate how the land will be managed to support reversion to occur, e.g. by fencing, exclusion of livestock, control of wild animal herbivores and weedy species, or supplementary planting. As with the AGS, applications may be declined at Te Uru Rākau's discretion following assessment of the suitability and likelihood of success of the planting.

174. We will require a credible farm environment plan, evidence of council support for the planting, or a comparable technical assessment undertaken by Te Uru Rākau where necessary, to ensure the proposed planting is suitable and consistent with good practice. Where we are being asked to fund riparian planting directly, we will need evidence of a credible riparian management plan, or equivalent.

175. Further to this, applicants will require resource consent to plant on land that has a very high erosion risk (red zone) under the Erosion Susceptibility

Classification, where the planting is more than two hectares per year and intended for harvest. For all other land, consent is not required under the NES-PF, unless permitted activity conditions cannot be met or a more stringent local rule that requires consent prevails over the NES-PF. Early engagement with councils will help landowners to ensure their compliance with RMA requirements.

176. The assessment, supported by information provided by the applicant, will also ensure that:

    a. Species do not present a high risk of wilding spread, in line with the Wilding Tree Risk Calculator requirements under the NES-PF, and are not pest or tree weed species that are identified in the regional council's pest management plan, or on the unwanted organisms register. A robust Te Uru Rākau operational policy has been developed to underpin these assessments.

    b. Adverse impacts on existing indigenous ecosystems are avoided and non-forest ecosystems will not be replaced by forest. Plantings should not occur within an area identified as having significant biodiversity value, unless the planting is indigenous species that will enhance the values of the area.

    c. If the land is a historic place, historic area or archaeological site, the authority of Heritage New Zealand Pouhere Taonga may be required before such land can be eligible for a grant. Consultation with iwi will be required as appropriate.

177. Guidelines on eco-sourcing will be applied to projects with ecological restoration objectives.

Recommendation:
Te Uru Rākau recommends that Ministers **agree** to the proposed grants eligibility criteria.

Additional criteria for ecological restoration

178. Te Uru Rākau proposes that applications for top-up funding to deliver ecological restoration must also be assessed against the additional assessment criteria below:

    a. Takes a landscape-scale approach to indigenous forest restoration – integrated package across regions, rather than isolated and fragmented, and linkages/synergies with other work in that landscape e.g. pest control.

    b. Achieves restoration of priority forest ecosystems – priority indigenous forest, shrub-land, and aquatic habitats are restored by planting woody species.

    c. Avoids adverse impacts on existing indigenous ecosystems – naturally occurring non-forest ecosystems are not replaced by forest, biosecurity risks are actively managed.

d. Grows nature connections by community groups and private landowners and enables kaitiakitanga and whanaungatanga among Māori communities.

e. Contributes to other values including ecosystem services such as water quality and soil conservation, as well as meeting New Zealand's climate change commitments through increased carbon storage.

f. Grows capability and capacity in sustainable indigenous forest management.

g. Supports, or has synergies with, key government priorities – Biodiversity Strategy, Predator Free 2050.

Recommendation:
Te Uru Rākau recommends that Ministers **agree** to the proposed additional assessment criteria for ecological restoration.

Milestone payments to address upfront capital constraints

179. As noted above, one of the key barriers to tree planting is a lack of upfront capital to cover the costs of getting the trees in the ground. This can be a particular challenge for Māori land trusts, which have little or no productive land to generate income to cover tree planting costs, and which may find it more challenging to access bank loans or other forms of finance.

180. Two main models are currently used for grant payments. The AGS provides a full grant payment to landowners on confirmation of establishment of the forest. This typically occurs three to six months after trees have been planted.

181. The ECFP used to operate under that same model, but has recently shifted to the milestone schedule described in Table 10, in order to address upfront capital barriers. As this was only recently introduced, it is still relatively untested. However, informal feedback from key stakeholders in the region has been positive, with them noting that this will have an impact on the types of landowners who are able to apply for grants.

Table 10: Current milestone payment schedule for AGS and ECFP

Scheme	Milestone			
	1. Contract signed and orders placed	2. Activity undertaken e.g. planting/fencing	3. Trees successfully established	4. Trees successfully maintained
AGS			100%	
ECFP	50%	30%		20%

Addressing capital barriers while managing risk to the Crown

182. There is a trade-off between addressing capital constraints and sharing risks, as shown in Diagram 2.

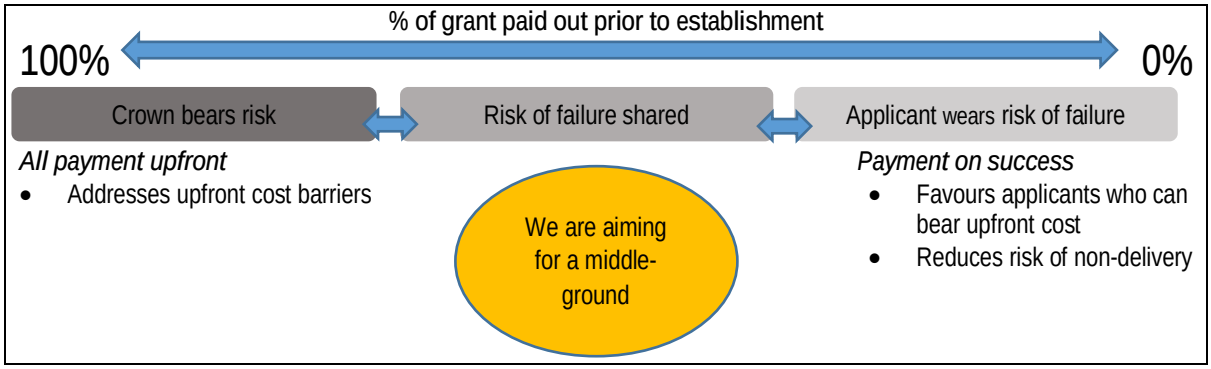


Diagram 2: Trade-off of risks to Crown and landowner

183. If Te Uru Rākau pays out the full grant payment early, this will significantly reduce landowners' incentives to ensure the long-term establishment and maintenance of their plantings. It also transfers the risk, if plantings should fail, to the Government.

184. Risk of failure is a function of a number of factors, including species choice, site-species matching, seedling quality, climatic conditions, the level of pest and weed control undertaken, and forest management knowledge and skills. Commercial pine plantations generally allow for initial failure to establish of around five percent by area. For indigenous species, Tāne's Tree Trust suggests that 80 percent survival after one year is excellent, though survival rates lower than this are common.[12]

185. Te Uru Rākau's assessment is that paying out up to 30 percent of the grant value prior to establishment would address cost barriers in many cases, and more equitably share the risk between the Crown and grant recipient. We propose that this forms the standard payment schedule (see Table 11). This is more upfront payment than the AGS but less than the ECFP, which was designed for a particular community and delivery model.

186. However, we also seek approval to maintain the flexibility to provide up to 80 percent of the value of the grant upfront on a case-by-case basis in order to better address upfront cost barriers where these may otherwise prevent a planting from occurring (e.g. planting on Māori Freehold land, by charitable trusts or non-governmental organisation).

187. The level of upfront payment may be increased up to 80 percent, at MPI's discretion, where:

    a. there is evidence that the planting is unlikely to occur without additional support;

    b. the proposal will deliver clear public benefits; and

[12] A low level of failure interspersed within a planting may still meet establishment checks. High levels of failure within an area currently mean that payment doesn't occur until the area is confirmed as meeting the minimum stems per hectare (i.e. is replanted, or reassessed once further growth and maintenance has occurred).

c. the increased risk to the Crown can be actively managed e.g. through directly contracting suppliers, increased relationship management and monitoring.

188. In all cases, we recommend that at least 20 percent of the payment of funds is retained until a final check occurs to provide greater incentive and support for the successful establishment and maintenance of the plantings. The timing of this payment will vary by species.

Table 11: Proposed milestone payment schedule

Schedule	Milestone			
	1. Contract signed and orders placed	2. Activity undertaken e.g. planting/fencing	3. Trees successfully established	4. Trees successfully maintained
Standard payment schedule	30%		50%	20%
Maximum upfront payment schedule (on a case-by-case basis)	80%			20%

Managing risks of planting failures, non-planting and deforestation

189. There are a range of supporting activities that can help mitigate the risks associated with trees that are planted failing to establish. This includes:

- Active relationship and contract management.
- Direct payment of invoices to suppliers (e.g. nurseries), and support to landowners to identify best practice suppliers of seedlings and labour.
- Extension services and technical support to landowners, either direct from Te Uru Rākau or via third party partners.

190. As with the current AGS, where a reasonable proportion of the grant-funded area does not meet the establishment check several months after planting, landowners will need to undertake remedial actions at their own cost. This may involve additional planting and/or maintenance work. Once this work is completed the land area can be reassessed and receive the grant payment.

191. The contract that landowners sign as part of accessing the grant payment will require them to keep the land in forest for a minimum of 10 years. If they deforest the land during this period they will need to pay back any grant funding received. Although some landowners or planting projects may choose to covenant or put longer term requirements on the land, Te Uru Rākau does not recommend any such restrictions be applied to all grants, as this would remove landowner's future options for their land and likely impact on take-up rates.

192. Experience of existing grants schemes suggests that some applicants face challenges translating intent into planting. Ongoing engagement from point of application until the trees are successfully established will help reduce this risk, and ensure good practice in tree planting and management. As part of

operational implementation, Te Uru Rākau will also establish enforcement options if an applicant has received upfront payments but does not plant.

193. A further risk relates to assisted reversion. Where land has been fenced off and left to revert to indigenous cover, it can be relatively easy to 'reverse' land use change and let stock re-enter a reverting area. Landowners may be particularly tempted to do this at times of drought, or when there are other stressors on the farm. As with managing risks of planting failure, it will be important to provide adequate, targeted support and advice to landowners, together with appropriate monitoring and enforcement.

Recommendation:

Te Uru Rākau recommends that Ministers **agree:**

a. to the proposed milestone payment schedule as outlined in Table 11; and

b. that the principles to guide the case-by-case higher upfront payments be:

   i. there is evidence that the planting is unlikely to occur without additional support;

   ii. the proposal will deliver clear public benefits; and

   iii. the increased risk to the Crown is actively managed, e.g. through directly contracting suppliers, increased relationship management and monitoring.

Balancing grant accessibility and administrative efficiency

194. Te Uru Rākau is also assessing options to address other barriers to uptake. Examples include:

- Allowing planting to occur more than one year after contracting in order to enable orders for slower-growing indigenous species to be placed.
- Ensuring contracted activity is undertaken, particularly where a landowner doesn't have capability or capacity in that area, e.g. by contracting service providers directly.
- A greater emphasis on promotion and outreach, with a 'train the advisors' approach across government (e.g. relevant staff from Te Uru Rākau, MPI, DOC) and with other organisations (e.g. regional councils, QEII National Trust etc.), and the potential for partnership funding to support extension delivered by existing third party trusted advisors.

195. These support options all increase the costs of administering the Fund. Further to this, given that the scale of grant funding being administered is a significant increase in scale from previous AGS and ECFP funding, we are also designing administrative systems to minimise bureaucracy, and target efforts where they will have the biggest impact. This will include:

- taking a risk-based approach to monitoring of compliance following establishment and over the longer-term;

- using technology, where appropriate, to make processes more efficient (for example, landowners submitting geo-tagging photos of land to provide proof of planting); and
- working with third parties to deliver services, where this is more efficient (such as where they have established relationships with landowners).

ONE BILLION TREES INTEGRATED FUND

Administrative design

196. Te Uru Rākau is developing a single application process for grants and partnership funding. This 'one-stop shop' will help make it simpler for applicants to understand and apply for available funding.

197. The Fund will be open continuously for Expressions of Interest (EOI) and applications. We are developing simple applications, which will be scaled to the complexity and value of applications (short form for simple grants and longer form for complex or partnership projects). These will be available online and paper-based. Support will be available to applicants during this process.

198. The same application and assessment process will apply where we have proactively worked to identify potential partnerships that align strongly with the desired outcomes of the One Billion Trees programme.

199. Applications will be assessed at least every two months from November 2018. We are developing internal processes to improve the efficiency of application processing, and enable applicants to receive decisions on funding as quickly as possible, thus reducing the time between an application being lodged and a contract being signed. The assessment process will involve appropriate triage, within and between agencies, and due diligence, while keeping it as simple as possible for applicants.

Fund governance

200. Funding decisions will be approved as per delegations agreed in the Cabinet paper. Ministers will be kept informed of funding decisions below the delegated $2 million threshold.

Table 12: One Billion Trees Fund Delegations

Approval of grants: • The Director-General (D-G) of MPI has authority to approve grants within the rate ranges approved by Ministers, and not exceeding $2 million in value. • This delegation is consistent with delegations for existing afforestation grants.
Decision-making on individual projects through partnership funding: • The D-G of MPI for projects with a value of up to $2 million. • The Minister of Forestry, the Minister for the Environment, and the Minister of Finance, in consultation with other Forestry Ministers, for projects with a value of between $2 million and $20 million. • Cabinet for projects with a value over $20 million.
The D-G of MPI has authority to decline applications: • which do not meet eligibility criteria, including that organisations or individuals must meet a fit and proper person test; or • that have any significant gaps that make approval by the delegated decision-maker unlikely.
Operational design settings and grant rates: • The D-G has authority, in consultation with other relevant departments, to approve operational design settings and grant rates within the parameters set by delegated Ministers.

Administrative assessment for grants

201. For standard direct grants to landowners, below $500,000 or 300 hectares, Te Uru Rākau staff will make an assessment against the prescribed criteria, and approval process will be via a decision briefing to the appropriate delegated person. This will closely replicate the model currently used to operate the AGS.

Panel assessment

202. We expect to establish a panel with cross-agency representation to have visibility of all funding decisions, in order to provide strategic oversight and direction.

203. Panel assessment will be used for:

    a. grant applications that are higher value (greater than $500,000 or 300 hectares);

    b. grant applications that are particularly complex or are seeking flexibility outside of the standard grant eligibility parameters; and

    c. all partnership projects, including any proposal for third party delivery of grants.

204. For applications that are greater than $1 million in value or are a commercial investment, external expertise may be co-opted onto the panel to provide broader expertise.

205. Te Uru Rākau will also work across agencies with existing interagency groups to ensure funding decisions are aligned with government priorities and other investment decisions e.g. DOC's Community Fund. Key central government agencies will be the Provincial Development Unit of the Ministry of Business, Innovation and Employment (MBIE), MfE, DOC and Te Puni Kōkiri, and regional councils will also be involved.

206. The proposed criteria for funding for enabling activities (see paragraph 65) reflect both PGF themes and One Billion Trees outcomes. As applications can now be made to Te Uru Rākau for One Billion Trees and to MBIE for the PGF, we will work closely to ensure that applications with aspects relevant to both One Billion Trees and the wider PGF are identified and appropriately triaged and assessed.

Recommendation:

Te Uru Rākau recommends that Ministers **agree** to the proposed administrative design and fund governance, including:

a. A single application process for grants and partnership funding.
b. For basic direct grants, a decision briefing will be provided to the appropriate delegated authority, as currently used for the Afforestation Grant Scheme.
c. A panel will be used to assess:

i. grant applications that are higher value (greater than $500,000 or 300 hectares) or are particularly complex; and
ii. partnership projects, including any proposal for third party delivery of grants.

d. External expertise may be used on the assessment panel for applications which are greater than $1 million in value or are a commercial investment.

Monitoring and review

207. Fund delivery will be closely monitored, particularly for challenges in achieving the desired level of uptake of exotics vs. indigenous, and the effectiveness of design in achieving the desired outcomes.

208. At this stage it is difficult to project grant uptake, particularly for indigenous tree species where motivations for planting are more complex and influenced by multiple factors. However, assuming the target of two-thirds indigenous species and applying tree stocking rates to this, we can expect approximately 50,000 hectares contracted for planting over the next three years, equating to approximately 30,000 hectares of indigenous species and the remainder exotic.

209. Given the lag between the time when seedlings are ordered and when they are available for planting, particularly in the case of indigenous species, trees are likely to be planted over a number of years (e.g. some seedlings ordered in 2019 may not be available for planting until 2021 or even 2022).

Performance Measures

210. While a headline measure of the programme will be the number of trees planted towards the one billion trees total, more meaningful long-term measures of success will be the trees that are successfully established and the wider outcomes that are being achieved. Indicative measures include:

    a. Area funded by species/grant category;
    b. Area established on highly and very highly erosion-prone land;
    c. Metres of waterways planted;
    d. Area established on Māori-owned land;
    e. Area established in ‘at-risk’ catchments and surge regions;
    f. Sequestration towards our 2030 target;
    g. Employment benefits.

211. A framework is being developed to monitor investment outputs and outcomes in order to ensure accountability with public funding and that intended benefits are being achieved. This will be finalised by the end of 2018.

212. To maximise the benefits of the programme, the Fund design has sufficient flexibility to be able to be adapted in response to new information or opportunities, and to align with regional priorities, e.g. as a result of the work we

are doing with regional councils. For example, if further information becomes available about the impact that changes to ETS settings have on landowner decisions to plant trees, tree planting grants could be adjusted.

213. As agreed by Cabinet (refer Table 12 above), the Director-General of MPI has authority to approve, in consultation with other departments, operational design settings and grant rates within the parameters agreed by Ministers. For clarification, operational design settings include: eligibility and assessment criteria for grants, milestone payment structure, and operational delivery mechanisms, provided those changes support more effective or efficient delivery of the scheme's objectives and are consistent with good practice forest management and fund management.

214. Initial settings will be reviewed within the first year, once there is a sense of uptake and effectiveness. Any proposed improvements to fund operational design will be tested with other relevant departments. If there is a need to brief Forestry Ministers outside of the review cycle, for instance if substantive changes to grant categories and partnership criteria are required, we will do so.

Recommendation:

Te Uru Rākau recommends that Ministers:

a. **Note** the indicative performance measures and that these will be finalised by the end of 2018.
b. **Note** MPI's Director-General's delegated authority to approve changes to operational design settings and grant rates within the parameters agreed in this paper.
c. **Note** that the initial settings for the One Billion Trees Fund will be reviewed based on its first year of operation, with a report back to Ministers if any substantive changes are required.

Implementation

Priority activities

215. There is a need to balance planting with scale and speed, with securing the right land for planting and developing an orderly pipeline of delivery.

216. Te Uru Rākau has identified the following priority activities to progress in order to build sustainable demand and momentum:

- Build awareness of One Billion Trees funding for planting in 2020 winter and subsequent years – with seedling orders for 2020 planting needing to be placed by late 2019, there is a good lead-in time to work with landowners to raise awareness, particularly through work with partners who have existing landowner relationships.
- Enhancing availability of advice and support for landowners and organisations – growing third party (e.g. regional councils, QEII National Trust) capacity and capability, develop critical resources, with a focus on meeting the needs of landowners, in particular Māori landowners.

- Working with DOC and other partners to identify large-scale planting projects including landscape scale indigenous restoration and catchment based initiatives e.g. for water quality and erosion control; potential partners include regional councils, Beef + Lamb, iwi, and partners undertaking existing large-scale initiatives such as Predator Free 2050.
- Labour and workforce development – identify initiatives that will increase training and employment across the forestry value chain (e.g. planters, nursery workers, land advisors, silviculture).
- Seek strategic partnerships with philanthropic and corporate funders to increase investment in the establishment of indigenous forest and enhance the sustainability of the programme. This will draw on and build on the early partnership established with Trees That Count. This approach will be critical to support the two-thirds target of indigenous species.

217. Te Uru Rākau is currently building capacity to scale up to administer the Fund and deliver on these priorities over the lifetime of the Fund.

Transition of existing afforestation schemes

218. Cabinet agreed that applicants to the 2018 rounds of the AGS and ECFP will be transitioned onto new agreements as per the agreed settings for the new grants. No applicant will be disadvantaged financially by the change; if the new settings would result in less funding than under AGS or ECFP, applicants will receive the amount they would have received under the original settings.

219. Once final settings have been confirmed, and ECFP contracts confirmed, the amount of the top-up for successful AGS and ECFP applicants will be estimated.

220. As of late September 2018, letters of intent have been sent to all successful AGS applicants advising them of the above process and the Government's commitment to them. This letter is to give them the ability to order seedlings, confident that funding is forthcoming. A contract will be signed with these applicants once the new settings and corresponding documentation has been approved. ECFP applicants will contract, then variations to contracts will occur where required.

221. A $34 million HCE funding round opened in October 2018. MPI will continue to operate the HCE within its current objectives and delivery mechanisms, and the partnership approach that is being developed with regional councils will complement funding decisions under the HCE.

Recommendation:

Te Uru Rākau recommends that Ministers **note** the proposed priority activities and the plan for transitioning existing afforestation schemes into the One Billion Trees Fund.

Allocation of funding

222. In August 2018, Cabinet agreed [refer CAB-18-Min-0379.01] to establish a tagged contingency of $234.373 million for the purpose of funding the tree planting grants and partnership fund, with a corresponding impact on the operating balance (see Table 13):

Table 13: Tagged contingency

	$million – increase (decrease) on operating balance			
Forecast fiscal impact	2018/19	2019/20	2020/21	2021/22
One Billion Trees Grant Scheme and Partnership Tagged Contingency	50.518	84.152	97.879	1.724

223. Cabinet authorised delegated Ministers to draw down the contingency once they have agreed on the design and details for both.

224. The contingency was projected to fund grants ($103.068 million, including potential costs associated with ETS decisions), partnership funding ($111.480 million), and administration costs ($19.825 million), but Cabinet agreed that delegated Ministers may decide the final amounts allocated to each area. Te Uru Rākau proposes the funding be allocated as set out in Table 14 (Option A) and Table 15 (Option B).

225. The ETS contingency has been revised for both Option A and Option B based on updated estimates of area that will be planted, given proposed grant rates and possible uptake by grant category, consistent with a two-thirds indigenous species target. It:

    a. assumes full grant uptake, and that 70 percent of total area is registered in the ETS (the latter being consistent with current unit flow projections);

    b. values New Zealand Units at the current price of $25.05/NZU; and

    c. reflects that the cost to the Crown associated with allocation of units is incurred in the year following planting.

226. It also includes the cost of allowing successful AGS 2018 applicants, who Cabinet agreed will be considered under the new scheme, to register their forest in the ETS. This pool of applicants will be funded from the remaining AGS allocation, topped by up one billion trees grant funding as required.

Table 14: Revised phasing of funding allocation (Option A)

	$million					
	2018/19	2019/20	2020/21	2021/22	2022/23	Total
Grant funding	9.912	43.366	45.577	-	-	98.855
ETS contingency		0.073	0.378	1.055	2.707	4.213
Partnership funding	37.340	32.105	42.035	-		111.480
Administration costs	3.353	8.543	7.929	-	-	19.825
TOTAL	50.605	84.087	95.919	1.055	2.707	234.373

Table 15: Revised phasing of funding allocation (Option B)

	$million					
	2018/19	2019/20	2020/21	2021/22	2022/23	Total
Grant funding	9.912	43.978	47.951	-	-	101.841
ETS contingency		0.047	0.182	0.394	0.604	1.227
Partnership funding	37.340	32.105	42.035	-		111.480
Administration costs	3.353	8.543	7.929	-	-	19.825
TOTAL	50.605	84.673	98.097	0.394	0.604	234.373

227. Based on the revision of the ETS contingency, we have modified the allocation of funding between grants and the ETS contingency.

228. Te Uru Rākau has further assessed whether the revised allocation of funding is still appropriate, given the proposed fund criteria and rates:

    a. For 2018/19, a total of $25.35 million has already been committed for partnership projects, as approved by Regional Economic Development Ministers.

    b. Of the current 35 active projects in the One Billion Trees pipeline, 15 have a specified funding amount requested; this amount totals $60.8 million. Currently all projects, which are a mix of enquiries (14), expressions of interest (14) and applications (seven) are on hold pending the clarification of the One Billion Trees Fund assessment criteria. All parties have been communicated with to this effect.

    c. With the current pipeline of projects alone, there is likely to be considerable competition for the remaining $14.75 million allocated under partnership funding for this financial year. As noted above, this will be prioritised using the key focus areas to help build demand and momentum.

    d. With regard to the 2018/19 grant funding allocation, we have had stakeholder feedback that some landowners are awaiting the opening of the scheme to apply for grants for 2019 planting. While the timing of when the fund opens means that there are constraints on how many applications we will receive for planting in 2019, over and above those that are already in train through the AGS and ECFP, a number of applicants may progress to the contracting stage in 2018/19 for planting in 2020 and 2021.

229. Given this, we do not recommend altering the existing allocations. Fund demand and uptake will be monitored and Te Uru Rākau may seek future agreement from delegated Ministers to adjust the amounts allocated to each area.

230. We will report back to Ministers annually on progress with spending as well as projected spending, including whether funding is likely to be fully allocated within the One Billion Trees programme or should be made available to the Provincial Growth Fund for opportunities elsewhere.

Recommendation:

Te Uru Rākau recommends that Ministers:

a. **agree** to draw down the tagged contingency as per the powers delegated to them by Cabinet [CAB-18-Min-0379.01 refers], and

b. **note** that we may seek future agreement from delegated Ministers to:

   i. adjust the amounts allocated to each area, depending on Fund uptake; and/or

   ii. change the details of the grants, such as the maximum rates if they are found to be too constraining.

International obligations and trade policies

231. MPI's preliminary assessment is that the design of the One Billion Trees Fund appears to be consistent with New Zealand's international obligations and trade policies. Consistency with World Trade Organisation (WTO) obligations needs to be monitored as the Fund is administered. If funding falls within the WTO Agreement on Subsidies and Countervailing Measures, it will qualify as a subsidy and would need to be notified to the WTO membership, where it could be subject to challenge by trading partners.

232. Our preliminary assessment is that the risk of a potential challenge is low given the proposed structure and design of the Fund. The Ministry of Foreign Affairs and Trade has been consulted on this matter.

Launch

233. Once Ministers have agreed to the proposed funding design, Te Uru Rākau will complete work to enable the One Billion Trees Fund to open in late November 2018.

234. At the point that the Fund is open, Te Uru Rākau will publish information about the new grants, communicate with key stakeholders, and welcome expressions of interest for funding from landowners and partners. Further work will continue in parallel with this to finalise the operational details and back-office systems to support the Fund, as well as build capacity to administer and support effective delivery of the Fund.

Appendix 1: Stakeholder engagement

1. Initial work on the One Billion Trees programme was informed by a series of targeted stakeholder workshops and discussions between April and June 2018. This included workshops with:
    - Environmental non-government organisations (24 April).
    - Regional councils (03 May).
    - Skills and training organisations (07 May).
    - Research and science organisations (21-22 May).
    - Forestry sector (29 May).
    - Primary industry organisation CEOs (06 June).
    - Federation of Māori Authorities and Māori representatives (11 June).
2. The Forestry Ministerial Advisory Group was established in May 2018 to provide the Minister of Forestry with a forestry industry perspective and independent advice about the forestry system and how Government and industry can work together to deliver better outcomes to New Zealand. Initially, its focus is to support the work of MPI/Te Uru Rākau to deliver the One Billion Trees Programme. The group was provided with a draft copy of this report and contributed feedback which has been taken into account in the final version.
3. On 28 August 2018, Te Uru Rākau ran a one-day cross-sector workshop to test proposed design details for the One Billion Trees Fund. There were 31 external attendees at the stakeholder engagement workshop representing 24 organisations (see Table 16).

    Table 16: Participant organisations

Beef + Lamb (including their Māori division)	Ministry for the Environment
Carbon Forest Services	New Zealand Farm Forestry Association
Department of Conservation	New Zealand Plant Producers
Environment Canterbury (ECAN)	Ngāti Kahungunu Iwi
Farm consultant/strategic advisor	Northland Regional Council
Federated Farmers of New Zealand	Nuhiti Q Māori Land Trust
Federation of Māori Authorities (FOMA)	Pamu Landcorp
Gisborne District Council	QEII National Trust
Greater Wellington Regional Council	Scion
Hawkes Bay Regional Council	Taranaki Regional Council
Horizons Manawatu	Te Tumu Paeroa
Million Metres Streams	Trees That Count

4. Te Uru Rākau officials provided participants with the background to the One Billion Trees programme, and an outline of what was being proposed for the grants and partnership funding. Participants were asked to test design proposals in small, mixed groups, and then report back to the room. Where necessary, resources with more information were provided, and at least one Te Uru Rākau official was at each table. Participation was lively, and constructive feedback was forthcoming.
5. A summary of the workshop, which includes some of the key questions asked of the participants and the themes which came through in the responses, is below.

Summary of cross-sector workshop

Initial insights

6. Participants were asked to identify and discuss the key issues that were on their minds as they commenced the workshop. A broad array of issues were identified, clustered around three key themes:

    - Ensuring impact of the programme (e.g. recognise broader outcomes will take time; clear phasing of the programme; builds on what exists already; and accessible for Māori).
    - Careful alignment of different objectives and goals (e.g. connection to long-term forest policy; balance of land uses; and regional/economic development).
    - Roll-out and support (e.g. landowner engagement; the role of Te Uru Rākau; central and regional government roles; and grant delivery and management).

Additionality and value

7. Workshop participants identified the following themes as being critical to achieve results: clear strategic purpose (e.g. what wouldn't happen without this support; outcomes-based; certainty and predictability); visibility (e.g. active outreach; clear communications; accessibility); achievable for the landowner (e.g. local and simple; support beyond funding); and connections to other initiatives in order to 'join the dots'.
8. A range of support services and functions were identified by participants, to ensure an effective partnerships and grants programme. These included aspects of financing; relationships with the funder; effective communications; links to the harvesters and wood processors; and availability of consultants, advisers and decision-support tools.

Categories, criteria and assessment processes

9. Participants were given a list of the proposed criteria, and asked if they were simple to understand and apply, and whether they support the 'right tree in the right place' objective. Participants provided a range of detailed feedback which Te Uru Rākau is taking into account. General comments included the need to ensure a simple process; and the need to experiment and adjust the rules over time.
10. When considering gaps or lack of clarity, participants identified other possible grant structures (e.g. a streamlined process for small-value grants); consideration of support for other costs associated with land/forest management; the risks to the landowner of planting failure; and the lack of Māori values in the criteria.

Funding rates and the Emissions Trading Scheme (ETS)

11. Participants were asked how important ETS participation vs grant rate was to them/the landowners they work with. There was a suggestion that the ETS linkage may not be helpful as it is only one driver and may be a distraction. The risk of future changes on ETS policy was also noted, with some suggesting the need for landowners to focus on getting the trees planted, and then consider linkage to the ETS.
12. There was overall agreement that upfront costs are a barrier to planting, although the significance would vary between landowners and planting type. There was concern that managing this risk may drive certain behaviours/species, e.g. a focus on radiata, and options for various end-uses were seen as important.
13. Various comments were made as to the specifics of grant rates under different scenarios, including different rates for public vs private benefit. The need for help with related costs such as fencing, and support for advisers and councils was also

mentioned, and one participant said that the final approach taken must meet the needs of the user.

How best to deliver support for both grants and advice?

14. Third-party provision was supported for its strong links to landowners, its key skill sets, and its independence from central government. A regional council-driven model was seen as linking to other regulations and being local, which fits with a recurring theme around the need for local engagement in regions and consistent, ongoing support.

15. However, regional councils were seen as having a risk that some landowners, for instance Māori, may not work with them, and the risk that council resources are already too stretched.

16. MPI [Te Uru Rākau] delivery was seen as linking strongly to the intent of the programme; however, central government delivery was seen as potentially lacking resources and the relationships on the ground. Issues with third-party delivery were also noted, including the need for higher levels of investment and the challenges of grant administration.

Who would be your trusted advisers for this programme?

17. Participants identified the key characteristics in a 'trusted adviser' to be relevant knowledge; experience; connections with the community; having an investment in the end result; full understanding of grants/regulations/opportunity; and someone who delivers the right message. Partnerships across groups to align with project need was also mentioned.

18. More than 20 possible partners were suggested, including environmental non-governmental organisations, Māori whenua experts, iwi, independent consultants, regional councils, sector organisations, land/farm systems advisors, and local experts/people trusted by the community.

Momentum and outcomes

19. Opportunities to build short-term momentum includes clear communications; making case studies available to demonstrate what a good project looks like; ensuring an effective grant process (e.g. simple/short processes for small grants); ensuring the right skills are in place and the 'supply chain' (e.g. nurseries) is funded; building partnerships across organisations; and providing assistance to develop applications).

20. Key themes identified as being vital to ensure long-term success included the need for a clear long-term vision; long-term support spanning successive cycles of government; ensuring ongoing support; and strong community participation, including through co-funding.

21. The early focus on ensuring the right skills are in place needs to continue; and success stories enabled through the programme should be communicated. Ensuring the right tree is in the right place is the key to long-term success.

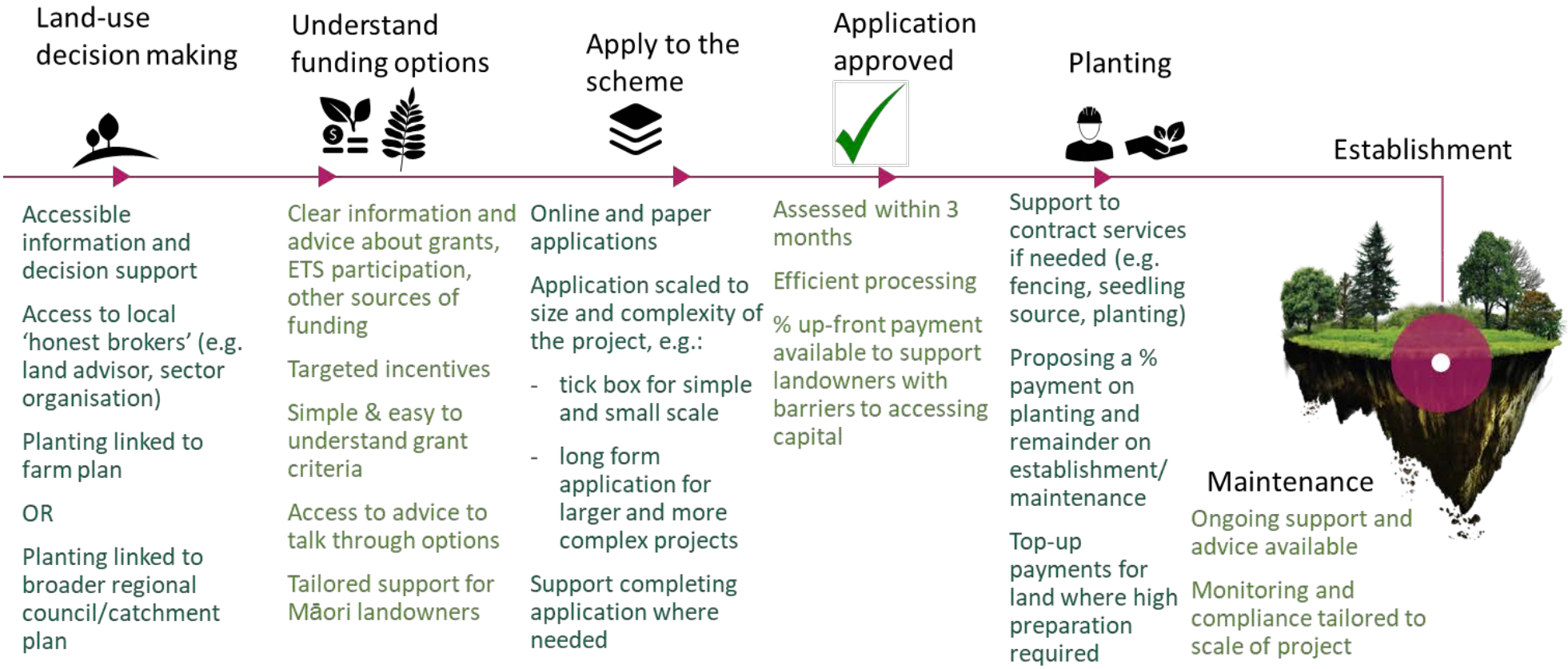
22. Participants were asked to create connections between the short- and long-term outcomes, and identified the need to ensure long-term planning to create certainty, and to focus on addressing blockages that hinder success.

23. Also identified as important is the need for Te Uru Rākau to build good partnerships with communities, landowners, and regional councils; and strong communications, including explaining the programmes' purpose, and sharing success stories.

Appendix 2: Regulatory and non-regulatory drivers that influence tree planting

1. Regulatory and non-regulatory drivers influence which and how many trees are planted where, when and for what purpose.
2. The National Environmental Standards for Plantation Forestry (NES-PF) applies to planted forest greater than one hectare in area and which is intended to be harvested. The NES-PF puts in place rules to manage the adverse effects of activities throughout the plantation forestry life cycle. Of particular relevance, at afforestation the NES-PF:
    a. requires use of a Wilding Tree Risk Calculator to ensure plantings are not at high risk of wilding spread;
    b. gives councils a high level of control on the planting that takes place on highly erosion-prone land; and
    c. requires planting setbacks from streams, rivers, lakes, wetlands and Significant Natural Areas.
3. Regional council rules, and the implementation of the National Policy Statement for Freshwater Management, are likely to influence land use decisions, including the planting of trees on erosion-prone land and/or alongside waterways.
4. Other developments in resource management policy, such as new priorities emerging from the recent Land and Water Forum report around identifying at-risk catchments and prioritising remedial activity in these catchments will also influence patterns of tree planting.
5. Over the longer-term, potential future decisions that place greater emphasis on farm environment planning and/or on obligations around on-farm greenhouse gas emissions may drive more tree planting.
6. Biosecurity priorities will also influence what is planted and where, and grant criteria will ensure that planting is consistent with the relevant regional pest management strategy or plan, and any other restrictions in place e.g. under the unwanted organisms list.
7. Work on indigenous biodiversity, such the upcoming recommendations of the Biodiversity Collaborative Group on a National Policy Statement for Indigenous Biodiversity, may also establish new drivers of the location and nature of indigenous species that are planted or established.
8. One Billion Trees funding will align with and support these drivers and, as relevant, will include additional criteria or monitoring to ensure that plantings are consistent with good practice and avoid potential negative consequences.

Appendix 3: The landowner view of the One Billion Trees Fund



Appendix 4: The costs and benefits of tree planting

1. There is a range of literature on the benefits of forests, both plantation forestry and indigenous forest. This includes market and non-market values, these include:

Economic • Timber • Honey production • Carbon credits • Tourism and recreation • Shelter/shade • Other by-products	*Environmental* • Biodiversity • Soil stability • Carbon storage • Water quality • Regulation of water flows
Social • Amenity • Conservation • Recreation • Community engagement	*Cultural* • Fulfilment of cultural aspirations such as kaitiakitanga

2. An ecosystem services approach can be used to value interventions or put a price on the costs of not intervening:

    - The total value of avoided erosion into perpetuity from establishment of forest on 2.47m hectares of erosion-prone land is estimated at $3.6 billion.[13] This equates to an average lifetime value of $1,457 per hectare.
    - A case study of the East Coast, using the NZEEM model, estimates an avoided erosion value of approximately NZ$1,017 per hectare. A similar analysis of a 'plant and leave' regime shows there will subsequently be less erosion, with a present value of approximately NZ$1,114 per hectare.[14]
    - The estimated value of water quality improvement of planted forests in 2008 was estimated to be $29 million.[15]
    - Costs of single flooding and storm damage can be significant, for example, the estimated one-off cost of the June 2015 storm in Manawatu and Taranaki is estimated at $70 million, with up to 800 properties affected.[16]
    - Individual willingness to pay for biodiversity enhancement was $42 and $82 on average per year on private and public land respectively.[17]

3. These estimates are not comprehensive, but are indicative of the value of forests. Estimates such as these provide a rationale for intervention in order to avoid immediate and long-term costs. A monetary value cannot be placed on all ecosystem services.

4. Table 17 provides an estimate of the value of key ecosystem services of standing exotic and indigenous forests in the Ohiwa catchment in the Bay of Plenty.

[13] Barry et al. (July 2014) *Enhancing Ecosystem Services through Afforestation: How Policy Can Help*, Land Use Policy 39.

[14] Yao et al. (2013) *Planted forests. In Ecosystem Services in New Zealand – conditions and trends*. 62 – 78. Lincoln, NZ: Manaaki Whenua Press.

[15] Rivas-Palmer (2008) in Yao et al (2013).

[16] https://www.radionz.co.nz/news/rural/285238/flooding-damage-estimated-at-$70m

[17] Yao and Kaval (2008). Valuing biodiversity enhancement in New Zealand. University of Waikato.

Table 17: Indicative values of key ecosystem services in the Ohiwa catchment[18]

Ecosystem service	Exotic forest ($/ha/year)	Indigenous forest ($/ha/year)
Provisioning		
Wood, pulp	$483	
Regulating		
Carbon sequestration (average over 20 years (exotic) or 50 years (indigenous))	$570	$161.70
Avoided erosion and flood disturbance	$121	$166
Regulating nutrient supply	$2,800	$2,800
Pollination	$206	$206
Water regulation	$6	$6
Waste treatment	$244	$244
Pest and disease regulation	$11	$11
Water supply	$8	$8
Social		
Recreation	$900	$1,800
Species conservation	$257	$414
Supporting		
Nutrient cycling	$994	$994
Soil formation	$14	$28
Total	$6,614	$6838

5. Extrapolation will only provide indicative values as actual benefits of different plantings will depend on the purpose, species, site and management. For example, small-scale indigenous plantings will not have comparable recreation or species conservation values, and the value of avoided erosion and flood disturbance do not reflect that indigenous forest takes longer to achieve canopy closure as the study was based on standing forest.

6. Further customised studies could be undertaken over time to refine the Crown's willingness to pay to achieve particular benefits.

Indigenous species

7. Indigenous forests can help control erosion, generate long-term carbon sequestration and enhance biodiversity, cultural and amenity values. These benefits vary depending on location and characteristics of the planting and are difficult to put a dollar value on. Indigenous forest has evolved to suit local conditions and provides an environmentally stable long-term land use option in almost all parts of New Zealand.

8. There is strong landowner, corporate and public support for planting indigenous trees. It is estimated that more than nine million indigenous trees are currently planted annually for a range of purposes.[19]

9. At present mānuka and kānuka are the main indigenous trees planted under the current Afforestation Grants Scheme. Both species are generally planted for honey and oil production and can also provide carbon income if able to meet ETS requirements. They are pioneering species and if there is a suitable seed source they support a natural transition to more mixed species indigenous forest, unless landowner intervention prevents this.

10. Grant rates for mānuka and kānuka do not need to be as high as for other indigenous tree species, as seedlings are cheaper, establishment is easier and early commercial returns are available from honey and oil. At the low end, mānuka stocked at around

[18] Yao, R. and Velarde, S. (2014) *Ecosystem services in the Ohiwa catchment*. Report for Bay of Plenty Regional Council. Carbon benefits have been re-calculated using a $25 carbon price and default look-up tables.
[19] This estimate is based on information from Trees That Count, extrapolated from tree planting reported to its online platform. No comprehensive data exists of all non-commercial or indigenous tree planting.

1,000 – 1,200 stems per hectare may cost around $2,000-$2,500 per hectare to establish.

11. Under the new grant scheme we are expecting interest in broader indigenous tree planting. We are also expecting timber production to be part of some landowners' aspirations when planting indigenous species. While indigenous trees can provide high value timbers the long establishment time deters most commercial investors. Where they are planted, the wider benefits form part of the rationale for planting.

12. Planting mixed species indigenous forest on open sites involves high establishment, and ongoing maintenance, costs. Grant rates will need to reflect these costs and we will need to accept a greater risk of planting failure than experienced with most exotic species and mānuka/kānuka.

13. Planting costs of mixed indigenous species are highly variable, depending on species composition, planting density and site characteristics in particular. At a minimum of 1,000 shrubs and 500 trees per hectare, establishment with site preparation, delivery and planting costs, grass and woody weed control, the estimated cost over five years is around $8,000/ha. Higher density plantings will cost considerably more, with high value restoration costing upwards of $15,000/ha and potentially up to $30,000/ha.

Assisted reversion

14. Assisted reversion of indigenous species can achieve indigenous forest cover at much lower cost than planting open sites. It requires fencing to exclude stock, and control of wild animals and weed species. Supplementary planting can be used to introduce key species or accelerate their colonisation.

15. Costs are highly variable, depending on what activity is required. Pest and weed control is site-specific, but ongoing intensive weed and pest control may cost around $300/ha/year until canopy closure. Fencing can cost up to $20/m depending on the terrain. The length of fencing required per hectare of reverting forest drops markedly as block size increases. Supplementary planting of around 100 stems per hectare could easily cost $500/ha, depending on the species.

16. A number of locally specific factors e.g. environmental conditions (rainfall, climate, and soil fertility), proximity of seed sources, and land management practice influence the reversion rate and trajectory.

17. There is limited data on current business-as-usual rates of assisted reversion. Between 1990 and 2000, it was estimated that on average around 2000 hectares per year reverted to indigenous shrub-land from marginal erosion-prone grasslands, though much of this is likely to have been unassisted reversion.[20]

18. Because costs are lower than indigenous tree planting on open sites a grant rate can also be lower than that for planted indigenous species, also reflecting that reversion may be relatively slow to achieve canopy cover compared to planting on open sites.

Riparian planting

19. Indigenous species are often used for planting riparian margins, although exotic species such as poplars may also be used. The benefits include erosion control, filtering pollution, protecting waterways from livestock, moderating water temperature, and increased biodiversity.

[20] Shepherd, J., Sutherland, M., Payton, I., Kerr, S., Zhang, W., and Power W. (2008) *Nature and Scale of Eligible Post-1989 Non-planted Forests*. Landcare Research Manaaki Whenua.

20. A mix of low-growing plants (e.g. flaxes and sedges) are typically planted closest to the waterway, with shrubs and trees being introduced further from the water's edge. What constitutes good practice varies, depending on the characteristics of the waterway.

21. The wider a riparian margin, the more trees are likely to be planted; however there are limited data on current numbers of trees planted through this work. Most riparian planting will occur on open sites and the cost will be high. A grant rate will therefore also need to be high to encourage adequate uptake.

Alternative exotic species

22. Some landowners see benefit in planting alternative species such as eucalypts, cypresses and redwoods for speciality timber markets. On paper, the returns from these species can be similar to radiata pine as their higher cost is offset by higher timber values. However, the higher planting costs, greater management, and market uncertainty deter investors. For example, eucalypts face a higher biosecurity risk from pest invasions due to our proximity to, and high trade with, Australia.

23. Redwoods, some eucalypts, poplars and willows are particularly suitable for erosion control. Their ability to coppice means the roots remain in the ground, stabilising the soil even if the trees are damaged or harvested.

24. The establishment cost for alternative exotics is currently high, relative to pine, and management generally requires greater care and more specialist knowledge. MPI's nursery survey suggests that there was less than 300 hectares of new planting in Douglas-fir, all other exotic softwoods and all exotic hardwoods in 2017.[21]

25. Planting more diverse forestry species makes for a more resilient industry. A higher grant rate was considered for alternative exotic species, compared to radiata pine, but is not currently proposed so as to maintain the overall simplicity of the grants scheme; this could be introduced in the future. The planting of alternative exotics will continue to rely heavily on landowner enthusiasm. We will be considering whether supporting research and development for alternative species is an effective way to encourage more diverse species being planted.

Radiata pine

26. Radiata pine is the mainstay of the commercial forestry sector. It provides economic benefits to landowners both from timber and carbon income. Annual returns generally fall within the six to nine percent range for timber, with a further three to four percent for carbon income under current ETS settings. It is also relatively cheap to establish at around $1,500/hectare, although ongoing maintenance activity such as pruning and thinning add additional costs.

27. Pines can also generate wider public benefits. They are quick to achieve canopy closure and remain a viable option for some erosion-prone land, provided they are appropriately managed. On some erosion-prone land where rotational forestry is not appropriate pines may be suitable as a permanent cover. Given the relatively certain market for pines as a rotational crop, they also makes an important contribution to regional development and providing an on-going source of employment.

28. Afforestation rates for radiata pine have been relatively low since the early 2000s. An estimated 4,000 hectares of commercial production forest (approximately four million trees) was established in 2017. This is projected to increase to 7,000 hectares in 2018 (including trees planted through existing grants and Crown Forestry joint ventures).

[21] Provisional estimates of tree stock sales and forest planting in 2017.

29. With a carbon price now above $25/NZU, there is likely to be an increased interest in investing in commercial pine plantations.[22] Base level commercial planting is projected to increase, with Crown Forestry joint ventures contributing additional planting and, from the early 2020s, improvements to the ETS incentivising additional new planting.

30. However, the upfront cost of establishment can be a barrier to planting, particularly on some multiply-owned Māori land. There remains a case to provide targeted support for planting radiata pine, where there is evidence it will generate wider benefits and not crowd out private investment.

[22] For example https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12108276. Māori leaders pitch to Māori landowners - let us pay to plant trees and we will share the carbon credit profits.

Appendix 5: Scenario for allocating funding

Table 18 sets out a possible breakdown of the Fund, which would deliver two-thirds indigenous species. Varying the uptake by different grant categories and/or the rates will produce different results.

Table 18: Funding scenario

Category	Possible proportion of fund committed by grant category	Possible amount committed over three years	Potential rate	Hectares delivered	Total trees delivered
Pinus radiata	19%	$ 19,255,360	$1,500	12,837	12,836,907
Other exotic species	3%	$ 3,040,320	$1,500	2,027	2,026,880
Mānuka	28%	$ 28,376,320	$1,800	15,765	17,341,084
Indigenous maximum rate	10%	$ 10,134,400	$6,000	1,689	4,222,667
Assisted reversion including fencing	10%	$ 10,134,400	$1,500	6,756	6,756,267
Indigenous base rate	20%	$ 20,268,800	$4,000	5,067	7,600,800
Exotic/mānuka 'topped up' rate for high priority or erosion-prone land	10%	$ 10,134,400	$2,000	5,067	5,320,560
TOTAL	100%	$ 101,344,000	-	49,208	56,105,165