

# Landowner attitudes to afforestation in the Hawke's Bay region of New Zealand

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Complementary land uses on-farm in mid-Canterbury. Photo courtesy of Scion

## Abstract

The decisions made by landowners about tree planting or any other strategic land-level decisions are influenced by a range of factors, drivers and barriers that make every situation unique. Developing an understanding of core drivers and barriers affecting New Zealand landowners' views on afforestation, and addressing these, may increase the likelihood of them planting the right tree in the right place to ensure both individual landowner and community expectations are met.

Interviews with landowners and rural professionals established that a range of potential benefits can be achieved through purposeful tree planting, and that perceived risks were often a barrier. Alongside this, a clear gap (and opportunity) was identified for a

central support and guidance system to work alongside landowners to understand their objectives and constraints and to develop long-term plans that fit with their needs and expectations.

There is an opportunity for regional bodies to influence and drive tree-planting behaviour, but this needs to be focused on the needs of individual farms and be supported by a community dynamic that encourages responsible planting. It is possible to drive behaviour change, but it will require conversations around the dining table, not pre-packaged solutions.

## Introduction

Afforestation is being promoted worldwide for the benefits provided by trees, such as reduced erosion, improved water quality, habitat provision, carbon

sequestration, and mitigation and adaptation to climate change (e.g. Basher, 2013). The One Billion Trees programme has been set up at the New Zealand central government level to get one billion trees in the ground by 2028. The Government has budgeted \$120 million to support landowners, particularly farmers, who wish to plant on their land (MPI, 2019). The programme has the potential to create employment, optimise land use, mitigate climate change, support Māori values and aspirations, protect the environment, and support New Zealand's transition to a low emissions bio-economy.

There is a fear that indiscriminate tree planting will lead to productive land being blanket planted in *Pinus radiata* (the dominant planted tree species in New Zealand). However, both the One Billion Trees programme and those cautious about planting agree that the country does need to plant trees, that we need to ensure the right tree is in the right place, for the right purpose, and that there are multiple ways to achieve this.

The Hawke's Bay Regional Investment Company (HBRIC) and Hawke's Bay Regional Council (HBRC) wanted to explore the potential of afforestation to control erosion and other ecosystem and economic benefits. The region has some areas that are highly susceptible to erosion, with around 150,000 ha (or 12% of the region) losing more than 1,000 tonnes of sediment per square kilometre a year. The region is also exposed to extreme weather events that have historically caused significant erosion, flooding and infrastructure damage, and which are expected to increase in frequency with climate change. With 'right tree is in the right place, for the right purpose' in mind, the HBRC wanted to explore options that include commercial plantations of radiata pine, redwood, cypress, *Eucalyptus*, tōtara and mānuka, as well as permanent native forests to achieve positive outcomes for the environment, the economy and communities.

Resistance to the afforestation of productive land is not unique to New Zealand. Conflict over the perceived environmental, economic and social impacts of planted forests has been reported around the world, including Australia (Schirmer, 2007; Schirmer & Bull, 2014; Williams, 2014), Ireland (Schirmer, 2007), Scotland (Hopkins et al., 2017) and the US (Claytor et al., 2018). Objections often centre around perceived losses of food-producing land, jobs, community and a way of life, with the profits flowing elsewhere.

Developing an understanding of New Zealand landowners' views on afforestation to ensure individual landowner and community expectations are met is essential to the success of the right tree, right place initiative. Beyond spatial and financial considerations, it is human factors that will support success. At its heart, this is a behavioural change process (encouraging and supporting landowners to do something). Therefore, it is crucial that the success factors, drivers and barriers are understood and included in planning.

Here we explore the behaviours, attitudes and perceptions of landowners in Hawke's Bay, as well as

those who work with or potentially influence them, to understand and document the key factors required to engage with and encourage/support landowners to plant trees on their land, by:

- Exploring and understanding the common 'success' elements among landowners who have engaged in commercial tree planting
- Investigating barriers that have driven landowners from engaging in tree-planting initiatives and factors that could make involvement more likely
- Exploring which aspects of the process were missing from a landowner perspective
- Identifying key parts of this process in terms of the parties involved, the information or support required, and the practicalities of implementation
- Understanding the elements of successful council engagement with landowners undertaking commercial tree-planting activity.

## Methods

Qualitative research was conducted by independent agency Fresh Perspective Insight using in-depth interviews (face-to-face and telephone) to understand behaviours, attitudes, perceptions and the past experiences of participants. Fifteen participants were recruited via the HBRC database and existing contacts, according to agreed criteria. Participants included those with previous experience and success in commercial on-farm planting operations, those in early stage engagement with commercial tree planting, and those with roles in farm forestry/farm consultancy/land management. Interviews were structured around an interview guide specifically designed to address the objectives outlined previously and signed-off by the client.

The interviews started with considering overall farm operations in general before focusing on tree planting, to ensure participants were not directed down a particular tree-planting or forestry path. Responses were analysed using a three-stage process of coding, categorising and theme identification using the project objectives as the analysis framework.

## Results

### Landowner perspectives

Looking at tree planting, there are baseline levels of awareness and engagement with activities such as pole planting and waterway initiatives, but very mixed awareness and comfort levels beyond this into larger scale or commercial tree-planting activity. There is a recognised gap in knowledge (and therefore comfort) about the realities and practicalities of tree planting among those who have not been exposed to it. As a result, there has been an obvious learning curve for those who have engaged or are more advanced in their tree-planting activity.

At a broader level, there is emerging disillusion with some aspects of tree planting in the region. This is largely based on negative perceptions around 'blanket planting' behaviour and the absence of long-term and land optimisation thinking.

It is important to remember that, in most cases, tree-planting behaviour and decision-making will be based on factors unique to the specific individual/operation. Tree planting is seen as a strategic-level decision and several elements are considered in this paper, including (but not limited to):

- Succession planning and the most appropriate structures/approaches to this
- Short, medium and long-term financial risk and potential benefit
- Integration of tree planting with other land-use activities
- Workload and cashflow impacts in comparison to other strategic options
- Emotional factors, including landowners' relationship with the property and wider ecosystem.

### Success factors

A number of important factors underpin the decision-making and behaviour of landowners who have achieved a degree of success in their tree-planting initiatives.

#### An integrated land management mindset

Successful outcomes and decision-making were attributed to thinking about the property or farm as an overall resource to be optimised through the use of a range of integrated activities. This mindset not only influenced tree-planting behaviour, but also farming practices more generally.

For these farmers, planting trees increased the overall productivity (and profitability) of their operation rather than decreased it, and tree planting was seen to be the best use of particular blocks based on land type, access and so on. As a result, the current and planned tree-planting initiatives on these properties were viewed as 'good farming practice' as opposed to something distinct or separate from their 'core' activity.

*'You have to have a mindset of what land is or could be in terms of what you do with it.'*

*'Farmers that keep their farms will be the ones that have planted trees.'*

*'It doesn't mean you have to reduce stocking levels.'*

#### A clear role for trees

As an extension of this 'resource optimisation' thinking, it was evident that each landowner had identified a very clear role for trees within their overall operation. These roles included one or more of: erosion control, land management, diversification, cashflow, succession planning, workload reduction and long-term investment. As with most farm decisions, each

landowner viewed their operation (and the role of trees within this) as the result of several factors unique to them and their land.

*'It's not as simple as saying "here is some money, plant some trees", there is more to it than that.'*

*'You need to think in terms of gross margin of each block. You plant on those blocks with a negative gross margin.'*

#### Focus on a range of benefits

Benefits were thought about in multiple terms rather than in isolation when landowners spoke about tree planting. The benefits broadly fell into primary, top-of-mind benefits and secondary, supporting benefits. Top-of-mind were benefits based around the core pillars of their operation – financial (cashflow and long-term investment) and land use optimisation – the primary reasons that tree planting was undertaken in the first place. Secondary benefits are those that enhanced the overall operation. In many cases, these benefits were only discovered after initial planting had taken place. They include elements such as animal welfare (shade, shelter and feed), aesthetics, social licence and improved mental health. Also, a benefit of increased productivity (or at the very least no discernible decrease) was reported by most.

*'It can be cash-flow, help with stock capacity, provide shade.'*

*'The commercial side of it is the icing on the cake. The most important thing is protecting the land.'*

*'It really can be a win, win, win. Money potential, animal welfare, climate change, social impacts, biodiversity.'*

#### Willingness to learn and adapt

All landowners accepted that they had learnt a lot through the course of their tree-planting activities. This learning centred around the key themes of species suitability, planting and initiation, access and extraction practicalities, and financial structures/approaches. The learning process largely takes the form of trial and error, or access to a specific individual or group with expertise and experience relevant to the landowners' situation.

*'I've got a whole lot of tricks to make it work that I have learnt along the way.'*

#### A degree of help in getting started

Almost all landowners identified the importance of grants or incentive schemes to help with the upfront cost of initial planting/fencing etc. In many cases, this was initiated or facilitated via the regional council or specific public sector forestry initiatives at the time.

*'In the early days I needed an incentive to get started.'*

*'Grants or help with the upfront cost is important to get people underway.'*

A range of factors are needed to support success from an individual perspective. Due to the unique nature of each operation, the weighting applied to these factors

differs and can only be determined by looking at the operation as a whole. Within this, there is also a very clear direction in terms of how tree planting is perceived by farmers that may differ from others in the industry. That is, it is complementary and integrated within their overall farm/business as opposed to operating in isolation.

The success factors identified here are similar to those identified by research focusing on Australian, Scottish and American landowners (Williams, 2014; Hopkins et al., 2017; Claytor et al., 2018). Successful farm foresters tended to have diversified income streams and recognised that tree planting provided a range of socio-economic benefits beyond the provision of income. Personal experience or knowing those interested in forestry was also mentioned as having the potential to influence attitudes.

## Barriers

Barriers to tree planting based on personal experience and current situations, as well as watching others, were considered. At their heart, these come down to perceived risk relating to three key factors.

### Financial risk

There is a perceived financial risk in tree planting for many landowners, both in the short and longer term. In the short term, this relates to set-up costs and the stress or pressure this can place on the economic sustainability of the overall operation. These costs extend well beyond the provision of trees and into fencing, pest control, early stage maintenance, labour costs etc. Alongside this short-term cost there is also the perceived loss of productivity from converting land to trees. For some, this can be a double hit.

*'A key barrier is the initial capital outlay.'*

*'Sometimes the focus is on the upfront cost (like fencing) rather than the end benefit.'*

From a longer-term perspective, the financial risk relates to the timeframe of potential returns and the volatility this brings to the overall equation. For a lot of farmers, this becomes a strategy of 'hope' regarding returns rather than a robust and certain investment return strategy. Added to this long timeframe can be a lack of familiarity with the financial workings and implications of forestry operations and low awareness of the different financial approaches and mechanisms. This heightens the perceived risk, particularly when it is compared to other farm activities with more certain or familiar financial models.

*'There is fear of locking it away for 20 or 30 years.'*

*'There is fear of the unknown.'*

*'I am hoping I can drive an income stream from it in terms of carbon credits, but we are still nailing down what will qualify.'*

### Implementation risk

Operational risk, or the practical considerations that come with tree planting, is another major risk factor that inhibits tree-planting activity. This is driven by a lack of

knowledge or expertise and therefore the potential for implementation to fail due to poor decision-making or execution. This largely applies to selecting site locations and suitable species, the timing of planting etc. Once again, when other potential farm activities have a much more certain outcome than tree planting may be superseded. This can often be expressed in a desire to 'stick to my knitting' or focus on 'growing grass, not trees'.

*'People need help with what to plant and where to plant it.'*

Also, there can be a risk or barrier around the practical side or physical planting of trees or extraction. This can prove a key barrier, especially when knowledge or awareness of different options is lacking, or when labour resources are particularly tight.

*'The country I would like to commercially plant is too remote.'*

### Reputational risk

Reputational or social risk can also be a real barrier; this is the risk of going outside 'traditional' farming. It is made worse by the permanent and very visible nature of tree planting, as well as the longevity of horror stories or well-known 'failures'. In 2019, this risk was heightened due to the ongoing community narrative around tree planting, which is bringing with it a large amount of negative sentiment, and in some cases positioning tree planting as 'anti-farming' when done at scale.

*'I am nervous about any change that is permanent and irreversible.'*

*'If you sit down and talk logically to most farmers, they will have blocks of land suitable for planting. But on the other hand, there will be push back because of the risk and worry.'*

Barriers to planting, either perceived or real, need to be acknowledged, accepted and understood as part of the engagement with landowners. Given the time, resource and financial pressures most landowners are under, it is very easy for them to de-prioritise tree-planting activity in favour of the status quo. Combined with knowledge gaps and lack of clarity around end benefits, this can result in failing to implement something that makes sense at a logical level.

International research also reports similar barriers to afforestation. Financial risk can weigh heavily. Work looking at the success of Australia's Strategic Tree Farming project suggests that engaging farmers was difficult, partly because they had to wait for 15 years for any financial returns. In contrast, plantation models that provide yearly payments are more readily adopted (Williams, 2014).

Landowners are also concerned about loss of land management flexibility, and feel they lack knowledge and experience. Reputational risk features very strongly. Being seen as a good farmer is very important, and how landowners believe others in the community view afforestation influences their views about the social acceptability of afforestation.



Cattle grazing under *Eucalyptus regnans* at Wiltstowdown (near Tokoroa). Photo courtesy of Scion

### Participants' views on potential roles for regional policy-makers

Participants were clear on the potential role(s) for regional policy-makers in supporting tree-planting behaviour in response to the current context and the drivers/barriers to behaviour identified above. It was felt there was a role as a Facilitator, and potentially as an Enabler, to support individual landowners and communities in navigating the tree-planting journey.

The facilitation requirement comes from the need (and current gap) for a body or party able to understand the needs, objectives and constraints of the landowner and then guide them through a process to tree planting. This includes introductions to other parties who can support and help deliver to the objectives of the landowner when the need falls outside of what can reasonably be expected or delivered by the regional council or others.

Facilitation and support are also needed in this space. This is because the barriers and current context means that purely addressing one element of the activity (e.g. finance), or leaping too far down the decision-making path at an early stage, does not adequately address the complex nature of farm operations and the

decisions to be made and will not lead to longstanding and mutually beneficial relationships.

The Enabler role is very much around providing the required ingredients for success. For landowners, this primarily relates to financial and expertise needs. When specifically looking at regional bodies, this means that their role is entirely dependent on the needs and situation of the landowner. Landowners are open to a range of solutions or approaches when it comes to the commercial side of their activity (such as joint ventures, grants), as long as it fits with their objectives and appetite.

*'Forestry consultants don't understand farming and farm consultants don't understand forestry.'*

*'They have to know their stuff otherwise they are no good to me.'*

*'It is a bit of a leap of faith, so some people will need more help than others.'*

*'4 or 5 hectares can be too small sometimes. They could help to make small blocks more attractive.'*

*'They need to have a one stop shop to make it easier for people like me. Otherwise we won't get onto it.'*

*'It's like the Smart Energy guys who just show up and take care of it all. Insulate, apply for funds, and do the job.'*

## Influencing the wider narrative

There is a social gap in terms of perceptions and attitudes that needs to be addressed alongside the gaps at an individual level. This is needed to create fertile ground for messages and initiatives to drive behaviour and normalise tree-planting activity. While much of the focus was on the individual success factors and barriers to tree planting among landowners, many participants also saw a role for the HBRC and others to influence the narrative around the place of tree planting and trees in responsible and sustainable land use.

It was felt that greater coverage and messaging was needed around:

- Promoting tree planting as an appropriate land use in conjunction with other farming practices
- Showcasing the success stories and different approaches in the wider community
- Illustrating the full range of potential benefits of tree planting (beyond financial benefits), including the role of different species in creating a more resilient region
- Signposting the regional council's commitment to long-term decision-making and support in this area, with real examples of the council ensuring the right type of activity takes place across the region.

*'They have to influence the wider community around trees as well. It has to come from all sides.'*

*'At the moment I think we are too Carbon Credit driven.'*

Consistent messaging is necessary to maintain a supporting narrative. It will be essential that communication from the HBRC, councillors or staff in the public domain support the intent and purpose of the initiative and comes from an informed and constructive viewpoint.

The wider research on the social acceptability of afforestation provides information that can both support and add depth to any messaging. Generally, the establishment of small-scale farm forests by local landowners, planted on marginal areas of a property rather than a whole property, is more acceptable than the establishment of large-scale plantations by non-farmers (Schirmer, 2007). In other words, planting trees is part of good farming practice.

Plantations need to be seen to provide positive outcomes for the environment and the broader community. For example, Australian communities generally prioritised public good outcomes over individual gains. In particular, plantations become more acceptable in areas with local processing facilities providing jobs as opposed to where chips or logs were exported (Williams, 2014).

It is also important to reiterate the message that the regional council and others are committed for the long term. Australia's Strategic Tree Farming project faltered when government funds were withdrawn and landowners started to worry that plantations could become 'stranded assets' with no clear market or processing infrastructure (Williams, 2014).

## Rules of engagement

Working closely with landowners and facilitating their journey is likely to be the most effective approach to encourage afforestation of land vulnerable to erosion. However, this needs to be done in a way that fits with the overall intent and develops and maintains trust and cooperation. Some key rules of engagement are needed to shape any engagement strategy or design to ensure this relationship works from a landowner's perspective.

- It is the landowner's plan and their objectives and constraints are the starting point
- The focus has to be on individual and local solutions, not a 'one size fits all' approach
- Implementation has to take place at the speed the landowner is comfortable with (*'Don't tell me how to run my farm'*)
- Genuinely use the 'right tree, right place' principle and explore different options rather than jumping to commercial radiata pine
- Focus on selective land optimisation and not blanket tree planting (*'It has to be right tree, right place. Not any tree everywhere'*, *'We have to move past being purely focused on Pinus Radiata'*, *'They (the Council) can't have a purely production focus. That isn't right'*)
- Focus on building relationships and trust rather than taking a transactional view
- Bring people and communities together to build relationships and work together. Introduce people who can help or who have *'been there, done that'*
- Be in it for the long haul (*'This is about making good, long-term, thoughtful decisions. You have to make sure money doesn't drive short term decision-making'*, *'I think at the moment the driver is just to plant pine trees, not on right tree, right place. I question the motives of some people involved'*).

## Conclusions

Deciding to plant trees is a complex process for many landowners. Encouraging a landowner to change current farming practices on an erodible landscape to forestry will require a range of tools and support from specialist consultants and industry experts, as well as including community engagement. There is an opportunity for regional bodies to influence and drive tree-planting behaviour by working alongside landowners to understand their objectives and constraints and to develop long-term plans that fit

their needs and expectations. This will entail building awareness and knowledge of the many different tree-planting options, the range of environmental and social benefits, and how this is compatible with landholder and community beliefs about the appropriate use of agricultural land to ensure the right tree is planted in the right place for the right purpose.

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