ACKNOWLEDGEMENTS

WorkSafe New Zealand would like to acknowledge the following parties for their support of and time spent on the project:

> the forestry crews, contractors, owners, and principals who participated
> the inspectors who gave their time.
EXECUTIVE SUMMARY

This research has found that the Forestry programme’s focus on small-scale forestry is warranted. This area of the industry is characterised by less-developed health and safety systems, which will present greater risk as the volume of wood harvested in woodlots and farm-based forestry increases. Small-scale forestry differs from industrial forestry in a number of ways, in terms of their motivations and vulnerability to external influences, and the harvesting methods employed. This means that the approach taken with those in industrial forestry will not necessarily work as well with those in small-scale operations, and thus a focus designed for small-scale is crucial in achieving better health and safety outcomes for workers in this area. Specific key differences are discussed below.

MOTIVATIONS FOR HARVESTING

This research found that farm forest owner’s decisions to harvest were driven by wood prices. Farm forest owners were concerned about responsibility for health and safety on the farm when logging contractors were harvesting. Most thought it was the contractor’s responsibility, but remained apprehensive about potential liability.

The forecast phase of 2015 and 2025 shows an increase of up to 35 million m³/year availability most of which will come from small scale forest growers who established their forests during the 1990s. The plantings in the 1990s included plantings on very steep sites that will be difficult and expensive to harvest. Some will not be harvested for this reason.

The cost of providing infrastructure for logging of farm forests and or private lots was a concern for all. Many of the small to medium sized forests are hard to access and roading costs were a major issue as too was the challenge of being able to put in a sufficient (and safe) skid site. Contractor’s observed that farmers were often reluctant to address infrastructure – or to go to any expense for this. Access roads were often poorly laid out and not gravelled as the farmer(s) were reluctant to damage pasture land.

Proximity to processing plants will also impact on the decision to harvest. The lower North Island does not have good proximity to processing plants. A large number of small-scale forest owners are concentrated in the lower North Island (Whanganui area).

Small scale forest owners (on and off farms) all spoke of the increase in harvest and the likelihood of ‘cowboys’ and ‘flyby nighters’ entering the industry. All thought that these contractors and crews would be inexperienced operators and would likely contribute to a spike in injury and fatality in the sector.

VIABILITY OF INCREASED MECHANISATION

Internationally and locally there has been an increased focus on using ground based machines for harvesting and for the extraction of timber off steep terrain. Having fewer workers on the ground and the greater use of mechanisation is assumed to have a positive impact on injury and fatality rates. Machine cabs do protect workers from fatality or injury from falling objects. Yet, the use of machines on steep sites could also lead to machine roll over on unstable terrain or on slope gradients that the machine was not designed to operate on.

In New Zealand, cable yarder systems are used on steep terrain forests and account for 53 percent of forest estate operators, the remaining 47 percent are ground based and account for 55 percent and 60 percent of the total wood harvested. Increased
mechanisation will impact on work-related health in a range of ways (potential increase in obesity, loss of fitness and propensity to strain or sprain when exiting machinery). It is anticipated that there will be a need for more forest workers and machines to harvest the increased volumes. There has been an increase in the importation of cable yarders, cable logging methods have changed little in 50 years and require an average crew size of 8 people.

There was general acknowledgement that mechanised crews were more efficient and provided greater safety for workers. However, all acknowledged that machinery was very expensive and most small contractors would not have the security of employment to raise the capital necessary to become mechanised. Contractors who were not mechanised were concerned that more mechanised contractors and crews would move into the small-scale sector and that they would be displaced from harvesting the more accessible sites and pushed into working on the steepest and riskiest sites.

**CHALLENGES OF WOODLOT HARVESTING**

The small contractors also stressed that larger contractors working in corporate forests were better supported to address health and safety and that as a small operator this was more of a challenge. Securing contracts and dealing with everyday business concerns took priority over health and safety. Small contractors and their crew did not have guaranteed year round work and for some this meant that they were out of work for sometimes a few months every year. When they had contracts they tended to work quickly so they could move onto the next contract in a 'make hay while the sun shines kind of way'. Some farmers thought this meant that corners were cut and the safety of crew was an issue.

The business of the small-scale forest, or small-scale forest on farms and that of those who harvest can be described as small to medium sized businesses. Most of the issues typical of small to medium sized businesses apply to those in this sector. That is, they have limited human, economic and technical resource. Health and safety tends to be prioritised after an event – when it is too late. Keeping the business economically viable is prioritised.

Small and medium sized business classifications are possibly too broad, for this sector it is arguably more useful when designing interventions to think of a range: micro, small, medium. Evidence suggests that the smallest businesses are more likely to be sensitive to the relevance of health and safety training and more likely to highlight the inadequacies of the legislation driving change. The research confirms this was the case for the smallest businesses that participated in the research.

Formalised health and safety processes and systems are not common in this sector. Health and Safety is more commonly addressed in an informal manner. Since the legislation there has been increased concern about liability. There appears to be a shift toward formalising processes and systems, but it seems fair to say that this is probably driven by compliance and a fear of liability rather than a substantial shift in behaviour or changed practices or procedures aimed at improving health and safety outcomes. There is a strong tendency for both owners, contractors and crews to think that it is WorkSafe’s responsibility to tell them what to do and what will ‘keep them safe’ – and ‘safe from liability’.
Trust emerged as a significant theme across all contractors and crews in the research. Trusting that the infrastructure when harvesting on small lots would be adequate. Trusting teammates will be competent and work safely and that this trust came from working as a team for some time. High turnover is a significant issue for these contractors and crews, and ‘low trust’ is an outcome of this.

Contractors harvesting small and medium sized forests experience challenges recruiting staff, have high staff turnover and also insecurity of contract and therefore employment for their crew. Māori comprise 34.2 percent of the forestry workforce and many work in ground based crews and will continue to work in small crews that are not heavily mechanised. High turnover of crew is an issue that has implications for health and safety. Inexperienced and new workers are more likely to be injured in the first year of employment, with the majority of injuries occurring in the first six months.

**NEEDS OF FARMERS**

Negative experiences with harvesting on farms included contractors not keeping to set plans and unanticipated problems occurring, including: not taking care with overhead power lines, not taking care of creeks and river beds and failing to observe fence lines. Other concerns expressed by farm forest owners included observing crews that had poor technique, put other crew at risk, using old and poorly maintained equipment.

Greater guidance was needed for farmers with forests on their properties in terms of what they needed to ensure was in place before contractors came onto their property. All stressed that a template would be very helpful. Some farmers with forests on their farms will only harvest once, farmers who had properties where there had been intergenerational harvesting thought that the once only farmers were more likely to employ an intermediary to engage the contractor and crew for harvest. The role of these intermediaries was thought to be potentially problematic and a point where pressure may be applied to the contractor to turn the harvest around quickly and potentially therefore undermine safe practices.

There was concern that they may become liable for events that had not been anticipated or planned for. That is, the contractor and or crew doing things that had not been in the plan, such as exiting the property via a different route, encountering overhead lines because they were not where they were meant to be.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 INTRODUCTION</td>
<td>7</td>
</tr>
<tr>
<td>1.1 Background</td>
<td>8</td>
</tr>
<tr>
<td>1.2 Introduction</td>
<td>10</td>
</tr>
<tr>
<td>1.3 Method</td>
<td>17</td>
</tr>
<tr>
<td>02 FINDINGS</td>
<td>18</td>
</tr>
<tr>
<td>03 DISCUSSION</td>
<td>25</td>
</tr>
<tr>
<td>04 CONCLUSION</td>
<td>32</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>35</td>
</tr>
<tr>
<td>Appendix A: Methods</td>
<td>36</td>
</tr>
</tbody>
</table>

## FIGURES

1. Historic Harvest and Forecast Wood Availability of Radiata pine forest in New Zealand 14
2. Processing plants in the North Island 15
IN THIS SECTION:
1.1 Background
1.2 Introduction
1.3 Method
1.1 BACKGROUND

Forestry is one of WorkSafe’s four priority areas because of the high incidence of serious injuries and fatalities. The WorkSafe Forestry programme has been running since 2010 and is currently in a phase of refining its future work.

To inform this next phase of the programme the project team requested research to understand what was happening in the sector, both with respect to changes in practice and behaviour and fatality and injury outcomes. The research sought to understand from the perspective of industry members what the key issues are that they face in this sector, what they think has changed and needs to change and what they anticipate will be health and safety issues in the future.

Following a high number of fatalities in the sector in 2013 (10 workers), the forestry industry commissioned an Independent Forestry Safety Review.¹ In response to this review the government proposed a focus on four broad areas: Strengthening Forestry’s Leadership; Strengthening Regulatory Standards; Strengthening Enforcement; and, Strengthening the Workforce.² More generally an emphasis was placed on the need for government and industry to work together to address the high fatality and injury rates in forestry.

In 2013, the market for logs was strong with the average price of wood hitting the highest it had been since December 2010 and September 2013 at $189/cubic metre. In the September quarter in 2013 the highest levels of production were also achieved. Employment rates were also high, with the December 2013 quarter having the highest number in employment since March 2008, at 9,801 Full Time Equivalents (FTE’s).³

Workplace injury and fatality rates are pro-cyclical and a number of researchers have explored why it is that economic booms are associated with higher injury and fatality rates and recessions with lower rates of injury and mortality.⁴ Some have attributed this to people working longer hours during a boom, an increase in fatigue and work related stress during short booms and workers subsequently becoming less careful. Other analyses reveal that in boom times people are more likely to report injuries than they are during a recession. Low rates of reporting in a recession are explained by workers fearing that their employer will be more likely to lay off workers who have reported accidents. A more recent analysis of injury and fatality in 16 OECD countries revealed that higher rates in boom times are an outcome of greater reporting of injuries rather than changes in workplace safety.⁵ This research also demonstrated that fatal accidents do not seem to be related to labour market conditions. Clearly, this research challenges a number of assumptions about market factors shaping high injury rates and suggests that we should be circumspect about the impact of booms and recessions on injury ‘itself’ and that reporting or not is what is variable.

³ Ministry for Primary Industries.
FORESTRY PROGRAMME: PRIOR ASSUMPTIONS, EVIDENCE AND HYPOTHESES ABOUT THE FUTURE

The forestry programme is embarking on a new initiative to develop and improve health and safety practices for workers within the non-corporate or small-scale forestry environment. The Independent Forestry Safety Review (IFSR) 2014 and the Government submission which WorkSafe NZ led, support the need identified by WorkSafe to address safety problems within small-scale forestry working alongside the Forestry Industry Safety Council (FISC). The following issues were identified by WorkSafe in its submission to the independent review as underlying the industry’s safety performance:

- the supply chain
- undervaluing safety
- competency deficits
- poor safety culture, and
- insufficient investment in forest harvesting infrastructure.

It has been anticipated by the Forestry programme that this will lead to increased health and safety risks for crews operating in these forests. It is also anticipated that this increase in harvest will lead to middle men acting as go-betweens between the small forest owners and harvesting contractors.

HEALTH AND SAFETY CONCERNS

The forestry programme used a number of sources to develop a focus on small-scale forestry. The Forestry Industry Profile 2015\(^6\) identified key Health and Safety concerns:

- verbal contracts increasing the likelihood of misunderstandings, or are used to avoid H&S responsibilities where these are seen as costs
- small areas and steep land
- favourable market conditions increasing production pressure.

From this, the Forestry Programme identified the following issues:

- Small lot owners are a diverse group but they tend to engage harvesting contractors with small crews (between 1-3 workers).
- Most contractors are engaged to harvest a particular block and a price per tonne is agreed.
- Work availability is subject to international prices of wood and fluctuates accordingly.
- Achieving mechanisation for a contractor involves a significant capital investment ($1 million or more).
- The supply chain tends to be fragmented where most of the risk is borne by the smaller harvest contractors. They are less likely to have health and safety systems and they often work in isolated and challenging physical environments. They also operate in a competitive market where price margins are slight and where invariably health and safety falls to the individual worker.
- Wood buyers who purchase logs on truck or at the wharf gate are unlikely to have Health and Safety at Work Act 2016 Act duties as a ‘person conducting a business or undertaking’ (PCBU) to the forest harvesting operation.

---

\(^6\) WorkSafe Internal Document.
1.2 INTRODUCTION

WHAT IS SMALL-SCALE FORESTRY?

Small-scale forestry systems differ from industrial forestry systems in many ways. The differences include:
> motivations for establishing and managing a forest
> the selection of species
> the social and economic objectives of the key stakeholders, and
> the likely market for products.

State privatisation of forests began in the 1990s and since this time there has been a marked fragmentation of ownership and diversity of ownership types. Ownership of land and trees are no longer necessarily combined. Afforestation since the 1990s has led to plantings on ex-pasture sites planted by small private owners, and to plantings on farms. Small- to medium-sized forests constituted approximately 25 percent of the national forest estate in 2013, with a concentration (60 percent) in the lower North Island. Approximately 25 percent of plantations are on Māori owned land.

Farm forestry refers to forestry undertaken on farms. It can involve woodlots, but also can include windbreaks, shelter belts, agro-forestry and break of slope plantings. The logic underpinning farm forestry is that forestry is integrated into the farm business, generates revenue, provides environmental protection and compliments other enterprises. Farm forests can only be identified if they are incorporated into a separate legal entity from the farm. Private forests (not on farms) tend to have complex ownership structures. International research demonstrates that these forest owners tend not to view the forest as an enterprise, but rather a capital reserve and future liquidity asset.

SMALL SCALE FORESTRY SYSTEMS

The systems for small scale forestry differ from industrial forestry systems in many ways. Specifically these differences include: the motivations for establishing and managing, the selection of species, the social and economic objectives of the key stakeholders and the likely markets for products. For this reason research focusing on industrial scale forestry does not always have immediate applicability for small-scale enterprises (whether they be community- or investment-based, or on farms).

There are a range of issues that need to be considered, including: economy of scale faced by small to medium sized forest owners (SMFOs); diversity of ownership type; work and employment aspects; the degree of outsourcing for harvesting and silviculture; whether familial labour is employed; motivational differences between owners; and understanding behaviour in this diverse sub-sector.

---

FOREST OWNERSHIP

State privatisation of forests began in the 1990s and since then there has been a marked fragmentation of ownership and diversity in ownership structures\(^8\) it is also no longer the case that ownership of land and trees are combined. In addition, there has been considerable afforestation since the 1990s with more than 300,000 ha of new forest planted and with a high proportion of it being planted on ex-pasture sites by small private growers.\(^9\)

The National Exotic Forest Description (a forest data base) distinguishes large owners (>1,000 ha), medium owners (40-1,000 ha) and small owners (<40 ha). Small to medium sized forest owners constituted approximately 25 percent of the national forest estate in 2013 with differences between regions, where in the lower North Island small- to medium-sized forests constitute approximately 60 percent. Approximately 25 percent of plantations are on Māori owned land and it is anticipated that this will increase by approximately 40 percent when the Treaty of Waitangi claims processes are completed.\(^10\) Māori ownership of plantation forests is smaller at approximately 80,000 ha.

---


\(^9\) Ibid.

FARM FORESTRY (WOODLOTS)

In New Zealand the term ‘farm forestry’ is widely used and woodlots on commercial and lifestyle farms are common. The term commonly refers to forestry undertaken on farms, it can involve woodlots, but also can include windbreaks and shelterbelts, agro-forestry and ‘break of slope’ plantings. The term agro-forestry is sometimes used to describe these plantings. The logic that underpins planting on farms is that forestry is integrated into the farm business, generates revenue and provides environmental protection (eg helps to prevent erosion) and compliments other enterprises on the farm. In New Zealand, forestry investment on farms tends to supplement income rather than being a primary source of income and for this reason a farm may have several hundred hectares of trees, but will not be publicly listed as a forest company. For this reason farm forestry lots are very difficult to identify and can only be captured if they are incorporated into a separate legal entity from the farm.

The Farm Forestry Association conducted a survey in the southern North Island and found that 62 percent of the forests were in individual ownership, 34 percent had multiple ownership structures, 4 percent were in Councils, Foundations, Trusts, Incorporations, local Boards and Crown agencies. Rodenberg and Manley (2011) conducted a national survey of forest owners holding between 20-200 ha and found that 46 percent were in individual ownership, 35 percent were in trusts or estates, and 16 percent in family partnerships. This survey excluded landowners and investors that had land only planted in forest.

PRIVATE FORESTS

Small scale forestry which has been planted since the 1990s also exists off farms. These forests can have complex ownership structures, involve a range of work and employment features, and a degree of outsourcing for harvesting and silviculture. There are also a range of motivations behind planting these forests ranging from investment, investment for and by family, conservation and preservation and sometimes a combination of all.

International research on non-industrial private forest (NIPF) owners has found the management of these forests is often resourced by savings, rather than forest enterprise economics. Others have noted that private forest owners see the forest as capital reserve, or future liquidity asset, not as an enterprise. These views can have implications in terms of how the work is done and by whom, for example, contracting out for silviculture may not happen as family labour/or

---

12 Ibid. p.6
13 Wakeland (2014) et al. ibid.
friend/co-owner labour may be used instead. In New Zealand, there is an evident trend across the industry, where unpruned without production thinning has increased 4 percent since 2013, and there has been a 3 percent decrease of pruned without production thinning practices.¹⁷ The reduction reflects the goal of reducing forest management costs and also has economic implications for those contracting services for silviculture in the sector.

**PREVIOUS RESEARCH ON THE MOTIVATIONS OF SMALL-SCALE INVESTORS**

The research literature in New Zealand has identified a range of values, attitudes and motivations that shape landowner decision making. This research demonstrates that different types of owners have been motivated by different objectives.¹⁸ Differences between individual investors and farmer investors have been typified as follows:

**Individual investors’ motivations are typically:** diversification of their investment portfolios; financial return; taxation advantages; superannuation requirements; a personal interest in trees and a strong belief in the future market outlook for wood.

**Farmers’ motivations are typically:** sustainable land use; economic diversification; financial return; on-farm wood supply; shelter for livestock, crops and buildings; a personal interest in trees and speciality timbers; aesthetics.

It has been suggested that SMFOs in New Zealand place a greater emphasis on financial return from timber than their counterparts in Europe and North America¹⁹ and this at least in part due to their forests being planted (most commonly Radiata Pine) rather than natural or near natural forests. However, our knowledge of SMFOs is generally poor.

**NATIONAL WOOD AVAILABILITY – ‘THE WALL OF WOOD’**

The New Zealand Ministry of Agriculture and Forestry (MAF) prepares national wood availability forecasts. These forecasts are based on plantation forest area data from the National Exotic Forest Description (NEFD) with yield tables generated for each wood supply region using data from large-scale (over 1000 ha) forest owners. The forecast phase of 2015 and 2025 shows an increase of up to 35 million m³/year availability most of which will come from small scale forest growers who established forests during the 1990s.²⁰,²¹ (See Figure 1).

---

¹⁷ NEFD 2014.
The forests planted in the 1990s by non-traditional forest owners have in some cases been planted in areas where it will be very costly to harvest (on steep and difficult to access sites) and the greater volume and nature of the sites is forecast to become a significant health and safety issue from 2016 and well into the 2020s. However, it is also possible that some of these forests will not be harvested for a range of reasons, including: high harvesting costs; costs associated with distance to processing operations and a port. We know that the lower North Island has a high concentration of small and medium scale forestry (60 percent of the wood estate) part of the ‘wall of wood’. Yet, we also know that proximity to processing operations is constrained in the lower North Island (Figure 2), this may impact on the decision to harvest. Deciding not to harvest may prompt the sale of private woodlots and with a change of ownership and potential lack of knowledge about forest management and harvesting it is possible these sites will be harvested by those without a background in forest management and understanding of harvest issues – that is, may represent greater risk.

MPI has also identified another means of ascertaining the ‘value’ of these lots and whether or not they are likely to be harvested. A forest sale website has been created and advertises the sale of woodlots (small to medium private forests), this site gives an indication of how well or not the small to medium sized forest has been managed (whether pruned or thinned) and also the asking price is a good indication of whether or not harvesting is likely to be prohibitively expensive (see: [http://www.forestx.co.nz](http://www.forestx.co.nz)) and or if done, more risky. A survey conducted on behalf of MPI revealed that 41 percent of the 2,051 respondents wanted to get more information from the NZFFA. The majority of these respondents have forestry in a production harvest schedule and this indicates that there is a real need for better information for small forest owners.23

---

22 MAF, 2010.
23 Ministry of Primary Industries, pers. Com.
HARVESTING – CABLE LOGGING AND GROUND-BASED MACHINES

The plantings in the 1990s on low cost land and erosion protection planting over the last twenty five years on unstable terrain potentially offer challenges with respect to health and safety during felling. There has been nationally and internationally a focus on using ground based machines for harvesting and for the extraction of timber on steep terrain. In addition, in New Zealand Future Forest Research has a goal of ‘no worker on the slope, no hand on the chainsaw’; and here it is often assumed that this will have a positive impact on injury and fatality rates, as machinery cabs will protect workers from fatality or injury from falling objects.

Yet, mechanised ground-based extraction on steep terrain also has the potential to increase risk of injury because of the increased possibility of machine roll over on unstable terrain.\textsuperscript{26} Even if operating within the ACOP guidelines, there are no slope limitations listed, nor a metric by which the slope is defined; this in turn makes it difficult to identify risk areas or which area may be better suited to ground-based machines. Slope is not the only consideration, the terrain can be unstable, covered in debris, have limited soil bearing strength, high moisture content and be terrain with or without slash.

Currently, in New Zealand, cable yarder systems are used on steep terrain forests, accounting for approximately 53 percent of forest estate operators, with the vast majority on steep slopes,\textsuperscript{27} the remaining 47 percent are ground based and account for between 55 percent and 60 percent of the total wood harvested.\textsuperscript{28}

While there is innovative contemporary research work being conducted to address how technological interventions might assist in the safe use of machinery on steep slopes, it has yet to be marketed widely and unlikely that small operators will be in a position to purchase this technology. It is predicted that managing machines on steep slopes will become of greater concern in New Zealand as the annual harvest volume increases.

CABLE LOGGING AND GROUND-BASED CREWS

It is anticipated that there will be a need for more forest workers and machines to harvest the increasing annual volumes. For woodlots that are on steep terrain the harvesting costs are on average 40 percent more than harvesting on flat terrain.\textsuperscript{29} In 2013 an average of two cable yarders a month were being imported into New Zealand, with each of these machines requiring an average of an eight person crew.\textsuperscript{30} Cable logging harvesting methods have changed little in 50 years and continue to represent significant hazards for workers on the ground.\textsuperscript{31,32}

Harvesting contractors and their crews who work on small woodlots share in common a range of issues that contractors and crews in corporate forests experience, there are challenges for contractors in recruiting and retaining skilled staff (competency issues) and staff turnover is related not just to the nature of the work (physically demanding), remuneration (low wages) but also insecurity of employment.

In 2013, Māori comprised 34.2 percent of the forestry workforce. As would be expected there is regional variation, with greater numbers of Māori workers concentrated in the North Island, on the East Coast, Central Plateau and in Northland. Māori are disproportionately represented in the injury and fatality rates in this sector.\textsuperscript{33}

\textsuperscript{27} Ibid, Berkett (2011).
\textsuperscript{33} MAF, 2010.
1.3 METHOD

The research employed a mixed method approach. This involved drawing on published local and international research in this area, grey literature from other state sector bodies, consultants and forestry related associations; WorkSafe quantitative survey data; ACC claims data; and, qualitative face to face interview and focus group data. The research project involved interviewing: managers of corporate forests; contractors working in corporate forests and focus groups with their crews; we interviewed contractors working on small scale lots and held focus groups with their crews; we interviewed farmers who had woodlots on their farms, both for supplementary income and environmental reasons and in one case as the dominant form of revenue generated on the farm. We also interviewed inspectors and assessment staff and asked them their views/experiences and perceptions of the key issues for small scale (farm forestry) now and what they thought they would be in the future. We reached saturation across all areas with a total of 100 participants. All of these interviews were digitally recorded, transcribed verbatim and subject to interpretative analysis. (See Appendix A for more detail).

OUR REGIONAL FOCUS

The research areas included: Northland, Gisborne, Central North Island, Hawkes Bay, Wanganui and Otago. In all of these areas future wood availability will come from small-scale forest owners who planted in the 1990s. While all areas will experience an increase in wood supply from small scale forestry, the Wanganui District is notable for its large number of small scale owners. The 168 470 ha of exotic forest area contributes only 9.4 percent of the national total, the region has 21.7 percent of the nation’s forest owners, 85 percent of whom own less than 40 ha of forest. In terms of employment, it is anticipated that the biggest increases will be between now and 2020 and will be in the Southern North Island, with the smallest increases in Northland/Auckland region. The Central North Island will continue to be the main forestry region.

FARM OWNERS WHO HAVE WOODLOTS ON THEIR FARMS

Farm owners with woodlots on their farms planted these for a range of reasons: for family (as a future investment); to address erosion and loss of pasture land in slips and to stabilize their land; to supplement income on marginal farm land; for environmental reasons only (mixed plantings experimenting with a range of tree species); as the main means of income from the farm (marginal pastoral land).

The farmers we spoke with had all harvested woodlots on their properties and all intended to be harvesting their next crop in the next few years. In all instances the farmer’s decision to harvest once trees had reached maturity rested entirely with market prices, some also indicated that with previous harvests they had halted felling because they thought prices would improve if they waited, and in all cases this was the case. This does however have implications for the contractors who are engaged to do a clear fell of a certain lot size only to find that the fell is substantially smaller and labour is only required for a short duration. Clearly, this also impacts on the crew work security.

WHO IS RESPONSIBLE FOR HEALTH AND SAFETY ON THE FARM WHEN LOGGING IS TAKING PLACE?

All of the farmers expressed concern about the issue of responsibility for health and safety on the farm when logging contractors were harvesting. Most were of the opinion that it was the contractor’s responsibility, but remained apprehensive that there may be some liability for them. Some had had negative experiences with logging contractors, usually around the fell not happening within the promised time-frame, wastage of felled trees because the contractor moved onto another harvest without completing the harvest or removal of logs to market; fluctuating log prices and unreliable contractors. Poor planning by contractors was also stressed and given as an example of why things go wrong when they are harvesting. All of the farmers had experienced variants on the following issues:

- not taking care with overhead lines
- not taking care with creeks and river beds
- failing to observe fence lines.

One farmer whose farm was predominantly woodlot had observed trees being felled without checking where other workers were in the lot, poor felling technique, old and poorly maintained equipment and slow progress. His family had been planting and harvesting trees for two generations and knew who the reliable contractors were in their region because of this local and intergenerational experience. He was concerned that many people who had planted trees in the 1990s and who will be harvesting will not have this experience behind them and that there would be a growth in the number of contractors wanting to take advantage of this increase in harvest and that many of these would be ‘cowboys’.

INFRASTRUCTURE

Farmers also spoke of the cost of putting in access roads for the harvest and how this impacted on their financial return. For those who had harvested on the farm on a number of occasions and were anticipating future harvesting, investing in the infrastructure was seen as a long term
investment for their family who would ultimately inherit the property and be involved in future harvests. All of the woodlots were on steep terrain, erosion prone land and in areas that were relatively remote on the property. For these reasons putting in the infrastructure was physically challenging and expensive.

From the contractors experience some farmers were reluctant to help with infrastructure – or to go to any great expense. Often the access roads were poorly laid out and some not covered in metal because the farmer was reluctant to damage pasture. Sometimes the terrain meant that space for a skid site was limited and this made working on site efficiently and safely difficult.

**FARMERS ARE BUSY PEOPLE**

*What we need is a template that we can fill in so we understand A4s. Most of us are tired at night one page of A4 is enough.*

Owner

Confusion over health and safety plans was framed in terms of farmers being busy people and an emphasis placed on ‘we are not just growing trees we have the farm business to attend to’. Being provided with detailed information in folders was considered unhelpful. In the view of all, the provision of a template would be useful and allow them to know where they stood in terms of what they had to ensure was in place before contractors came onto their property for harvest. A list of who is responsible for what was also mentioned as something that WorkSafe should provide. Overall, there was an indication of a willingness to do the right thing, but a strong request to make it as simple as possible.

**DIFFERENT FROM FARMING, SOME IN IT FOR THE LONG HAUL, OTHERS JUST THE ONCE**

Those who harvest just once were considered very different from those who had an intergenerational commitment to forestry on the farm. These farm foresters explained that those who just do this once have often bought the farm with an established woodlot and in the view of those who had harvested a number of times, they just wanted the harvest to happen, contracted in some contractors and were not particularly interested in the harvesting process or any future planning.

*He just left them to it, he didn't, the son was looking out on what they were doing, but he wasn’t that interested. I was fairly interested, I was down there every night after they had gone to see what was happening, and what have you, and talk to them. But the next one down the road, he knew nothing about it, he’d bought the farm, the trees were on it.*

Owner

This observation also suggest that disinterest may also be a lack of knowledge about the harvesting process, and if the woodlot was part of the farm recently purchased, then possible little knowledge of forest management.
FARMING AND WOODLOTS – DEALING WITH DIFFERENT PEOPLE

Engaging with contractors for harvesting was also not a common experience for farmers with woodlots. While they are familiar with dealing with stock agents on a regular basis, dealing with a harvest is only a 20-30 year event and engaging the services of a contractor and interacting with the crew is an unusual experience for most. In addition, managing the operation and working with the supply chain was also outside of most small lot farmers’ experience. Some had decided because they did not know the business in this way it was better to appoint an intermediary who contracts the contractor and crew and manages the operation.

As one farmer observed:

_You don’t know them personally, you meet the ganger, he comes and sits with you and tells you how good he is and what he’s gonna do and you believe him. But with a managed operation, someone else is looking after the gang, the trucking, the selling of the woodlots and the grading price. So it’s all out of our league._

Owner

The role of these intermediaries was considered problematic by some and a point of influence where pressure might be put on a contractor and gang to turn the harvest around quickly and potentially undermine health and safety.

IF THERE IS AN ACCIDENT

While there was an understanding about responsibility and liability and the role of the Principal, there was concern about things that happen that have not been planned for. As one farmer noted:

_Look it all goes back to the Principal if there is an accident. Say the skidder driver loses control of his skidder with a whole lotta logs behind him and he tips over and gets hurt and he’s in a place that’s dangerous, well we could say you, I did, I have pointed out the hazards here, the road, the country’s steep, the trees are large and there was something else. But I had them cutting some Poplars over here and when they left they just trundled around the track to go down there and most of them got through but one of them clipped the power line. Now I hadn’t put that down as a hazard cos I didn’t know they were going to do that but you know had he electrocuted himself, we would have a major. So you can try and cover yourself so much but then again you can get tripped up quite easily._

Owner

And this came back to the need for a template:

_So we need a template, with tick boxes, power lines should be on there, even though my trees were nowhere near them._

Owner
MECHANISED CREWS

There was general acknowledgement of the advantages of mechanisation: that it made harvesting more efficient and most thought it made things much safer than having men on the ground. Others also noted however that it was very expensive for a contractor to become fully mechanised. This expense could not be met by those who did not have steady work and some thought they would need bigger blocks to work in so the machinery can be paid for.

THE VULNERABLE CONTRACTOR – AND VULNERABLE CREW

Contractors harvesting small lots tend not to have long term, or a steady stream of contracts. These contractors pick up what work they can, sometimes they are harvesting a reasonable sized lot, at other times it may be a wind break, and some will also do silviculture. As one contractor noted:

_Well, we’re only a small logging and forestry company, we contract to whoever will have us, and (we do) silviculture, and we’ve just signed a three year contract – which is long term for us and that’s been good for us because we’ve sort of been shut down in the winter, in the last couple of winters. We’ve only been going for three years, we’re only sort of small fry. It it we had been going for longer and were bigger I guess we’d ultimately try and work in one of the corporates, because, and that’s still the goal, still the aim, but you’ve got to walk before you can run sort of thing, you know._

_Contractor_

Those working for the corporates have advantages that the smaller operators do not have:

_I think you have a lot more support. And a lot of infrastructure that’s in place, whereas we’re basically in woodlot situations._

_Contractor_

For this contractor, as for others, they have to address infrastructural concerns themselves and this is often expensive and the sites they work on are on difficult terrain.

All of these contractors said they were concerned about the safety of their crews, most were not aware of any health issues, safety tended to be their focus. Where each crew member would be working throughout the day was discussed each morning and tail gate meetings were held. For small crews tailgate meetings were considered by some to be a bit of a waste of time and crews and contractors found the paper work burdensome. All, crews and contractors had experienced near misses and put this down to cutting corners to get the job done and at times, complacency. The contractors for crews working in small lots did not monitor the health of their workers and for some drug testing was considered prohibitively expensive. Amongst crew, safety was something they spoke of, but not health.
Contractors engaged in woodlot felling have limited security with respect to contracts and are in turn less able to guarantee year round work for their crews. Most members of the crews had had periods of no work and were very much in the position of taking whatever work they could find. The crews spoke well of their contractors, but also noted that he (in all instances men) had to manage everything and everything costs. All of the crews said they felt free to challenge the contractor about working in an area or on a task that they considered too dangerous and most of the men in these crews had worked for others where this had not been the case. In these instances they stressed that their previous contractor had only cared about production and put production first. These crew members also thought that such contractors still existed in the sector.

**MAKE HAY WHILE THE SUN SHINES**

The precarious nature of this part of the industry – where securing contracts is difficult, also means that when multiple contracts are secured by these vulnerable operators there is a tendency, according to farmers, for the crews to work very quickly (possibly cut corners) so they can move onto the next lot – ‘in a make hay when the sun shines – kind of manner’. Some of the farmers noted that the quality of their work was compromised in these circumstances and for some farmers it had meant wastage and not realising the full value of the clear fell as logs had been left to waste and insufficient effort had been made to ‘clear’ and sell the fell. In these instances the farmers stressed how important it was to know what was going on on-site (not to be away from the site in particular). These farmers now only worked with contractors that they had had previously positive experiences with – but they all noted that there will be an increase in operators for woodlot fells and it will be difficult for farmers to know who is going to be reliable and who will do quality work.

**TRUST**

The issue of trust is a reoccurring theme across all contractors and crews in the research, and for those engaged in harvesting small woodlots the issue of trust from the farmers perspective was that even if they as Principal set up a safety plan they had to ‘trust’ that the contractor would do what was planned and not stray from that plan. The need to oversee throughout the operation is an indication that there is limited trust and that observing (or overseeing) the operation conspicuously is one way to manage the risk associated with limited trust.

For the contractor, trust is also an issue, both in relation to the farmer and the provision of adequate infrastructure (roading in particular) for the harvest. They also have to trust that their crew will work safely while still being productive and for those who have experienced recruitment and retention issues with crews this trust is often at least initially weak. For all crew (in corporate forests and small lot forests) it was important for a crew to have worked together for a while – the longer the length of time the better, again this is related to trust and safety. The better you know your team mates the more able you are to judge what they are likely to do in a given situation. High turnover of workers is common in this sector and this suggests that workplace relations are typically ‘low trust’.
COWBOYS AND FLYBY NIGHTERS AND MECHANISED CREWS

While a number noted that there would be increased work on farms with woodlots and in private small-scale forests and this would be good for their business they were also concerned that this would prompt more contractors to enter the industry. It was thought that whenever there is an improvement in the market there are always some operators who suddenly appear, and as quickly disappear when wood prices decrease. These operators were variously referred to as Flyby Nighters and/or Cowboys. Not necessarily skilled, opportunistic and much more likely to cut corners and cause and or experience harm (injury and fatalities). Underpinning this was the idea that these operators were not in it for the long haul, were unlikely to invest in health and safety and also by implication, less likely to care. These operators were also considered by contractors to be ‘dangerous’ and responsible (through injury and fatalities) for giving the industry a bad name and reputation.

It was generally thought, that even if not Flyby Nighters or Cowboys, with the greater volume of wood through woodlot harvest there was definitely going to be an increase in small operators (one to three men teams), most likely without much capital and low levels of mechanisation. They also thought that they will be poorly equipped with respect to health and safety and that there would be a spike in injury and fatality rates in the sector. This group disregard health and safety because it is a cost, rather than because they do not care.

The concern about an increase of operators working on woodlot fells was also linked to another concern that larger contractor operations who are mechanised and who have been working in the corporate sector will move into the woodlot sector. Ground based operators were concerned that the mechanised crews would be able to fell much more efficiently and quickly on lots that were more accessible than crews with limited mechanisation. In turn, they argued these larger contractors would consequently squeeze out other less mechanised contractors and their crews. Some also thought that in order to remain competitive with those who are heavily mechanised, small operators, with crew on the ground, may start to cut corners to keep the pace of production up and or these crews will end up working on the steepest sites, where the use of machinery is not possible. Here then the most economically marginal and vulnerable operators will be working on the most risky sites and the likelihood of injury and fatality will be higher.
DISCUSSION
WOODLOTS – FAMILY FARMS, CONTRACTORS AND SMALL TO MEDIUM SIZED BUSINESSES

The intersection of the farm, forest, farmer and contractor and crew is one that needs to be very carefully explored as forests on farms (woodlots) become increasingly important in terms of harvesting over the next 10-15 years. A range of risks from the perception of those engaged in farm forestry and those who harvest these lots have been outlined above and in the main there is strong concurrence with what the National Forestry Programme has anticipated will need to be addressed now and in the future.

In terms of future directions we need to explore the context a little more fully, including:

> the range of issues that sit ‘behind’ what people have said in the sector and what we know to be general attitudes and behaviours, and
>

> to consider more generally the nature of family farming (with forest lots on them) and the nature of the business of contracting for harvest on small-scale forest lots.

FARMERS, CONTRACTORS AND CREWS

With respect to attitudes and behaviours toward health and safety in agriculture and forestry it is possible for us to speak generally, but we do not have an established research record that enables us to explore in-depth the health and safety culture and or behaviours that manifest and potentially undermine health and safety when woodlots on farms are either being pruned, thinned or harvested.

FORESTRY

The 2015 Nielsen Survey provides us with an insight into worker and employer attitudes and behaviours at this time. For Forestry workers (we cannot distinguish between those working in corporate forests and those working on small-scale woodlots) attitudes and behaviours between 2014 and 2015 are broadly unchanged, however there has been some shift with workers in 2015 agreeing that health and safety is discussed in an open and helpful way always, or most of the time. Where employers were less likely to agree this always happens.

Forestry workers were less likely in 2015 than in 2014 to consider the risk of getting seriously hurt in their industry was higher or much higher than other industries, and they were less likely to say there was a moderate risk of a worker being seriously hurt in the workplace or business in the next 12 months. This could mean that they felt that their work environment was safer, but it could also mean that there is some complacency.

Forestry workers reported changes (decreases) in risky behaviours, such as cutting corners, making mistakes by being careless, being put at risk because of work conditions, being hung over or stoned or undertake a risky job that they do not have the skills for.

Awareness of WorkSafe had increased since 2014, as too had awareness of Safer Forests. Workers who had had health and safety training in the last 12 months were more likely to report that they felt involved and informed about health and safety than those who had not, they were likely to be informed about their legal responsibility and more likely to think workers

---

were proactive about health and safety.\textsuperscript{36} Employers whose employees had had health and safety training in the last 12 months were more aware of their obligations, how to comply with them, than those with employees with no training. They were also more likely to have made significant changes to their business’s health and safety systems or practices in the last 12 months.

\section*{AGRICULTURE}

Attitudes and behaviours are broadly unchanged since 2014. Workplaces had put practices in place to encourage worker participation in health and safety, and more employers had made changes to health and safety practices and systems since 2014. There has been some increase in the use of personal protective equipment and a decrease in risky behaviours.

More workers disagreed that their boss sometimes overlooked a worker taking a short cut. There has been an increase in the reporting of near misses and serious harm incidents. Over half of employers had used WorkSafe’s health and safety guidance material in the last 12 months, while 45 percent had not used any forms of guidance.

Employers reported that they placed keeping their workers healthy and safe in their top three business considerations. Employers who were more likely to agree that their business considered health and safety at least as important as production and quality of work were those who: currently had workers working on two or five sites; on other horticulture farms; where at least half of their workers had received formal health and safety training in the last 12 months. Both employers and workers place the most responsibility for being safe at work on the workers themselves.

As with Forestry, awareness of WorkSafe in agriculture had increased since 2014. A third of workers in the agricultural sector claimed they had not done anything differently because they were already doing it all. And as with Forestry, employers and workers in agriculture thought that the risk of being seriously hurt in their industry versus other industries was not as high as it had been in 2014.\textsuperscript{37}

The survey results suggest some shift in attitudes, for agriculture perhaps less so than Forestry. However, with regard to behaviour change the tendency for both workers and employers in both sectors to state ‘we were already doing it all before’ suggest that either they have always been operating within safe practice guidelines and have had not need to change, or there has been no behaviour change. The observations more generally about attitudes from this survey cover both sectors, we cannot identify small forest contractors who predominantly work harvesting woodlots, we cannot identify their workers and we cannot identify farmers who have woodlots on their farms or identify which employees (potentially from both sectors) are responsible for harvesting small woodlots on farms.

We can however make a number of observations about both sectors and the nature of their enterprises.

\textsuperscript{36} Ibid. pg 14.
THE BUSINESS OF THE FAMILY FARM AND THE SMALL-LOT CONTRACTOR

Family farms and the business operations of those that harvest woodlots on farms have a number of things in common. They can be classified as small to medium sized businesses (SMEs); both sub-sectors are vulnerable to the vagaries of commodity prices fluctuations for primary products, both potentially have or need to make significant investment in machinery; and both operate in a constrained labour market, where there are significant issues with respect to recruitment and retention of semi- to skilled labour. Both types of business are usually owner operated and employ a small number of staff (if any) – either in permanent or in temporary or casual roles and these small to medium sized businesses can be economically precarious (while the contractor may struggle to raise capital to invest in machinery, the farm may struggle to service debt). Labouring on the farm or in the woodlot can and often does involve working alone and workers in both contexts are exposed to range of exposures that put them at risk of injury and fatality.

There is a growing body of research evidence that suggests that there are a range of special conditions typical of small to medium sized businesses that have health and safety implications. It is well documented that Small- to Medium-sized Enterprises (SMEs) have higher accident rates, have high serious injury rates, and fatalities, and a larger magnitude of ‘lost work days’; when compared to larger enterprises (LEs). These outcomes have been attributed to limited human, economic and technical resource. A range of other issues have also been documented, including the role that a low level of occurrence of accidents and injuries has on the perception of risk, which in turn shapes the manner in which risk is addressed and where it stands with respect to managerial priority. When injury outcome is severe or fatal, health and safety becomes more of a managerial priority – unfortunately by this stage, it is obviously too late.

In addition, with SMEs they are often owner operated and involve a small team, health and safety is usually relegated as less of a priority in relation to a range of other tasks that are perceived to be essential. More essential is usually that which keeps the business economically viable, and this will be addressing book work, tendering for further work and making sure that which is under contract is completed on time. Health and Safety is not typically considered economically essential, indeed it is often perceived to be a drain on economic resources. It is not uncommon

---

45 Our research confirms this, where many of the contractors spoke of the economic burden of having to comply with current legislative requirements.
for the small team to be provided with the necessary Personal Protective Equipment (PPE) and then be left to manage their safety, while at work.\textsuperscript{47} These same workers often work alone – or at least are frequently geographically removed from their colleagues (in construction, farming, and forestry). These workers will report that their employer does care about their safety, but ultimately it is up to them to make sure they stay safe while at work.

The challenge here is addressing prevention and preventive measures that can reach all SMEs – in this instance those harvesting woodlots on farms throughout New Zealand and small scale private forests, and in particular the concentration of harvest that will occur in the lower North Island. Further, there is some research evidence that suggests that we should be careful about lumping together Small and Medium sized enterprises, and that it is probably more fruitful in terms of the design of any organisational safety and health management system to address micro, small, and medium sized enterprises.\textsuperscript{48} This research suggests that the larger the size of the enterprise the more likely they are to invest in health and safety, the smaller the enterprise the more likely they are to perceive the inadequacies of the legislation in relation to their enterprise and the more likely that they will be sensitive to the relevance of health and safety training.\textsuperscript{49}

This research demonstrates that for both the farmers and the contractors engaged in the thinning or harvesting of woodlots, formalised health and safety management is minimal – or if being considered is perceived to be overwhelming and burdensome. Health and Safety is more commonly addressed in an informal manner, but since the passing of the Legislation there has been an increase in concern around issues of liability and a move toward wanting to document any plan or agreement between a contractor and the farmer or the private small scale forest owner/s. It appears that there is a shift occurring away from informal and adhoc responses to health and safety toward formalisation, but it seems fair at this stage to say that this may be more about compliance and a fear of liability, than a substantial shift in behaviour or changed practices or procedures aimed at improving health and safety outcomes.

Both farmers and contractors working on woodlots wanted straight forward processes (and or templates) that would enable them to address health and safety easily and quickly. There was also a strong tendency to expect that the regulator should be able to tell them what to do and what will ‘keep them safe’ – this however, was usually a reference to being kept ‘safe from liability’ should somebody get injured or die during work on and in the woodlot. This finding is surprising given the Small scale forestry safety guidelines developed by Farm Forestry New Zealand in conjunction with Farm Safe, the Forestry Industry Contractor’s Association, Safe Tree and WorkSafe NZ, were made available for download in January 2016, and suggests that there are still those in this sub-sector that have yet to be reached, or perhaps who are less likely to seek out web-based resources.


\textsuperscript{48} Micheli & Cagno (2010) ibid.

\textsuperscript{49} Ibid.
SAFETY AND EMPLOYEE TURNOVER

There is a body of research that has focused on the relationship between employee turnover and accidents, and the relationship between team instability due to absenteeism and occupational accidents. This research revealed that employee turnover was an issue for contractors and that recruiting skilled and or experienced staff was also an issue. Research suggests that inexperienced workers may be at greater risk of injury. In forestry and other industries (e.g., coal mining) it has been argued that new workers have a lack of familiarity with the characteristics of particular machinery, the work environment, methods and the people that they will be working with, and it is the absence of familiarity that places them (and their co-workers) at risk. In New Zealand, Bentley et al. (2005) observed that 44 percent of injuries on logging skid sites occur within the first year of the worker’s time on the job, with 32 percent of these occurring in the first six months. New employees are inducted into a company’s safety processes (to familiarise them with the processes, new machines, context and fellow workers). Yet how safety processes are perceived is important in terms of safety behaviours. This body of research demonstrates that ‘trust’ is a core issue. A number of studies have found that a degree of distrust in the company processes is advantageous to safety as trust can serve to reduce an individuals’ inclination to monitor and safeguard themselves. Yet, while trust is negatively associated with employees’ taking personal responsibility for safety, trust in management can increase an employee’s engagement with safety behaviours and reduce accident rates and is positively associated to injury rates. Further, research into issues around ‘trust’ amongst contractors and crews (n=232, response rate of 98.7 percent) revealed that not trusting new team members could be advantageous; and conversely the team might have a negative impact on a new team members safety behaviours – and the new team member should be distrustful of the existing team culture around safety.

This raises a number of issues with respect to the findings of our research. Firstly, crews working in woodlots (and also with corporates) tended to say that they thought that their contractor cared about their safety, but ultimately it was up to them to work safely. Workers did not strongly identify with the health and safety meetings, they were something that they did because they knew they had to (or something they had always ‘sort of done’ – working out where everyone would be throughout the day). So this, could be evidence of distrust of the system (management

---

52 Goodman & Garber (1988) ibid.
processes) and result in these individuals’ monitoring and safeguarding themselves. Yet these crews had also experienced turn over and high employee turnover is associated with increased injury and harm.

When engaging with the sector a number of suggestions could be made:

> encouraging existing crew to help with familiarising the new team member could be good for health and safety performance

> encouraging the crew to know each other - familiarity of this kind helps to encourage crew members to care about the health and safety of crew members (in the corporate forests some contractors were doing this by holding regular barbecues where crew could be thanked, but also were given the opportunity to get to know each other (gain familiarity))

> with safety and induction processes, there may be some advantage in encouraging new employees not to ‘trust’ these systems and processes

> there may also be some advantage in encouraging the existing crew not to trust (or at least to be cautious about) the new member – give them time to assess how safe they are

> stress new members will not be familiar with machinery, context, other crew and the actual way other team members do the job.

---

A range of evidence has informed National Programme Forestry to-date and a range of hypotheses about what might be expected in the small scale forestry sector in the near to mid-range future have also been constructed.

This research has addressed these hypotheses and concludes the following:

1. The 2015 Forestry Industry Profile asserted that there was good knowledge about safe harvesting in the sector.

   Our research supported this assertion. Participants were aware that unsafe harvesting led to injury and fatality and thought their knowledge about safe practice was sound. Crews and contractors were, however, less likely to have any awareness of occupational health related risks.

2. Harvesting of woodlots and small scale forestry would increasingly involve working on smaller areas and steep land.

   The research confirms this will be the case.

3. Favourable market prices lead to increased production pressure.

   Contractors, crews and farmers with woodlots and owners of private small scale forests confirmed that favourable market prices led to increased harvesting of mature stands, and this increased production pressure on contractors and crews to get the logs to market as quickly as possible.

4. The projected increase in the harvesting of woodlot and the ‘wall of wood’ from this sector for the next ten to fifteen years will lead to an increase in the number of inexperienced contractors entering the harvesting market.

   In general this hypothesis is supported by those engaged in contracting and harvesting in the woodlot sector. These contractors stressed that WorkSafe would need to focus on this to ensure that ‘cowboys’ were monitored and if necessary ‘squeezed’ out of the sector. All were in favour of greater ‘enforcement’ of the legislation with these kinds of contractors. All anticipated an increase in injury and fatality.

5. Harvesting of woodlots would involve working on steep slopes and this presents greater risk for contractors and crews in terms of injury and fatality.

   This hypothesis was supported by both farmers with woodlots on their farms, owners of small scale forests; and, contractors and their crews. Access to these sites was also stressed by all and the challenges of putting in adequate infrastructure for harvesting and transportation of logs off site.
6. Those working on small woodlots will most likely be ground based crews (not heavily mechanised) and consequently the risks associated with breaking out, felling manually, and having crew ‘on the ground’ would continue to result in injury and fatality.

This hypothesis was generally supported by contractors and crews and to a lesser extent farmers’ with woodlots in the North Island on their farms. There were a number of qualifications however. Firstly, contractors and crews thought that mechanised crews would increasingly enter the small lot harvesting sector and that they faced being squeezed out by these contractors and crews who would be able to harvest more quickly and who would also be less likely to have high injury and or fatality outcomes.

It should be stressed that many of these non-mechanised crews working on private forests or small woodlots are predominantly Māori, and these contractors were also less in favour of mechanising because they feared job losses for young Māori.

This research has generated three hypotheses that the programme should consider in the future:

i. Non-mechanised crews will be more likely to be working on the hard to access, isolated and steep sites. These crews will be more likely to be injured and experience fatalities – and if injured there will be challenges in getting appropriate and timely medical assistance.

ii. If non-mechanised crews are also more likely to be ‘manned’ by Māori crew, then Māori workers will also be conducting the most risky forest harvesting and will experience high rates of injury and fatality. In addition, a broader understanding of health is necessary. Māori are also more vulnerable to a range of co-morbidities (eg heart disease, diabetes) and environmental precursors for poor health outcomes (inadequately insulated homes, crowding in homes and poor nutrition) – and all are associated with occupational health outcomes, and

iii. Mechanised crews will be working on sites that are ‘steep’, but less so than for non-mechanised crews; and, may increasingly use machinery on slopes that the machinery has not been design to safely operate on.
IN THIS SECTION:
Appendix A: Methods
APPENDIX A: METHODS

The research involved a mixed-method approach, using both quantitative survey and claims data and qualitative interview and focus group data. The quantitative data provides us with an observation of what change has occurred over time. The qualitative interviewing and focus groups provide an insight and understanding of the views of those in the sector and their explanations of what has changed and why.

FOCUS GROUPS WITH WORKERS IN SECTOR

Focus groups provided an opportunity to hear from a greater number of participants than interviewing alone. Focus groups also give participants the opportunity to build off each other’s observations and to discuss with the interviewer. This allows for a multiplicity of views to be recorded in this interactive setting and therefore also allows insight into when and how views differ in this context.

All focus groups were conducted with crews only, no contractors were present; this was to allow staff to be as open and honest as possible without fear of employment repercussions.

INTERVIEWS WITH FORESTRY OWNERS, PRINCIPALS, CONTRACTORS AND WORKERS IN SECTOR

Interviews with managers and staff provide in-depth information on their experience of working in the Forestry sector over the past two years. Interviews give participants the opportunity to discuss issues they may not be comfortable raising in front of a group. It also provides the chance to delve deeper into specific areas that is not possible in a focus group setting.

INTERVIEWS WITH WORKSAFE INSPECTORS AND ASSESSMENT MANAGERS

WorkSafe staff and managers who interacted with the sector over the period were invited to discuss the changes they made to their practice, the changes they became aware of through assessments and investigations, and any other differences in the discussion or attitudes they witnessed during the research period.

HEALTH AND SAFETY ATTITUDES AND BEHAVIOUR SURVEY (HSAB SURVEY)

This survey is run annually by WorkSafe NZ and involves around 290 employers and 380 employees in the forestry sector. It covers a number of questions about the attitudes and awareness of Health and Safety practices and the actions taken by both employees and employers to ensure a healthy and safe workplace. This provides sector level measures of the changes over duration of the research period.

REVIEW OF EXISTING STUDIES

Where applicable, the research draws on existing studies and research to support conclusions drawn from the current research.
ETHICAL CONSIDERATIONS

The research was conducted according to the ethical principles and associated procedures endorsed in the Association for Social Science Researchers.

Ethical considerations apply to the primary data collection – that is the focus groups and interviews with workers and employers in the sector, and interviews with WorkSafe staff.

WorkSafe staff were made aware prior to participation that though they will not be identified by name, they may be identifiable by their role within the organisation.

Informed consent was obtained from sector workers and employers participating in the focus groups and interviews and they are not identified personally by name or business. All attempts have been made to ensure confidentiality. If data could not be reported in a way that does not identify individuals from the sector, it was not reported.

Survey data is anonymous to WorkSafe and only figures that are statistically significant and do not identify individuals have been reported in the research.

Some of the data collection took place on site at a forest where harvesting work was being undertaken. A specific safety plan was developed for staff involved, in collaboration with a forestry inspector, to ensure that research staff were not placed at undue risk during the process of data collection. Personal protection equipment was supplied.

Those who participate in the employer and worker interviews and focus groups received a participant acknowledgement in the form of a $30 supermarket voucher. Individuals who participated in both received one voucher. Participants were not made aware of this the voucher prior to participation to ensure there was no external coercion. A reasonable amount of food and drink was provided at the focus groups and interviews. Participants will be provided with a summary of the report findings.

All research data of a confidential nature is locked in a secure cabinet, and electronic data of this nature has been password-protected. Data will be held on site in accordance with the WorkSafe NZ National Records retention policy.

RESPONSIVENESS TO MĀORI

The Forestry industry has an over-representation of Māori employed in the sector, with 34.2 percent of employees in Forestry identifying as Māori in 2013, compared with 11.2 percent of the entire workforce identifying as Māori in the same period. This means this project is likely to involve a significant number of Māori workers and employers without any focussed sampling.

Te Ara Tika suggests that in the case of Māori centred research, a research team should consult with Māori Advisors within the Agency about the research approach and the need for Māori input and wider consultation. The research should include Māori fieldwork researchers and should consider Māori project leads and analysis.

At the time of writing, WorkSafe does not currently have Māori advisors. However, the National Manager, Māori was involved in the design of this project. Two members of the research team identify as Māori and will be involved in the fieldwork and analysis.