

# Link between aspects of diminished farmer wellbeing and injuries

Report prepared for  
Accident Compensation Corporation and  
Farmstrong

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# 1 SUMMARY

## Introduction

- This research was undertaken as part of the Farmstrong research programme. Farmstrong is a rural well-being programme for farmers, their families and others in the sector, which has been running since 2015.
- This research aims to understand the relationship between aspects of diminished farmer well-being and farmer injuries.
- The aspects of diminished well-being were identified in Farmstrong research with farmers, based on what they said had negative impact on their wellbeing, such as feeling fatigued or exhausted, and having too much to do with too little time.
- The key questions this research addressed were:
  - What is the relationship between aspects of diminished farmer wellbeing and injuries?
  - How does this vary across different farmer groups and types of injury?
  - What is the cost to ACC of farmer injuries contributed to by aspects of diminished wellbeing?
  - What level of interest might injured farmers have in an online tool to assist with injury prevention?
  - Is there any link between engagement with Farmstrong and reduction in occurrence and impact of injuries linked to diminished wellbeing?
- This report integrates the findings of three phases of research: a brief literature review, qualitative insight interviews and a survey.
- This Summary should be read in conjunction with the Discussion and Recommendations section which follows.

## Method

- Qualitative insight interviews were undertaken to gain a full understanding of how aspects of diminished wellbeing were contributing to farmer injuries and to inform the survey questionnaire design.
- The insight research involved 25 in-depth interviews, mostly face-to-face, with farmers who had recently been injured and believed an aspect of diminished wellbeing had contributed to their injury<sup>1</sup>.
- The survey was undertaken with 500 farmers who had made a recent injury claim with ACC, in the period January to December 2018.
- A response rate of 54% was achieved, providing survey data which was highly representative of the demographic profile of the ACC data base.

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<sup>1</sup> They were provided with a list of examples of diminished wellbeing, as reported by farmers in previous research, although neither 'diminished' nor 'wellbeing' were terms used in the questions.

## KEY FINDINGS

- Almost six in ten (58%) reported that at least one of the listed aspects of diminished wellbeing was a contributor to their most recent injury and these injuries accounted for two thirds of the ACC farmer claim costs.
- Almost a quarter (24%) reported that aspects of diminished wellbeing were a 'major' contributor to their injury and these injuries accounted for 30% of ACC farmer claim costs.
- Those who had engaged with Farmstrong were less likely than others to report aspects of diminished wellbeing as being a 'major' contributor to a more serious injury (where the injury had a 'moderate' or 'large' impact on their ability to work).
- Thirty percent had gone back to work earlier than recommended, and this level was higher for those who reported aspects of diminished wellbeing were a 'major' contributor to their injury.

## OTHER FINDINGS

### The relationship between aspects of diminished farmer wellbeing and injuries

- Almost six in ten (58%) reported that at least one of the listed aspects of diminished wellbeing was a contributor to their most recent injury.
- Almost a quarter (24%) reported aspects of diminished wellbeing were a 'major' contributor to their injury.
- Sixteen percent reported that aspects of diminished wellbeing were a 'major' contributor to a more serious injury (one that had a moderate or large impact on their ability to work).
- The most mentioned aspects of diminished wellbeing which were major contributors to injury were:
  - Having too much to do and not enough time (11%)
  - Feeling fatigued or exhausted (8%)
  - Lack of sleep or poor quality sleep (6%)
  - Challenges coping with the ups and downs of farming (5%)
  - Feeling in need of a break away from the farm (5%)
- The insight research has assisted in understanding the ways in which these aspects of diminished wellbeing contribute to the farmer injuries. Farmers deal with injury risks all the time, but diminished wellbeing results in farmers doing something they wouldn't normally do, or failing to avoid a risky situation that they normally would have successfully avoided.

## How the relationship varies across different farmer groups and types of injury

- The groups *more* likely to report aspects of diminished wellbeing being a major contributor to their injury were:
  - Assistant managers (40%)
  - Those aged under 35 years (35%)
  - Dairy farmers (31%)
- Groups *less* likely to report aspects of diminished wellbeing being a major contributor to their injury were:
  - Those with injuries in May/June (12%)
  - Sheep/beef farmers (16%)
  - Those with two persons working on the farm (17%)

## Level of interest injured farmers have in online tool to assist with injury prevention

- Just over half of the farmers (53%) said they would have been willing to give a possible online programme a go if it was sent to them while injured (they were told the programme could be used to identify the person's top injury risks and to develop their own plan for managing them).

## Other findings

- The 30 percent who had gone back to work earlier than recommended included two percent (of the total sample) who went back sooner because their employer wanted them to and another four percent who felt 'an expectation from them' [their employer] that they should go back sooner than they wanted to.
- Sixteen percent reported that at the time of their injury there was less than the usual number working on the farm for that time of year.
- On farms where there was a reported personnel shortage, the rate at which aspects of diminished wellbeing were a major contributor to the injury (32%) was almost three times the level on farms without personnel shortages (11%).

## Limitations of the research

- The time period between the injury and the interview/survey may have affected farmers' ability to accurately recall the contributors to the injury.
- It may be that those who chose to take part in the research differed from those who chose not to take part.

## 2 DISCUSSION AND RECOMMENDATIONS

### Significance of this research

To the best of our knowledge, based on the brief literature review, this is the first research to have identified farmer perspectives on the extent to which aspects of diminished wellbeing contributed to their injuries. Other studies have shown, via data analysis, an association between individual aspects of diminished wellbeing and farm injuries. However, this study has used a methodology which may provide stronger evidence of causality than the previous research, as it asked the farmers directly to identify the extent to which they felt aspects of diminished wellbeing contributed to a specific injury. Also, the analyses in the literature have only been able to examine aspects of diminished wellbeing which are present most of the time, whereas this study also allowed for the examination of aspects of diminished wellbeing which may not be present in most of the farmer's life, but were present prior to the injury. An example would be anger triggered by an event which happened earlier in the day.

We now know from this research that nearly a quarter of New Zealand farmer injuries have aspects of diminished wellbeing as a major contributor. It is therefore likely that if those aspects of diminished wellbeing had been more effectively addressed a lot of those injuries would not have happened. That these injuries account for 30 percent of the ACC farmer costs and that farmers are one of the highest cost sectors for ACC reflects the significance of these findings.

### Mechanisms by which aspects of diminished wellbeing contribute to injuries

This insight research has illustrated the diversity of ways in which diminished wellbeing contributes to injuries. However, a key factor underlying many of these injuries is the aspect of diminished wellbeing leading to reduced concentration on the task at hand and poor decision making. There are a lot of injury risks in farming and any aspect of diminished wellbeing that reduces concentration on the task at hand increases the risk of injury. For example, when dealing with stock, especially at close quarters, there is a need to be alert, as stock are unpredictable in their movements and there is very little time for the farmer to respond.

Farmers deal with injury risks all the time, but diminished wellbeing result in farmers doing something they wouldn't normally do, or failing to avoid a risky situation that they normally would have successfully avoided. Increasing health and safety protocols and training alone is unlikely to overcome these types of injuries; the aspects of diminished wellbeing linked to injuries also need to be addressed. Farmers need to be encouraged to adopt good health and safety protocols, but they also need programmes like Farmstrong to address the aspects of diminished wellbeing that contribute to the injuries.

Several of the aspects of diminished wellbeing are linked to workplace culture. These include not feeling valued, poor relationships with key persons in the workplace, and people working excessive hours for long periods that leaves them feeling exhausted. A culture where employers care about their staff and reflect that in their behaviour is likely to result in a lower injury risk.

### Implications for Farmstrong strategic direction

The strategies which Farmstrong has developed to date will be impacting on aspects of diminished wellbeing which are contributing to injuries. However this research now provides the opportunity to place a greater focus on the cost benefits for farmers of implementing wellbeing enhancement

strategies. The insight research tells us that farmers want to avoid injury, as they can't afford to be off work. Also, having staff off work places unwanted extra pressures on the others working on the farm. These new research findings allow Farmstrong and ACC to reinforce the financial impact of injuries in their communications. While these results will not be a surprise to most farmers, being able to put this concrete evidence in front of them showing the real size of the issue, should provide increased motivation to adopt improved practices to enhance wellbeing. It would also be appropriate for Farmstrong to develop more resources and get media coverage which draws attention to these research findings and the cost implications for farmers of aspects of diminished wellbeing contributing to injuries.

The insight research identified that it is going to be difficult to get farmers to change, even if they know more about the link between aspects of diminished wellbeing and injury. There may be value in making a distinction between those aspects of diminished wellbeing which tend to be present much of the time and those that are situation specific. Frustration, and the anger resulting from that, is more likely to be triggered by specific events. It is the researcher's suggestion that, as these are not everyday events, it might be easier to get farmers to be cautious about what risky behaviour they take on until these feelings have dissipated. These cooling off periods may not take them away from the must do work for very long, so there might be more openness to adopting such strategies.

The insight research identified that 'worrying about something else and not focussing sufficiently on what you are doing' is closely linked with 'having too much to do and not enough time'. However 'worrying about something else and not focussing sufficiently on what you are doing' is possibly a behaviour where farmers may be able to make some improvement, even if their workload does not improve. Providing skills for staying focussed on the job at hand and increasing awareness of the consequences of not doing so, particularly increased injury risk, might assist in this regard. Farmers may well see this level of change as achievable, whereas they might see reducing their workload as not achievable.

Most of the other aspects of diminished wellbeing tend to exist as on-going issues, although they may have seasonal variations. Having too much to do and not enough time seems to be present for most farmers for much, if not all, of the year. However, it is worse in peak periods<sup>2</sup>, which can be lengthy, particularly for dairy farmers, from the start of calving until Christmas. Fatigue/exhaustion is closely related to workload (i.e. having too much to do and not enough time), but is more cumulative. So even if the workload decreases, it may well still be at a level that continues to increase fatigue, because the farmer is still so worn out by the end of the peak period that only a really good break will help them come right.

### **Interest in possible online tool**

Providing online tools would be a relatively easy strategy for Farmstrong to implement. With just over half the farmers saying they would be likely to view an online tool to assist with injury prevention, if they were sent it while injured, this level of interest justifies further consideration of such options.

### **Impact of Farmstrong to date on injuries**

The results provide some evidence that is consistent with Farmstrong already making a contribution to reducing farmer injury. The most important result was that those who had ever engaged with

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<sup>2</sup> 'Peak periods' was a term used by some farmers to describe the busiest times of the year.



Farmstrong were less likely to report aspects of diminished wellbeing being a major contributor to a more serious injury (an injury that had a moderate or large impact on ability to work).

When the impact on ability to work was not considered and it was just whether aspects of wellbeing were major contributors to the injury, there was no significant difference between those who had and had not engaged with Farmstrong. Although the results were in the right direction, the three percent difference was not very large and certainly not large enough to be statistically significant.

There are several things which might be contributing to what, initially, might seem like an inconsistency between these two sets of findings:

- Farmstrong may be having more impact on reducing the more serious accidents that have a larger impact on farmers' ability to work
- It may be that, for the farmers who have engaged with Farmstrong, the accidents have less impact on ability to work because these farmers are in better shape at the time of the accident (e.g. fitter and healthier)
- Those who have engaged with Farmstrong may be more resilient as a result and therefore have a faster recovery from injury.

There were other results which were also consistent with Farmstrong making an impact on injuries. For example, those who were aware of any Farmstrong initiatives reported lower levels of aspects of diminished wellbeing being a major contributor to their injury.

These results can't establish a causal link, but they are in a direction that is consistent with Farmstrong already having an impact.

Stronger evidence for a causal link comes from other Farmstrong research. In the 2018 national dashboard survey of farm owners, 10 percent of the total sample reported that some improvement in the 'amount of time my work was impaired by an injury' was as a result of their involvement with Farmstrong or Healthy Thinking<sup>3</sup>. There were four percent who reported a 'moderate' improvement and six percent a 'small' improvement.

## Returning to work before recommended

While aspects of diminished wellbeing are contributing to injuries, they are also hindering recovery from injuries. Those who reported aspects of diminished wellbeing having a major contribution to their injury were more likely to return to work before recommended, thereby increasing the risk of a slow recovery, exacerbating the diminished wellbeing and increasing the risk of further injuries. This early return to work is consistent with a work culture where the farm owners and managers prioritise other things over their own wellbeing and the wellbeing of their employees. It was this same culture and attitudes which in many cases may have contributed to the diminished wellbeing, which then contributed to the injury in the first place.

Perhaps Farmstrong and ACC resources could consider placing more emphasis on the benefits, particularly financial, for both the injured person and their employers from ensuring people do not return to work before they have recovered and are ready to start work again.

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<sup>3</sup> Healthy Thinking was a workshop delivered by Farmstrong in the first two years.

## Implications of understaffing

This research has identified that staffing levels are a key wellbeing issue. On farms where there was a reported staff shortage, the rate at which aspects of diminished wellbeing were a major contributor to the injury was almost three times the level on farms without staffing shortages.

When those in the insight research were asked what could be done to address aspects of diminished wellbeing the most common response related to improved staffing levels. These findings reinforce the value of the work which Farmstrong has initiated to promote time off and community initiatives that provide farmer relief, but it is also important that farm owners and managers have appropriate expectations of work hours for their employees, to support their wellbeing.

## Monitoring change over time

If farmer injury rates and claim costs decrease over time, this would provide evidence that was consistent with Farmstrong being effective. But there would obviously be other factors which could also contribute to this result. It could also be that Farmstrong is being effective, but other factors are increasing the rate of injury, and this increase would have been even greater in the absence of Farmstrong. Therefore it would be useful to undertake a similar survey to the current one at some future date, possibly in three to five years' time. If this showed a reduction in the proportion of injuries and claim costs accounted for by injuries where aspects of diminished wellbeing were major contributors, then this would provide stronger evidence of the effectiveness of Farmstrong in reducing injuries.

A repeat survey would also provide an opportunity to compare all types of farmer groups in terms of their awareness and engagement with Farmstrong. The survey would under-represent the true levels, as those who are benefiting most from Farmstrong will be less likely to be getting injured and therefore less likely to be in the sample of injured farmers. However, given the lack of other available data bases giving a wide mix of farmer groups, data from this survey would still be very useful for comparisons across the farmer groups on a range of relevant measures.

## Limitations of the study

As noted previously, this research did not investigate all aspects of farmer wellbeing. It has deliberately focussed on those which farmers identified as contributing most to impaired wellbeing and having an impact on injuries.

The research was dependent on the farmer's recall of the injury event and the circumstances leading up to it. It was for this reason that the data collection was split into two time periods, but there were still some farmers who were recalling an event up to nine months later, although for most it was a shorter time period. This may therefore have affected their ability to accurately recall the contributors to the injury.

It may be that those who chose to take part in the research differed from those who chose not to take part. While the 54 percent response rate in the survey was a good level for a survey, especially with busy farmers, it may be that some of those who chose not to participate did so because they were too busy, which would increase the likelihood that they had aspects of diminished wellbeing contributing to their injury. This would mean the survey was under-representing the contribution of aspects of diminished wellbeing to injuries. Some of those who chose not to participate may have felt their injury was unrelated to the sorts of issues described in the letter sent out from ACC or in the introduction to

the survey. This would mean the survey was over-representing the contribution of aspects of diminished wellbeing to injuries. Others may not have participated because they thought their injury was too minor, or they couldn't recall circumstances of the injury, while others will have just not wanted to take part in a survey. It should be noted that only 20 percent were refusals; most of the rest were people the interviewers could not reach successfully, possibly because they were too busy. Given all these considerations, it is the author's conclusion that the research findings are likely to be providing a reasonably accurate representation of the contribution of aspects of diminished wellbeing to farmer injuries.

## RECOMMENDATIONS

### **That Farmstrong:**

- **Develop resources and get media coverage which draw attention to these research findings and the cost implications for farmers of aspects of diminished wellbeing contributing to injuries**
- **Prioritise additional strategies which will address the link between aspects of farmer wellbeing and injuries**
- **Give further consideration to the development of an online injury prevention tool for injured farmers**
- **Undertake a repeat survey in three to five years' time**

## 3 BACKGROUND AND INTRODUCTION

### WHY DID WE DO THIS RESEARCH?

Since 2014 Farmstrong has completed qualitative and quantitative research with farm owners and growers, women in farming and younger farmers / farm workers on the things they say impact positively and negatively on their wellbeing. Based on the findings on the areas having the most positive and negative impacts, Farmstrong has developed tools, resources and initiatives to help all those involved in farming improve their wellbeing.

Alongside these research findings, informal feedback from farmers participating in Farmstrong initiatives has indicated that they often incurred injuries at times when aspects of their wellbeing were being negatively impacted, for example being short on sleep, or feeling frustrated or angry. Farmstrong planned to undertake some limited research to explore farmer perspectives on the link between diminished wellbeing and farm injuries, however the extent and quality of this research was able to be extended greatly due to additional funding from ACC. This was a topic of particular interest to ACC, who are a strategic partner of Farmstrong, alongside founding partners FMG and the Mental Health Foundation.

### DEFINING WELLBEING

There is currently no consensus on a single definition of wellbeing in the literature. The government definition included in the 2019 Wellbeing Budget is: 'Wellbeing is when people are able to lead fulfilling lives with purpose, balance and meaning to them'. Treasury are using 12 domains of wellbeing, with each domain having a definition of wellbeing relevant to that domain.<sup>4</sup>

In its educational work Farmstrong uses the WHO definition of mental health, which defines mental health as, 'a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community'.

The key point about Farmstrong is that it is using the aspects of wellbeing which farmers have identified as important. The research has not attempted to fit within any particular definition of wellbeing. It is acknowledged that what is being investigated and measured in the research are only aspects of wellbeing. These aspects are signs of and contributors to diminished wellbeing. The list of these signs of and contributors to diminished wellbeing was informed by previous research completed by Farmstrong with farmers and growers, and further explored in the qualitative interviews in this research. For ease of reporting, the signs of or contributors to aspects of diminished wellbeing are referred to as 'aspects of diminished wellbeing'.

### RESEARCH QUESTIONS

The key questions this research addressed were:

- What is the nature and extent of the link between aspects of diminished farmer wellbeing and injuries?

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<sup>4</sup> The twelve Treasury wellbeing domains are: housing, income and wealth, jobs and earning, social connections, education and skills, environmental quality, civic engagement and governance, health status, subjective wellbeing, personal security, work-life balance and cultural identity.

- How does this vary across different farmer groups and types of injury?
- What is the cost to ACC of farmer injuries contributed to by aspects of diminished wellbeing?
- What level of interest might injured farmers have in an online tool to assist with injury prevention?
- Is there any link between engagement with Farmstrong and reduction in occurrence and impact of injuries linked to diminished wellbeing?

## PHASES OF RESEARCH

There were three phases to this research, which are integrated in this report:

- A brief literature review
- Qualitative insight interviews with 25 recently injured farmers<sup>5</sup>
- A survey of 500 recently injured farmers

Details on Research Methods are included as Appendix A.

A more detailed Technical Report <sup>6</sup> has also been prepared in addition to this report. The technical report includes the literature review. A one page infographic is also available from the Farmstrong website ([www.farmstrong.co.nz](http://www.farmstrong.co.nz)).

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<sup>5</sup> The qualitative research has been reported separately: Wyllie, A. (2018) *Link between farmer wellbeing and injuries: Insight research*. Report prepared for Accident Compensation Corporation and Farmstrong.

<sup>6</sup> Wyllie, A. (2019) *Link between farmer wellbeing and injuries: Technical report*. Report prepared for Accident Compensation Corporation and Farmstrong.

## 4 MAIN FINDINGS

### THE RELATIONSHIP BETWEEN ASPECTS OF DIMINISHED FARMER WELLBEING AND INJURIES

Survey participants were asked about an injury of theirs that was registered with ACC in recent months. Survey participants were told they would be read 'a list of things which can sometimes contribute towards injuries' and were asked, 'Please tell me which, if any, of these contributed to this injury and whether it was a minor or major contributor'. The term 'wellbeing' was not mentioned in the survey questions and it was up to the participant as to how they defined 'minor' and 'major'. The items were read out in randomised order.

Almost six in ten (58%) reported at least one of the aspects of diminished wellbeing listed in the graph below was a contributor to their injury. Almost a quarter (24%) reported aspects of diminished wellbeing were a major contributor to their injury.

As shown in the graph, the most mentioned major contributors were:

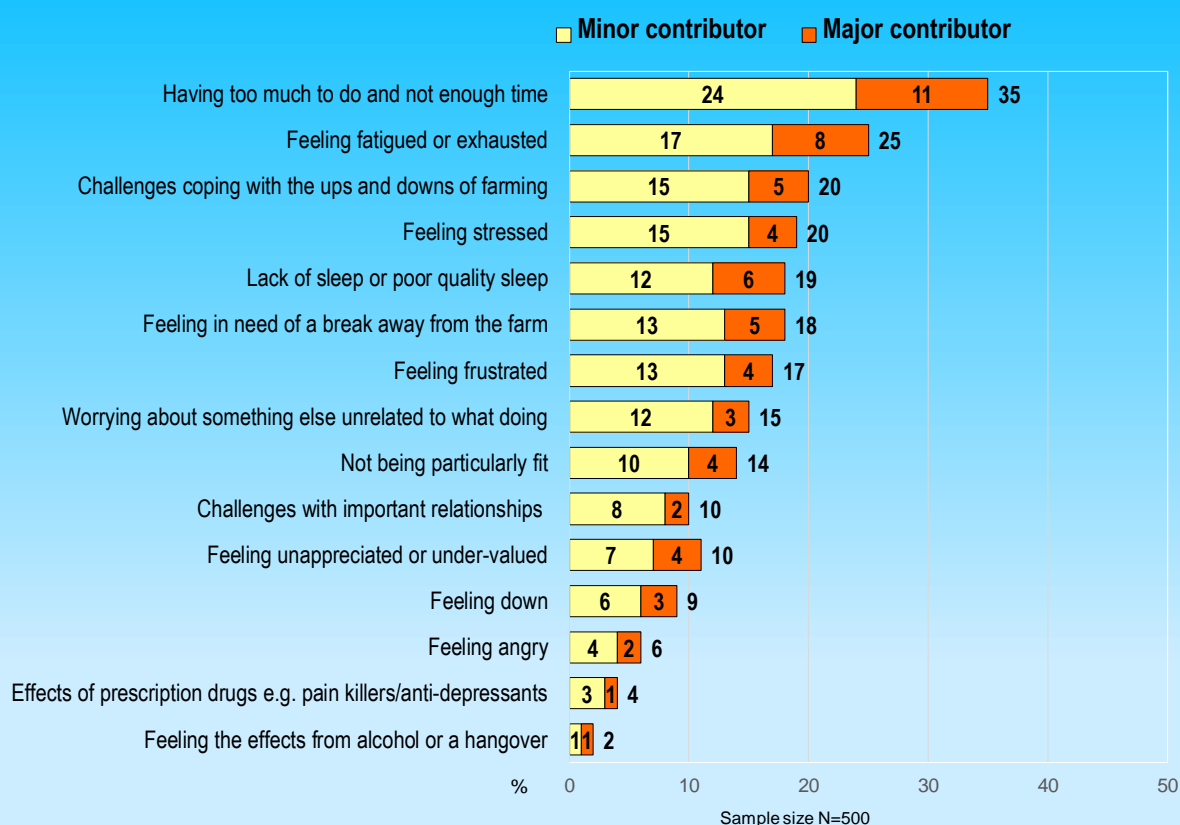
- Having too much to do and not enough time (11%)
- Feeling fatigued or exhausted (8%)
- Lack of sleep or poor quality sleep (6%)
- Challenges coping with the ups and downs of farming (5%)
- Feeling in need of a break away from the farm (5%)

The survey also took into account how serious the injury was, in terms of impact on ability to work. There were 16 percent of the farmers who reported that aspects of diminished wellbeing were a major contributor to their injury and that this injury had a 'moderate' or 'large' impact on their ability to work<sup>7</sup>.

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<sup>7</sup> Participants rated the impact of the injury on ability to work as either 'no impact', 'a small impact', 'moderate impact' or 'large impact'. It was up to the participant as to how they defined these categories.

# Contributors to injury



## Examples of how aspects of diminished wellbeing contribute to injuries

The insight interviews provided detailed examples of how the different aspects of diminished wellbeing contribute to injuries. Further examples are included in Appendix B. The examples provided were rated as 'major' contributors, unless otherwise stated.

### Having too much to do and not enough time

'Having too much to do and not enough time' often led to farmers rushing and not making the wisest decisions. As shown in the previous graph, this was the most common wellbeing issue. It was often coupled with fatigue.

*Trying to get all his own sheep shorn before he had to go off farm to do other shearing, contributed to one farmer rolling a four-wheeler. Darkness was approaching and he still had more mobs to get out of the yards that night. He was moving shorn sheep to get them on to grass, because they had been off it for so long. He was watching the sheep and drove off the track. If he hadn't felt so much work pressure he would have left the sheep where they were, instead of trying to beat the darkness. He described himself as being 'very sore', was on pain killers for a week and was unable to return to shearing for two weeks.*

***One farmer, who was rushing to get on with calf feeding, made a poor judgement call and tried to jump off a stationary quad bike and grab a calf as it ran past. She missed the calf and fractured her knee. The injury was made much worse because she then went and loaded eight 25kg bags of calf feed on to a trailer and spent more than an hour feeding the calves. She was on ACC for three months and possibly needs a knee replacement.***

Some of the pressure came from being short-staffed.

***A farmer, whose team was down one employee, had gone out to get another herd of cows in. He was rushing to get back, so the other worker wasn't left alone for too long. A couple of cows cut away from the main herd and he jumped off his quad bike and started running after them. He looked back and saw the quad bike was about to tip over. 'Instinct took over' and he tried to push it back the right way and finished up with it landing on top of him. Fortunately he was wearing his helmet, which he believed saved him from a far more serious injury, as the seat 'smashed down' on his head. When he went back to the accident site later he realised he had parked on a steep gradient that he would not normally have parked on. The rushing and also feeling 'a bit tired' he rated as major contributors to the injury. He was off work for almost two weeks and lost a week's pay, as they didn't get paid for any sick leave.***

### **Fatigue/exhaustion**

'Fatigue/exhaustion' was sometimes only mentioned after prompting. It was almost like it was so much the norm that the farmers didn't think to mention it unprompted. Some farmers described themselves as always being tired.

***One dairy farmer, who had not had any time off for four months, was feeling tired and stressed when his two wheeler hit a large rock on the race and tipped him off his bike and caused a break in his shoulder. He felt he wouldn't have hit the rock if he wasn't so tired and had been paying more attention. He was also thinking about other things to do with the farm. He was off work for 12 weeks.***

Many of the other wellbeing factors contributed to the 'fatigue/exhaustion', but the biggest single factor was the long hours of work, with insufficient time off. Other contributors to fatigue mentioned



were: insufficient sleep and/or poor quality sleep, having young children, and various sources of stress, such as financial and relationships.

*One farmer was attempting to get a cow off the milking platform and should have got a worker to assist him. But, in trying to do it by himself, he fell backwards and did serious damage to his back; two years later he still needed to take pain relief and approached certain areas of work with 'reluctance and apprehension' for fear of aggravating the injury. He attributed his fatigue in part to poor quality sleep and financial stress. This same person reported that at the end of last year he 'pretty much had a breakdown' from working 24/7 for two to three months – he was 'absolutely exhausted'. He would like to change careers, but feels it would not be easy at his age.*

#### **Lack of sleep or poor quality sleep**

*One woman, running a farm by herself, had a son who was 'desperately ill' with cancer and she was spending nights sleeping at the hospital where he was. She went to put a sick calf on to her four wheeler, 'grossly under-estimated how heavy it was' and caught and broke her finger on the tray of the four wheeler. She rated her aspects of diminished wellbeing, which, as well as lack of sleep, included rushing because she had too much to do and the stress of keeping the farm going while dealing with her sick son, as only minor contributors to the injury. She felt she had no choice but to keep on working with her broken finger.*

#### **Worrying about something else unrelated to what you were doing**

'Worrying about something else unrelated to what you were doing' was often linked to 'having too much to do and not enough time'.

*One farmer commented that he is never able to live in the moment and enjoy it; he is always thinking about what needs doing. He lives at his work; he looks out his house window and always sees things that need doing. These factors contributed to him getting 'smashed up' in the cattle yards. He was weaning calves off their mothers and a cow knocked him to the ground. He felt it would only have been 'a bit of a slide glance' if he had been more attentive. Tiredness was also a contributing factor.*

## Feeling stressed

Many of the other wellbeing factors contributed to general feelings of stress, but farmers often reported specific stressful events which contributed to their injury. Stress was often related to financial issues.

*One middle-aged farm manager described himself as 'fully stressed all the time'. He was feeling the 'financial pressure there every day' and was thinking of leaving farming. Coupled with poor sleep, he realised he was making bad decisions and these were leading to more stress. His injury was to his shoulder when a sheep jumped forward. He felt he would have been holding it better if he wasn't so fatigued from all the stress and long hours of work. He 'just kept going, but it [the injury] took longer to come right'. He commented that, 'This is why it costs ACC so much – re-injure and it makes it worse and then you need operations'.*

*Another had been made redundant the day of her injury. She was moving boards and knew there were nails in them, but her boss drove past and she started worrying about how she was going to find a new job and stood on a nail. The doctor said he would like her to take one to two days off by she 'said no'.*

One contract milker believed that some of the financial stress for contract milkers was because they are signing up to agreements which don't give them sufficient return for the work they have to do. He noted that it was very farm specific determining what was a good rate, but he felt there should be a minimum wage people can walk out with.

## Feeling angry

*One dairy farmer was feeling frustrated and angry at the time of his injury, as he had to constantly get out of the pit because the farm owner had failed to repair the backing gate for over a year. He had gone out to close a gate behind the cows in the yard and went to jump over some rails and 'didn't quite make it'. In trying to stop himself from falling on his head, he finished up with a hernia that needed surgery. Getting in and out of the pit all the time also contributed to fatigue. He was off work for two weeks before the operation and then about two months after the operation and then 'slowly got back into it'. As he was a contract milker he had to employ someone to milk the cows and he reported losing \$1000 a week.*

## Feeling frustrated

Those who were feeling angry were also feeling frustrated, but the reverse was not necessarily the case; someone could feel frustrated, but not angry.

***One farmer, who was frustrated with an 'incompetent' machine operator, damaged his knee lifting pipes that the machine should have been doing but wasn't. This injury was also linked to having too much to do and not enough time. He described the injury as 'sore for a while' but he kept working his long hours.***

## Feeling unappreciated or under-valued

***The farmer whose employer had not fixed the backing gate for a year was feeling unappreciated and undervalued. It was a constant source of stress trying to get his employer to buy essential supplies, such as calf feed. When he told his employer of the injury, he got no initial response and then a day later he got an email saying there would be no job for him next season.***

## Challenges with important relationships

'Personal stuff' was a source of stress that was contributing to injuries.

***One woman felt a recent break-up with her partner had contributed to her making a poor decision, which resulted in an injury. She was moving dry cows when some started breaking away. Instead of getting on her bike, she ran to try and stop them and sprained her ankle and was off work for six weeks.***

## Evidence from literature review

The literature review identified higher farmer injury rates being associated with each of the following:

- Stress (Jadhav et al., 2015; Welke, 2004; Simpson et al., 2004; Glasscock et al., 2006; Lizer & Petrea, 2008; Zheng et al., 2014)
- High workloads (Welke, 2004; Pratt et al., 1992; Sprince et al., 2003)
- Amount and quality of sleep ((Osborne et al., 2012; Voaklander, 2009; Choi et al., 2006; Zhu et al., 2014; Zheng et al., 2014; Lilley et al., 2012)
- Depression (Jadhav, 2015; Voaklander et al, 2009; Park et al., 2001)
- Financial pressure (cited in Welke, 2004)

- Use of medication (Jadhav et al., 2015; Voaklander et al, 2009)

New Zealand data showed that increasing dairy herd size was correlated with increased levels of ACC claims (Tipples & Greenhalgh, 2011).

## HOW THE RELATIONSHIP VARIES ACROSS DIFFERENT FARMER GROUPS AND TYPES OF INJURY

All of the reporting for sub-groups is based on those where aspects of diminished wellbeing were a major contributor to their injury.

### Type of farm

Dairy farmers were more likely than other farmers to report any aspects of diminished wellbeing making a major contribution to their injury (31%), while sheep/beef farmers were less likely (16%).

The higher levels for dairy farmers were evident in higher levels on the following specific items that were major contributors to their injury: feeling fatigued or exhausted (12%), feeling frustrated (7%), worrying about something else unrelated to what you were doing (5%), and feeling angry (4%).

The lower level for sheep/beef farmers was also evident for the following specific items: feeling fatigued or exhausted (3%), lack of sleep/poor quality sleep (3%), having too much to do and not enough time (7%), feeling frustrated (1%), feeling stressed (2%), feeling down (1%), feeling unappreciated or under-valued (1%), and challenges coping with the ups and downs of farming (1%).

Persons working in horticulture/nursery and floriculture were more likely to report challenges coping with the ups and downs of farming as a major contributor to their injury (10%).

### Role

Assistant managers were more likely than others to report any aspects of diminished wellbeing as being a major contribution to their injury incident (40%). Higher levels for assistant managers were also evident for: feeling fatigued or exhausted (18%) and feeling frustrated (10%).

Full-time farm workers/shepherds were more likely than others to report challenges with important relationships (i.e. husband/wife/partner, parents, in-laws, farm owner or workers) as a major contributor to their injury (5%).

Higher levels were also evident for part-time farm workers/shepherds for feeling frustrated as a major contributor to their injury (11%).

The small sub-sample size contributed to their being no significant differences for sharemilkers/equity partners/contract milkers, even though their levels tended to be higher.

Farm owners/part owners/lease holders were less likely than others to cite feeling fatigued or exhausted as a major contributor to their injury (5%).

### Number working on farm

Having two persons working on the farm (including owners who work on the farm) was associated with less likelihood of any aspects of diminished wellbeing being a major contributor to injury (17%). On the specific wellbeing items, these farms with two persons were less likely to be associated with having too much to do and not enough time, as a major contributor to injuries (7%).

Those on farms with five to nine persons were more likely to report feeling fatigued or exhausted (15%), frustrated (8%), angry (5%) and down (6%) as major contributors to their injury. Those working by themselves were more likely to mention feeling in need of a break away from the farm as a major contributor (11%), while those on the two person farms were less likely (2%). Those on the largest farms (10 or more persons) were more likely to report challenges coping with the ups and downs of farming as a major contributor (16%), as well as prescription medicines (7%)<sup>8</sup>.

### **Month of injury**

The seasonal nature of farming is reflected in any aspects of diminished wellbeing being a major contribution to injury, with there being a significantly lower level in May/June (12%).<sup>9</sup>

Lack of sleep/poor quality sleep was mentioned more as a major contributor to January/February injuries (13%) and feeling stressed was mentioned more by those with injuries in November/December (9%).

### **Type of injury and injury site**

The extent of any aspects of diminished wellbeing being a major contributor to injuries did not differ significantly by type of injury or injury site.

Not being particularly fit was more likely to be a major contributor for those with soft tissue injuries (5%).

The only specific aspect of diminished wellbeing linked with injury site was feeling frustrated, as a major contributor to lower back/spine injuries (9%).

### **Gender**

Thirty percent of women reported aspects of diminished wellbeing being a major contributor to their injury but the difference from men (22%) was not statistically significant. However women were more likely than men to report a major contribution from feeling fatigued or exhausted (13%) and feeling unappreciated or under-valued (7%).

### **Age**

Those aged under 35 years were much more likely than other ages to report any aspects of diminished wellbeing being a major contributor (35%). The difference was evident for many of the aspects of diminished wellbeing:

- Feeling fatigued or exhausted (16%)
- Lack of sleep or poor quality sleep (12%)
- Feeling frustrated (9%)
- Challenges coping with the ups and downs of farming (9%)
- Feeling unappreciated or undervalued (8%)
- Not being particularly fit (8%)
- Feeling stressed (8%)
- Feeling in need of a break away from the farm (8%)

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<sup>8</sup> There were only five persons reporting prescription medicines as a major contributor, so although the result was statistically significant it should be interpreted with caution.

<sup>9</sup> The months were grouped to provide larger sub-samples and increase the likelihood of identifying significant differences.

- Feeling down (6%)
- Worried about something else unrelated to what you were doing (6%)
- Feeling angry (5%)

### Other analyses

There were no statistically significant differences between Māori and non-Māori. However, Māori did show indications of being more likely than others to report aspects of diminished wellbeing making a major contribution to their injury (35%)<sup>10</sup>.

There were also no significant differences for the amount of time people spent working on the farm or by region.

## COST TO ACC OF FARMER INJURIES CONTRIBUTED TO BY ASPECTS OF DIMINISHED WELLBEING

Two thirds of the survey participants' ACC claim costs were from injuries where they felt some level of at least one aspect of diminished wellbeing had contributed to the injury. Thirty percent of the claim costs were from injuries where farmers felt aspects of diminished wellbeing were a major contributor to the injury.

These figures are based on the claim for the average person (the mean). It should be noted that means are influenced by a few extreme values. For example, a claim of over \$30,000 will have a large influence on the mean for the group it falls into. There were a small number of farmers whose injury claims to ACC were large (2% of all the farmers were \$10,000 or more). Almost two thirds of the injuries (65%) incurred costs of less than \$200. It is therefore useful to also consider medians, the median being the level at which half the group are above and half are below.

The median cost of claims to ACC where aspects of diminished wellbeing were a major contributor was \$110, compared with \$136 for claims where aspects of diminished wellbeing were not a major contributor. However, when considering the mean costs for these same groups those where aspects of diminished wellbeing were a major contributor had higher means (\$1,011) than the others (\$715).

There was 14% of the sample for whom no cost data was available. Also, some of the people included in the sample would have gone on to incur further costs associated with their injury. This means that the mean costs shown are likely to be lower than for all ACC farmer data. However there is no reason to believe that either of these factors would make any difference to the proportion of costs associated with aspects of diminished wellbeing.

## LEVEL OF INTEREST INJURED FARMERS HAVE IN AN ONLINE TOOL TO ASSIST WITH INJURY PREVENTION

Survey participants were asked the following question: *'I want to explore one possible idea with you, which is an online programme. You could use this programme to identify your top injury risks and to develop your own plan for managing them. If ACC had sent you a link to this at the time you were recovering from your injury, would you have been willing to give the programme a go, if it took 15-20*

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<sup>10</sup> As there were only 37 Māori participants, it required a large difference to be significant.

*minutes?* A little over half (53%) said they would have been willing to give it a go. In the insight interviews the reasons given for this were because of interest in what it was offering, wanting to reduce injuries and having the time because of their injury. The others were not sufficiently interested to prioritise it in their busy lives.

## RELATIONSHIP BETWEEN FARMSTRONG AND INJURIES LINKED TO DIMINISHED WELLBEING

### Those aware of Farmstrong

Forty-five percent had heard of Farmstrong prior to the survey. Another 23% had seen or read about All Black Sam Whitelock talking about things to help farmers cope with the ups and downs of farming' (Sam Whitelock is the Farmstrong ambassador and fronts some of the Farmstrong messages and resources). Therefore, in total, just over two thirds (68%) were aware of Farmstrong or the Sam Whitelock messages/resources.

Farmers who were aware of Farmstrong or the Sam Whitelock messages/resources were less likely to report an aspect of diminished wellbeing being a major contributor to their injury (19%) than were farmers who weren't aware (34%). The same trend was also evident for aspects of diminished wellbeing being a major contributor to injuries which had a moderate or large impact on the farmer's ability to work (11% for those who were aware, compared with 26% for those who were unaware).

Farmers who were aware of Farmstrong or the Sam Whitelock messages/resources were also less likely than other farmers to report feeling an employer expectation that they return to work early (2%) or to have been short staffed at the time of the injury (13%).

### Engagement with Farmstrong

There was just under a third (32%) who had *'ever visited the Farmstrong website, Facebook or twitter, seen any Farmstrong videos or articles, including those with Sam Whitelock, or attended any workshops or other activities associated with Farmstrong or Healthy Thinking'*. Farmers who reported engaging with Farmstrong in this way did not differ significantly from other farmers for specifying a wellbeing issue being a major contributor to their injury (22% for those who had engaged compared with 25% for those who had not). However, those who had engaged with Farmstrong were less likely than others to report a wellbeing issue being a major contributor to an injury that had a moderate or large impact on their ability to work (11%), compared with those who had not engaged (18%).

Those who had engaged with Farmstrong were also less likely than others to report feeling an employer expectation that they return to work early (1% compared with 5% for those who had not engaged) and less likely to mention feeling unappreciated or under-valued (1% compared with 5%) as a major contributor to their injury.

## OTHER SURVEY FINDINGS

### Working while injured

In the survey 30% reported going back to work 'sooner than recommended by your doctor, ACC or

those providing you with treatment'. Two percent (of the total sample) reported going back sooner because their employer wanted them to. Another four percent felt 'an expectation from them' [their employer] that they should go back sooner than they wanted to.

Those who reported an aspect of diminished wellbeing as a major contributor to their injury were more likely than others to report returning to work early (38%). Returning to work early was more prevalent for those who reported the following aspects of diminished wellbeing as major contributors to their injury:

- Having too much to do and not enough time (44%)
- Feeling frustrated (55%)
- Feeling stressed (59%)
- Feeling down (54%)
- Feeling unappreciated or undervalued (56%)
- Feeling in need of a break away from the farm (56%)
- Feeling fatigued or exhausted (49%)

Those with knee injuries were more likely than others to report returning to work early (43%). Part-time shepherds were less likely to report returning to work early (11%), as were those in the grouping of 'other' injuries (where prevalence was below 5%), where there were 22% returning early.

In the insight interviews almost all of the farmers reported that they had at some time been injured and not sought treatment when they probably should have, or not sought it as early as they should have. Likewise, most had also gone back to work sooner than they probably should have for some of their injuries.

The primary reasons for working while injured were the amount of work that needed to be done on the farm and financial pressures. Farmers reported getting lots of injuries and that they ignore many of them and they just come right. However, sometimes they did not come right and by the time they sought help it had got quite serious. Some farmers had to travel one to two hours to reach a doctor, so they were reluctant to go. Others were put off by the length of the wait when they did get to the doctors and another said there were 'lots of complaints about the local health centre'. One woman noted that farmers don't like to show weakness, they like to be self-sufficient. She felt this was probably more so in women farmers as they 'have got more to prove'.

Several farmers reported negative impacts from working while injured or recovering. One, with a back injury, took three years to recover when it should have been one year. She lived in constant pain every day and said that she sometimes felt like she was 70, even though she was under 25. She didn't let anyone know she was in pain, as she didn't want to let the team down. She saw lifting heavy weights, which was not good for her back, as an integral part of farming and she did not want to have to start a new career. Another farmer needed six weeks off instead of one because she did not look after the injury properly.

Some reported a negative impact on their relationship with their wife/husband/partner from working with injuries, as they were 'not good to be around'. When injured these farmers tended to get frustrated and angry more quickly. Contributors to this were fatigue from working with an injury and/or resentment at having to work with the injury. Sometimes it also meant the wife had to go out and do the farm work, or more of it than usual.



One farmer reported a couple of near miss events when working with untreated injuries. As a result of a 'pretty bad' cut, and trying to do things one-handed, he had fallen off a cattle yard and just missed a six inch nail in a board.

Several said they would have employed a casual farm relief worker to help out while they had their injury, if one had been available. Several spoke of the difficulty of being able to access relief workers.

### Link with staffing levels

The insight research indicated that injuries may be more prevalent when there are staff shortages, which puts more pressure on the other staff. As a result of this finding, a question was included in the survey. It identified 16% of respondents where, at the time of their injury, there was less than the usual number of staff working on the farm for that time of year.

On farms where there was a reported staff shortage, the rate at which aspects of diminished wellbeing were a major contributor to the injury (32%) was almost three times the level on farms without staffing shortages (11%).

The following significant differences were identified for reported shortages of staff at the time of the injury:

- Higher for dairy farmers (21%)
- Lower for sheep/beef farmers (9%)
- Lower for farm owners/part owners/lease holders (12%)
- Higher for full-time farm workers/shepherds (27%)
- Lower where there are two people on the farm (9%)
- Higher where there are 5-9 people on the farm (28%)
- Higher for those aged under 35 years (26%)
- Higher in Canterbury (24%)
- Lower in July/August (8%)
- Higher in November/December (29%)

## OTHER FINDINGS FROM INSIGHT RESEARCH

It is important to note that the insight research was only with persons who had injuries where they thought aspects of diminished wellbeing probably contributed, as the aim was to understand how the aspects of diminished wellbeing contributed. Therefore these comments should not be seen as representative of farmers as a whole.

### Changes made as result of injuries

Some farmers did report making changes in attitudes or behaviours as a result of their injuries, the changes often addressing aspects of diminished wellbeing.<sup>11</sup> Some just talked about being more

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<sup>11</sup> There was no attempt, as part of the interview, to explore whether this linked back to engagement with Farmstrong.

careful when doing the sorts of actions that resulted in the injury.

Others farmers reported having slowed down. One was taking his boss's advice, that only the important things have to be done, the rest can wait, and not to worry about the next day. This same person also reported taking more holidays and planning 'decent breaks' over the next season, to address his body fatigue.

Another older person reported slowing down and 'absolutely no rushing'. He reported being 'very consciously aware' now and making everyone around him aware as well. Since his quad bike injury he had been shown a map of the farm which identified where you should walk rather than take the quad bike. He does not recall being shown this when he arrived at the farm, but he makes sure other workers are aware of the map.

Another had made some changes to reduce his workload. One was to create larger flocks of sheep, so he had fewer flocks to manage. He was also keeping sheep in paddocks nearer the yards when they were going to be needed in the yards later. Another planned change was to build a set of satellite yards, so there was less stock movement required.

One farmer mentioned that when he gets frustrated he now tries to remember the 'small things'. He mentioned thinking about his wife and children as an example of this. He also was a lot more forward about saying things if he felt there were issues at work. He said he used to keep things bottled up and 'wasn't the best person to be around'. A friend had asked him if he was alright and had kept pushing until he finally 'let it all out'. He said he was initially not wanting to be seen to be weak, but he now realises it is a strength to be able to admit your weaknesses. He noted that on social media and on TV people are a lot more open about depression.

Another felt she had made 'lots' of changes. She was now more thoughtful when walking around the farm, climbing fences, getting on or off the quad bike. She had reduced the weight of calf feed she was carrying, even though it may take her a little longer. She felt the 'best thing' was sharing her experience with the other worker, in the hope of preventing them from injury.

It was reported that, on one large farm, all staff who are working in isolation now take radios with them, following injuries when working alone.

Another reported having altered things to 'stay safe'. She gave the example of making the cows come to the silage. She also reported getting off the farm more. One, who had a bike injury, reported not looking around so much when he is on the bike and not being as 'flat out' when on the bike. A knife injury had led to a farmer now wearing a mesh glove when doing knife work. Another said she had never taken a short cut again, but she also noted that she is pretty health and safety conscious anyway.

A woman who had been distracted by children at the time of her injury now never takes children to do any job that requires her full attention. She also didn't want to be responsible if any of the children had an accident. She also makes sure she now always wears appropriate safety gear. As she had two injuries involving fencing, she no longer has anything to do with fencing.

### **Likely farmer response if wellbeing-injury link is known**

When the farmers were asked if they might be likely to bring up with other farmers the link between aspects of wellbeing and injuries, several said they would. These farmers often envisaged this discussion focussing on the injury they had experienced.

Only a few thought that making farmers aware of a link between wellbeing and injury would be likely to have the farmers postpone higher risk activities if they were not feeling in great shape. Most felt there was so much work that just has to be done, it can't be postponed.

A few more thought that farmer knowledge of this link might make farmers reconsider the hours they are working, or getting their staff to work.

## **Farmer interest in trying to reduce risk of injuries**

Almost every farmer interviewed thought most farmers and farm workers were interested in trying to reduce their risk of injuries. Some noted that there were still a few 'rambo-ish ones out there, who are not going to alter the way they have always done things'. For them personally, many noted that they can't afford to get hurt, both financially and in terms of needing to get the work done. Most felt farmers respond well when people try and encourage them to think about injury prevention.

Most thought farmers had quite a lot of control over injuries happening, but there was also quite a lot of unpredictability that cannot be controlled.

Most thought the 'OSH' health and safety rules and requirements had brought about positive changes in farmer behaviour and attitudes, although many still had complaints about 'OSH'<sup>12</sup>.

## **Strategies to reduce injury risk by addressing aspects of diminished wellbeing**

### **Improved staffing levels**

As noted previously, staff shortages were contributing to some injuries because of the fatigue from the hours of work. Staff shortages were due to both inability to get staff or sufficiently skilled staff, and financial constraints limiting the number of staff employed.

A contract milker reported attending a DairyNZ event where the speaker had said that people buying New Zealand products overseas want assurances that staff are not being over-worked. A goal of 50 hour working weeks was mentioned. He felt NZ dairy farming was 'way off that, but if it was forced on us, we would have to find a way of doing it.' He thought it would mean farm owners would have to spend more, because the contract milkers would have to be paid more, so they could employ more staff. Another younger farmer, who was working as a 2IC<sup>13</sup> on a large dairy farm, reported how juniors had been sent home, rather than be paid more, which meant those on salaries were having to work even harder. He had to work three consecutive 18 hour days at one stage. He felt that having to work more than 10 hours should be compensated; he wanted to see farmers move away from salaries. He had worked for a previous employer who had given staff time off when there wasn't urgent work to do.

Another contract milker felt that farm worker hours have already been dealt with. He reported that farmers employing workers had 'been forced to' sort out pay and hours of work, but also 'finding it too difficult to get staff' was a motivation. Another reported how the 'Department of Labour' had been to their farm and checked all their timesheets, to ensure no one was finishing up working at below minimum wage rates.

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<sup>12</sup> 'OSH' was the term used by farmers, OSH being the former Occupational Safety and Health Service, whose responsibilities are now with WorkSafe.

<sup>13</sup> 2IC is second in command, a role one step below manager.

One farmer suggested that part of the problem is that farm employers 'treat labour as being free'. He suspected many farmers were probably unaware of how many extra hours their staff were working.

### **Other strategies**

A range of other strategies to address aspects of diminished wellbeing were mentioned by the farmers. One thought it was important that staff feel able to speak up if they were feeling tired, and for there not to be repercussions. However, she did then add that there would be a risk of some people abusing it. The difficulty for workers to have the courage or motivation to do this was illustrated by a young woman on a dairy farm, who would try not to let her employer know she was having a bad day, as she wanted to impress him. She reported that if anything goes wrong she 'goes away and cries and doesn't want him to see she is weak.' But she did note that she sometimes finished up crying in front of him anyway.

One, who worked on a large dairy farm, said the workers look after each other and help out if someone is not feeling so great. Another, who was intending to move on to being a contract milker and employing staff, mentioned the need to become a people person when employing staff. He felt you were border-line on being a counsellor. He also considered it important to find 'struggling staff' an easy job for the day, if possible.

One beef/sheep farmer gave some examples of strategies he used to reduce his injury risk, which included going slower routes on the 4-wheeler, dodging certain tracks after rain and picking the right conditions for certain jobs. He also mentioned that all the staff take note of safety hazards and let the other staff know, as they are all keen to not get injured, or be the reasons someone else does. Having someone off with injury impacts all their workloads.

Another beef/sheep farmer noted that on their farm GPS had been installed, so staff can be tracked on their phones. The quad bikes also had radio connection.

One farmer commented that big stations, which employ a lot of staff, are very safety conscious and as workers move on from there they take the practices with them, so this is helping to spread good practice.

One farmer, who did stretching before milking, had tried to encourage others to do the same, but they had thought him 'a bit weird'.

Other suggestions included:

- If you know you are going to have extra hands at some stage, hold off the work till then
- Get contractors in
- Having the equipment to do jobs safely
- Doing more planning, so people know what they are doing and what is expected of them, which would help avoid people having to rush to do things at short notice
- More training, such as AgITO courses, for those who haven't done them, particularly foreign workers
- Ensuring staff are aware of the risky areas on the farm
- Penalties imposed by the farmer for staff who go in no-go zones
- Posters in the cowshed – 10 key things to remember
- Make sure staff are aware of external support services for depression and such like

## 5 CONCLUSIONS

The combination of the survey and the insight research provide a picture of the nature, extent and impact of aspects of diminished wellbeing on injuries. The insight research provides a range of useful examples of the ways in which aspects of diminished wellbeing contribute towards farmer injuries. The survey provides hard data, showing that this is a very real and significant phenomenon influencing injuries to many New Zealand farmers. If some of these injuries can be avoided by better wellbeing awareness and practices, this will benefit farmers in terms of their health, productivity, reduced ACC levies and their general wellbeing, but also ACC in terms of reduced payouts being required.

The pressures and constraints on farmers which contribute to these wellbeing-related injuries are also impacting rates of recovery from injury. This delayed recovery reduces farmer wellbeing and thereby places farmers at increased risk of further injury.

The implications of this research have been more fully outlined in the Discussion and Recommendations chapter, following the Summary.

## REFERENCES

- Choi S.W., Peek-Asa C., Sprince N.L., et al. (2006) Sleep quantity and quality as a predictor of injuries in a rural population. *Am J Emerg Med.* 24(2):189–196. [http://www.ajemjournal.com/article/S0735-6757\(05\)00329-3/pdf](http://www.ajemjournal.com/article/S0735-6757(05)00329-3/pdf)
- Glasscock, D.J., Rasmussen, K., Cartensen, O., et al. (2006) Psychosocial factors and safety behaviour as predictors of accidental work injuries in farming. *Work & Stress* Volume 20, Issue 2. <https://www.tandfonline.com/doi/abs/10.1080/02678370600879724>
- Jadhav, R., Achutan, C., Haynatzkim G., et al. (2015) Risk Factors for Agricultural Injury: A Systematic Review and Meta-analysis. *Journal of Agromedicine*, Volume 20, Issue 4. <https://www.tandfonline.com/doi/abs/10.1080/1059924X.2015.1075450>
- Lilley R., Day L., Koehncke N., Dosman J., et al. (2012) The relationship between fatigue-related factors and work-related injuries in the Saskatchewan Farm Injury Cohort Study. *Am J Ind Med.* Apr;55(4):367-75. <https://www.ncbi.nlm.nih.gov/pubmed/22213463>
- Lizer, S.K. & Petrea, R.E. (2008) Health and Safety Needs of Older Farmers *Part II. Agricultural Injuries.* Workplace Health & Safety. <http://journals.sagepub.com/doi/pdf/10.3928/08910162-20080101-05>
- Park, H., Sprince, N. L., Lewis, M..Q et al. (2001) Risk Factors for Work-Related Injury Among Male Farmers in Iowa: A Prospective Cohort Study. *Journal of Occupational and Environmental Medicine:* Volume 43 - Issue 6 - p 542-547. [https://journals.lww.com/joem/Abstract/2001/06000/Risk\\_Factors\\_for\\_Work\\_Related\\_Injury\\_Among\\_Male.7.aspx](https://journals.lww.com/joem/Abstract/2001/06000/Risk_Factors_for_Work_Related_Injury_Among_Male.7.aspx)
- Pratt, D.S., Marvel, L.H., Darrow, Stallones., L. et al. (1992) The dangers of dairy farming: The injury experience of 600 workers followed for two years. *American Journal of Industrial Medicine*, Vol 62(4). <https://onlinelibrary.wiley.com/journal/10970274>
- Simpson K, Sebastian R, Arbuckle TE, Bancej C, Pickett W. (2004) Stress on the farm and its association with injury. *J Agric Saf Health* 10:141–153. <https://www.ncbi.nlm.nih.gov/pubmed/15461131>
- Sprince, N.L., Zwerling, C., Lynch, C.F., Whitten, P.S. et al (2003) *Journal of Agricultural Safety and Health.* 9(1): 5-18. <https://elibrary.asabe.org/abstract.asp?aid=12346>
- Tipples, R. & Greenhalgh, J. (2011) Milestone 1.3 Accident Incident Report, Evidence based stream. Report for Dairy Farming Fatigue and Work Related Stress, Farmer Wellness and Wellbeing Programme, Faculty of Commerce, Lincoln University, New Zealand.
- Voaklander, D.C., Umbarger-Mackey, M.L. & Wilson, M.L. (2009). Health, medication use, and agricultural injury: A review. *American Journal of Industrial Medicine.* <https://onlinelibrary.wiley.com/doi/full/10.1002/ajim.20749>
- Welke, C. (2004) Farm/ranch stressors and the distress and job satisfaction of farm family members: The buffering effects of perceived social support. A dissertation submitted in partial fulfilment of the requirements of the Degree of Doctorate of Philosophy, Department of Psychology in the Graduate School of University of South Dakota.
- Zheng, L., Zhao, N. & Chen, D. et al. (2014) Nonfatal work-related injuries among agricultural machinery operators in northern China: A cross-sectional study. *Injury.* March ; 45(3): 599–604. <https://www.sciencedirect.com/science/article/pii/S0020138313003112>

Zhu, H., Han, Y., Sun, W. et al. (2014) Sleep-Related Factors and Work-Related Injuries among Farmers in Heilongjiang Province, People's Republic of China. *Int J Environ Res Public Health*. 2014 Sep; 11(9): 9446–9459. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4199028/>

## APPENDIX A: RESEARCH METHOD

### QUALITATIVE INSIGHT INTERVIEWS

Twenty-five in-depth interviews were undertaken with farmers who had been injured within the previous five months. To qualify the farmers had to think that at least one of the following contributed to their most recent injury: being tired, having too much to do and not enough time, being worried about something else, or feeling stressed, frustrated, angry or upset.

Recruitment was undertaken by Infield International, using contacts generated from the ACC new claims data base. All farmers were sent a letter from ACC explaining the research and were given the opportunity to request not to be contacted further about the research. An information sheet and a description of the lead researcher's links with farming were also sent with the letter. The project was approved by the ACC Research Ethics Committee.

The interviews were conducted by Wyllie & Associates. Four of the interviews were with farmers who identified as Māori and were undertaken by a Māori interviewer, Raewyn Harrison, who also undertook one of the other interviews. The rest were undertaken by Dr Allan Wyllie, who also undertook the analysis and reporting.

Most of the interviews were undertaken face to face in farmers' homes or agreed locations. For eight of the interviews the farmer was not available at the time the researcher was visiting their region, so these interviews were undertaken by phone.

The interviews were completed between April 16 and May 12, 2018. The interviews usually took between 60 and 90 minutes and were digitally audio-taped. Each farmer was provided with a \$100 gift voucher and a Farmstrong cap, in acknowledgement of the time they had provided for the interview.

Because the interviewing was being undertaken in farmers' homes, it was necessary to limit the sample to three regions, as shown in the table below. The interviews were spread between dairy (13) and beef/sheep (12). Six of the farmers were aged under 35 years, 11 were 35 to 54 years old and eight were 55 years and over. Seventeen were men and eight women. Apart from the four Māori interviews, all other participants were New Zealand Europeans.

REGION	Dairy interviews	Beef/sheep interviews	Total
Waikato Māori	2	2	4
Waikato non-Māori	7	1	8
Manawatu/ Whanganui	1	6	7
Canterbury	3	3	6
<b>Total</b>	<b>13</b>	<b>12</b>	<b>25</b>

### SURVEY METHOD

Five hundred interviews were undertaken with farmers who had made a recent injury claim with ACC. The data collection was undertaken by Infield International via a CATI (computer assisted telephone interviewing) survey.

Because the nature of injuries may vary over the year and it was important that participants could recall the injury being asked about, the survey was undertaken in two phases. The first phase of data collection took place between 13 June and 17 July, 2018 and was for injury claims between 1 January



and 31 May, 2018. The second phase of data collection took place between 5 and 24 February, 2019 and was for injury claims between 1 June and 31 December, 2018.

## Sample selection

The sample was randomly drawn from the ACC data base of new claims, over the most recent 12 month period. This was drawn from all types of farmers/growers, based on lists of PCU codes supplied to ACC by the researchers.

All persons selected in the samples were mailed a letter from ACC explaining the research and giving them the chance to advise if they didn't want to be contacted for an interview.

This survey received ethics approval from the ACC Ethics Committee.

As ACC only ever contact claimants once for surveys, withdrawals for previous research may have created a bias in those claimants remaining on the data base. Therefore the sample selected for this survey was checked against all claim data to ensure it was sufficiently representative, which it was.

## Response rate

The response rate was 54%. Only 20% were refusals and this included those who withdrew prior to the survey. Most of the rest were people who could not be successfully reached. To maximise response rates, at least 10 calls were made, if required, to try and reach selected respondents.

## Significance testing

Analyses were undertaken by SHORE (Centre for Social Health Outcomes Research and Evaluation), Massey University. All statistical significance testing was undertaken using SAS. Differences between proportions were testing using chi-square. Differences between means were tested using the Wilcoxon two-sample test and medians were tested using the Median two-sample test.

Any differences reported for sub-groups in this survey are statistically significant, unless otherwise stated.

## Sample description

The table below shows how the composition of the achieved sample of 500 interviews compares with the ACC claimants data base that the sample was drawn from. It can be seen that the achieved sample was a very close match. The survey interviews over-represented dairy and sheep/beef farmers a little, but that was appropriate given the focus of Farmstrong on these sectors.

Along with cropping, the 'cropping/other' category included: deer, poultry, pig, horse, bee keeping, 'other livestock farming' (e.g. goats, alpaca), agriculture and fishing support services (which were mainly agriculture rather than fishing, but excluded shearing as this was the focus of a different initiative from Farmstrong). Other categories not included were: forestry, fishing, hunting/trapping. Those who grew grain in addition to sheep/beef were included in the sheep/beef category. Horticulture/Viticulture included nursery/floriculture and horticulture contracting and labour services.

As with all the tables, numbers may not add to 100% due to rounding.

	Survey N=500 %	ACC claimants (17,547) %
<b>TYPE OF FARM</b>		
Dairy	39	33
Beef/sheep	32	27
Horticulture/Viticulture	10	13
Cropping/Other	19	27
<b>MONTH OF INJURY</b>		
January/ February 2018	20	19
March/April	17	18
May/June	13	16
July/August	18	17
September/October	17	16
November/December	16	14
<b>REGION</b>		
Northland/Auckland	8	10
Waikato/ Bay of Plenty	29	27
Gisborne/Hawkes Bay	10	11
Southern North Island	16	16
Canterbury	15	15
Otago/Southland	16	15
Other South Island	6	6
<b>GENDER</b>		
Male	80	79
Female	20	21
<b>AGE</b>		
Under 35 years	27	28
35 years and over	73	72
<b>ETHNICITY</b>		
Māori	7	8
Non-Māori	93	92
<b>INJURY DIAGNOSIS</b>		
Laceration/puncture/sting	20	21
Soft tissue	64	61
Other	16	18
<b>INJURY SITE</b>		
Finger/thumb	10	10
Hand/wrist	8	8
Upper/lower arm	8	6
Shoulder	10	8
Lower back/spine	14	15
Knee	10	9
Other	34	38
Unobtainable	6	6

The following measures did not have ACC data for comparison.

	Survey N=500 %
<b>TIME SPEND WORKING ON FARM</b>	
All/most	69
More than half	15
Up to a half	15
Don't know	1
<b>ROLE ON FARM</b>	
Farm owner/ part-owner/ lease holder	43
Sharemilker/ equity partner/ contract milker	8
Manager	12
Assistant manager	8
Full-time farm worker/ shepherd	11
Part-time farm worker/ shepherd	5
Other	5
Not answered	8
<b>NUMBER WORKING ON FARM</b>	
One	13
Two	30
Three to four	28
Five to nine	17
Ten or more	9
Don't know	3

## APPENDIX B: OTHER EXAMPLES OF HOW ASPECTS OF DIMINISHED WELLBEING IMPACT INJURIES

These examples are additional to those included in the main part of the report.

### Having too much to do and not enough time

*A farmer felt under pressure to get a bale-feeder repaired so he could feed his stock. To get the shaft off the bearing he was hitting it with a sledge hammer and a pin broke and went into his leg, which resulted in a big fever and the leg hurting for six months. He described himself as having 'six months of stressing out' as he wasn't able to feed his stock. He felt that, if he hadn't been stressed at the time of the injury, he probably would have approached it in a different manner.*

*A farmer, who was rushing to put up a break-fence in the rain, slipped on a waratah standard, got a shock from then grabbing an electric wire and hit her head on a tree root when she fell. She was probably unconscious for some time (estimated at three hours) and was thought to be at risk of hypothermia when she was rescued. She was working by herself and rang for help when she became conscious. She had two days off work.*

*Instead of drafting it out, a farmer tried to read the number of a cow with a missing tag when it was in being milked. He slipped coming back down off the bars and smashed his elbow on the bars. When he took the short cut he was conscious of all the other jobs that still had to be done after milking.*

*A head cut resulted from a farmer trying to trim a ram's feet in the crate on the back of his ute, when he should have taken it to the yards. He realised it was a stupid thing to do in a confined area, but he made the call because of time pressure and fatigue. He 'went straight back to work'.*

### Fatigue/exhaustion

*One farmer had an infected finger from a thistle. He noted that he gets thistles, cuts and scratches on a daily basis and they are not usually a problem. He attributed the infection to being tired and run down. He said they were working 'crazy hours', doing an extra week's work every month. He kept working with the infected finger, which he described as 'really painful' and it 'kept getting knocked about constantly as they were dagging and drenching.*

## Worrying about something else unrelated to what you were doing

*A young woman farmer, who had the care of others people's children as one of her paid duties, got called up by her partner to fix the hotwire into a paddock where he was concerned about bulls getting out. She took the children with her and was being distracted making sure they did not touch hot wires and finished up cutting her finger when peeling the outer plastic off some wiring. She also thought that if she hadn't had the children with her she would have taken the time to go and get safety gear (gloves) before she went out. This injury was also a product of having too much to do and not enough time. She had two days off work with the injury.*

## Feeling stressed

*A contributor to one farmer's injury was having microplasma bovis in their herd. This created a high level of stress for a period of time while the farmers waited to find out how the authorities were going to deal with it. They then had to watch the whole herd, which they had spent many years breeding, having to go off to be slaughtered.*

*One example was a farmer who had found out the day before that he was being made redundant, so that was on his mind. He considers himself 'professional' but on this occasion made a 'rookie mistake' to get himself in a position where the cow could kick out and injure him. It was an action he did 'thousands of times a week'. It turned out he had tendonitis and 'working with the injury the next day completely set it off'. He needed six weeks off, was in a brace and on anti-flams and painkillers. He understood that if he had got immediate attention he would probably only have been off work for a week.*

## Feeling angry

*A young woman felt anger and sadness contributed to her breaking her back when her horse threw her, after being scared by dogs and touching an electric fence. She had just had a fight with someone and she 'didn't really care what happened' and tried to 'fight the horse and show her who was boss', rather than getting off safely when she could have. She was told she would never walk again, but after eight weeks off work and being in a brace, she 'went straight back to calf*

*rearing'. She has continued to need physio and acupuncture for three years.*

*A woman farmer who was feeling frustrated and angry that the sheep were being extremely difficult (she used more vivid language) and the dogs were not listening, tripped over a rock and rolled 100 metres down a hill through very prickly foliage. Her partner had also been angry and his anger had been making her angrier as well. Rushing to beat night fall was also a contributing factor.*

## Feeling unappreciated or under-valued

*One farmer commented that all farmers feel unappreciated, because they are 'the whipping boy' on environmental issues - 'the government don't see the follow through effect of their policies'. This same farmer also felt undervalued because of the low returns for doing so much hard work and carrying so much responsibility.*

## Challenges with important relationships

*One farmer found it challenging working on a farm owned by his father (who lived elsewhere) and this contributed to his injury. (No further details are provided for confidentiality reasons.)*