



Expectations of Pastoral Animal Shelter among farmers, Stakeholders & the general public

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Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz
Telephone: 0800 00 83 33
Facsimile: 04-894 0300

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Barriers to the adoption of animal welfare standards: shelter on pastoral farms by MW Fisher, W Stockwell, A Hastings, JIE Brannigan, CE Lyons, and P Timmer-Arends (2019) *New Zealand Journal of Animal Science and Production* 79, 37-42.

It is available at <http://www.nzsap.org/system/files/proceedings/barriers-adoption-animal-welfare-standards-shelter-pastoral-farms.pdf>

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1 Background and objectives

1.1 Background

MPI considers that pastoral animal shelter remains a ‘stubbornly unchanging’ challenge, despite several decades of animal welfare initiatives. While most farmers, and the general public, believe in the value of shelter, there is a need to better understand the psychology of management change and social expectations, to develop tailored solutions.

MPI believes that everyone has their own definition as to what the problem is or whether there is a problem. While there is the expectation that shelter is provided, this is not always happening on-farm to those expectations. Why does one farmer plant shelter and another not? While guidelines may say that animals must have enough shelter to maintain good health, what is adequate or good?

MPI need a strategy to deal with pastoral animal shelter. To this end they wish to understand and map the range of expectations, and determine options for, if and where necessary, shifting expectations. While MPI is of the opinion that something needs to change, they want to understand if there are good arguments not to change, or if things need to change. There is recognition that there may not be consensus. It is not just about farmers but about understanding different perspectives, and there may be a need to address unrealistic expectations of non-farmers.

MPI commissioned Nielsen to look at the issue of pastoral animal shelter and expectations and the barriers to providing (adequate) shelter from the perspectives of stakeholders, pastoral farmers and the general public.

1.2 Objectives

The overall aim of the research was to identify the factors affecting the expectation of greater provision of shelter amongst those with an interest in the main pastorally farmed animals (sheep, cattle and deer) and understand the reasons why those in charge of animals are not establishing additional shelter on their properties, or why there are expectations that more shelter should be provided, by identifying factors which act as drivers or barriers the provision of shelter. The perspectives of three audiences were explored, namely stakeholders, farmers and the general public.

Stakeholder consultation explored:

1. Views on how much shelter should be provided for agricultural animals. This includes consideration of why shelter should/should not be provided, their reasons, what the range of practical options are, and the main challenges involved.
2. Views on why there is variation on the level of shelter that farmers are prepared to and/or actually provide and the main barriers to (greater) shelter implementation.
3. Ways of influencing farmer behaviour.

Farmer interviews explored:

1. Attitudes to pastoral animal welfare generally and to pastoral animal shelter in particular, identifying how farmers prioritise it.
2. Triggers and barriers to the provision of shelter.
3. Ways of influencing farmer behaviour.
4. Who farmers most trust to deliver messages relating to pastoral animal shelter.

5. The role farmers would like MPI to play in relation to pastoral animal shelter.

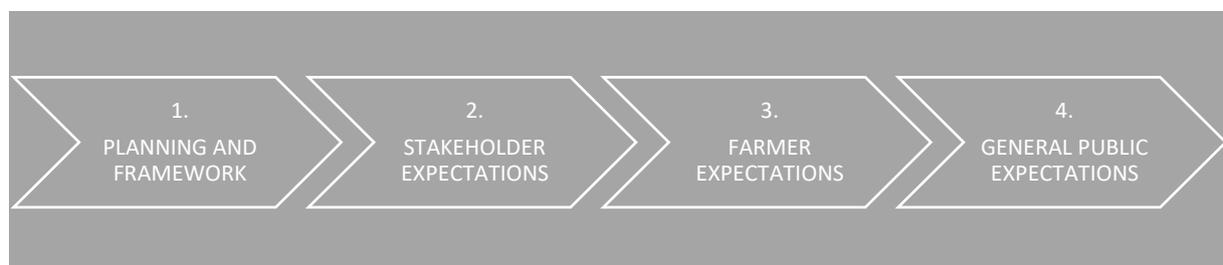
General public survey:

The general public survey addressed the following questions:

- To what extent are New Zealanders concerned about animal welfare (compared with other issues)
- To what extent are they concerned about pastorally-farmed animals versus domestic animals versus wildlife?
- How important do they perceive each of the following to be for the welfare of pastorally-farmed animals (food and water, shelter, allowing expression of normal patterns of behaviour, appropriate physical handling, protection from and rapid treatment for injury or disease)
- How would they rate our current performance in terms of how we care for our pastorally-farmed animals in each of these areas?
- If they rate us as poor on providing adequate shelter, why is this?

1.3 Study approach

A staged approach was employed for the project. The stakeholder and farmer components were qualitative in nature, while the views of the general public were assessed via a quantitative survey.



1.4 This report

This document provides detailed findings for all audiences.

- Findings for stakeholders and farmers are presented together to provide a comparison of similarities and differences. Quotes, narratives or verbatim responses are included for both farmers and stakeholders as they provide a tangible sense of the issues from both perspectives. Farmer verbatim responses include identification of farm type and location without compromising confidentiality. Stakeholder responses have no identification to minimise the risk of interviewees being recognized.
- Results for the general public are included near the end of the report (Section 13).

2 Who we spoke to

2.1 STAKEHOLDER INTERVIEWS

MPI and Nielsen agreed the different stakeholder groups to be included in the study, and MPI provided names of people willing to be interviewed. Nielsen qualitative researchers with a working knowledge of farming in New Zealand, contacted and interviewed the following stakeholders during the period 10 April to 4 May 2018.

A total of 22 stakeholders were interviewed: with three group interviews (2-4 participants) and the remainder individual interviews. A few interviews were conducted by telephone, with respondents being sent a summary of the question topics in advance.

STAKEHOLDER TYPE	ORGANISATION	NUMBER OF RESPONDENTS
Industry Sector	Deer Industry NZ - Producer Manager, Quality Manager	2
	Beef & Lamb - Technical Policy Manager	1
	Dairy NZ – Consultant	1
Corporate	Landcorp – 1 Dairy Business Manager, 3 Farm Managers	4 (as a group)
	Alliance Meats - Key Account Manager	1
	Fonterra Farmer Relationships, Vet Risk	2
Farmer Representative Bodies	Federated Farmers – 2 Sector Policy Advisors, 1 National Board Member	3 (as a group)
	Farm Forestry - Independent Consultant	1
	Rural Women NZ - National Board Member	1
Māori AgriBusiness	AgFirst - Shareholder and Farm Management Consultant	1
	Whangara B5 Farms - Management	1
Animal Welfare and Advocacy	MPI - Animal inspector	1
	SPCA – 2 General Managers, Inspectorate, Animal Welfare	2 (together)
	SAFE – CE	1

Note: on occasion some stakeholders indicated that their views were their individual perspectives, rather than those of the organisation they were representing. One stakeholder group pre-prepared responses to the topics on the topic guide.

2.2 Farmer interviews

Nielsen staff with a working knowledge of New Zealand farming conducted a total of 24 interviews with pastoral animal farmers across New Zealand. The aim was to cover a mix of farm types across New Zealand to achieve a sample of farmers from varied geographies and topographies and animal species farmed.

Recruitment: The farmers were recruited from Nielsen’s specialist recruitment company, Infield, and also by Nielsen networking. The Infield farming panel consists of approximately 1000 large animal farms spread throughout New Zealand. Infield bought a rural sample from a list broker and contacted people via the list. We recruited most of the farmers from the panel, but it proved difficult to find farmers on the panel who met the criteria in high country Canterbury and were

available to our timing. Networking supplemented the panel to meet sample requirements in this location. Nielsen networking involved reaching out to all colleagues to come forward with any contacts they had (friends, family etc.) to identify farmers.

All the farmers interviewed were screened by a recruitment questionnaire to ensure that they met the required specifications. All those who were interviewed received a koha of \$100 for their time.

Sample: The farm type / region matrix took into account the distribution of farm types across New Zealand (based on Statistics NZ data).

All respondents had total or joint responsibility for decision-making on the farm. The sample was primarily farmer owners, but included two share-milkers. Twenty-two interviews were with male farmers and two with female farmers. The female farmers were working beef farms together with their husbands. Respondents ranged in age from 23 years to 80 years. There was a mix of farm sizes, and a range of times spent farming. All had a range of animal shelter provision and differing self-expressed attitudes to shelter to ensure that we could interview people across the shelter spectrum.

Twenty-one of the interviews were conducted face-to-face on the farm providing the opportunity to see the farm topography and types of animal shelter provided. Three interviews were conducted on the telephone, due to recruitment and researcher travel logistics. The breakdown of the farmer sample was as follows:

REGION	DAIRY	BEEF	SHEEP	DEER	TOTAL
Northland		2			2
Waikato	2	3			5
Manawatu			2	1	3
Canterbury Coastal	1	1	1	1	4
High Country Canterbury		1	1		2
Otago Coastal	1	1	1	1	4
Southland	2		1	1	4
TOTAL	6	8	6	4	24 interviews

While our aim was to interview farmers with a range of attitudes towards shelter provision, inevitably we could only interview farmers who were willing to be interviewed about animal welfare and shelter. As such, they are potentially farmers who may have been more willing to consider the issues and act upon them. We did not interview any hard-core shelter provision resisters, although we did speak to one farmer (a Waikato based dairy farmer) who was sceptical about the need for shelter. Although we did not interview entrenched resisters, the farmers we interviewed were all able to provide a perspective on those who exhibit poor farming practices, based on farmers they have known and / or stories they have heard.

We thank all the farmers who so candidly shared their views and were welcoming and hospitable when we arrived at their farm-house. We also acknowledge that the period during which fieldwork was conducted (15 May to 6 June 2018) was a worrying time as the *Mycoplasma bovis* outbreak was worsening, and MPI announced plans to try to eradicate the disease on 28 May 2018.

2.3 Data analysis and interpretation

Analysis of the rich data set was based on the research objectives and the research respondents' knowledge, attitudes, expectations and farming experiences. All interviews were transcribed.

Each of the three researchers undertook a review of interview transcripts, and observational data for their interviewees during fieldwork, to identify patterns and themes, and to identify supporting evidence and verbatim comments to include in the report.

Researchers held team analysis sessions during which they explored, developed and expanded their hypotheses.

INTERPRETING QUALITATIVE RESEARCH

This report is based on the knowledge, attitudes, expectations and farming experiences of the people recruited to take part in this qualitative research study. Verbatim comments are included throughout the report to provide a rich understanding of the way in respondents spoke about the provision of animal shelter, based on their experiences and attitudes.

Note: qualitative research findings cannot be extrapolated to a quantitative population.

Where individual names were used in verbatim comments, these have been changed to ensure respondent confidentiality.

2.4 General public quantitative survey

A national quantitative survey was conducted among the general public to assess where animal welfare perception ranks relative to other issues facing New Zealand, and attitudes towards the provision of pastoral animal shelter. The general public audience was included in the study in recognition of their interest in animal welfare (albeit not directly involved in farming), and given farmer and stakeholder interest in how animal welfare and shelter practices are perceived by the public.

The quantitative survey was conducted via Nielsen's Online Omnibus. Survey specifications are as follows:

- **Online survey:** the sample source was respondents who belong to an online panel operated by Nielsen's partner SSI.
- **Sample size:** n=700 completed interviews among the New Zealand public aged 15 years and over.
- **Weighting:** While the sample was structured to be representative of the New Zealand population aged over 18 years, results were weighted to the New Zealand population (2013 Census) by gender, age and region.
- **Margin of error:** The maximum sample of error for the General Public survey was plus or minus 3.7% at the 95% confidence level. That is, there is a 95% chance that the true population value of a result of 50% actually lies between 47.3% and 53.7%. The margin of error increases, as the result moves further away from 50%.
- **Significance testing:** All sub-group differences mentioned in this report are statistically significant at a 95% confidence level. This means that the difference is a true difference statistically and not due to random variation.

- **Fieldwork dates:** 23 August to 29 August 2018.
- **Rounding:** Results were rounded to the nearest whole number. This means that in some cases, the results in graphs may not add exactly to 100%.

Note: Media coverage during the fieldwork period: There was television coverage of intensive farming practices, with images shown of cattle in mud during the week of 23 August, and some discussion of the appropriateness of intensive farming on morning television programmes. There is a possibility that this may have heightened awareness of animal welfare issues

3 Executive summary

“My impression is shelter is not assessed on its own merits as a standalone value proposition and that it encompasses two areas. One is animal welfare and the other one is environmental management or impact for which it’s basically just a subcategory that we consider.”

(Corporate Stakeholder)

A general view is that most farmers are trying to do their best and right by their animals. They have an affinity for them and consider that healthy animals equate to good business. This also applies to the issue of animal shelter on farm. Most feel they are providing adequate shelter and are not experiencing any overly negative impacts from having inadequate shelter. Shelter is therefore not the most important issue for most farmers right now.

Based on the exploratory study among farmers and stakeholders, a specific focus on changing animal shelter behaviour across all farmers, is not recommended. Most farmers are aware and support the ideas of shelter, and it is on their list of “future to dos”. Communications to most farmers are a ‘call to action’ to move shelter up the priority list rather than a ‘conversion’ conversation to convince them that shelter is important. The dairy farming sector will require a more explicit ‘conversion’ strategy. Like any strategy to change behaviour if MPI pushes animal shelter too forcefully there is the danger of alienating farmers.

3.1 Drivers for providing shelter

Most of the farmers we interviewed believe they provide decent shelter for their animals and understand its value. The key triggers to providing animal shelter are:

- animal welfare - as understood by the animals appearing comfortable and not in distress from their look and behaviour (for example, cows huddle together if cold, pant if hot, and deer are skittish)
- productivity - higher milk yields, better weights for lamb, beef and venison
- environmental - water management (fencing and riparian planting), soil erosion, biodiversity
- external market demands (e.g. overseas retailer stipulations)
- aesthetics (of natural plantings).

Many considered that their shelter could be better BUT they have other, more pressing priorities - compliance and regulations, financial concerns, fencing of waterways, succession planning, etc. Planting is customised to each paddock and some would value planting advice. Some see man-made shelter as very effective, but tend immediately to think of million dollar outlays (rather than cheaper options such as feed lots and shades) and are discouraged by this expense. There is opportunity to provide more cost effective, potentially mobile, man-made shelter solutions, although man-made solutions do not necessarily fit well with the traditional image of natural green pastures associated with New Zealand farms. Farmers are also put off by issues that man-made shelter creates, such as proximity based illnesses, lameness and effluent disposal.

3.2 Barriers to animal shelter provision

The key barriers to farmer provision of (more) shelter for pastoral animals are summarised below. These are ordered in terms of the priority farmers and stakeholders gave them

Significant barriers

- Financial resources - the expense of putting up shelter but also the on-going maintenance costs.
- Time and resources to put animal shelter in place - most farmers are caught up in the day-to-day running of the farm and shelter gets pushed down the priority of things to do. Planted shelter takes time to mature and farmers (especially older ones) may feel that they will not see the benefit of it.
- Farm productivity - very much associated with the large dairy farms where shelter belts have been removed to enable pivot-based irrigation systems and maximize feed growth.
- Lack of knowledge about animal shelter initiatives being undertaken and the successes - the information may be there, but many are unaware of it, shelter does not get talked about much.
- Difficulties enforcing the lack of animal shelter - what is the definition of animal suffering? Although most farmers are looking for encouragement to provide shelter rather than prosecution which they feel should only be administered to the worst and most stubborn offenders.

Barriers for some

- The farm provides a suitable environment now - many feel that shelter is good enough although they may recognise that there is room for improvement.
- Difficulties in measuring the benefits for different impacts on animals - this is seen to be the case for some who need tangible proof and evidence.
- Lack of knowledge of what is really important to the animal - for a minority and more likely to be those new to farming or those removed from the operation (corporates).

The issue of animal shelter is recognised as a complex one and this needs to be acknowledged when communicating with and asking farmers to review their shelter provision. Across New Zealand, farms have different topography, operations, natural shelter and inclines. Any “one size fits all” or blanket rules and guidelines will be easily dismissed.

Farmers understand the cold and its physiological impact on livestock. It is the traditional shelter issue they have taken into account. They tend to believe that good feeding can help mitigate the adverse effects of the cold in addition to shelter.

There is less understanding of the consequences of heat (particularly extremes and/or prolonged exposure to high temperatures) and the physiological effects on production and welfare (although some dairy farmers did talk of milk yield falling if cows are heat stressed). But there are indications it is becoming a nascent issue, especially when the impact of climate change is considered. There may be value in educating farmers how adequate shelter from the increasing heat enables them to maintain production and is thus beneficial to the business as well as being good for their animals’ well-being.

Farmers have some understanding of the impact of lack of shelter for their animals from a pragmatic perspective. They know about this from experience, by visual cues about how the animal is behaving - putting its energies into survival rather than growth, but generally they do not understand the specific physiological/temperature relationships involved. There may be value in educating farmers about this. Independent research, science and financial analyses could provide a compelling argument as to what difference shelter makes and its value proposition.

Dairy intensification is clearly a major concern in relation to animal shelter provision, not only from the animal welfare perspective, but from its negative impact on public perception of farming practices. It puts cows in unnatural environments. The land in Canterbury, for example, is not considered to be naturally suited to dairy farming and many respondents talked about the planted shelter being ripped out for the big irrigators. There is debate about how New Zealand farmers should return to farm to what the land is suited for.

There is an argument to target dairy, and especially the big operations, first. This is considered the big issue and needs to be tackled head-on with a firm approach. Dairy needs regulation, but also education about the positive impact of shelter on milk production.

3.3 Farmer types and how to influence

We have identified six types of farmers in relation to attitudes and approach to provision of shelter from this qualitative research, and have profiled these in section 8. In summary they are:

- **Family Stalwarts** - generational farmers steeped in heritage and tried and trusted practices
- **Holistic Front Runners** - trailblazers adopting innovative practices
- **Newbies** - on a steep learning curve regarding all aspects of farming
- **Profit is King** - chasing the dollar and driven by profit alone
- **Strugglers** - those who are not coping financially and may be suffering mental health issues
- **Cowboys** - those cutting corners

It is apparent that Family Stalwart and Holistic Front Runner types are acting positively in relation to shelter provision. The Cowboys and the Profit is King are most likely to compromise on shelter or sacrifice it for maximum profit, and regulations and enforcement may have a role here. For the majority and amongst non-dairy and the Holistic Front Runners and Family Stalwart types, a suggested approach could be to acknowledge the good work being done in terms of shelter provision, and encouragement to do more, with education where relevant. Farmer mentors, sharing success stories, dissemination of information through discussion groups and farmer publications/online could all be considered. The emphasis should be on collaboration, positivity with practical guidance and recommendations about appropriate planting.

3.4 Role of MPI

MPI is seen as a large conglomerate that is bureaucratic and somewhat divorced from the realities of day-to-day farming. MPI has lost a degree of credibility in the current *Mycoplasma bovis* crisis, because it is thought to have been slow to respond and to have taken a heavy-handed approach to managing the outbreak. MPI needs to tread carefully in the current climate.

Working closely with farming and industry organisations and bodies such as Dairy NZ, Fonterra, Beef and Lamb, Deer Industry NZ and Federated Farmers will be important for success. Ideally, it is these

who would be the main vehicle for delivering messages relating to shelter. These stakeholder groups are trusted and have the relationships with farmers, so farmers feel that they understand them better and are more receptive to messages from them.

In conclusion, most farmers consider they are doing what they can in regard to shelter. The conversation with farmers should focus on the multiple reasons for and benefits of providing shelter within a holistic farm ecosystem rather than in isolation. Animal shelter conversations are better managed as part of environmental management considerations and in the light of market expectations.

4 General perspectives of farmers and stakeholders on pastoral animal welfare and shelter

INTRODUCTION

This section of the report focuses on where pastoral animal welfare and shelter sit in farmers' thinking, relative to other farming issues. Section 4.1 looks at what farmers do currently and what they plan to do, 4.2 looks at stakeholders' perspectives of farmers.

4.1 Farmer perspectives

Farmers talked about what was most important to them currently because we asked them to. Trying to run a profitable farm or to just make a living lies at the heart of this, and having financial stability is a key goal. Many are focused on debt repayment and related dealings and pressures from their banks. Much thought is given to stock and pasture management, driven by the belief that a good approach reaps rewards for the farming entity. Some talked about always seeking to farm better and looking for ways to enhance their operations. This might include continually assessing what is done on the farm and refining practices, soil fertility and stock production. Property maintenance and improvements take up time for many. Those with staff talked about the difficulties of attracting and securing good workers and being able to maintain them. Older farmers we interviewed are inevitably thinking about who will take over the farm, so succession planning becomes a pertinent issue. For sheep, beef and deer farmers, supplier audits (ANZCO, Alliance, and Silver Fern Farms) take up mental focus and energy.

Animal health and welfare is a fundamental issue to the philosophy of most farmers we spoke to. They are trying to do their best because it is their living. Most farmers derive genuine and deep-seated satisfaction from their environment and stock. In our view this is partly emotionally driven - though not to the extent of extreme sentimentality. It can be summed up best by the sense of pride that they derive from seeing their stock fare well. Yet it also has a rational aspect to it - most know that contented animals are more productive and they see that good, 'fat' stock weigh more and sell for a better price.

"99% of farmers, I mean, it's their living. They know they've got to do their best they can to try to make a living. They are not going to do anything silly that's going to put their stock at risk in any way because they don't make any money. Nobody wants that." (Sheep, Otago Coastal)

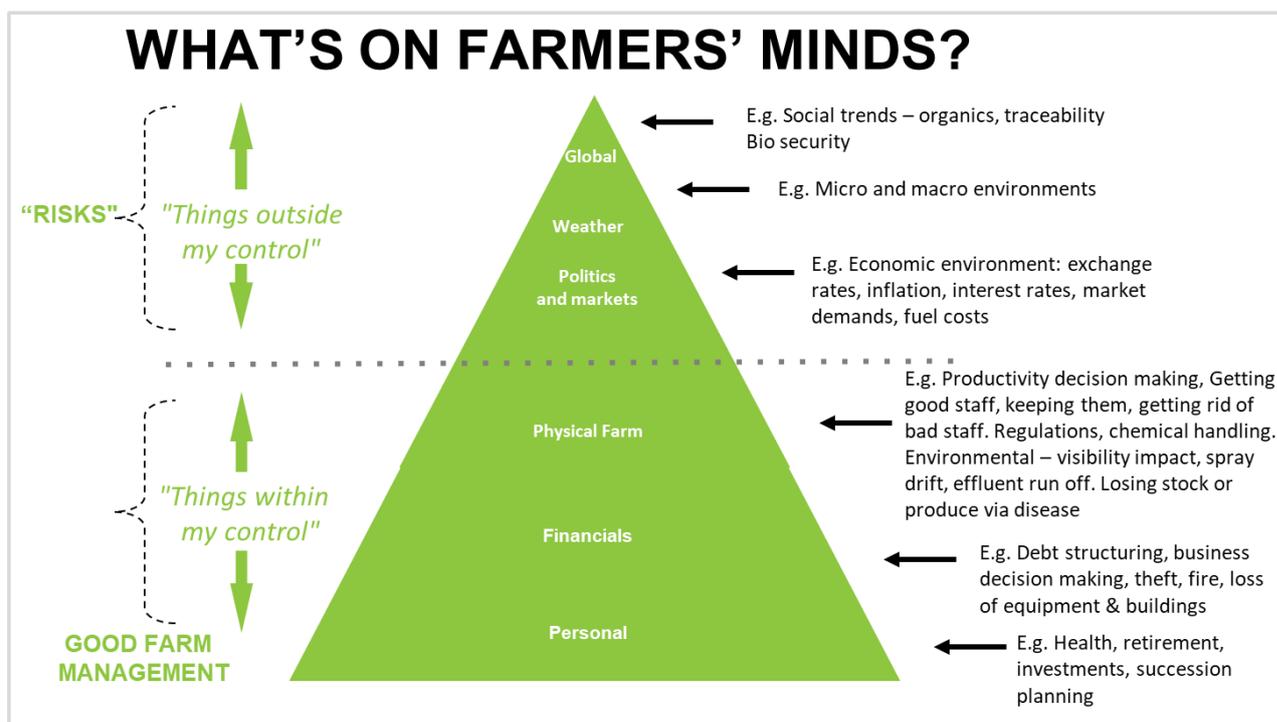
Shelter is a subset of animal welfare. Animal welfare is on most of the farmers we spoke with priority lists. Shelter is implicit but not overtly considered a stand-alone priority by them.

"Pasture management, reserves for winter and all that is dependent on the weather. So when we say stock management we are looking at young stock that might be severely affected by drought. It's a big thing so the whole of the farm is geared around the well-being of the animals. That's why we are here. That's our profitability." (Beef, Northland)

"Profitability, sustainability and I suppose we're looking at the next generation to a degree and trying to create opportunities for our kids." (Deer, Southland)

"My priority is to farm better. It's a continual aspect - refinement, soil fertility and stock production. Setting another generation on the farm." (Sheep, Canterbury Coastal)

Many issues keep farmers awake at night and they tend to fall into external pressures and day-to-day, on-farm issues. While farmers have some control over some elements - or at least can proactively manage them, there are others that are beyond their control that they can only react to as circumstances arise. The following diagram shows the sorts of issues, from those within to those beyond an individual's control.



THE WEATHER AND HOW FARMERS DEAL WITH IT

From our interaction with farmers in this project it became clear that the weather is a top of mind issue for them every day of the year. Whether they believe in the concept of climate change or not, many farmers commented on how weather patterns seem to be changing - long hot summers (no feed to get lambs to weight) and wet winters (hard to feed stock, mucked up paddocks, shearing is messier).

While the farmers who spoke with us appreciate that the weather is beyond their control, we observed that weather forecasts are integral to helping them manage their stock and their farming activities. The accuracy of weather forecasts have considered to have improved. While better longer range forecasts help more accurate stock management, our group of farmers rely on daily (or more frequent) weather forecasts (including specialist weather forecasts). They consider shelter requirements in relation to the weather and most farmers move and rotate stock according to weather and seasonal needs. For example, sheep farmers generally talked about planning shearing according to the weather - either a bit earlier or later if a particularly cold snap of spell is predicted or moving stock to home paddocks if extreme weather is approaching. Some dairy farmers related how they would milk later in the day during high heat to minimise the stress to their cows.

Some of the older farmers' views on and attitudes to shelter have been deeply affected by being caught out by weather events when they were younger. We observed during the interviews how the

loss of stock has shaped their thinking and left an emotional scar that defines their perception of the importance of shelter provision. This is illustrated in the following narrative by an older sheep farmer.

“We came here and took the farm over in July 1973 and in August 1973, one month from the day after I’d taken it, we had 5 feet of snow through here. So the end result of that, we lost a lot of stock, a lot of ewes. The place was overstocked prior to the sale anyway, so we purchased an overstocked property with no shelter in the winter and we lost 50% of the sheep. And about 20% of the cattle. So that was a really defining experience for me as a younger man, 45 years ago. In fact we did learn some experience from shelter which was actually a negative. The end result was that my view of shelter, trees in particular, was very much formed by that experience. The negative aspect of it was the animals were driven in front of the snow and would come to a fence where there were trees and then couldn’t go any further and ended up piling on top of each other and they smothered. So the snow, in a driven snow storm, looked like a gentle descent like this, you actually need permeable shelter that stock can get into and not stop at, because that was what - they’d get the wind behind - this was a southerly, they turned downstream of the wind and walk with the wind behind them, and the snow driving them and then hit a fence and just piled up in the snow. So one of the lessons that I learned out of that is that if you are going to put sheep in particular areas where you get big snow then you need permeable blocks that you can actually let animals in. So we’ve planted quite deliberately, particularly wide creek beds, and river beds are sometimes 300-400 metres wide, so in the event of a snow like that, you’re better just to actually cut the fence and let the animals go through and get into the trees.” (Sheep, High Country Canterbury)

*“Lack of rain means dry pasture and you’ve either got to de-stock or bring in supplementary feed. Rain is the worst thing that brings pasture damage. So that’s what will keep us awake at night.”
(Beef, Northland)*

“The environmental challenge. The weather - drought or rain. Market prices. The government has got us nervous.” (Sheep, High Country Canterbury)

“Listening to that rain and thinking I didn’t expect it so I need to get up quick, early and get those animals off that particular spot because it’s not a good spot for them to be in. So the weather forecast is a huge thing. My husband will look at the weather forecast three times a day, especially if he knows something is coming, if there’s a front coming or whatever. It’s really, really crucial” (Beef, Northland)

“And if we know a bad weather event is coming we will go and shift things around on the flat paddocks and put them in the most sheltered paddocks. Like its part of our snow plan really, so we muster off the blocks, off the hill blocks and then we rearrange things down on the flats. We have special forecasts, quite a few special forecasters that we sign up for in this area. We get Blue Skies Snow Warnings and we are on the Selwyn District Get Ready.” (Sheep, High Country Canterbury)

“In the hot weather we will actually not start milking till 5 at night because it’s cool. And we will monitor, if it’s far too hot to put the cows through the shed we will wait.” (Dairy, Waikato)

“We’ve nowadays got pretty accurate long-term forecasts. You’ve got your daily forecasts and then your barometer. You know, particularly when there’s young lambs and freshly shorn sheep - you plan

it so that the first week after they are sheared they have good access to shelter. Like I've got some dairy cows here grazing now and I knew that the weather forecast was a quite cold westerly so we put them back where they had a beautiful easterly sort of little basin and they could get in there and be as happy as anything." (Sheep & Beef, Manawatu)

"That's a farmer's life. Looking at the weather forecast. I only looked at it twice today. And then you move your animals and shift the animals around due to the weather, prevailing winds and shelter. It's the same in the summertime, because the deer don't like being out in the exposed sun." (Deer, Manawatu)

OTHER CONCERNS

- **Debt repayment** concerns farmers but is managed with financial planning. There are those however, who get overwhelmed by debt and it can lead to considerable stress and mental health issues.
- The **"dirty dairy"** issue is top of mind and a major concern to the farmers we spoke with. They perceive that it gives all farmers a bad name - that members of the public don't make the distinction between poor farming practices by a perceived minority of dairy farmers and the positive principles of most farming people. Many farmers feel that there can be a degree of control though, for example, through initiatives like the Fonterra Open Gates, whereby in December 2017 nearly 40 Fonterra farmers opened their gates to the public. We believe this provided New Zealanders with the opportunity to learn how Fonterra farmers care for the waterways and share what happens on a dairy farm. From the media we have observed the response was so positive that at the time of writing this report Fonterra are intending to repeat the initiative.
- From our discussions with farmers it became clear that **compliance and regulations** are an on-going worry and seen to be increasing, for example, employment, health and safety, bobby calves, fencing waterways/effluent management, etc. Increasing compliance is considered to be forcing some smaller farms out of business, either because compliance requirements cannot be met or because the increasing paperwork is alienating some and they choose to leave farming. Compliance means time, money and paperwork which can impede the day-to-day running of the farm. There is a perception that the government is introducing regulations and policies that aren't good for farmers (for example, tax on fertilizer). The following narratives illustrate their concerns.

"It does bother me. There seems to be more and more regulation coming in. It does just worry me that there's people that are making some of those decisions don't necessarily understand. Like this M Bovis at the moment is a classic example. You've got basically a government department making rules and regulations and not really understanding how it works." (Sheep, Otago Coastal)

"More and more paperwork. I hate paperwork. I'm hopeless at it and it is an ongoing problem. So you've got the health and safety thing and you've got all your QA insurance programmes for animal health and chemicals and it's just more and more paperwork. And NAIT. Everyone who had half a brain knew that wasn't going to work." (Deer, Manawatu)

- ***Mycoplasma bovis*** was a big issue at the time of fieldwork. Considerable concern was voiced about the spread of the disease but also the government's management of it. This has led to negativity towards MPI, which is discussed later in terms of perceptions and any role that MPI might play in regard to animal shelter.
- **The increased importance of NAIT compliance** concerns some farmers, as the following narratives illustrate.

"The NAIT system is never going to be the be all and end all. It's just another whole kettle of fish. I don't think it was designed properly. As an example of the way you see things going you just hope that it doesn't become too hard and people just go - oh, well I'm not going to bother farming because there's so much silly stuff going on." (Sheep, Otago Coastal)

"NAIT. National Animal identification transfer or whatever it's called. I mean, I spend three quarters of a day trying to get my scales, my phone and my computer all linked together. I tried three times before I finally got everything to work. I had to update my phone and then I had to update my scales and then I had to get a cord to plug my computer because nothing is Mac friendly. Generally speaking farmers out back way are asking - how the hell is it going to work? It didn't work in Australia before they entered it into New Zealand, and so I mean it's just another thing. You know you've got NAIT and health and safety and then all your Q. A. programmes which are just more and more audits." (Deer, Manawatu)

- **Market drivers** affect farmers' living being something that is out of their control but very much on their minds. One aspect is foreign influencers affecting what and how farmers produce - overseas retailers for example stipulating how they should farm and care for their stock. Also, amongst dairy there is the never-ending uncertainty of the milk payout/milk prices. And sheep farmers talked about how market prices can yo-yo.

In addition to this there is **public and animal advocacy pressure**. Perception among the farmers who spoke with us was that, while the industry response to this could be better, it could potentially be managed. Many said that the **Urban-Rural divide** is very evident and becoming wider as more people move to towns and links to the land are lost. Some mentioned how there is a lack of understanding of how farms operate. These farmers observed this poor understanding can lead to well-meaning but misplaced interference if the public are in a rural area and see stock that they perceive to be maltreated or suffering. The stance and activities of SAFE are seen to encourage and exacerbate such well-meaning but misguided behaviour. The following narratives illustrate farmers' perceptions of market drivers.

"I think you've got so much urbanisation now that there's a whole demographic out there that don't understand the rule. It's like what you've always heard like years ago a couple of generations ago everybody had a cousin or someone that was a farmer and they all spent their holidays there or whatever and they all sort of understood roughly what happened but I think there's just so many people now that haven't got a clue and then they are possibly quite easily led then into thinking what's happening is wrong or what they see and just don't understand how the farming really works. Quite often what they think looks bad is really quite normal. I know I had a dairy farmer friend, he lives not far from the airport that had just one cow in a paddock, I think they had singled out for whatever reason and they got a phone

call from the SPCA to say they were coming out. And this was on a Sunday because some member of the public had phoned in to say oh there's a cow in the paddock, must be something wrong with it. And they even, the SPCA or whoever it was MPI, they knew it would be nothing in it but they had to respond to it. So you see it's just a great waste of resources and time for everybody and it was just because his farm happens to be close to a main road and he's got to be so careful what he does and there was really nothing wrong at all. The cow was perfectly fine. She was out in the paddock eating grass, just happened that they thought there was something wrong because it was by itself. It's crazy stuff." (Sheep, Otago Coastal)

"SAFE are at the extreme where there's a few radicals who have farmers in for certain things. Most of the stuff I've seen, that they've put on TV, is either old footage that doesn't happen anymore, or its blended footage to make it look a certain way." (Dairy, Otago)

Summary: The farmers that spoke with us have a lot on their minds and are under pressure from many directions. It became clear that farming is becoming increasingly complex for these farmers, often having to factor in unexpected external issues, such as *Mycoplasma bovis*. Animal shelter is not one of their biggest concerns. Shelter, these farmers indicated, is part of good farm management. This small group of farmers do what they can do shelter-wise - but it doesn't keep them awake at night.

ANIMAL WELFARE AND SHELTER

Animal welfare is inextricably linked to **good business** for the farm for nearly all the farmers we interviewed. **Good animal welfare drives productivity and profit.** Most really care for their animals. Working with animals is a key driver for being a farmer (the satisfaction derived from raising healthy, vital stock) and it is their income. They want their stock to be well-fed and well-looked after, which means that pastoral animals have access to the basics - food, water and also shelter - either some, or all of the time. As much as possible it is about the animal being able to lead a natural life. There is fundamental pride for many in New Zealand farming practices.

The farmers we talked to mostly gauge the well-being of their animals by their look and behaviour, particularly by visual cues. They generally know that when the temperature drops, cows for example, will huddle together rears facing outwards, or that when it is very hot and animals without shade will pant and fret. These farmers are mostly not overtly guided by science, and they do not necessarily have knowledge of the specific temperature levels where animals become distressed. In our view there is some opportunity here to use evidence-based science to educate farmers like them about the impact of temperature on physiology, as part of a wider shelter conversation.

"Animal welfare - at the end of the day animals are better off. If an animal is healthy they'll do better, so then it becomes the financial benefit, the payoff from it." (Beef, Northland)

We observed from the farmer interviews that production and productivity are part of animal welfare BUT it was seldom articulated as a separate topic. The following narratives underpin our observation.

"It's the 5 Freedoms, I suppose, as defined by the code. Freedom to express natural behaviour, freedom from pain and stress, freedom from want or lack of food and so forth." (Deer, Southland)

“The whole farm is gathered around the well-being of the animal - this is our profitability.” (Beef, Northland)

“Well, I think animal welfare is probably, it’s one of the cornerstones of any farming operation and you’ve got to have healthy well-cared for animals or you shouldn’t be a farmer really. All your animals have a right to shelter.” (Sheep, Manawatu)

“If you’re not looking after animal welfare then your productivity goes down and your profitability suffers accordingly.” (Deer, Southland)

“Animal health is the next thing. We believe that you’ve really got to look after your animals. They are an animal at the end of the day. They are a living creature so if they are not looked after well then they are not happy. The happier the animals are, the better production you get out of them as well. It’s not just about the money but money is important if you know what I mean.” (Dairy, Waikato)

“Animal welfare. Well, once again, you are cutting your own throat. You can work all year and not do a good job and at the end of the day it’s going to cripple you. You will be gone. You can’t survive so animal welfare is very important.” (Deer, Canterbury)

Farmers mentioned that what the animals need shelter-wise depends very much on the farm location in New Zealand (Northland has a much more benign climate than Southland so the cold in winter is not such an issue), which direction the farm faces relative to prevailing winds, hills, etc, what natural shelter exists (scrub, lee of the hill), the type of system /farming operation and when the young are born. From the discussions with these farmers it became clear to us that there is no single simple shelter solution that will work for every farmer; in fact shelter needs customizing to each paddock. The following narrative illustrates this point.

“No two farms are alike. I mean, our farm is on the north side of these hills so we are protected from the south which is the cold wind. The farms on the other side, they are not, so their situation is way different to mine here. There’s so many variables you can’t put everyone under one umbrella. What might grow in the South Island won’t grow up here, versus in the Waikato. And there’s different soil types. I mean, I’ve got paddocks with four or five different soil types on them and you plant and some trees might grow on them and some won’t. So it’s not one thing that is going to solve the whole package. If they do bring something out it’s got to have a range to be adaptable to different situations.” (Beef, Northland)

There is a general understanding among the farmers we interviewed that the **topography of the farm is the starting point** and that everything else flows from that. There is wide-spread recognition that all animals need some shelter at least some of the time, whether this is natural via wind shields, tree shelter, hedgerows and gullies or man-made via calving sheds, woolsheds, etc. Also, we observed that effective feeding and **management of livestock** can affect farmer perceptions of how much and what form of shelter is required. There seems to be a general view, for example, that in the cold weather, feeding can offset the impacts of the low temperatures.

All the farmers we talked with adhere to the view that shelter is essential in more severe weather - when it is very hot, wet or cold. Some perceive extremes of weather to be increasing, whether or not they subscribe to climate change, and we believe this may have an impact on attitudes to shelter provision.

The farmers we interviewed appreciate the importance of providing shelter, but they also note that just because shelter is available does not mean that an animal will use it. In our view, understanding this could impact farming practices like shearing ewes pre-lambing so that they feel the cold and then seek shelter when lambing. The following narrative highlights this point.

“Cattle do just tend to walk. If you’ve got a southerly blowing they’ll just walk to the most northerly point of the paddock and all huddle in a bunch sort of like penguins, and even if you’ve got good shelter at the other end they could stand behind, they’ll be away at the other end. Same with sheep sometimes to be fair. You can have the best sheltered paddock possible for lambing, yet they’ll go stand out in the middle of it and have their lambs.” (Sheep & Beef, Otago)

We acknowledge that there may be some farmers who are sceptical about the role and value of shelter. But we only met one farmer who vocalised this, his stance being that pastoral livestock are outdoor animals, they can cope with any weather conditions by and large, and that it is uneconomic to provide shelter over and above the farm’s topography.

Summary: None of the farmers we spoke to said that they believe that shelter is unnecessary. However, according to them, there are differences about what form that takes because it is a complex issue with different requirements according to species, topography, location and farming operation and system. Given this, it is important to recognise and be sensitive to the fact that there is not one solution for all when suggesting, advising on or stipulating shelter requirements.

Cold

The farmers who talked with us feel that they, and other farmers like them, are used to dealing with cold, particularly in the South Island. The farmers say that other factors can mitigate the adverse effects of the cold on pastoral livestock for example: **feeding** helps keep animals warm and content, and **shearing practices** - to the seasons, cover-comb and also encouraging ewes to seek shelter. The following narratives illustrate these points.

“Your shearing dates. Obviously, you don’t want sheep with wool on during the summer. And again, you just make sure that they have got somewhere to shade and that’s normally by natural down in the gullies. There’s quite a few farmers would actually shear the ewes what’s called pre-lamb - they’ll shear them, but they’ll leave cover wool and that encourages the ewe, because she’s getting cold at lambing she will go and seek shelter and lamb in it.” (Sheep, Manawatu)

“When they’re out on a cold, windy, snowy, sleety day, there’s not a lot you can do apart from give them plenty of food, so that is your way of managing it. I mean, they’ve got a naturally pretty thick coat and it’s just about keeping the fires burning inside.” (Deer, Southland)

“It all comes back to good feeding. If they are well-fed then it doesn’t really matter as much.” (Sheep & Beef, Otago Coastal)

From the interviews we concluded the farmers believe factors other than shelter come into play with cold temperatures, and shelter on its own is not always so much of an issue to them.

Heat

According to the farmers we interviewed hot temperatures, particularly for protracted periods, seem noticeably on the rise. We observed a sense among them that these hot spells may be due to climate change, because farmers frequently mentioned this spontaneously. Shade, according to them, is imperative in the heat. Many farmers are not aware of any other mitigations for heat stress, although they do talk about stock having access to water, whether this is creeks/rivers or troughs, and some change milking times to cooler times of day, for example. The following narratives illustrate these views.

“Obviously with us being largely a breeding operation, we’re having animals born outdoors and so you know if we can try to feed them and then provide shelter you are doing your utmost.” (Sheep, Manawatu)

“I think with climate change, or whatever you believe about it, the summers are certainly getting hotter and drier.” (Sheep, Canterbury)

“If your animals are fed well in the winter and it’s cold they don’t seem to mind if there’s shelter or not. But you can’t escape the sun in the summer. Sheep in particular really seek the shade. I honestly think shade is the key. You can eat to keep warm but they can’t do anything to stay cool. If it’s hot they’ve got to have shade.” (Sheep & Beef, Otago)

“Regarding minimising effective heat stress. I think that’s still a learning curve. I think that it’s something that people - if climate changes proceed to get worse - I think people will be very conscious of that. And probably it’s one that is not quite promoted enough.” (Sheep, Canterbury Coastal)

Apart from these narratives, one of the deer farmers commented about the problem of stock not being able to access water if the waterways are fenced off and this appeared to be of concern to him. One dairy farmer talked of cows following the irrigator spray in hot weather, and another spoke of hosing cows down in the heat, but these were isolated comments.

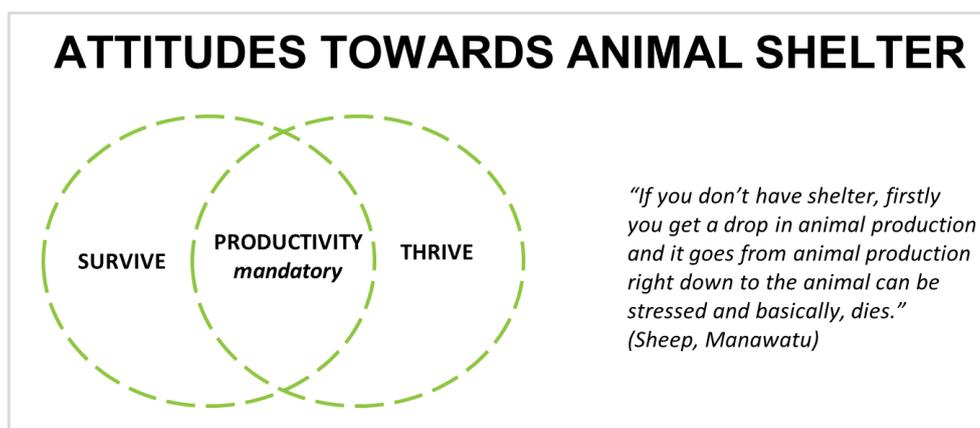
Summary: From our interviews with farmers we conclude that they have focused mostly on shelter from the cold, but they are recognising that protecting animals from the heat is becoming increasingly important. These farmers have linked hot spells that occur more often, with climate change, and the need for shelter with pushing land use to the extremes. From our perspective, some farmers may need educating in ways to manage heat, because the experiences of recent summers have heightened awareness of the problem and provide a good opportunity to raise issues of shelter.

The farmers interviewed all valued shelter for their livestock. However, there are potentially different levels or expectations – shelter enabling animals to survive, maintain productivity, and thrive in comfort. The different attitudes people have, along with the features different regions and farm species impose, and the drivers of agricultural production, make for a complex subject. For example, shelter could be provided by providing buildings for winter though costly and likely to challenge natural perceptions of farming. The next section explores farmers’ views of these aspects – views of

what is adequate shelter for animals in different environments, forms of shelter, and acknowledging the impacts of intensification.

4.1.1 Attitudes to shelter

Farmer attitudes to shelter can be illustrated by the diagram below, focussing on enabling animals to survive or thrive, but productivity being fundamental.



PRODUCTIVITY

All the farmers we spoke with had a positive attitude towards productivity; it is important to them. Why? Farming is a business and in our view that means farmers need to make money. Hence it is plausible to assume that farmers would have a positive attitude towards productivity. The farmers we spoke with focus on productivity and bear finances in mind when they consider the benefits of providing animal shelter.

Although the farmers we spoke with have a positive attitude towards productivity, there was also a positive attitude present towards animals and their ability to survive in nature, by themselves. This attitude we call survive, which is discussed in the next point. Further, we also observed farmers with a positive attitude towards thriving animals, which we call "thrive" and discuss directly after the next point.

SURVIVE

Those farmers who are positive towards the strong ability of animals to survive we describe as being sceptical about providing shelter to animals. In our group of interviewees this attitude was apparent, and we also observed that our interviewees believed that there are other farmers who are sceptical also. In our view sceptical farmers may not be convinced that shelter provision makes a measurable and tangible difference to animal performance. From our perspective there may be a lack of trust amongst such farmers to messages relating to shelter and they therefore may readily dismiss them. We also believe they may mostly react to circumstances, rather than being pro-active. From our interviews we gleaned that providing shelter to animals is typified by trial and error. The farmers we interviewed typically believed farmers with a sceptical attitude, or who are sceptic, think that animals belong outdoors and manage and cope in their natural environment without the need for additional shelter provision. Further, in our view it is only in the most severe weather that those sceptics may feel the need to consider shelter, and even then they are probably unlikely to take action; we also believe they are not proactive. We believe some of these sceptics may want to be left alone and not hear about animal shelter provision. Even though productivity is important to

farmers that are also sceptic about providing shelter to farm animals, the sceptics could be failing considerably in this regard because their stock are stressed by heat or cold without them realising it. We believe such farmers will ask for proof of the positive effects of shelter.

THRIVE

From our observations those farmers we spoke with, who focus on their stock thriving, were particularly motivated by the notion of contented stock. In dairying farmers call contented thriving animals “happy cows”. In our view, farmers with a positive attitude towards animals that thrive will probably value the natural life of, and natural environment for their animals, and they might also seek to enhance animals’ environments with planted shelter if they believe it would be beneficial to animal well-being. The farmers we spoke with, that were positive towards thriving animals also believed shelter provision could have a positive effect on productivity. These farmers also drew satisfaction from raising healthy stock that have good access to shelter. We believe farmers with a positive attitude towards thriving animals could be inclined to forward planning, proactivity and continual improvement. We also believe a positive attitude towards thriving animals could be associated with a positive view of sustainability and a sense of pride and a motivation to succeed and contribute towards a healthy farming community.

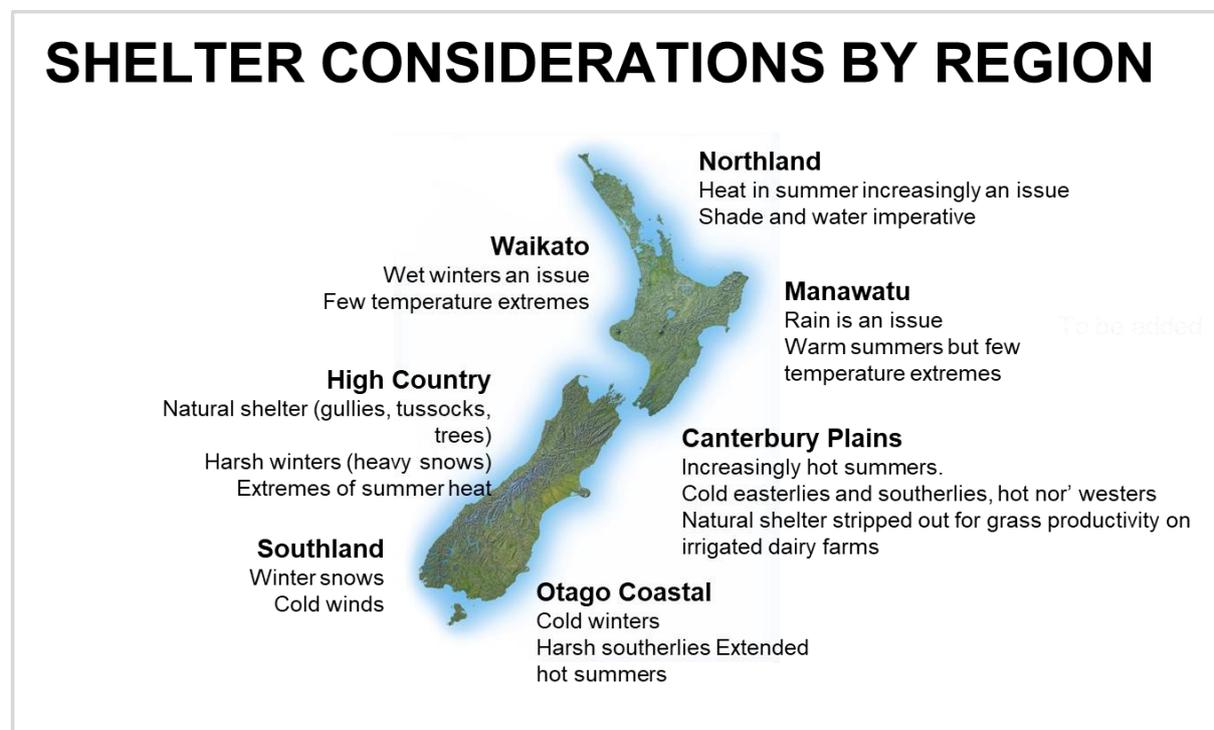
LEVELS OF COMFORT

The farmers we interviewed believe the adequacy of shelter is measured by the degree of animal comfort. It became clear to us that they consider that they are doing enough and that their animals are comfortable. They called it “good animal husbandry”, between the extremes of neglected and pampered animals, as illustrated in the following table

STRESSED <i>Abuse and neglect of stock</i>	DISCOMFORT <i>Distressed stock</i>	TOLERABLE <i>Mostly satisfied stock</i>	COMFORT <i>Contented stock</i>	PAMPERED <i>Happiest stock but possibly indulged</i>
<ul style="list-style-type: none"> • No shelter • Basic survival • At its worst - death 	<ul style="list-style-type: none"> • Some/intermittent shelter • Prolonged periods with no or limited shelter • Underweight and loss of production • Degree depends on duration and intensity • Perceived to be intensive dairy 	<ul style="list-style-type: none"> • Shelter when needed • Stock coping well • Acceptable weight and production 	<ul style="list-style-type: none"> • Shelter available all or very much most of the time • Stock doing very well • Good weight and production • Sense that majority of NZ farmers fit here 	<ul style="list-style-type: none"> • More shelter than necessary? • Totally animal-centric • Perfection • But how realistic?
Total lack of animal husbandry	Minimal animal husbandry	Reasonable animal husbandry	Good animal husbandry	Idealised animal husbandry

4.1.2 Shelter consideration by region and species

The climate of New Zealand varies from region to region which gives rise to different considerations and issues, and the farmers we interviewed said these consideration and issues impact on farm animals' shelter needs and requirements. The considerations and issues by region listed above are based on these farmers' and stakeholders' inputs.



We also analysed what farmers (and stakeholders) had said and how they described the risks to farm animals for each of these regions. In the table below we summarise their perceived main risks for three species based on the insights we gleaned from our conversations.



LESSER NEED		GREATER NEED
DEER	CATTLE	SHEEP
<ul style="list-style-type: none"> • Less about shelter due to their ancestry. • If well-fed than seen to be able to cope with the conditions. • Natural behaviour - make wallows • The key thing is to separate males from females - rutting. • Fawns born in November when the climate is mostly benign. <p><i>“They calve in mid-November, so the weather is generally pretty good by then” (Deer, Canterbury)</i></p> <ul style="list-style-type: none"> • Fawns need shelter during the 1-2 week period in which they usually hide - in tussocks etc. • But vulnerable to stress • When they are stressed their behaviour is totally unpredictable. 	<ul style="list-style-type: none"> • Calves in sheds and calving homes. • Bull calves first 8 weeks in a shed • Evidence of discomfort in bulls when they pick on each other and fight • Dairy calves housed for first 3 months in shed. • Angus a bit hardier than Friesians. • Huddle together with bums out when cold so know need to move them. • Hose down in the heat. • Milking later in the heat. 	<ul style="list-style-type: none"> • Lambing is the crucial time • Some provide woolshed for lambs – may not be common and widespread but a couple of farmers referred to. • When just shorn – held indoors if storms. • Identify ewes carrying twins/ triplets and farm them indoors/closer paddocks. <p><i>“The triplet ones, if the weather is going to be rough, I’ll actually run them in or land them inside the shed so they are out of the weather.” (Sheep, Waikato)</i></p> <ul style="list-style-type: none"> • Grown sheep are relatively tough though - except when having lambs - they can cope with a lot more. • Merino are hardier - better suited to South Island high country.

Additionally, we gleaned insights into how the interviewees perceived man-made structures and planting practices for enhanced animal welfare. These perceptions are discussed below.

Man-made Structures

Views among the farmers we spoke with are divided as to whether man-made structures are the best form of shelter, or whether they are the antithesis to “natural” New Zealand farming. These farmers were generally proud of the naturalness of New Zealand pastoral farming and said it is seen as renowned, respected and admired by much of the rest of the world. We observed that their views were not similar on this topic. There were two main perceptions. They either consider man-made structures - barns especially – as the gold standard because of the level of shelter they provide, plus other benefits such as saving pasture and maximising feed. Or, they consider man-made shelters as counter traditional, against outdoors farming practices and are akin to factory farming. Interviewees who are against man-made structures also say these structures can lead to other animal welfare

problems such as mastitis, lameness, proximity diseases, and waste and effluent disposal issues. So, they did not consider man-made structures as a perfect solution. In addition, to this these farmers said these man-made structures are expensive, which is a significant barrier for farmers. The following narratives explain these perceptions.

“In an extreme weather event, after shearing, we can put shorn sheep back in the woolshed so there is cover there.” (Sheep, Manawatu)

“There’s a lot of places now putting barns on and there’s other benefits than just shelter. You’ve got pugging and stuff for paddocks so when there’s winter weather you can bring them in and save your pastures and so you’re maximising your production in pasture but not wrecking them in those adverse effects. At the same time you’re giving your cows better shelter - you can feed there so you can maximise the feed that you’re feeding out. If you feed out on a wet day, you’re probably - the cows are probably walking 40% into the ground and not eating, so you’ve got the feed out that much more. So in the future, I can probably see that there’ll be more and more farms that do put types of sheds and different standoff pads and shelters and stuff.” (Dairy, Otago Coastal)

“What stops me building artificial shelter? I guess you have to be honest and say the financial side of it. And you’ve got to ask yourself - do you really need it? You’d have to quantify the financial cost of the so-called lack of shelter if you had lack of shelter. In those Northern Hemisphere winters the farming is a lot colder than here. The downside of those shed scenarios is you are heading towards a sort of factory-type farming.” (Sheep, Manawatu)

“We’re about it’s not ideal to put up a shed. It’s been a long-held ambition. We’ve in the past put stock on wintering pads under trees which served its purpose but it’s not ideal. A shed is going to keep them a lot drier and warmer even than under the trees. It’s a roof with a shade-cloth windbreak types sides on it so they will be out of the wind.” (Deer, Southland)

Planting Practices

We observed that interviewees that are positive about shelter in the form of planting, and those who have farmed for generations, seemed more inclined to plant as a matter of principle. Planting shelter for them appeared to be part and parcel of running and maintaining the farm. In our view, because there is currently no incentive to plant animal shelter, this practice could easily drop off the radar for a while. We believe this may be an issue particularly if other issues arise. In our view, based upon what farmers said to us planting may be for shelter, but not exclusively so. Farmers indicated that the prompt to plant may be external like erosion control, environmental considerations, management of waterways (riparian planting) and internal, like planting for aesthetics. Farmers we spoke to, who plant for animal shelter appear to be putting considerable thought into what to plant. They talked of moving from pine (quick to establish but blow down) and macrocarpa (toxic), to manuka, bulrushes, flax, willow, leyland cypress, toi-toi, beech, and poplar. Also, we observed that they were conscious that planting practices involve a mix of taller and low level shelter. While the farmers we spoke with perceived that irrigated dairy farmers are notorious for poor shelter provision and reversing the positive effects of planting, they acknowledged that some irrigated dairy farmers are actively replanting what has been stripped out. For example, they pointed out how a pivot irrigated dairy farmer based in Canterbury was planting low level hedges and low growth trees, both for animal comfort and better milk yields. The farmers we interviewed also talked about dirt and infections being an issue in planted tree areas - sheep and fly-strike especially - so they may move stock to more open paddocks when required. There was minimal to no awareness of NZ Farm Forestry Association resources among the farmers interviewed. In our view, the key question is how

to encourage all farmers to consider long-term planting strategies? The following narratives illustrate some of the points we made above.

“There is some plantation planting that has been done and we also planted willows for erosion control which provides shade and shelter. And we’ve done quite a bit of riparian planting. I guess sometimes in plantation situations you do see that sort of the big shade area which can become quite a sort of dirty area. It can be an area where sheep can pick up infections. There’s that perception. Some trees can be a bit toxic like macrocarpa and it’s really bad for pregnant cows. It can cause an abortion.” (Sheep, Manawatu)

“I planted lots of shelter and forestry blocks and I have done heaps of fencing and cropping... Deer are such a flighty, finicky animal and they are very exposed to the weather. I was told by my father - you don’t want to plant those dirty old pine trees. It’s very easy to plant a little pine tree. They soon grow into big ones and fall over and make a hell of a mess. At the end of the day it’s better to plant natives or shelter that doesn’t need trimming and doesn’t fall over. You plant a native. I mean they take a long time but then they are just there, just ticking away forever. Pittosporums and mahoes and five fingers and cabbage trees.” (Deer, Manawatu)

The interviewees also talked about how they currently provide shelter to their animals. This is discussed in the next sections, for each of three farming systems.

4.1.3 Current shelter provisions

Dairy

From our conversations in the Waikato, Northland and Manawatu it became clear that trees, hedges, shelter belts are plentiful. From our interviews there appears to be a lot of animal shelter that participants considered as good or adequate. All the farmers we spoke to talked about how they are planning to plant more when they have the funds available. During our farm visits we saw evidence of some man-made shelter in the form of sheds and barns. But, in some cases the primary driver of these man-made shelters was to protect the feed bins and get rid of water rather than for animal welfare purposes as such. On the irrigated Canterbury Plain farm that we visited, shelter had been removed to accommodate the centre pivots. However, the farmer was now planting lower hedges that the pivot can go over. In this case the driver was animal welfare and increased productivity because cows are less stressed. One dairy farmer made the following remark.

“This farm has got a reasonable number of trees but not every paddock has trees in it. And we’ve got hedges that they will line up against too.” (Dairy, Waikato)

Another dairy farmer said the following:

“It’s about having somewhere they can get out of the sun or out of the weather. In terms of shelter we took all the hedges out when we converted and put the centre pivot in, but we have well-established hedges and we put in a lower set of hedges that the pivot can go over. All the young stock up the road at the runoff that we lease has excellent hedge or excellent shelter. It’s got shelter that’s right round every pivot. Great shelter belts right round.” (Dairy, Canterbury Coastal)

Sheep and Beef

In the group of farmers we interviewed there was a mix of hedges, tussocks, gorse, flax and trees providing shelter. We heard comments about how the topography of the land limits what could be

done in terms of planting. However, interviewees also indicated that the same topography (such as gullies) could often provide natural, in-built shelter. The woolshed was seen by participants as invaluable at lambing time. Other man-made structures were also used when needed, like shearing or woolsheds and hay barns, if animals are sick or need extra attention. Farmers talked about having planted trees to suit different soil types - such as willow by fenced creeks, or pine trees in open paddocks. Planting was often planned and considered by the interviewees. For example, one farmer had lost many lambs in the past and recognised that insufficient shelter was not good for business. The following narratives illustrate some of the points above.

“We’ve got sheltered gullies. We have some planted hedgerows because we identified a windy plateau and have planted up.” (Beef, Northland)

“All the paddocks on our farm have shelter of some type. It’s one of the advantages of being on hill country, particularly this type of hill country as we have areas on the farm that will be sheltered from any direction and we’ve got quite a bit of manuka and sort of native type trees in the steeper gullies which create natural shelter.” (Sheep, Manawatu)

Deer

The deer farmers we interviewed talk about natural gullies, trees and hedging and shelterbelts all providing shelter. One farmer commented on how matsudana willows were a big trend a few years ago but require considerable maintenance and are now falling out of favour. Another farmer was planting trees at the road frontage in order to stop well-meaning but misguided members of the public looking in. Deer farmers, for example, said the following things about animal shelter on their farms.

“We’ve got a lot of shelter here I would say. There’s still scope to put in more but it’s primarily shelter belts that we’ve established. They’re a mixture of poplars, gums but we’ve got a modest number of natives.” (Deer, Southland)

“Shelter is quite a priority. That’s why I planted 25 hectares of trees. 10% of the farm. And I’m still planting. It’s shelter and shade. Just when it’s 30 degrees in the summertime you are checking that the animals have got somewhere... It’s important that deer have somewhere to stash their fawns. They need a bit of cover for their fawns or they always leave them you know in a bit of long grass or a patch of thistles. They’ve got to have cover, you can’t just leave them in a bare paddock.... We’ve got gullies and nooks and crannies. Some paddocks mightn’t have shelter belts but at least they have topography.” (Deer, Manawatu)

Levels of shelter provision appear to be good and varied among those interviewed. During those interviews the intensification of dairy farms was raised as a concern too often to be ignored. We discuss this in the next section.

4.1.4 The intensification of dairy

The impact of intensive corporate dairy farming needs to be highlighted in this report, as it was cited time and again by farmers who spoke with us. They felt very strongly that dairy intensification is the major contributor to shelter provision being compromised. Interviewees acknowledged that not all dairy farmers fail to provide adequate shelter BUT they believed it is the most likely sector to be

failing. In this regard they mentioned how factors like flat land, more cows on the grass, shelter removed for maximum grass growth, are combined with a strong profit-driven attitude that is linked to increased production rather than animal well-being. The interviewees believed that this is a departure from valued and respected farm practices in which New Zealand takes pride. They also believe it encompasses farming 'against the land' rather than 'farming with the land'. It is seen by the interviewees to be about chasing the dollar rather than adhering to good animal husbandry.

Interviewees discussed how large, intensified farm systems are also often operated by managers rather than owners. This, in their view, can bring separation from the coal-face of farming which creates less of a sense of personal responsibility. Intensification, in their view, is compounded by the fact that these farmers often have huge sums invested and are driven to make high returns. Intensification, interviewees believed, leads to less shelter provision as the land is utilised to the extreme. One farmer, for example, commented that a farm adviser had suggested that he considers irrigated dairy farming in order to maximise productivity. In our view, this signals that there may be a need to communicate to farm advisers as well as farmers about animal shelter and productivity.

However, the interviewees acknowledged that not all dairy farmers compromise animals' needs for shelter. They remarked how non-intensified dairy farmers appear to have good shelter and how these farmers rotate paddocks if not all their paddocks have shelter. It was remarked that some of these less-intensified farms may also have wintering sheds. During our conversations with farmers we spotted emerging practices like lower tree and hedge plantings that accommodate new technologies like pivot irrigators. Overall, based on our interviews, we believe intensified dairy industry practices are a priority for focus. The following narratives illustrate research participants' experiences with and views on the dairy sector.

"We've seen other farmers have virtually changed overnight - got very, very intensive. We've had farm advisers come in and recommend it and it's not for us. It's not for us to see a whole lot of mud or starving animals. Somebody once said to us that you just don't go out and look at your farm but you get staff to do it and then you don't have to see it." (Beef, Northland)

"I just think they are getting, intensification of farming I think is just getting away from what we do best, which is produce top quality produce from grass-fed, reasonably good environmental footprint." (Sheep & Beef, Waikato)

"You stand in a dairy farm and you won't hear a bird. It's just a monoculture. One species of grass and nothing else. I don't think that's responsible land management. They've been allowed to totally intensify those light soils and it was a mistake. We need to say what they need to do - and shelter is part of that, so less fertiliser, less watering, more judicious use of science" (Sheep, High Country Canterbury)

"I guess it's the intensification - particularly in the dairy sector. I don't think it's changed much in the hill country, but particularly the intensive farming operations, when the big dairy conversions were going on, it was almost a scorched earth approach, they would come in and cut everything out and pivot irrigators would go in, production..." (Sheep, Manawatu)

"I had a friend who was in the South Island and their whole philosophy was that they put in a big pivot irrigator and they could basically treble the amount of grass they grew, but it wasn't anywhere

like the cost of buying two more farms. Like it was economic because they could just spend the money, grow the extra grass without buying extra land.” (Sheep, Manawatu)

“Some are introducing lower line species. So instead of having a pine tree that’s 10 to 20 to 25 metres high they’re bringing in the low lying species that might only be 3 or 4 metres high but actually providing a lot of good wind shelter. (Sheep, Canterbury Coastal)

“You have to consider when you drive past some of the very large developed dairy farms where they’ve taken down the trees for irrigation. It’s highly questionable but you do see some of the very good farms that have addressed that by planting flax and willows and things like that. But the shock of having those trees cut down from the landscape...” (Sheep, High Country Canterbury)

4.2 Stakeholder perspectives

“Most farmers try to do the right thing, but there are always a few rotten eggs.”

In this section we first provide an overview of several considerations of stakeholders on the matter of farm animal shelter provision and welfare, and then we discuss the perspectives of each of the stakeholder groups.

4.2.1 Stakeholders' considerations – an overview

Importance of animal welfare and shelter

Perspectives of animal shelter provision were varied, as one would expect of stakeholders with a mix of partisan and welfare and advocacy interests. Most stakeholder groups talked of the fact that farming is a business and so production/productivity are key farming expectations. They generally believe that most farmers are in farming because of their affinity with the land, that they care about and respect their livestock and are doing their best, but that there are a few who for whatever reason, are not committed to animal welfare. Stakeholders generally believe the views of animal inspectors and advocates are shaped in part by what they see in their daily work. Not surprisingly, one stakeholder (anonymous) mentioned how animal comfort factors had a higher priority in the thinking of animal inspectors and advocates.

“Well farmers, I reckon the majority are very proud of the way they treat their stock and their farms and their staff and things like that, so they don't like reading stories of the one percent that aren't good...they hate it when there are negative stories out there...they are out there 7 days a week, you know 10 hour days, trying to do their best and then get scrutiny over what they are doing from people who aren't aware of what to do.”

While considered to be an important component of the overall farming system, animal shelter is not generally considered by stakeholders that talked to us as a standalone issue. They believe it is incorporated into wider farm management considerations. The comment was made that shelter is not a high-profile issue in its own right. Within the sector, stakeholders believed, the conversations are likely to be about animal welfare in the context of the environment, rather than animal welfare. A stakeholder, for example, said:

“My impression is shelter is not assessed on its own merits as a standalone value proposition and that it encompasses two areas. One is animal welfare and the other one is environmental management or impact for which it's basically just a subcategory that we consider. In terms of what that means on our farming scale, a lot of it actually does start with the farm manager and most of it starts with an interest point unless we have an overarching project where we are considering development in those areas and so the likes of the riparian plan that we were talking about.”

Animal shelter provision is a complex matter

Pastoral animal shelter provision is generally considered a complex issue by stakeholders we talked with. They were clear that what works on one farm doesn't necessarily apply to another, because of different topographies, climatic conditions, different animal species and different farming and stock management systems, etc.

From our discussions with stakeholders we identified key factors they consider relevant in the provision of shelter, and which make it a complex matter. These factors are as follows:

- Temperatures and animal stress. Stakeholders we interviewed talked about livestock's physiological requirements particularly the impact of hot and cold temperatures on animals' energy demands. They discussed the ambient temperature range within which livestock metabolise, and the extent to which they are exposed to temperatures greater or lower than these ranges with the accompanying thermal stress. Stakeholders generally believed different genetics mean stock may be better suited to southern regions or to northern regions. They said, although information about animal physiology is published, some farmers may not know this type of detail.
- Species (different animal size, outer/inner coat and physiology). Stakeholders said animals' tolerance to heat and cold varies by species. For example, deer industry stakeholders pointed to the deer undercoat as deflecting rain and providing good insulation against cold temperatures. Specific points in animals' production life cycle of concern to stakeholders are:
 - production lifecycle (in pregnancy, and close to birthing)
 - early days after birth, before suckled - babies and mothers vulnerable to cold (all species, but particularly sheep that are run on more exposed terrain than say, dairy)
 - when newly shorn (sheep)
 - when rutting (deer) through risk of not putting on condition before the winter
- Stakeholders we interviewed also talked about the natural behaviours of animals in the wild. One example mentioned is how deer behave differently than say bovine animals – for example, they wallow and cattle do not.
- Stakeholders mentioned availability and quality of feed as a key factor in animal welfare.
- They identified region as a key factor in the provision of shelter for animal welfare. Regions, they said, have varying climatic conditions, particularly north to south and east to west. They specifically mentioned the following factors:
 - Topographical conditions (hills, gullies, natural vegetation for stock to shelter in). Sun and shade change with the seasons, which an impact on animals' needs for shelter.
 - Geography. Availability of coastal winds, and whether the prevailing winds are hot or cold at different seasons. Also, whether the farm is exposed to (regular) high winds (for example, the highly exposed South Wairarapa hills) which cause wind chill and adversely affect animals' body temperatures.
 - Soil type and propensity to become cloggy mud in heavy rain.
- Frequency of severe weather events (floods, snow, high winds, heat, drought, etc.). Stakeholders had a few questions: Are they one in a 100-year flood or one in five year storms, etc.? What is the duration of the extreme weather, whether snow, rain, heat, cold, wind, etc.?
- Stock management systems. Whether livestock are mobbed for feed demand (for example twin and triplet ewes), or whether stock are spread at a low rate across the farm, affecting ability to move stock quickly in the event of forecast bad weather.

Temperatures, shelter provision and animal welfare

Stakeholders generally considered that the discussion in New Zealand on shelter provision has focused more on the extremes and impacts of cold temperatures on livestock than on heat. With climate change and long hot summers and dairy intensification, there is a sense among stakeholders that addressing shelter provision to mitigate heat extremes and longer periods of high temperatures in the 30s and 40s will become a bigger issue.

The point was also made that it may be easier for farmers to mitigate extreme cold events with extra feed (to replace energy lost through wind chill and thermal stress) than to mitigate hot events. That, stakeholders said, is because there are fewer options in temperatures of 30 and 40°C. They qualified this perception by saying it is particularly the case for dairy, with significant impacts on production - whether milk production or weight gain. Specific mention was made of dairying properties in the Mackenzie Basin, with minimal shade shelter and also of properties on which the cows follow the pivots around to get a shower to alleviate their heat stress. Sheep and beef may be less problematic due to the nature of the terrain they are farmed on, but access to water may still be a problem. One stakeholder hypothesised that heat stress may be more of a problem for bovine stock than for sheep, but this is an area that science can help unpick.

“I know that in Northland cows produce 1.1 of milk solid (units undefined), whereas in the South Island cows produce 2.4 or more. So there’s definite impacts of heat on milk production.”

Interrelationships between on-farm practices and decisions (the issue of interactions between different parts and emergent properties in farming systems)

The point was made by stakeholders that talked to us that mitigation of one condition shelter-wise potentially creates other issues and challenges. For example, having shelter and shade in the certain area on the farm can impact grass production, and lead to more mud in winter and affect waterways. The following narrative illustrate how three different stakeholders illustrated the issues caused by interrelationships.

“Shaded paddocks may not be less productive (grass production) but potentially more dangerous in the wet - as far as getting stuck or sliding off. Production wise in the droughts that we went through in Canterbury in recent years, I’ve got several paddocks with pine blocks beside them. Really good shelter, during the drought that was the only green parts on the farm, stock wouldn’t go there anyway. They wouldn’t eat the bloody stuff, it was a frustrating exercise. But you would think that they would want to be there and eat because of the shade, but I don’t know what it was. I think it just makes the soil sour I suppose.” (Farming body)

“In an extensive farming system what’s achievable in terms of mitigation of extremes of heat and cold has to have some boundaries around it, for example, if you plant too many trees. Herd animals don’t like to be in an environment where there are too many trees and vegetation because their food doesn’t grow that well and it would be worth testing this with the welfare people. But if I was a prey species I wouldn’t necessarily want to be around objects that were ambush sites for predators. Their natural preference I believe is for open spaces rather than confined spaces. Their ability to roam and graze is what they are for and so it’s just not practical

to have too much shelter from a pasture production point of view and it's not necessarily an environment the animals would wish to be in anyway." (Deer sector)

"Another example is in the South Island irrigation farms. Not a lot of trees in those farms, gets pretty hot in Canterbury at times, the west wind's quite cooling although it's a warm wind. So is it better to have no trees at all there, because the only tree you are going to be able to grow is something that's relatively short. So you are creating hedges that are going to stop that wind and airflow, that cooling effect for the cows. It's going to actually make it worse in the summer whereas in the wintertime it is reasonably ok to have hedges because then the cows can shelter behind the hedges. But which is the greater challenge? Actually cows are really good at managing cold but not so good at managing hot so is it better to leave no trees on the Canterbury even though that doesn't look great from a public point of view, where's the shelter for the cows? A lot of extra work.... In some regions, some certain set of conditions, a herd home, a physical structure is probably the best way. In two farms over, with a slightly different environment, slightly different aspect of farm, farm physical contour etc., trees may be the most effective form of shelter. In another environment entirely that is currently in a dairy production system, it may be best that that isn't actually a dairy production at all. But you have to work with what you've got."

(Corporate)

Man-made versus natural shelters

Stakeholders were very aware of man-made shelters, and they came in for a lot of comment. From our discussions it became obvious that everyone was familiar with the use of man-made shelter overseas. Sheds are not considered a perfect solution for New Zealand farming systems, according to stakeholders. They said the use of sheds raise belief system issues in relation to the natural New Zealand way of farming. For example, one farm manager in the group of stakeholders was a strong advocate for herd homes for a range of reasons, like enhanced animal welfare and production, protection from temperature extremes, labour efficiency, and reduced pasture damage in the winter. Other stakeholders were less positive about their use and talked of some of the downsides, including that the building needs to be well-aligned to the wind to avoid wind tunnelling. They believed sheds create potential risks for the livestock because of issues like close confinement diseases, lameness from concrete floors, susceptibility to mastitis, etc., and no proven reduction in lambing mortality rates, and practical management problems such as effluent removal. Sheds are considered expensive by those who do like them. They say the return on investment is not considered proven, and reputationally, they are inconsistent with the traditional, clean green New Zealand farming image. There were anecdotal stories for example, about deer farmers who had put barns in place in the South Island, but who had stopped using them, due to brand image conversations.

The following narratives illustrate the points raised by stakeholders.

"The herd homes have covers that can be pulled down in summer for greater protection from the heat. The feed is placed along the outside. The animals love the herd home and don't need to go outside to graze. They still put weight on in winter - it's warm inside in winter. When it's hot they dodge the heat and prefer to stay in the home. Air circulates. I'm also feeding out in paddock, but the cows can't be bothered coming out. No need to stand huddled, or covered in mud. So I'm not

paying for grazing, it's simpler, labour wise and I'm catching the effluent. Cows are in better condition and it's easy to farm.” (Manager)

“If it's a concrete shed then you've got lameness issues. That's your cause and effect.” (Corporate)

“Being an industry good organisation which focuses on the whole system of a farm, i.e. profitability and everything else, our work shows that building a shelter such as a herd home or covered feed pad generally doesn't improve profitability of the farm. We've also done trials on animal welfare regarding standing on concrete versus wood chip versus 12 and 20 millimetre matting and how long an animal will stand there and go to pasture and how long they stand or sit on the pasture, and documented that work as well. It's showing if you are going to build something like this, 24 mil matting's better than concrete but wood chip's best out of all of them ...Part of our animal husbandry team is looking at shade and shelter from trees and their concern over the risks that have been identified through farms in Canterbury, with the irrigators there and the lack of shade and bush hedges and things to prevent the wind.” (Sector)

“It's not practical for farmers to house stock and we need to be very careful about leaping to a conclusion that housing them would be better for their welfare. Our understanding is that lamb mortalities, lamb survival is no greater in house systems. We'd have major issues with what do we do with effluent. There's building consents. What would that do to our landscape? What would it do to the economics of our farming? House systems require, I mean part of it is a system issue and part of what comes with a house system is feeding out. Now certainly in the beef sector the topography of much of NZ's pastoral landscape is wholly unsuitable for the cultivation of crops that could then be turned into feed even grass. You cannot harvest silage off Gisborne Hill country for silage. You graze it in situ or not at all. So we would face some major constraints were we to go down that road of European style farming systems. It's just simply not doable. There's basically two productive uses for much of the land, the pastoral sheep and beef production or it's forestry and the attendant social consequences of putting NZ into pinus radiata, and the destruction that would do to local communities and the NZ way of life would be immense.” (Sector)

From our observations and analyses there was general acknowledgment among stakeholders that that shelter is not always implemented for animal welfare reasons, but may be a by-product of other drivers such as erosion control. The following narrative illustrates the point.

“There's no set plan or rule because as I said every farm is different, for example some people on the rolling country might plant off parts of the farm that are erosion prone and wet prone. That may be fenced off, it may not but generally in those cases they'd possibly be fenced off and that just happens to be from a management perspective on that particular farm so there's shelter provided as a consequence of that action.” (Farming body)

Next, we discuss the views of each of the stakeholder groups we interviewed on shelter and farm animal welfare.

4.2.2 Sector groups

Industry sector organisations recognise the importance of pastoral animal shelter provision and how it relates to both animal welfare and good farm practices. They explained how animal shelter provision goes hand-in-hand with animal welfare, and that welfare and production are

intrinsically linked. They believe if farmers have good welfare standards, they will have good production standards too. They said if farmers mistreat their animals, the animals won't produce as well. One sector group stakeholder illustrated this point as follows:

"I believe that most traditional sheep and beef farmers do a good job in providing shelter for animals... the use of sheltered lambing paddocks (for cold stress and lambing), the retention of data on paddocks that have higher lambing percentages. Farmers have a very strong incentive to get lambs on the ground alive and keep them that way. They don't like their animals dying. They want to make money... they are a business. But what is also at the forefront of farmers' minds is the care for their animals and the price in being a good farmer. They like to compare themselves with others and so there's an innate care for the animal, financial considerations and then professional pride."

Each sector talked of having voluntary animal welfare codes, which they talked of developing with the assistance of their industry, vets, the National Animal Welfare Advisory Committee (NAWAC), etc. Some include details on ambient temperature ranges in their discussion of shelter options.

Dairy: There are minimum standards for dairy, which, for example, state that calves should be provided shelter, and there is a requirement to minimise adverse weather impacts on dairy cows. Shelter is considered a priority and an important issue among stakeholders that talked to us. Comment was made about regular training sessions held for dairy farmers around the country. This sector group stakeholder said dairy animal husbandry teams focus on the animal side of the farming business and early response teams go on-farm to address any issues. The point was made that animal husbandry teams do consider shelter in relation to good farming practices, and there was discussion around the relative value of building herd homes or covered feed pads. One sector group stakeholder said trials have shown that herd homes do not improve profitability. There was also discussion around wet and cold and ongoing rain and impact on soil, mud, etc.

The following narratives illustrate some the points made about the animal husbandry team:

"We have our own animal husbandry team so they focus a lot on the animal side of things and we've got an early response unit so if there is any concern from the public of skinny cows or anything like that, then we've got a team that will go out to that farm and address the situation and make a plan with the farmer to improve it."

"I think that to the animal husbandry team, shelter is a massive priority. There's a big focus on that side of things. However, the discussion this year from farmers is more around the wet and cold and the ongoing rain. It's definitely become a discussion topic because farmers are seeing that cows are making mud and wrecking paddocks. They can't feed them the amount of grass because they stamp it in and then they can't feed them with supplements because that keeps getting stuck in the soil. Being clay soil just means that as soon as a tractor drives on the soil it will just get stuck."

Sheep and beef: Sheep and beef farming are generally associated by sector group stakeholders with traditional farming systems, and harder country than dairy farms. Sheep were talked about in terms of shelter requirements in the cold, rather than heat. The riskiest time is seen by sector group stakeholders to be the around birthing and potential for newborn mortality due to adverse

weather. The loss of a lamb represents a complete loss of productive and potential economic benefit for sheep farmers. There was discussion of sheep fleece and the impact of shearing times on sheep welfare in inclement weather. Those sector group stakeholders with great familiarity with sheep farming talked of the fact that there is usually a winter shear, regardless of the shearing system used, and of the need to remove the fleece to reduce the risk of animals becoming cast.

Bovine stock were identified as being at risk primarily due to excessive heat rather than cold (with productivity losses through thermal stress).

Deer: Deer sector stakeholders that spoke with us chiefly discussed the physical characteristics of deer and their natural behavioural preferences in the wild – sitting under trees if available, seeking the lee in contoured land in rough weather, and seeking tussock/gorse/thistles as cover for newly born fawns. Apart from particular risks at birthing and the following few days, the rut season was the other critical risk period identified by stakeholders in the production life cycle.

Temperature is also important to stakeholders. Snow cold is not considered by sector stakeholders a real issue given the Northern European origins of farmed deer, and unlike sheep, deer have the stature to free themselves from snow drifts. Invermay work has established that 5 degrees is an important cold temperature – the animal has to redirect energy from growth to survival mode to keep warm. Wet alone is not problematic, due to the nature of the deer coat, but combined wet and cold are more problematic.

Prolonged heat above 28 to 30 degree threshold (as experienced this summer in Wanaka and Mackenzie country) is considered more of a concern than cold (reflecting the Scottish origins of New Zealand's deer stock) particularly for hinds/fawns. At temperatures higher than 28-30 degrees, deer go into survival mode, as opposed to growth mode; access to water supply is critical, although wind may help to keep animals cool.

Deer sector stakeholders believed while gullies may provide shade, there can be a sediment risk if it's muddy. The downside of shade is grasses turning brown, then soil and dust, and then nitrate/phosphate problems could develop. Phosphate pollution is an issue in deer sector.

“Often having shelter in the bottom of the gullies, is not as useful as it would be on the top because deer accumulate in low spots and sit down if there's shelter but it gets muddy and so you've got a sediment risk.” (Deer sector)

One stakeholder estimated 80% of farmers are cognisant and responsible shelter-wise and that bad farmers have generally left the industry. The stakeholder noted that the number of farms is smaller than ten years ago. Stakeholders from other sectors talked of a poor 10%.

4.2.3 Corporates

Animal shelter provision expectations are partly driven by market demands, as well as production and animal welfare considerations according to corporate research participants. One corporate stakeholder talked at length about how shelter is driven partially by market opinion. Marks and Spencer, Sainsbury and Tesco were mentioned as demanding certain standards, of which provision of shelter is one element. The following narrative explains the corporate's view.

“We have a lot to do with Marks & Spencer, Sainsbury and Tesco and they are the driver. They lead it and we’ve worked with them to bring our company standards up to them. Farmers must meet all minimum animal welfare standards as a minimum, such as providing shelter.”

New Zealand farmers have to meet these overseas companies’ standards if they want their meat accepted for supply. Farm assurance and animal shelter is part of the programme. One corporate said their company’s view is that all farmers must meet the minimum standards in terms of the 5 Freedoms and that animal shelter fits into the company values. To them the definition of the provision of shelter is that in extreme weather a farmer can demonstrate that he has paddocks that he can put the animals into with shelter. That corporate’s livestock team go through animal training and animal welfare exercises regularly and so are very knowledgeable about shelter and the physiological impact of provision or non-provision of shelter.

Another corporate talked about how difficult it is to consider shelter in isolation because so many other factors are at play in terms of animal welfare and productivity. They also noted there is a careful balance to be achieved between provision of shelter and other elements on-farm. Their view is that providing shelter just for shelter’s sake can cause other problems for the animal. The whole picture needs to be considered - a system of how the animal is performing on a number of attributes and what needs to be done and whether shelter may be part of this. The following narrative is how the corporate described these animal-shelter interactions and how they impact decision-making.

“It’s about everyone’s definition of what level of shelter is needed for a cow. A cow in Southland during the winter, her coat is a lot thicker than a cow in Northland in the middle of winter just by the fact that she’s in that environment they adjust their own, and as long as she’s well fed, that animal can sustain, they are quite developed, they’ve come from an environment genetically where it was cooler. In going north that heat challenge is one that’s again, if she’s got adequate water and then is shaded enough or does she need more than shade as in as far as are you going to cool her during milking and that sort of stuff so that’s an option that’s been used all around the country. But it’s that definition of what is needed for a cow and every farmer would probably have a slightly different view on how much shelter is needed. And the constraint for most farmers is obviously if they’ve got, a farm that’s got lots of trees and that sort of thing that’s all fine, but if it’s an irrigated farm that they’ve bought and it’s got all the trees cut down, what can they do to mitigate that and a lot of that is just that cost, if you are going to put in a structure of some sort. Just that sheer cost and are you going to get the money back on that, is probably the main constraint for most farmers.

4.2.4 Farmer bodies

“Anyone who farms animals has a pretty good appreciation of the value of shelter on their property.”

Farmer representative bodies expressed varying insights of shelter and the benefits of good farming. Despite not having formally consulted on pastoral shelter, one farmer group considers that animal welfare is important to all farmers and they support good farming practices. If farmers don’t treat animal welfare as a prime concern, then economic outcomes are negatively affected (animals produce less if stressed and there is higher mortality).

Shelter is an important issue, considered primarily in relation to livestock productivity. Animals stressed by either cold or heat do not fare as well productivity wise, with negative economic impact. Shelter is also critical at different stages of the animal production lifecycle (late pregnancy, and for offspring that are particularly vulnerable in the days before and after suckling starts). Sheep are considered the most vulnerable species because of their fleece (making them particularly vulnerable to thermal stress when shorn) and because they tend to be farmed on rougher terrain than beef or dairy.

Shelter requirements depend on the nature of the farm, topography and the location in New Zealand. Most farmers seem to provide some shelter, if not all, then some of the time. Cold is the key issue in the south and some farmers are erecting herd shelters to protect their livestock (although this creates other problems such as potential confinement diseases and market resistance - brand image wise). Cold, both in terms of cold southerly winds, and storms bringing particularly low temperatures, heavy rain and snow create problems. In the north, cold is less of an issue and heat is the more prevalent concern. The need for farmers to be prepared and able to shift their stock before extreme weather hits was considered critical (for example to shift stock off flood plains to higher ground).

What does concern this group (along with other stakeholder groups), is the sense that conversations around animal shelter are being driven by emotive public perceptions based on what the public see of animals, driving along the Canterbury Plains, with limited understanding of the principles of animal physiology or understanding, and the fact that good news stories and successes are not heralded. This concern is illustrated by the following narrative.

“People from overseas think the fact that we don’t bring our animals inside is cruel, there are people here who think taking your animals inside is cruel so it’s that perception versus what the reality is. Also with the increase of social media, the spread of information and the differences in systems, you’ve got people who have gotten involved or engaged with an issue in one country which is an issue in that country and then assumed that all the problems are the same in NZ. But the problems with the US farming system aren’t necessarily the same problems with the NZ farming system but the people opposed to it or with that perception don’t understand the differences in the system so they assume the solutions for the US are the same as the solutions for NZ which isn’t often the case. And a number of migrants and visitors who come to NZ they come from places where the animals are inside quite a lot and they say there should be a tree and a cow or a tree and a sheep and anything less is cruel to the animal. But that’s putting their overseas aspect onto the NZ and they are getting a stronger voice.”

The farm forestry perspective was that farmers could do more in terms of providing natural tree based shelter, and that there is evidence to support the benefits of doing so: namely:

- Animal related: productivity, general animal comfort from shade, reduced temperature stress which enhances productivity, additional feed
- Erosion control and soil management
- Weed control
- Bee/pollination value

- Native birds
- Aesthetics
- Timber
- Potentially Emissions trading, although current minimum requirements mean this would be unlikely.

4.2.5 Māori agribusiness

“It’s an ‘our’ problem, it’s not a ‘your’ problem so let’s fix it. How do we create a culture where people willingly do the right thing?”

“When I hear ‘shelter’ I hear protection from the environment. We are looking after the animals.”

For Māori stakeholders, shelter is intrinsic to farming philosophy – respecting and taking care of the land and the animals. To them it is part and parcel of a holistic view to farming and sustainable farming. But, they warned, providing good shelter takes time, especially on acres of cleared land where farmers are planting trees. Māori agribusiness representatives who talked to us wondered whether providing shelter is about regulation and enforcement or incentive and encouragement. They said if farmers design systems to comply with regulation they may meet the regulation, but may not necessarily adopt best practice. They also believed market signals could send different messages, and then there would be different types of behaviour. They believed everyone has to own the problem and people should avoid “kicking the farmer when he/she is down”. One group said:

“We have a 100% pastoral natural system and everything is done to allow our animals to enjoy the natural environment as much as we can. We point out the opportunities they have to get in to existing natural shelter so hill country is reasonable easy. We do have shelter belts and shade on our flat lands and we try to manage it so that the animals are not exposed.”

4.2.6 Animal welfare

“It’s in the legislation but nothing’s done about it.”

This group of stakeholders believed shelter provision is part and parcel of good animal welfare, but there is no enforcement for inadequate shelter. An inspector who spoke with us considered heat to be the bigger issue, and an increasing one, with climate change. This group believed farmers can mitigate cold by providing extra feed for example, but with high temperatures and relentless summer heat there is no escape for animals in the absence of shade. One of the stakeholders described how farmers could mitigate the effects of cold and heat on sheep as follows.

“Sometimes they’ll machine shear sheep with a cover comb so they leave a fine layer of wool on the sheep so when they go out they’ve still got some insulation. Even with no shelter for cold, as long as you feed the animals, animals in cold can eat up to 25-30% more than their usual daily allowance and if you can keep throwing the food into them, they’ll stay warm. But there’s nothing you can do to alleviate the heat. Farmers are very good in cold events in relation to trying to find shelter for the animals and feeding them, because they know they’ll tip over and die quick if they don’t. They don’t tip over and die, well they could, from heat – but not very often. Occasionally I’ve seen people leave young stock out in pens and gone away – someone was supposed to pick

them up, they haven't, they've got heat stressed and die. Usually adult cows on farms don't die from heat stress but I still believe that they suffer distress. The vet could take blood samples from cows at usual times and then take them during extreme heat, and it would show a rise in cortisol in their blood for stress. So you could clinically do it."

An inspector who spoke with us was of the view that the industry, referring to farmer bodies and main corporate players, need to be on board to get real change on shelter provision.

4.2.7 Animal advocacy

To animal advocates shelter is central to animal welfare and they believe every animal has a fundamental right to access it at any time, and the ability to choose whether or not it wants to use the shelter that is provided. Animal advocates think of shelter in terms of quality of life and the opportunity for the animal to display natural behaviour, and they consider farmers to take a limited view – one of animal survival and health vs. mortality. They acknowledge the complexity of the issue: a huge number of variables - location, time of year, age of animal, quality of feed, and as different species have different requirements - needs to be considered by species, herd, animal. But they consider that animals should live in an environment that suits them, not make animals adjust to an environment to which they are not naturally suited. The following narratives illustrate their sentiments.

"We think shelter should be there to ensure that the animals have a good quality of life, that they have a life worth living and that shelter is there not only to protect from the cold or the heat, but that shelter can be important for the animals to express their normal behaviour."

"I think a lot of farmers think that they already see animal welfare as a high priority, but I think that the definition of animal welfare is quite narrow for a lot of people. It's really focused on health and consequent mortality but not so much about behaviour, welfare or emotional welfare which animals should have as well."

"I think the debate always seems to be on cost and practicalities and how hard it is to put in and how hard it is to change attitudes, to get people to understand that and so on, but I think the science with regards to whether animals have benefited from shelter is quite clear. That they do."

While acknowledging that there are many good farms, animal advocates consider that the provision of animal shelter is inconsistent, and that there are significant numbers of New Zealand pastoral farms that do not have meaningful or substantive shelter. They talked of having substantive research evidence (without providing specific details of this) that lack of shelter is provided to pastoral animals across the whole of New Zealand, with a systematic failing - sacrificing paddocks in the winter, electric fencing and mud, over-wintering with crops, heat stressed animals. The dairy industry was mentioned as the main culprit, in that it is pushing farming into the margins of country that has never been dairy farmed, for example, the Central Plateau and the Mackenzie Basin.

"Dairy farming in Canterbury. We're putting cows where we used to grow sheep and probably should only grow trees but we're putting cows on them. To do that, you've got to water it. To water it, you've got to have sophisticated machinery to water it that requires no trees. So you have cows there that should have shelter, shade, probably more than winter conditions, probably a heat, summer

thing and they can't get any and we expect them to perform to the highest levels of their genetic ability to produce milk."

The regulation construction process is considered to be complex, and achieving usable regulation is difficult. There is no enforcement of the Act and there should be. Their feeling is that prosecutions don't take place because of unwillingness to kick farmers when they are down, and the challenge of getting appropriate veterinary evidence of non-compliance.

"We enforce the law as it is – not as we like it to be. One of the issues with that is shelter is part of the Animal Welfare Act and I would suggest that there are numerous breaches of that provision yet nobody's actually going to do that because it's the scale of that and it would be problematic to investigate or prosecute someone for failing to provide adequate shelter, and I don't think any enforcement agencies currently ready to do that. I would agree that there are instances of this lack of shelter and they're science based. Mine are experience based or practical based. You watch the news and you watch when it happens, when it snows and all the lambs die. It's important. I shouldn't have used that emotive language but that's a breach potentially but also it happens year after year – why? It doesn't happen in Scotland. It happens here and we're supposed to go 'Oh, that's okay, they got caught by surprise. There's nothing more they could have done'. Bring them down from somewhere. The farm should have somewhere where they can accommodate animals in adverse conditions."

"And corners are cut because it's a hard business to farm profitably in New Zealand. No-one's suggesting that it's an easy choice for these farmers and I'm sure that the vast majority of farmers would like to provide all the needs for their animals whether it's purely for production benefit or for the economic margin regardless what the outcome is, would be that the welfare needs are met. But we have a culture across our farming sector where we don't need to meet the welfare needs, we don't need to provide them shade and shelter and it's acceptable and it's not being challenged. No compliance agency's challenged it. It's hugely controversial. It would be heavily defended. It would polarise the veterinary, you'd have experts on either side arguing. It sounds very simple, but to get it to court and to be willing to do it and to get the right evidence to satisfy the evidential sufficiency and public interest test would be difficult."

Looking ahead, animal advocates believe international pressure and consumer pressure will drive change in terms of farmers' provision of animal shelter. They further believe if New Zealand's reputation is going to be harmed then the country's representatives of the agriculture sector or government may be willing to take more action.

5 Exploring the animal shelter spectrum

INTRODUCTION

This section of the report outlines what stakeholders and pastoral farmers consider the gold standard, the middle ground and inadequate animal shelter look like.

5.1 Farmer perspectives

Exploring what is Best Shelter

We explored farmer perceptions of shelter in terms of a gold standard, the middling/acceptable and what they would consider to be inadequate shelter. The following table summarises participating farmers' views of each of these standards.

GOLD STANDARD: Shelter, in whatever form, is available for stock always or most of the time.
<p>This might take the form of natural shelter such as trees, hedges, gullies, gorse, shelter-belts etc.</p> <p>Man-made encompasses sheds, sheltered feeding pads, woolsheds. Barns for cows were mentioned, but noted that these are very expensive.</p> <p>Erecting barns may address shelter issues but can cause other problems such as lameness and mastitis. Also, if they are poorly ventilated this can create discomfort for stock.</p> <p>Some also felt that this was at odds with traditional, outdoors New Zealand farming of which so many are very proud.</p> <p>Wintering barns for Beef and Sheep are seen to have merit, but as with dairy barns, are prohibitively expensive for most of the farmers we spoke to. They talked about how wintering barns cost in the region of \$800-\$1000 per animal to build, plus the ongoing expense of feed (baleage & silage).</p> <p>Many believe that shelter in every paddock is not required for it to be gold standard. Some held a strong opinion that indeed it is not desirable as one needs to have "aired" paddocks as sheltered paddocks can get very wet and water-logged in inclement weather, fly-strike can be a problem for sheep farmers in particular.</p> <p>The practice of rotating and shifting stock ameliorates the imperative to have shelter in every paddock.</p>
ACCEPTABLE / MIDDLING: Natural shelter is available when stock require it, i.e. some of the time in some areas of the farm.
<p>This a flexible, pragmatic system in which farmers use stock rotation and movement to provide stock with appropriate shelter in poor weather conditions.</p>
INADEQUATE: Stock have no access to any shelter at all.
<p>This was most commonly equated to the large dairy farms that have stripped out all shelter in order to accommodate pivot irrigators. The following narrative explains one farmer's description</p> <p><i>"We'll start with inadequate. We've seen first-hand when farms get intensified and shelter that may have taken 50 years to grow is suddenly ripped out because that is driven by production per hectare type thing. Middling shelter - they're probably being driven by production per hectare and may not be physically out there seeing the animals and the state they are in."</i></p>

From our discussions with farmers we conclude there isn't a consensus amongst them as to what is best in terms of shelter provision. It was clear that it very much depends on where the farm is, what animals are farmed and how they are farmed. Like stakeholders, farmers we talked to believe that extreme weather (hot and cold) is a critical consideration for shelter, and it is in these conditions that they sometimes feel they could perhaps do more. From our perspective perhaps communicating the gold standard as providing 'good shelter to cover all extremes of weather' may be more useful than using "shelter in every paddock". We note that it was commonly believed that it was important to have one or two paddocks clear of shelter to keep dry and free from mud. As each paddock has unique features and soil types we understand how difficult it is to articulate one universal or definitive "best practice" for providing animal shelter. To attempt to do so is not advisable because it won't be well-received or appreciated as farmers consider the reality of their farm. Mostly, for the farmers that spoke with us, it is about having shelter readily available for when the animals want it or need it, dependent on different weather, breeding season, etc. This is perceived as a fundamental animal right by those individuals.

5.2 Stakeholder perspectives

We begin this section by describing general perspectives of stakeholders and then we discuss the views of each stakeholder.

"As David Mellor says, it's not about surviving. It's about thriving and in this day and age, how we farm our animals says a lot about our nation."

Defining the Gold Standard of Animal Shelter

Stakeholders typically found it challenging to articulate a specific gold standard for animal shelter because of the many variables involved, like we outlined in the previous section. The following comment was typical of opinions expressed:

"My view is that it's on a farm-by-farm basis, because every property is different and shelter for example in winter for stock, the best form of shelter may be just the gully, the topography within the property. There may be parts of a property that have a little microclimate, that if you put your animals there they are going to be fine, but to the uneducated observer they could think what the hell are those animals doing in there? There's so much that has been done on farms around the country, that hasn't been heralded." (Farmer body)

In broad terms however, stakeholders that spoke with us believed gold standard shelter provision enables animals to seek and gain shelter at any time of day or night. They typically said gold standard shelter enables the animals to keep their ambient temperature within range to be productive, and provides protection from excessive heat and cold, wind (wind chill impacts), and inclement weather. They further believed duration of exposure to extremes of temperature, wind and inclement weather also need to be considered. The gold standard appeared to relate less to the actual shelter provided than to the adverse effects on animals. Animal advocates specifically talked about choice: animals having the choice of whether to move into shade or not. Guidelines for individual species, based on their behaviours in the natural environment are generally considered possible. The following narratives illustrate the range of views of different stakeholders.

"I was thinking there was a gold standard before sat down here, but I don't know if there is a gold standard, one size that is the gold standard because of those perceptions out there of even housed animals, people would not necessarily see that as a gold standard even if it's only for short periods of time for those adverse weather conditions. And just thinking about the cost of putting that sort

of infrastructure in place, also what tends to happen is that you put that infrastructure in place, you've got a relatively large bill, so you think now I need to intensify my farm more to pay for it. So now the sustainability footprint of the environmental impact of that farm is a lot bigger, to pay for that shed that was to fix one problem...Actually what we've done is intensify that land use which is not necessarily good for the other aspects."

"Or is it better to have no sheds there, have a less intensive farming system and yes at times those cows are out in the sun and they are out in the rain but overall it's better for the greater 24/7 environment cow, as long as that cow is well fed. A cow on a hot day, yeah she's hot, we all get hot. Is that really a problem? She's not going to fall over from it as in die or if she is then there's a serious problem. If she's got adequate water and she's well fed, the first thing that's going to be affected is production and her performance, and that's a decision for that farmer to go 'well I'm going to put trees in to improve my performance as far as production, or not' and that sort of thing."

"In cold weather it's again 'I'm going to have to put more feed into that cow because she's using more energy and I'm either going to provide more feed or I'm going to provide infrastructure or trees or shelter of some sort or put her behind a hill, to try and reduce that intake of feed because it costs me money to get that feed'. If we go to the other side of this - often the animals, farmers that are in care of poor conditioned animals and I'll say condition is a function or is some of the equation of feed availability, water, shelter, so all of these ultimately affect the condition of the animal. Any one farmer that's got animals in poor condition is often the farmer with the least ability to make a change to the better. At which point how do you improve the overall welfare of those animals?... I think a big part of it is that science of looking at animals of all varieties, not just bovines and go at what point is an animal truly stressed or not and whether it's hot or cold. Do you put heat sensors in cows? If there is evidence to show that these cows' core temperature didn't rise to a critical level during this summer, all things being equal these cows were not under undue stress. Even the Act doesn't necessarily say it has to have shelter it just has to have, what does it say, something about the adverse conditions don't adversely affect the animal or some wording of that effect."

"And I think that's what we need to be aiming at rather than shelter per se. It's just adverse effect of challenging weather. I guess if we bring this right back, if a farmer can empower an animal to exhibit its natural behaviours in as many set of circumstances as possible and there possibly is a threshold that the farmer has to meet in this, then that could be the way to go because there are so many different factors that affect whether an animal is stressed or not, whether it might seek shelter or not, that to put a limit on one, or to have a requirement on one that there's a certain bit of infrastructure or access to, well I mean it could be overly restrictive or not conducive to what's actually good in the animal's best interest because you could remove other freedoms or other expressions of that animal's behaviour by requiring them to be in a certain environment when they may not otherwise want to be there." (Sector)

"It's giving the animal choice all the time... Like you see on – where there is shade provided in paddocks and a good example is Cornwall Park in Auckland, there's a little bit of an urban farm there and so people that go through can see it's an old park so there's very large big trees in it, so there is shelter provided for those animals and all of the animals are under the shelter when it's too hot and when it's not they all utilise different areas of their paddocks so it's provided they will utilise it but it

needs to be provided and where a way that all the animals can use. We need to look at behavioural needs and motivation states of animals, and having a holistic view on quality of life.” (Animal advocate)

Defining Adequate Animal Shelter

Stakeholders generally believed the minimum adequate expectation was that a farmer can move their livestock to a place that will provide shelter for the total number of animals they have on their property, in the event of an inclement weather event. Also, that animals have access to shade/water in the event of extreme heat or cold, so they do not move outside the productive temperature range for sustained periods of time.

“I’ve seen large scale dairy farms with pivots with some shade. It’s just that the pivots might not run the whole length of 10 big paddocks. They might have two pivots and have some shade in the middle. There’s ways you can do it, but they might think that the cost to improve it for animal welfare is too expensive.” (Farmer body)

Defining Inadequate Animal Shelter

Every stakeholder provided examples of what they perceive as inadequate animal shelter, and there was a commonality in these. Inadequate shelter is regarded as having no shade in summer (with limited or no access to water) and no shelter from wind or rain. Discussion included both physical landscapes, the absence of actual shelter and/or access to water, as well as the inability to take shelter from inclement weather, for example:

- Large plains areas, in which natural/tree shelter has been removed for pivot irrigation, without the re-provision of man-made or natural shelter. Canterbury Plains farmers were the whipping boys, with shelter removed for pivot irrigation cited by all stakeholders as examples of what could be considered as inadequate (and likely to be perceived as inadequate by the general public driving by). Whether it is actually inadequate is considered to depend on animal access to water during hot days and shade, and whether or not the animal is performing (according to sector productivity expectations). Generally, stakeholders said inadequate shelter needed to be looked at in a wider context.
- Livestock being out in the heat without access to water.
- Livestock left lying in mud, without access to feed, and the inability to move to get out of inclement weather (conditions associated primarily with winter, but not always so). The following narratives illustrate this point.

“If you’re talking sheep only, I would say it could be 10-15% and cattle and beef cattle, it’s probably about the same for having inadequate shelter. But in terms of dairying I’d say it would be higher, because of the big herds they have and the mud – they don’t shift them onto dry blocks. I live in Akaroa so I drive back past from Christchurch in the winter time and I’ve seen these Jersey bulls. I don’t know who he was, and these bulls are up to their bellies in mud and water. It was terrible, shocking. But there was no shelter and they were just in mud, so there’s a combination of no shelter and animals standing and lying in unacceptable conditions. Farms have to be made that animals must have the ability to go and lie on a dry run-off paddock that they can lie down in. If it’s a fodder crop, like a kale crop or whatever...” (Corporate)

“Wet and cold are becoming big problems with all the rain. Farmers are seeing that cows are making mud and wrecking paddocks. They can’t feed them the amount of grass because they stamp it in and then they can’t feed them with supplements because that keeps getting stuck in the soil. So then they’re trying to feed down races and stuff which is then wrecking races. Being clay soil just means that as soon as a tractor drives on the soil in winter it will just get stuck and if you try to pull 3 or 4 ton wagons through it, you’re a foot below the surface just in the mud. It’s just the nature of our soils – they’re not free draining. So they are asking is there a way that we can feed these animals better while protecting everything else in the business.” (Sector)

5.2.1 Industry sector

Sheep and beef

Sheep and beef cattle industry representatives referred to the different needs for shelter, and the different expectations people may have in providing it, evident in the following narratives.

“The gold standard is probably something that will reduce the heat in the summer and keep the animals warm in the winter. To reduce heat there’d be shade so whether it’s a facility or building or trees and sufficient hedge lines for like wind or the other elements.”

“Yes there are instances where people are not, a bare paddock with no shade or shelter at all and inclement weather. I guess one of the issues we need to recognise is that animals are not kept in the same place for extended periods because they eat the food and then they are required to be moved somewhere else so to some extent these, any welfare impacts associated with being in a relatively shelterless place are mitigated by the fact that that’s transient experience both from a weather point of view and from a location point of view and I generally think that there is a bit of a disconnect between, put it like this, people, some people with a very strong set of values about animal welfare may not be on the same page as others about the level of discomfort.”

Deer

Stakeholders from the deer industry we interviewed perceived deer to be natural hiders – they seek cover rather than shelter (behavioural collar tracking work done by Landcorp cited as the source). They held that happy animals can be seen sitting quietly together in a group, with access to water in the heat, and land contours (to protect from wind/get in the lee) and cover, critical. Optimal animal shelter was based on deer behaviour in the wild (running on the tops and seeking shelter in bad weather), balanced with what it is practical to provide. The ideal deer country was described as land around Geraldine and Rangitata, as it offers a mix of contours, cover, reliable rainfall and water access.

Dairy

Stakeholders from the dairy industry acknowledged the dairy farming environment is recognised as the least “natural” of the farming environments, due to corporatisation and increasing herd sizes, the terrain required, and the removal of natural shelter to allow for pasture irrigation and stock management. Hence, they recognised, natural shelter that was available to animals in the past, may well have gone. While there is acknowledgement that some farmers are replanting natural shelter and/or providing man-made shelter, dairy sector participants said dairy farms are generally considered as the ones with the biggest problems with animal shelter. Nevertheless, some of those farmers were aware of what their animals were experiencing, evident in the following comment.

“Farmers get a pretty quick understanding of what they are doing right or wrong. And with the heat of the summer a lot of sheds have water cooling systems while they are standing in the yards so the cows like coming inside and so they get a nice cold shower.”

5.2.2 Corporate

Corporates talked about increasingly requiring their farmer suppliers to meet minimum animal shelter requirements. The following narrative illustrates the point.

“That they must shelter animals in inclement weather. If say a snow storm’s coming, that the farmer can demonstrate that he’s got paddocks that he can put those animals in to protect them from the weather. So you take an example of a freshly shorn sheep and the farmer’s got no shelter on his place, say it’s a flat Canterbury Plains property with no shelter, you must be able to put them into a wool shed or covered yard that can house them from that weather. Or yards – if he hasn’t got a treeline or big hedges or trees to protect them if he’s on barren land, he must be able to bring them into a defined space or shelter, like a woolshed, so he can protect those animals.”

Corporate research participants explained it is difficult to define what good shelter is specifically. For example, woolsheds are good but then hedgerows, trees, natural gullies, flax bushes, vegetation clumps, large tussocks and rock faces provide natural shelter options for pastoral animals. They talk in terms of shelter being anything that allows the animal to get away from adverse weather. A sheep farmer is more vulnerable in terms of livestock deaths in winter (newborns, cast sheep with heavy fleeces), so he/she may think a lot more about shelter than a dairy farmer.

The view was expressed that 90% of sheep farmers do have natural shelter: hills, gullies, valleys and rock faces and natural cover like tussocks, hedges, trees (for example, cabbage trees). Pivot irrigated blocks are considered to be the problem on sheep fattening or finishing type farms, where natural shelter has been removed.

Winter shelter of animals is potentially a big issue. When farmers are wintering their stock they must have adequate shelter and places with drier soils or grass pasture so the livestock can lie down. Concern was expressed about feeding of animals in the winter on crops when it’s muddy and the farmers aren’t allowing the animals into dry paddock - while worse on dairy farms it also happens on sheep farms. Southland and Canterbury where land has been cleared and shelter belts removed is a big issue. The following narrative illustrates this point.

“When you look at Southland or you look in Canterbury, they’ve just cleared all the trees and shelter belts where a lot of sheep farmers have been converted to dairying. Not in all cases but in a lot of cases. When you look at the big pivot farm in Canterbury, there are no trees there at all. Now where are they getting shelter from?”

Corporate participants said climate change may have a huge impact on animal shelter provision requirements. Along with access to shade and unlimited water, the suggestion was made that a potential recommendation may be required for lambs and sheep to have had to have been shorn in summer, with no more than so many months of wool on, to keep them cool.

5.2.3 Farmer bodies

In linking with the previous point made by corporates, farmer representative bodies believed that some winter shearing is inevitable considering the three main shearing systems in place in New Zealand). They also mentioned the need of animals to have access to shade as well as unlimited water.

Farmer representative bodies talked of the difficulties of prescribing a gold standard, given the individual setting of every farm, in terms of topography, wind and inclement weather protection, natural vegetation cover and additional shelter belt plantings. The following narrative illustrates this point.

“We are mainly hill country so we don’t have shelter belts. On our terrace country we have flax shelterbelts and stuff we’ve planted or we’ve got Pampas, toi toi and others so we have them where they make sense to have them. Every year we plant 1,600 poplar and willow poles - our main driver there is erosion control but they also provide shade and shelter benefits so you are doing both. And then there’s also places where we haven’t cleared rushes that we might otherwise have cleared, because the rushes can be helpful at lambing time, for a storm the lambs can go and hide out in there. It’s not necessarily having something in every paddock it’s about having areas on the farm so that you can make sure you’ve got good places where just after shearing you can put sheep that are sheltered during the vulnerable week. It’s about not having a blanket approach everywhere it’s about horses for courses, what works in different situations within the system. (What about allowance for storms?) It depends what sort of storm it is. If we think we are having a flood coming we obviously get everything up off the flats so they don’t get washed away. If we’ve shorn and there’s a bitterly cold southerly forecast, I may keep the stock handy and then bring them into the covered yards because there’s shelter there. Or shift them to a paddock that has a better sheltered aspect from the south.”

A forestry consultant identified the goal of shelter being to keep livestock happy and relaxed within the preferred temperature range to avoid thermal stress (hot or cold). For this consultant gold standard shelter means that every animal only has to spend a short time in uncomfortable temperatures. The consultant said:

“On these hot days, when it’s not at a comfortable temperature if you have these hot, day after day after day of hot weather than every cow should be able to find shade at some time during the day. I think that would be my gold standard anyway. And the same in very cold weather. I mean like in Southland for example they have some terrible weather in the winter and the cows are still milking or they can be just if they are calving in August or September I mean anywhere really they just come into the peak lactation and they should be, or if they are very heavily pregnant they should be a comfortable temperature. And it’s not rocket science to put up a line of poplars or something to cut down. A porous semi permeable shelterbelt can reduce the wind speed by 50% and when you look at the graph of how that affects temperature again there are some basics like joining the dots. Farmers must intuitively realise because they will be out in the paddock getting cold too. They perhaps just don’t join the dots to that and getting colder and production and there’s a lack of data, lack of hard data on the real, on the production impacts I suppose.”

5.2.4 Māori agribusiness

What the animal experiences is important, not just what is most practical or convenient, as is the case in too many of New Zealand's farming systems. For instance, humans wouldn't go and stand in the rain and animals are little different, requiring access to suitable resources as evident in the following comment.

"That the animal is given a choice. If it's got no choice so it's forced to go into that paddock it turns its back, it tucks up. It looks very unhappy so why don't we think about putting something up whether it's Pampas or some sort of hedgerow or at least mitigate the worst effects. That's why we have our conversation in this country about the social licence to operate."

In hill country there may be adequate shelter, except in heavy snow or during extreme rainfall events, but on the flats there are large areas where shelter is considered inadequate. Stock in those environments are unable to get out of the wind in particular, especially where any artificial shelter designed to provide shade is poorly aligned to prevailing winds, creating wind funnels and wind chill. However, riparian plantings may provide adequate shelter as they mature.

5.2.5 Animal welfare and advocacy

Shelter is seen by this group of people as not just about survival but also a quality of life. While participants believe that most farmers know that their animals need shelter, it has to be available all the time so that the animal can use it whenever, and if it is not there the animal may not know to use it when presented with it. The key thing is to give animals of all species the choice and across the vast majority of pastoral farms animals are unable to choose whether to use shelter or shade.

It is not easy to say what gold standard shelter is because it will vary from species to species. But generally it is about having shelter available for an animal all year round - so it can seek and find shelter whenever it desires (it shouldn't just be "Oh, we see bad weather coming, we'll drive them into a paddock with a few trees"). And not just shade for extreme events - even if it is not overly hot the animal may still prefer to lie in the shade. This group believed that shelter needs to become part of the psyche or mind-set of the farmer, just like food and water. They also believed that the best shelter is natural. Artificial shelter, such as housing, may be good for dairy farming, but has its downsides concentrating animals into small areas limiting animals' ability to exhibit natural behaviour. Having no shade available for livestock is considered completely unacceptable.

"Shelter is something that should just be around for animals to choose and get comfort. And I think that if animals do not get any shelter and are not used to having any shelter, then if the weather turns really, really bad and they all get driven into an area where there is shelter, they may not even use it."

"The best shelter eventually would be natural shelter. Artificial shelter, I think by and large, they concentrate animals into small areas and that's not necessarily the best thing either."

6 Triggers to providing (adequate) animal shelter

INTRODUCTION

This section of the report discusses triggers to considering providing animal shelter, from the farmer and stakeholder perspective.

6.1 Farmer perspectives

Farmers who spoke with us generally understand the positive and beneficial reasons for providing shelter for their animals, the good sense that it makes and the value that it offers.

From our discussions with farmers we conclude that our research participants generally believed the provision of shelter was the right thing to do. They believed it is part of good farming practice, although it may not always be top of the list of priorities owing to other issues and challenges which are regarded as more pressing. It appears, from those we interviewed, that the direct benefits of good shelter provision, both to the farmer and his/her farming business, are generally recognised, in terms of productivity, that is, improved milk production, fewer lambs lost, stock with healthier weights that command a higher price. Provision of shelter is also in part environmentally driven, they said. It relates to topography and what there is around, and less commonly, the encouragement and preservation of biodiversity. It was mentioned that planting shelter may even be coming back as a best farming practice, after years of the prior generation removing macrocarpa and pines. We heard of a growing view of the farm as an eco-system which is driven by erosion control, clean waterways and an increasing value in native cover rather than introduced species. Other triggers that were mentioned are external market forces and influences, especially from international markets. In response companies that farmers supply to (e.g. Alliance, ANZCO, Silver Fern Farms) make stipulations regarding animal welfare of which shelter is a part. Some farmers suggested including shelter as part of their regular audits. The following narratives illustrate the preceding views.

“If your stock are somewhere and they’re sheltered they’re not going to use as much energy trying to keep themselves warm, so therefore they are going to make no more milk. If you have cows in a paddock that’s not sheltered then when rough weather comes through you notice the milk the next day will drop off because they’ve put that energy into keeping themselves warm rather than turn it into milk, so there’s the financial benefit there.” (Dairy, Otago Coastal)

“We got accredited through Silver Fern Farms because they were going to pay a premium on another 10c kilo or whatever it was, so we were accredited. They came round and inspected shelter. They even inspected the welfare of the dogs that were on the farm.” (Beef, Northland)

“We supply our lambs to a meat company and we get audited and we sign a thing saying that we do - you know, we operate within the animal welfare codes which includes shelter and things.” (Sheep, Manawatu)

“You want to make sure that, you know, we’re selling food overseas, you want to make sure that we can say - look at these animals, they’ve been well-looked after, not factory farmed and left out in the cold unnecessarily. It’s the whole traceability thing coming through.” (Sheep, Manawatu)

“I wouldn’t want to be out in a cold southerly.” (Beef, Otago Coastal)

6.2 Stakeholder perspectives

Like the farmers who spoke with us, stakeholders generally consider that farmers want to be good farmers. Stakeholders assume farmers wouldn't be farming if they didn't appreciate their animals. Stakeholders further said good animal welfare is a source of pride to farmers who want to know that their animals are in a secure, comfortable environment. One stakeholder said the following.

“Most traditional sheep and beef farms do a good job and provide shelter for animals. I mean the use of sheltered lambing paddocks, the retention of data on paddocks that have had higher lambing percentages, you know farmers have a, and this goes back to the cold stress again and lambing, but farmers have a very strong incentive to get lambs on the ground alive and keep them that way. They don't like their animals dying. And there's a few facets to that. There's the one that I perceive society might focus on a bit too much is that farmers are wanting to make money, but it would be crazy to ignore that fact because they are a businessman. But what also is forefront of mind for farmers is the care for their animals and the pride in being a good farmer so they like to compare themselves with others, how they get on, and how they manage and so there's a combination of innate care for the animal, financial considerations and then professional pride and I'm not sure, I just don't think people understand that.”

Shelter is typically not assessed as a standalone consideration by the stakeholders, but an integral part of the larger farming system. Triggers to providing good animal shelter were seen by them to include the following:

- A desire to be good farmers and to provide good quality of life for animals, that is, animal welfare considerations.
- Economic imperatives: desire for productive animals and the desire to maximize animal productivity.
- Environmental factors for example, less mud/damage to winter pasture through provision of herd homes, along with improved animal welfare.
- Productivity incentives and the desire to be leaders in the farming space.
- Peer pressure - farmers live in small communities and they know each other - talk about shelter in a positive way - they don't want to fall behind their neighbours' practices.
- Market demand and pressure from offshore retailers/consumers - for example, UK retailers demanding more of their suppliers. As one stakeholder explained: *“I think if farmers get a clear market signal and a genuine market signal then I think you will see different types of behaviours.”*
- Keeping a free-range image as a marketing point of difference compared with the more confined perspective associated with herd homes.
- Public perception - farmers are aware that cars drive past their roads and they know an animal standing in mud is not a good look
- Poor farming practice exposés - as with bobby calves. We believe this is more of a potential trigger than major driver, but it does provide a means of starting conversations.

7 Barriers to farmers providing (adequate) animal shelter

INTRODUCTION

This section of the report discusses barriers to the provision of animal shelter from farmer and stakeholder perspectives. While participants were asked what the barriers were, i.e. they were unprompted, they were also prompted to comment on a list provided by MPI.

7.1 Summary comparison between farmers and stakeholders

The following table shows that farmers and stakeholders' views of the barriers to farmers providing adequate shelter were reasonably well aligned.

BARRIER	FARMERS	STAKEHOLDERS
Financial resources to put shelter in place	YES	YES
Time and resources required to put animal shelter in place	YES	YES
Farm productivity vs Comfort e.g. removing shelter belts to provide irrigation systems	YES Canterbury irrigated farms	YES Canterbury irrigated farms
Lack of knowledge about animal shelter initiatives being undertaken and their success	YES	POSSIBLY, FOR SOME
Difficulties enforcing the lack of animal shelter. Prosecution requires evidence that the animals are suffering.	YES	YES
The farm provides a suitable environment now and additional shelter is not needed	POSSIBLY, FOR SOME	POSSIBLY, FOR SOME
Difficulties in measuring the benefits for different impacts on animals e.g. comfort compared with productivity	YES	YES
Lack of knowledge of what is really important to the animal	POSSIBLY, FOR A MINORITY	POSSIBLY, FOR SOME
Expectation that paddocks should have trees or hedgerows	NO	NO
Animals manage and cope. Shelter is not necessary	NO	POSSIBLY, FOR SOME
Management & animal-related factors designed to afford resistance to adverse weather e.g. breeding for cold resistance	NO	NO
Unrealistic standards in animal welfare codes	NO	NO

7.2 Farmer perspectives

Unprompted Barriers to Animal Shelter Provision

The first and most important barrier they mentioned was the perceived **cost** of shelter - both to put up AND to maintain. For example, farmers talked of trees getting too big, blocking drains, knocking down fences, etc. One farmer spent \$15,000 one year on tree trimming alone. Associated with the costs, are the time and resources to plant and maintain shelter. Farmers generally work long hours, with little labour support and lack the three to four days planting more shelter may take. In our view the time it takes for trees to mature may mean that farmers have to be encouraged to think longer-term than some may currently do. Man-made shelter is seen as expensive by the farmers who talked to us. They intuitively thought of large sheds, but other options, such as the umbrella type moveable sun shelter, may have some appeal to them also.

Lack of knowledge of the appropriate vegetation type and/or tree species for the farm location and for the stock was also identified as a barrier. The farmers we interviewed were largely unaware of any planting guidance resources which the Farm Forestry Association provides. In our view such guidance and advice would be beneficial.

There were questions on how the **value of shelter** could be measured without proven financial benefits. For example, if tree plantings inhibit grass growth, this impacts productivity. For dairy, with a strong focus on grass production, this is a critical issue. Moving the dairy mindset may, in our view, require either financial evidence of shelter benefits or a more legislative approach.

Farmers who talked to us also mentioned farm **topography** as a limitation. They said it may be hard to plant trees and hedges / or erect and implement structures on hilly and steep land.

We thought there might be a lack of knowledge of the benefits of shelter among farmers but the farmers we spoke to generally believed that “everyone” is aware that an animal needs shelter whether they do or don’t provide shelter for their animals. In our view, then, for many farmers providing adequate shelter is already on their list of future “to-do’s” but, more compelling communications about the need for providing shelter is required to move it up their, and like farmers’, priority lists.

RESPONSES TO PROMPTED BARRIERS AND FARMER FEEDBACK

We have grouped these responses into those deemed significant barriers, possible barriers, and those not considered a barrier, as summarised in the following text-boxes.

1. SIGNIFICANT BARRIERS

Financial resources needed to put shelter in place

Financial resources are an issue and cost can deter shelter provision or lead to delays in erecting shelter.

While trees can be relatively cheap to plant, the on-going **maintenance costs** can be a barrier also. The cost of man-made structures and big barns is also a considerable barrier.

“I mean, you know, this thing is a cost and you’ve got to stick with your constraints so it can lead to it being dropped down the list of priorities.” (Sheep, Manawatu)

"I think it's also the cost of maintaining it. It's something that is often overlooked." (Sheep, Canterbury Coastal)

"You know it's a lot of capital you're putting into a shed and muster up that sort of round that million dollars sort of mark when you're putting a shed in. Then likewise, if you're doing tree lanes and hedges and stuff there's upkeep of the hedges. You know, they get mowed and hedge cutting and all that kind of stuff." (Dairy, Otago Coastal)

Time and resources required to put animal shelter in place

Time and resources are a barrier for many. It's partly about getting round to it in the hurly-burly of day-to-day farming.

Recognition that it needs to be part of planning and thinking ahead.

"It can definitely be a barrier. I mean if shelter is done with a tree, it takes time and if it is done with a building it takes a lot of money." (Sheep, Manawatu)

"Time. And prioritising your resource. I do everything myself. So it's just not on the priority list." (Deer, Manawatu)

"It's the length of time it takes to grow shelter. Will they get a benefit from it in their lifetime? If they pay their mortgage off and have got 10 or 15 years left of farming, are they going to see any benefit then?" (Sheep, Canterbury Coastal)

Farm productivity vs animal comfort e.g. removing shelter belts to provide irrigation systems

This is a major barrier BUT mostly thought to be in relation to centre-pivot irrigated farms (mentioned by most of those we interviewed).

The trees were planted in these areas for a reason and then ripped out for the irrigators. But some now planting lower line species.

A change in practice seems to be on the horizon as farmers see that the productivity push has gone too far. It may be that peer pressure could also cause change.

"I think that's a major one, but I think that hopefully peer pressure will eventually solve, but it's very much like the factory farming approach and people want square paddocks and systematic systems, but stock still need shelter." (Sheep, Canterbury Coastal)

"Yes. That is a big barrier. I can see why they have done it but the animals still need some shelter. The trees were planted in for a reason and then they were ripped out." (Beef, Otago Coastal)

Lack of knowledge about animal shelter initiatives being undertaken and their success

There is awareness but reminders would be helpful. Some farmers are considered to be ignorant of the benefits of animal shelter that success stories are not thought to be widely publicised.

The point was made that there is a lot of information out there if farmers look for it - Lincoln University, tree nurseries, the internet, etc.

"It's probably something that doesn't get talked about much. If you bump into someone down the road or down at the pub or something your shelter is not something that you ever sort of talk about or compare. I guess there's probably room there for some research to be done." (Dairy, Canterbury Coastal)

"I think there is a lot of information out there if you know where to look but people don't. Lincoln University has done a lot in terms of shelter belts. Tree nurseries talk about it. There's the internet if you want to go and look for it." (Beef, Otago Coastal)

Difficulties enforcing the lack of animal shelter. Prosecution requires evidence that animals are suffering

Most agree it is difficult to enforce currently. What is the definition of suffering for prosecution?

A small minority may need to be prosecuted. There is perceived to be a role for others within the industry, e.g. Fonterra and the meat companies, to make a stand.

“They only get prosecutions if it is straight out animal neglect and where animals have died and that type of thing.” (Sheep, Manawatu)

“I’m not sure there are any measurements...” (Beef, Otago Coastal)

“Yeah. It’s got to come from the companies that the farmers supply. Like Fonterra is a classic example. I don’t know why they dragged their feet for so long about fencing off waterways. Because if companies like Fonterra or Silver Fern Farms or Alliance don’t take their meat or milk the farmer can’t operate, can he. It’s pretty simple. So that really enforces behaviour, well if they can’t sell their meat, they can’t make any money, can’t sell their milk.” (Deer, Manawatu)

2. POSSIBLE BARRIER FOR SOME

The farm provides a suitable environment now and additional shelter is not needed

This is a barrier for some - sense that the shelter on the farm is good enough. But recognition that every farm is different and it depends on the land contour - Canterbury Plains shelter is imperative, but possibly less so in the hill country because of gullies and rocky outcrops.

Generally, farmers felt that their shelter is good enough but that there is room for improvement and so they have plans for on-going and future shelter provision.

If shelter provision is seen to be good enough for the moment it is easy for it to be pushed down the priority list.

“That would be true for a reasonable number of people. Particularly in rolling country where you’ve got gullies and a bit of tussock and that sort of stuff.” (Deer, Manawatu)

“I suppose it depends on the land contour - in the hill country there’s some very natural shelter but on the Canterbury Plains I would suggest that shelter’s almost an imperative.” (Sheep, Canterbury Coastal)

“I guess it comes down to every farm will be different but some farms do have enough shelter and can manage maybe the way they’re set up. I guess the layout of the farm’s important depending on where your shelter is positioned and ways you can access it or ways you graze your paddocks.” (Dairy, Canterbury Coastal)

“I would like to put more shelter in...” (Beef, Otago Coastal)

“It comes down to every farm is different. Some may be able to manage the way they set up. You can always have more but there’s a limit of how much land is tied up with shelter belts, land that you could be utilizing for growing grass and milking more cows.” (Dairy, Canterbury Coastal)

Difficulties in measuring the benefits for different impacts on animals e.g. comfort compared with productivity

Most know that a comfortable animal always produces better than one under stress. If they are comfortable they are producing.

“Well, it’s not difficult to measure them, to see the difference if you’re a good stockman. Because you can see it. Animals will grow faster and be more happy animals. Lead to high production. You won’t have high productivity without happy animals.” (Deer, Manawatu)

Others however feel that they need tangible proof of this and it can be a reason to not provide more shelter provision. Also, it can be seen to be farming type dependent.

“I would say dairy farming is something they must see the benefits pretty much straight away, because they know what milk goes into the vat every day. If you’ve had a bad stretch of weather and your cows are in a nice sheltered paddock, or it’s been really hot and they are in a shaded paddock I suspect you would see a difference in the vat. It’s harder to pick with sheep and beef because you can do a series of things throughout the year and be not sure if it’s worked or not right until the other end, and even then you are not sure whether if you try a different drench or fertiliser or whatever you are doing. It’s very hard to define a huge difference at the other end.” (Sheep & Beef, Otago Coastal)

We consider that farmers may not generally have specific scientific knowledge to underpin their experiences suggesting there is an opportunity to provide physiological evidence of stress related to exposure to different climatic variables.

Lack of knowledge of what is really important to the animal

To a degree - but for the minority - those new to farming, and those remote from the operation.

But most farmers know what is important to their animals, and consider this to be common sense (for example, putting lambs close to woolshed in their first few days after shearing).

“I hate to say this but there are probably some people still who lack the knowledge and really underestimate what is important to the animal. But most people really know that shelter can help to some degree. If you’ve got an uncomfortable animal it won’t be productive.” (Sheep, Manawatu)

“I’d probably put it in the common sense basket, but potentially there are farmers out there that are just chasing the bottom line and probably the environmental stuff and animal health stuff comes second to the bottom line.” (Dairy, Canterbury Coastal)

“Most know. Most know what is best for the animal.” (Beef, Otago Coastal)

“I think most farmers who are farming know about the animals. There’s not too many people there that - I mean, possibly the odd worker doesn’t really understand.” (Dairy, Otago)

3. NOT CONSIDERED A BARRIER

All paddocks should have trees or hedgerows

Nearly all farmers disagree with this and see it as unrealistic and not ideal. They shift and rotate their stock.

Ideally farmers think there should be a mix of paddocks with and without shelter. If every paddock has shelter then they will only have wet paddocks.

It is practical to have one paddock with no trees to stay dry. One mentioned that fly-strike can be an issue with sheep but that fly-strike is less of an issue if the sheep are in a paddock where the wind blows through.

"If they were all planted you run into problems like fly-strike because you've got your sheep and the trees give shelter that allow warmth and they all camp under the trees and that's where you often get an outbreak of fly-strike and that's quite noticeable even around the house here. If the sheep are out in the next field where the wind blows through they're not so prone, so I think there's a case for mixture and sometimes a bare paddock is handy at shearing time when you want to get sheep dry." (Sheep, Canterbury Coastal)

"I'd probably say that not all paddocks need to as long as you manage the way you farm and the way you graze your farm and if you know there's weather events pending or in weather events shift your animals to paddocks that you have shelter." (Dairy, Canterbury Coastal)

"That's not true. If it's really wet and you have shelter in all your paddocks then it's a negative effect of a wet paddock all the time. Generally you move your stock." (Beef, Otago Coastal)

"It's not so important. As long as you manage the farm and in a weather event pending you shift them to paddocks with shelter." (Dairy, Canterbury Coastal)

Animals manage and cope. Shelter is not necessary

Most farmers disagree that this is a major barrier - animals do need shelter. The animal may seem to be coping but it may not be thriving if there is no or inadequate shelter.

Farmers say they can tell on a bitterly cold or searingly hot day that the animal is stressed and not faring well if there is no shelter.

(Only one farmer believed that animals are resilient and meant to be outdoors in all conditions, so sceptical of requirements for shelter provision.) Those who espouse this view are most likely to be 'Cowboys' who may not care enough about it, while knowing that shelter does matter...

"Rubbish. If you look at animals in their natural environment they go to shelter when they are cold and miserable. No animal stands in the middle of a blizzard." (Beef, Otago Coastal)

"The farmer who said animals cope and don't need shelter was an ignorant bugger." (Deer, Manawatu)

Management & animal-related factors designed to afford resistance to adverse weather e.g. breeding for cold resistance

Farmers may select breeds because they are better suited to an environment e.g. Merinos are hardier so good for South Island high country.

However, most farmers strongly believe that all animals, whatever breed they are, require access to shelter at least some of the time.

"You wouldn't put a human out in the cold and say - It's alright, we've got a gene." (Sheep, Canterbury Coastal)

"No. All animals need some shelter, even the hardier ones." (Beef, Otago Coastal)

"Polar bears! It's always good to have the option, that there is shelter there if it is needed. I don't agree with this argument. Any animal on a 35 degree day or when a cold southerly is blowing through will look for shelter." (Dairy, Canterbury Coastal)

"Well, that's bullshit. I mean you breed animals to have more brains to take the land and cover and things like that. That's why you blade shear Merinos and things like that, so they don't stand out in the bloody cold, they seek shelter. But they've still got to have shelter to seek don't they." (Deer, Manawatu)

Unrealistic standards in animal welfare codes

There is mixed awareness of the animal welfare codes - some know of them but not the detail and others have limited or no awareness.

But when they review the codes most feel that they are generally acceptable, although some of the wording can be considered a bit ambiguous.

“What does ‘reasonable’ mean? What is the definition of that?” (Dairy, Canterbury Coastal)

All farmers we interviewed agreed that Animal Welfare Codes are important. Key questions were raised about them:

- How do I find out about the Codes?
- Where are they?
- How do I use them?
- How are they enforced?
- Who writes them?

7.3 Stakeholder perspectives

Stakeholders who spoke with us generally believed farmers face a myriad of pressures in their daily farming businesses and animal shelter is not considered to be a top-of-mind priority. Issues they mentioned included the following:

1. Increasing regulation, compliance and bureaucracy for example, environmental plans and waterway planting requirements.
2. Bio-security concerns, specifically *Mycoplasma bovis*.
3. Financial worries.
4. Issues with staffing and finding good stockmen. Problems getting shearers at shearing time.
5. For dairy farmers specifically: ‘dirty dairy’ accusations, wintering feed, no palm kernel issues, central pivot irrigation, etc.
6. Public perception of the industry, particularly the dairy industry, and the urban-rural divide. The stakeholders said farmers think the rest of New Zealand doesn’t understand them, and that they are all being judged by the poor practices of a minority.

7.3.1 Unprompted barriers

We asked stakeholders to talk to us about barriers for farmers to improve animal shelter provision. From the ensuing discussion we identified four common barriers.

1. Financial / expense was the key barrier identified to providing (more) shelter. Stakeholders consider that a good farmer operator will have good shelter and those who are struggling can’t afford to do it. They further believed providing shelter is costly and that it is more than just the cost of the plantings/fences/sheds, and so on, but also the ongoing maintenance costs (and associated resourcing requirements). The time and labour resources required to put shelter in place and maintain it were also mentioned in conjunction with the expense of building fences and planting tree shelter or buying herd homes. In our view farmers that struggle financially might have a list of priorities and animal shelter may not be high on this list even when their financial situation improves.
2. Some farmers don’t think that they need to provide more shelter to their animals and

that already existing treelines and gullies are adequate.

3. Removal of shelter belts for pivot irrigation, and to provide greater land/grass productivity.
4. Ignorance and lack of education as to how much shelter is required.

The different barriers were evident in the following comments.

“Where is the communication and where’s the incentivisation to do it?”

“You know, how do you collect a whole lot of subjective measures of behaviour inadequacy and turn it into a snapshot that informs your view.”

“There is a pertinent article in Countrywide Beef Magazine May 2018 - pages 42 -43 about indoor cattle wintering and how expensive this is. The cost of the shed is the main barrier for farmers, and cattle on straw is much more expensive than cattle on rubber mats. There is an example of a farmer who was going to do a three year trial on indoor wintering, but gave up after one year because it was so expensive. Farmers who have done it have not found the return on their money.”

7.3.2 Prompted barriers

Stakeholders were shown the list of barriers prepared by MPI, and their comment invited about each of these, to confirm which were considered to be bigger barriers for farmers, and which were considered to be less significant. A few stakeholders felt they were too removed from the farm-face to comment on this list, other than to reiterate concerns about the expense of providing and maintaining animal shelter.

The barriers and feedback are listed in the text-boxes below in terms of their relative significance.

Financial resources needed to put shelter in place

Financial viability and affordability are considered the biggest barrier to providing additional shelter. Even planting trees, considered to be relatively inexpensive (compared to fencing, herd homes, etc.) can have considerable maintenance and resourcing costs. And shelter is only one of a farm’s pressing financial needs.

“Financial. That would be the biggest one. You look at a good operator, a good farmer, he always has good shelter. Where you get a farmer that is struggling financially you don’t have the same shelter. Their farm is not in the same pristine condition because they can’t afford to do it. It costs you money to put up shelter belts.”

“If you just wrote a cheque, the problem wouldn’t go away because there’s ongoing management, keeping fences in good repair, managing trees, and finding the resources to do that etc. You need staggered development - e.g. poplars, otherwise you get a big glut in 30 years where they are all too big.”

The financial barriers was also expressed in terms of achieving a return on investment, especially of concern with the intensification of farming systems for dairy. In previous generations, farmers could achieve a good living off 200 cows, but now 400 – 500 cows are needed, along with equity funding partners. This changes the nature of farming system and decision making.

“Obviously being an industry good organisation which focuses on the whole system of a farm, so profitability and everything else, our work shows that building a shelter such as a herd home or covered feed pad kind of thing doesn’t generally improve profitability of the farm.”

Time and resources, and increasing compliance demands

As well as finances, having the time and resources to provide shelter was mentioned as a barrier, as was the time it takes for trees to grow. Farmers are busy and under pressure managing the day-to-day activities on their farms, a situation exacerbated by increasing rules and regulations and managing compliance.

“As a farmer your focus is often on day-to-day practice and you know, your daily tasks that you have to carry out and it’s usually farm work, but you can also have stuff to do with your own family and kids and stuff, so you get so taken up with the day-to-day stuff that issues like shelter don’t really come up much because you’re just too busy.”

Impacts on farm productivity (e.g. shelter belts removed for irrigation systems)

Nearly all stakeholders talked of the removal of shelter belts to maximize land productivity or enable modern pivot irrigation systems (Canterbury cited) as a big consideration in shelter provision, particularly with increasing dairy intensification. Generational cultural differences were also cited in terms of attitudes to pasture management. There has been focus on creating higher quality pasture and removal of trees, to make irrigation easier to create pasture for feeding, perhaps reinforced by a belief that cows shouldn’t be sitting down, but standing eating. The focus was all about production but is now changing toward planting trees again and focussing on pasture management. But there is also a view that growing trees take fertility from the soil.

The challenge becomes how to encourage shelter that will fit in with the infrastructure that’s already there.

“I think some of the worst areas I’ve seen are some of the irrigated areas, particularly in the South Island where they have these expansive centre pivots where they have removed all the shelter.”

Interestingly, one stakeholder was keen to explain the alternative viewpoint about the Canterbury Plains: that trees were originally grown as wind shelter had reached end of their safe life and were dangerous in high winds. Furthermore, not all species were considered appropriate for animal shade. There is a perception that not all farmers are aware of the specific benefits of plantings, areas to prioritise, types of trees to plant and the associated benefits, subjects addressed in, and hence the development of Farm Forestry video materials.

Animal advocates regarded examples like dairying and tree removal on the Canterbury Plains as greed and farming against nature - putting cows on terrain that is unsuitable for the level of intensification required. While some of the new dairy farms are planting trees and putting up herd homes and trying hard, for some stakeholders the critical question is whether New Zealand should be allowing dairy farming in regions that have not traditionally been considered suitable land for dairying (like the Mackenzie Basin).

“You see animals following the pivot round so they can get a shower to try and alleviate some of the heat stress.”

Animals manage and cope. Shelter is not necessary

The perception is that farmers can think “I have been doing it this way for years and it is okay”. While it may be easy to think that it’s all okay as long as animals not dying in the paddock, and that they are resilient, there is a lot of welfare compromise before death. Animal advocates questioned at what point is the animal not thriving but suffering. However, they did acknowledge that all farmers are likely to know when an animal is stressed, and that most care about their stock.

“I think every farmer would know when the animals are in stress. Like if they’re all hunched in a corner holding together, then I’m pretty sure farmers are aware that they’re shivering. they can probably say they’ll survive as a result of managing, cope kind of thing, but most farmers I talk to, if they see a storm coming they will put the cows in a paddock where there is shelter.”

“There will be some farmers that believe that some discomfort is not inappropriate for an animal to experience. And the lack of control over things like weather and the transient nature of being located in the same spot in the same weather conditions means that discomfort that is endured on some occasions is part of the inevitable life of all beings, people, animals, and pets. But then again I think there’s a question of degree here.”

“Because there will be a view amongst some farmers that animals are animals and that their lot in the farming environment is far better than it would be in a wild state, and that some discomfort attends the lives of all beings including pet cats and dogs who are confined during the day when owners are at work and my kids when I make them go out and play in football in the rain, it’s transitory ... I think we are all agreed that too much time in an environment where you would prefer to be a little warmer or a little cooler, is too much time. But that’s not to say that it should never occur because we haven’t even touched on kind of practicalities of interventions. “

The point was also made that New Zealand only suffers really severe weather events in which farmers lose significant lamb numbers, every few years (e.g. the Southland snow storms of 2010) implying there is no real incentive to change shelter practices.

“On some farms they just get these occasional terrible storms and they lose all their lambs and then the next 5 years are fine. In that terrible year, ‘oh my God I wish I’d planted a shelterbelt’ and then they don’t do it and then the next year they get away with it and think ‘I’m glad I didn’t plant the shelterbelt, save some money and spend on something else’. So whereas on farms where it’s perpetually windy, most farmers on very windy farms probably have shelter I would say.”

One comment was made about farmers’ individual belief systems potentially being a barrier to providing optimal animal shelter. On the one hand, the strong belief that man-made shelter is better, on the other the equally strong belief that man-made shelter will lead to increased disease risk, for example.

The farm provides a suitable environment now, and additional shelter is not needed

Some farms have sufficient shelter, but as was said - *“you don’t know what you don’t know”*. In other words, what is the right amount of shelter? Some farmers may be amazed what a difference shelter that is meaningful to animal makes.

Lack of knowledge of what is really important to the animal - and physiological impacts

There is a perception that farmers generally know their stock and that some farmers are incredibly tuned in to their animals and what is important to them: clued up and really switched on to what they need.

“They know about their animals. They know their production, their milk production is down, so they know...”

“I think most farmers would know that animals must need shelter. They know that. It’s just that sometimes the farming operation doesn’t lead to being able to provide enough adequate shelter. That’s the problem.”

However, there was also a belief that a small proportion lack such knowledge with some misinformation and a bit of ignorance evident. For example, the traditional stock people who had affinity for the stock and the land are seen to be disappearing, and newer generation, not brought up on the land, do not necessarily have the same affinity with and understanding of livestock.

“I think some people wouldn’t be aware of what should be provided - it’s like what are the 5 Freedoms - so they might not be aware of what the best practice is. So therefore they make the assumption that what they’re doing is good.”

Stakeholders acknowledge that awareness of the specific physiological aspects is not well known in the broader farming community.

“I think farmers are generally good at providing shelter, but I can’t believe that every farmer in the country has a good handle on what the boundaries around physiological and production related to temperature actually are.”

“There’s a lot of evidence to show that even when stock are grazing, wind chill can make quite a difference to the amount of weight they gain. That’s common sense that when they are cold they are using their energy to keep warm rather than to grow...Some farmers use an agri-forestry type approach for vulnerable sheep. Tree cover cuts out radiated heat loss and that’s quite important on cold nights. But I don’t know if all farmers know this.”

Difficulties in measuring the benefits for different impacts on animals (e.g. comfort vs. productivity)

While some believe *“Good shelter can provide a lot of things that you can’t measure”* some sector groups and farmer bodies consider there is well documented evidence of the physiological benefits of shelter provision on productivity. A number of resources were mentioned, for example (Beef & Lamb Shelter Guidelines; Farm Forestry videos)

- <http://www.nzffa.org.nz/farm-forestry-model/resource-centre/trees-on-farms-videos/videos-by-category/trees-for-shade-and-shelter/>. (In these videos individual farmers talk for example, of lambing rates achieved on paddocks with shelter belts.)

- <https://www.fonterra.com/nz/en/campaign/caring-for-animals.html>

But stakeholders acknowledge that awareness of physiological impacts is limited and that there is a need for more science to prove the value and/or to communicate the benefits of such science more widely, and not only in relation to productivity. Stakeholders also acknowledge that the benefits of tree planting in paddocks may not be obvious in the short term - other than seeing stock sitting in the shade, whereas the results of riparian planting along waterways for riparian benefits can be more readily seen in improved water quality.

“If you are paddocking new grass and you see it grow, your cows go in there and increase in milk production the day that you take them out. If you planted a row of trees, it’s hard to see the benefits, whereas if you plant trees around your stream, you can test the water and see the improvement in water quality.”

Animal advocates believe that it’s all about selling the good stories, and that farmers need access to this information.

Lack of knowledge of animal shelter initiatives being undertaken and their success

Lack of awareness of the positive impact and economic benefit of provision of good shelter (better milk production, fewer/no lambs dying etc.) is considered a barrier for some farmers, with a need for information and education via industry sector groups. Also, there is seen to be lack of knowledge about some types of shelter.

“There are some good examples now and videos of farmers who have integrated shelter into irrigation systems, and there’s no excuse really for not doing it, except it costs money, and it’s just another management challenge for the farmer.”

“A lot of people just associate housing and shelter with the winter conditions but overlook the summer conditions. It’s quite obvious in the middle of the day any part that’s got a single tree you’ll have 300 cows trying to puddle around that one tree to get the shade. I think a lot of people don’t realise the value of what shelter can be used in the summer never mind the winter. I’ve got a hedgerow with poplars and it’s got lots of benefits in summer, not just shade.”

All paddocks should have trees or hedge rows

No-one considered that it is realistic for all paddocks to have shelter. What is considered important is having access to paddocks that do, and the ability to move livestock in the event of a major weather event (wind, cold, rain, snow) being forecast.

Management and animal-related factors designed to afford resistance to adverse weather r resistance to cold)

Stakeholders appreciate that farmers select animal breeds for their ability to adapt to local environmental conditions and examples mentioned included the choice of sheep breeds like Merino in the high country, breeding for tolerance to cold, and focusing on genetics to help lamb survival rates. But breed selection was not seen as a reason for farmers not providing shelter per se.

"I wouldn't bring sheep over from the West Coast as they are bred for wet conditions and I wouldn't bring sheep up from Southland to Canterbury. They are fat as butter down there, but they wouldn't keep that condition in Canterbury droughts. You farm what is appropriate."

"That sounds like a total cop out. I don't know how you breed animals that are resistant to the cold. I know that some animals cope better and some type of breeds cope better but there's always a certain parameter, a certain range. I think it's just a cop out for not providing shelter when it should be there."

Inadequate or inappropriate animal welfare standards (e.g. minimum standards in codes of welfare)

Guidelines are considered to exist (in the Animal Welfare Act and sector Welfare Codes), but some questioned whether farmers know about them?

"There are a lot who have never heard of the codes, even now."

Animal advocates, particularly, consider that the codes could be more specific, and are somewhat insufficient.

"There's nothing in the codes of welfare saying specifically that you've got to ensure that the cows don't suffer heat stress through summer."

"The minimum standards are pretty minimum in my opinion. They're not too strenuous."

Legislation is considered important, and it accepted that farmers must abide by it or face the consequences. However, some argued that legislation should be primarily about empowering farmers to make good decisions. Others said that more needs to be done in terms of enforcement.

"Well, we would agree with that because they are never good enough for us...but the reality is now that we already have in the Animal Welfare Act the requirement for adequate shelter, and the reality is that there is no adequate shelter on plenty of farms in New Zealand and yet there are no consequences."

Difficulties enforcing animal shelter (Prosecution requires evidence that animals are suffering)

While there is legislation, the feeling is that few prosecutions take place - in part because of the difficulty in proving suffering. But political agendas within the industry and various stakeholder groups were also mentioned as a factor.

"Difficult if based on quality of life but you can prosecute if animals are dying. It's not an exact science. It's not black and white. It's not a definitive thing. It would have to be a rigorous process."

Hence inadequate shelter is perhaps more a consequence of inadequate enforcement. The more prevalent view is that it is better to encourage and help most farmers, than to punish them.

Provision of the cheapest product

Retailers and consumers were seen to have a role in animal welfare, a demand for better product, not just the cheapest, rewarding farmers for implementing shelter, rather than having to farm in a way that drives up production cost without adequate recompense.

Public perception

Public perception can also be a barrier to farmers putting some types of shelter in place. For example, farmers have been criticised for using herd homes rather than natural shelter. More on public perception is included below.

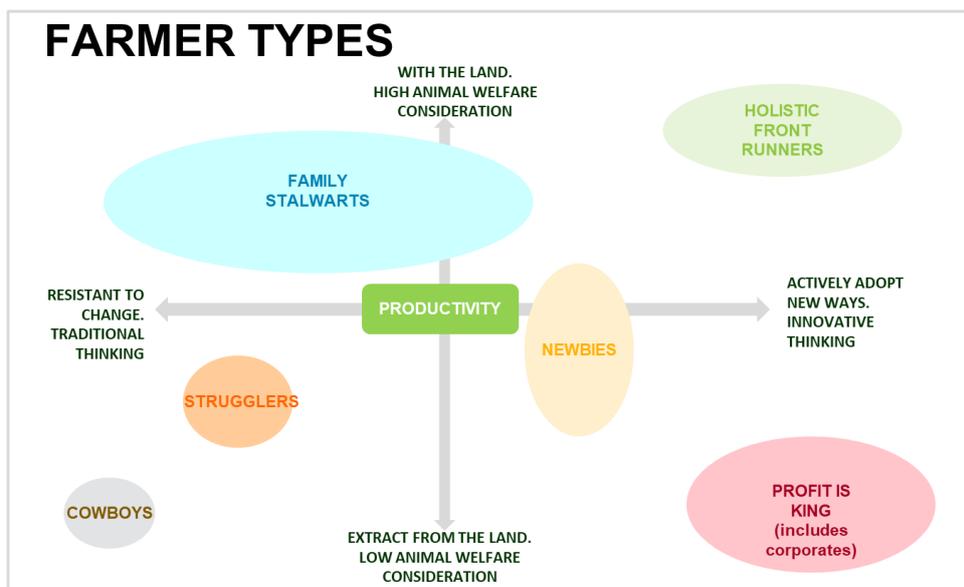
8 Who are they?

INTRODUCTION

This section of the report profiles the different farmer types we identified from those interviewed in terms of how they view and prioritise animal shelter.

8.1 Farmer types based on their attitudes to and behaviour regarding shelter

From this study, it is possible to envisage different types of farmers based on their attitudes to shelter. It should be noted that these are generalisations based on the conversations we have had, developed for the purpose of informing a strategy engaging with the insights shelter may demand. They are not descriptions of the individual farmers we interviewed, and may not even neatly represent actual farmers, merely the attitudes that may need to be borne in mind in changing behaviours. The map has two dimensions: the first reflects farmers' attitudes being influenced and shaped by whether they are actively adopting and practising new ways of farming and innovative thinking, versus being driven very much by traditional thinking and possibly more resistant to change (the horizontal axis). The second dimension reflects whether farmers work with the land and are attuned to it - and as part of this have high concern for animal welfare - or whether they primarily extract from the land with accompanied low animal welfare considerations (the vertical axis). At the centre of the map is Productivity, which is a driver for all farmers, however they go about trying to achieve it.



The model helps understand farmer attitudes and behaviours in relation to the provision of pastoral animal shelter which enabled us to conceptually draft communication priorities and approaches for each type. While we did not interview some of these types specifically, they are built from descriptors that farmers raised, referencing “the guy down the road” or “problem” farmers. The six types are:

1. Holistic Front Runners
2. Family Stalwarts
3. Newbies
4. Strugglers
5. Cowboys
6. Profit is King

Some profiles are based on individuals in the study, with names changed to retain confidentiality, while others are a composite of respondents.

8.1.1 Holistic Front Runners

For these farmers shelter is central to good farming and they are actively pioneering better ways of providing it. They are trailblazing and have the potential to be the good case study examples to others. They can express examples of the tangible benefits of shelter - with proof and evidence to underpin the message. There is a clear demonstration of good shelter equating to a successful business. These farmers can be our advocates.

The Holistic Front Runner pulls in new ideas and works diligently at implementing them. New thinking may be directed by a 'per head' rather than 'per hectare' focus. This results in the farming lens being on the animal and what most enables the farmer to get the optimum from it, rather than what can be extracted from the land to the detriment of the animal.

Holistic Front Runners are attuned to the land but they are also very receptive to new ideas for farming, some of which may relate to management that is rooted in empathy to what is right and natural for that area/region that the farm is in. For example, they may be part of QEII National Trust caring for native species. These farmers are spearheading and pioneering positive farming practices. They are exploring what works best as a holistic system and the benefits of this. There is considerable forward planning and proactivity and this is tied into sustainability. Holistic Front Runners thus embrace new approaches but also revisit and reassess traditional approaches especially in regard to planting - natives, etc.

"We've actually embraced a system which is, it's not organic but it's what I guess you'd call an holistic approach, where it's much more targeted on per head production rather than per hectare production. It's the satisfaction of feeding animals better and I believe we're setting ourselves up for more consistent financial results whereas we were quite erratic in the old system" (Sheep, Manawatu)

"You can tell if your animals have enough shelter. Like the way they move, the way they stand - you know they are hunched up. I mean just through animal husbandry skills, you know what an animal looks like when it's feeling cold and stressed. Like cattle will always turn their backs to the weather and both sheep and cattle have a very tucked up sort of look." (Sheep, Manawatu)

"I am involved in what's called an Advance Party. It's like a discussion group with a focus on trialling different ideas. You go round different farms. You look at what's happening, you come up with suggestions and ideally each farm should be trialling different approaches to addressing issues that they want to focus on. The one that I'm involved in has an environmental focus so shade is certainly part of that." (Southland)

"We try and plant between 500 and 800 trees a year. This property has been, well a labour of love. It's got about 4 hectares of native bush...and seeing that develop, seeing now we've got 12 year old nikau palms and we've had an incredible year. This was the first year we were gob-smacked, we had a flock of wood pigeons. A lot of our bush is flowering and fruiting and our flax too, so we want to propagate a lot of our own seedlings and then continue to do it that way." (Beef, Waikato)

"It's shelter. It's shade. It's aesthetics. It's stock health. It's bio-diversity. There's an ambience around the trees and natives and low shrubs which I just think is important. We're moving from a

point of view of saying farming is all about maximising production from introduced species, to saying farming's more about land and environmental management. So shelter is used in a number of ways. It's used to protect stock, it may be used to protect riparian plantings, it may be used to prevent soil erosion, it may be used to prevent, not so much in this sort of country, but in the North Island, land slips and things like that. So there's a number of different ways. I think we've just got to be a bit better at looking at it as a responsibility to the whole environment." (Sheep, High Country Canterbury)

HOLISTIC FRONT RUNNER PROFILE

"To me every creature deserves to be cared for and provided with a good lifestyle because I'm a steward for them. I consider it a stewardship role and I also believe in creating a good product for people. When you do an animal harm they produce a lot of stress hormones. I don't think that should be in the food chain. So maybe it's a little bit of a holistic approach."

Farming Context

Marianna is a beef farmer in coastal Waikato. She and her husband own a small block of land, 32 ha, and she has been a commercial farmer for 10 years. She started out on a 10 ha block breeding a few cows as a hobby and for the freezer. Marianna is forward thinking and is concerned about biosecurity. She wants to turn the farm into a "small sustainable long-term venture"

Attitudes to shelter

Marianna cares deeply about the welfare of her animals and this includes ensuring that the animals have good shelter. She actively looks for new and innovative ways to provide shelter, without compromising her land productivity. She saw on Country Calendar an interesting article about a farm in Tauranga where they had created 'working shelter belts' and was exploring ways she would be able to implement that on her own farm.

Current shelter provision and triggers

Marianna relies on a mixture of topography and natural shelter for her animals. The farm is situated on top of a ridge so she can be strategic about where to put animals in different weather conditions. They also have a half round barn and hay barn that can be used for sick cows or calves.



Barriers to shelter provision

Money and time are Marianna's main barriers to providing additional shelter. She has limited finances and there are other priorities on the farm. They are also on soft land that can get destroyed by the bigger cows but a feeding pad isn't realistic – cost is too high and managing effluent can be difficult.

Any future plans for shelter

Marianna has a long-term plan for shelter provision. She would like to eventually have hedgerows on one fence line in each paddock for shelter but this may take 10 years to complete.

8.1.2 Family Stalwarts

For Family Stalwarts, shelter is something that has always been part of how the farm operates. It is integral to how these individuals farm because it has stood up to the test of time. These farmers know that it works. It is not about doing anything different but doing what has always been done and improving on it.

These farmers are generational farmers - the land and farm has been passed on from grandfather, to father to son. They are demonstrably sympathetic to the land and take pride in animal husbandry. (One farmer proudly showed us cups and awards.) Practices have been passed down through the family and there is an innate understanding borne through this. Traditional practices are tried and trusted and this means that a considerable faith in them has developed over time. Essentially this encompasses heritage. As the farm has been in the family, the farm management system is developed and under control and there is space and time to consider what can be seen to be non-urgent issues and tasks such as shelter. Also, it may be is part and parcel of what is done – a father, for example, has planted and the next generation is taking on this mantle and continuing along this path.

“The family has been here since 1865. We think about shelter, feed and water for the animals. It’s part of animal welfare. We have a shelter belt and that is the most important. Shelter from cold winds in the winter and in the summertime the trees for shade. We have some belts to renew. Some gaps for heat protection and 5-6 rows that are a bit straggly. We spent years planting shelter belts.”
(Beef, Canterbury Coastal)

“My grandfather planted and my father did and we are doing now. We planted trees to slightly different soil types and willows by the fenced creeks to stop the lambs drowning. We have open paddocks planted with pine trees. It’s planned and considered planting. Something that we have always done through the years.” (Sheep, Canterbury Coastal)

“Not every paddock has got shelter. Some of it is due to drainage and draining and things like that. I haven’t finished the job yet. It’s an on-going process. Rome wasn’t built in a day.” (Deer, Manawatu)

FAMILY STALWART PROFILE

Farming context

Karen and her husband are third generation farmers - they started off as a dairy farm but have progressed to a stand-alone beef unit. The property is 360h, 320 of which is effective (the rest is bush and pine trees). What does she like about farming? She doesn't know anything different. She loves the people they deal with (genuine people) and the lifestyle – ‘you're in charge of your time both on and off the farm’. She has three grown children and grandkids. They carved off a piece of the farm for her daughter and family to build on - they were after a rural lifestyle for their kids.

Attitudes to shelter

“The whole farm is gathered around the well-being of the animal - this is our profitability.”

Weather is checked at least three times per day and stock are moved every 24 hours accordingly.

Current shelter provision and triggers

The topography of the farm - sheltered gullies, riparian planting is a good shelter for the wind. The farm is rolling or 'tractor country' - any uneconomic gullies have been planted in pine which offers great winter shelter. They have also planted hedgerows along any windy plateaus. She feels that the shelter on the farm, that has been planted over time, is acceptable for the cold but less so for the heat. Young calves are in a calving shed for the first 6 to 8 weeks of their life.

Barriers to shelter provision

It's a catch 22. To plant shade in every paddock would kill the grass underneath it - deciduous trees are a help but they mean compromising feed for shade. Shelter sometimes comes down the list of things to do - fencing the waterways would be ahead of shelter. It's about having funds and time - and a system in place e.g. every autumn they are going to fence off and plant a hedge.

Any future plans for shelter

The couple have no future shelter plans and the next stage for them is retirement considerations. However, they have planted regularly adding to what her father and grandfather planted. The farm is profitable and the animals are well looked after.

8.1.3 Newbies

These individuals are new to farming. They are on a steep learning curve and can be a bit overwhelmed by all that they have to embrace so that shelter gets pushed down their list of priorities.

The Newbies are likely to be younger farmers who are new to farming. They do not have a heritage or generational line to guide and shape them. Their focus is on getting the farm up and running. They are immersed in stocking, learning about the farm topography and getting to grips with the vagaries of the weather. Many are dealing with huge debt and trying to manage this in order to survive and make a go of their farming business. They have neither the money nor the headspace to consider non-urgent elements, and shelter can fall into this category.

NEWBIES PROFILE

Farming context

George is a young farmer in his late 20's. He works with his wife on their 1400 hectare sheep and beef farm which they purchased 6 years ago. He is struggling to establish the farm and turn it from neglect to productivity and he didn't quite realise what he was buying into.

"Probably getting established has been our biggest issue. Just cos we've bought land... to get your numbers up and running and no one's ever going to sell you their best product so yeh, it's just sort of finding your feet and getting stock."

Finances and keeping up with mortgage payments are his biggest issue.

"Cos I'm pretty much – there's no way I'll ever be out of debt so – not if I keep doing what I want to do."



Attitudes to shelter

Shelter is lower down the priority than fencing and maintenance and getting to grips with the farm topography and weather conditions. Sometimes animals suffer due to unexpected conditions.

"We've bought that many ewes and they don't all last under a bit of pressure... cos you don't have all your set stocking rates correct... Sometimes you'll get to dock and you'll think oh, you poor bastards. It's just a matter of next year you learn."

Animals lacked some shelter in unexpected snows last year just after shearing.

"...the ones that had been sheared were mobbed up so we just went out to the paddock and opened every gate and just had to let them go but it was too late by then..."

Current shelter provision and triggers

While there are good sheltered gullies, he has plans to put in more shelter as the farm had been run down when he bought it and many paddocks lack any shelter. But it's about finding the space and time and he has a load of other things on his mind right now.

"I'd probably be down here (on the rating scale). And the only reason I say that is because there is room for improvement. Just with plantings. There's still a lot of paddocks that don't really have a lot of shelter at all. Well, when I say shelter, I mean shade. And that's just a time thing."

Barriers to shelter provision

George plans to plant at some stage but doesn't have money or capacity at the moment.

"My Financial's one (reason that I don't plant). But probably the biggest is workload. We've got plenty of other work to be doing and the pole planting (for erosion) used to take us about a week or 10 days. I think we did 350 poles the year just been."

Any future plans for shelter

George plans to plant more over time.

"I'll just plant trees when I get the time. It'll just be one of the jobs you do every year."

8.1.4 Strugglers

Strugglers are not coping and are highly stressed. As a result of this shelter is not on their horizon. They are the least resilient of farmers and the ones most susceptible to destructive behaviour. They are the ones with the potential mental health issues. Strugglers need help and support. These individuals require performance planning, an agenda for what to do, education and mentoring.

Struggling types are overwhelmed and in crisis. They are not making money on the farm and they feel out of control in all aspects of farming. They are not coping and feel that everything is spiralling downwards. They are very likely to feel the full brunt of the potential isolation of farming and they are cut off from the community and networking. Many are depressed and suffering mental health issues. They lack resilience and need considerable support.

STRUGGLER PROFILE

Farming context

Hamish farms 130 cows in Southland. He is in his late 50's and is married. His two children live overseas, and although he'd like them to take over the farm, he knows that won't be the case, so he worries about what will happen when he retires. He had an injury last year when he overturned his quad bike and that shook him up. He increasingly finds farming hard work - it's ever increasing paperwork which just piles up, and more and more rules and regulations. 'It feels as though you don't know where you are one day to the next.' And the farm isn't making as much money as it should which worries him a lot, especially when the bank gets on to him. He's tired and worn down. He feels that all the responsibility is on his shoulders. 'But you've got to keep on' although some days he doesn't feel like it.

Attitudes to shelter

Hamish knows that shelter is something that needs to be considered but he just can't get his head into that right now. It all feels too much and he doesn't feel like it's something that is urgent. *"To tell you the truth, it's not something that is high on my list of priorities. There's enough shelter and of course there could be more but it just isn't top of my list of things to do."*



Current shelter provision and triggers

Hamish has shelter-belts and he hopes it's enough but is aware he should plant more.

Barriers to shelter provision

Hamish doesn't feel that he has enough money to plant shelter. It's as simple as that. And if he's really honest it's just one thing too many to think about.

Any future plans for shelter

Hamish has no plans at the moment for future shelter.

8.1.5 Cowboys

Shelter is seen by this group to be an intrusion or a waste of money. They dismiss it as something that can't be proved to make a difference. They are resistant and it will require inspections and enforcement to push them into taking action.

Cowboys intuitively feel like a minority of farmers. Their behaviour results in a farming business that often fails to succeed because they lack astuteness and understanding of what is important. They tend to be ignorant of issues relating to good farming. They cut corners and have a slap-dash approach. This is compounded by a dismissive attitude to what is important and positive. They are mostly reactive and resistant. How they farm can verge on negligence in relation to stock welfare. They are not prepared to invest, but also may not have the finances to do so because their businesses are failing. It feels that these types do not have their heart in farming.

“For those guys it’s partly ignorance and partly just not knowing what they should do and that nobody is going to tell me what to do. Those are usually the people that will fail in their business too.” (Beef, Northland)

“There is the odd time we have to be ruthless. Sometimes you’ve got skinny sheep, sometimes you’ve got sheep you can’t sell. Yeh, it’s just natural. Every farm’s got them. If they tell you they don’t, they’re a liar.” (Sheep and Beef, Manawatu)

COWBOY PROFILE

Farming context

Bruce’s dairy farm has been in his family for generations. His parents worked it, as did he, and now his sons are looking to take it over. He gets frustrated at the number of regulations that are coming through from government bodies who don’t know or understand farming. He has an old style of farming and believes that, for the most part, animals are born with everything they need to survive.

“Majority of the time they are animals that are used to outside, outdoors things anyway. They were born with fur and hair and all that sort of carry on. Gosh, you can’t make things too unnatural for them. Probably they don’t need shelter. That’s where I come from probably. My wife likes putting covers on calves. I said - well the calf was born with bloody hair on its back. It’s designed for that sort of thing. They manage. They have done for hundreds of years.”

Attitudes to shelter

Bruce thinks that animals don’t really need much shelter because they can manage and cope as they are. He doesn’t see the point in planting trees as it reduces the productivity of his land and is not effective.

“I don’t go deliberately planting trees for shelter. I think it’s a complete waste of time because you can’t get 650 cows under one tree. You can’t expect that. In the summer when it’s hot and you’ve got a few trees they make an enormous mess....I don’t think it’s a realistic goal otherwise you may as well have your whole farm covered.”

Current shelter provision and triggers

Bruce currently has a shed that can fit 650 cows. He uses this shed as a feeding pad. The main benefit of the shed is to take the water off the concrete where the cows are standing, which means that he doesn’t have to get rid of the effluent. He didn’t erect the shed because he felt the cows needed it for shelter, but did so primarily to protect the feed.

“The shelter wasn’t put up for that reason. It was put up more for the protection of the feed that’s in the bins and the other reason was to get rid of the water.”

Barriers to shelter

Financial resources are the main barrier to Bruce’s providing more shelter, as well as the impact on land productivity and the inability to measure the benefits of providing animal shelter. He doesn’t see the point of going overboard and planting an unnecessary number of trees.

"If you are wanting to improve animal shelter and you don't even know why you, you can't figure out if there's any impacts on the animals, what's the point in doing it?"

Any future plans for shelter

He has no plans to add any additional shelter on his farm.

8.1.6 Profit is King

This group have a very focused, bottom-line attitude to farming. Shelter is seen to get in the way of maximising grass productivity for profit rather than for other benefits, and all farming inputs are targeted to achieve this regardless of impact. These types are likely only to consider improving shelter if they are forced to, and financially punished for not providing it.

The 'Profit is King' type is epitomised by the mind-set that profit is key. This type comprises some of the corporates and those who often don't live on the property or are managing a number of farms. These types are not emotionally attuned to the land and animals and may be running the farm from an office in a different part of the country. There is likely to be a lack of animal husbandry understanding and sense of heritage.

For these people it is all about return on investment. They have an accountant mentality – the focus is spreadsheets and percentage profit, and the comfort of the animal is pushed out of view. There is a degree of exploitation of the land - stripping out shelter for maximum pasture growth, having too much stock on the land so that both are put under pressure. Shelter is seen to reduce productivity (grass growth) and they are often not farming to natural conditions. This type of farmer is typified by the large irrigated dairy farms - essentially the corporates. We didn't talk directly to any of these farmers but all the people we did interview referred to them and were able to articulate what they are like and how they operate.

"They are insulated from it. They are sitting at a desk and seeing that this has just given us 10% return or whatever and they've not actually seen the cows shivering or standing in the mud." (Sheep, Manawatu)

"Smaller farmers tend to worry about stock, whereas big farmers only worry about what's on the bottom line. And on these bigger farms, most of them don't see what a happy cow is." (Beef, Waikato)

"Well, these farms, they are very large corporate farms. Their sole focus is production, and you will probably find that even though if you talk to them they'd say - oh no, we care about our animals - but if you really went and looked through their herd you'd find a few cows with a few issues. By pushing more towards corporate farming you lose that animal care a little bit, because what you've got is a couple of thousand cows, the staff are just there to milk the cows, clock in, clock out and they don't actually watch the cows in the paddock or spend time with them or become friends with the cows or anything else. They are just cows. If you talk to someone in corporate it's just a cow." (Dairy, Waikato)

"Probably I'd say that the financial thing is the main driver of these people. You know, taking hectares out for their platform to milk. It is the financial driver for some of them. Like those

corporate farmers - I know a couple - they go in and take all the trees out. It's purely so they can maximise how many hectares of grass they've got and maximise the sunshine over it." (Dairy, Otago Coastal)

"In your shiny office with a heater and getting morning tea brought to you. Well, you don't go out there with your raincoat on and a bloody woolly hat and do all the jobs on a shitty day thinking - I should plant some more shelter. You don't lay awake all night listening to the rain thinking how much mess we are going to have in the morning." (Deer, Manawatu)

PROFIT IS KING PROFILE

Farming context

Jasper lives in Tauranga and his family privately owns a \$100 million fifteen irrigated dairy farm conglomerate in the South Island, mostly outside Christchurch. They supply Fonterra and Westland Milk Products. Jasper keeps a keen eye on the farm and he checks the spreadsheets daily from his office. 'It's important to keep on top of your ROI.' It's all about size and scale and ensuring that you are getting your maximum percentage profit. Jasper's family have extensive financial debts to service.

Attitudes to shelter



The shelter was all stripped out when the irrigators were put in. Trees are a nuisance because they impact on pasture growth and you can't have a pivot irrigator if you have large trees. The farm has high milk productivity targets and debt repayment drives the treadmill of intense productivity.

Current shelter provision and triggers

It's mainly some hedges on the perimeter of the paddocks.

Barriers to shelter provision

Jasper is wanting to get as much pasture growth from the land as possible.

Any future plans for shelter

The farming system works as it is so there is no plan to change it and put in shelter.

In summary, and across the sample, it was the Holistic Front Runners and Family Stalwarts who had active plans to put shelter in place in the short to immediate-term. Newbies and Strugglers have considerations other than shelter that take priority. It is *"something that I will get around to doing in time"*. Profit is King-types are likely to be the most overtly resistant to the concept of shelter, along with the Cowboys.

9 How to influence farmers

INTRODUCTION

This section of the report discusses stakeholder and farmer suggestions about how to encourage farmers to put in place (more adequate) animal shelter.

9.1 Farmer perspectives

Stakeholders and farmers who spoke with us generally said farmers trust 'people like them' and farming organisations/publications that they see as working in their interest. They said farmers don't particularly trust government - especially this Labour government with Green support. They believe influencing farmers is best done by encouragement rather than telling them what to do. Although, they also say some will need to be directed. The stakeholders and farmers indicated farmers should be given encouragement to take ownership and allowed "to be the hero". Collaboration, i.e. working with them, is therefore key.

Family members, friends and other farmers who are doing well are all considered by stakeholders and farmers that talked to us, to be highly trusted sources of advice and guidance.

*"I talk to my neighbours. My brother-in-law is a livestock rep and it's good to have a yarn with him."
(Sheep, Otago Coastal)*

There is also considerable respect for industry bodies and many farmers look to them for information, stakeholders and farmers told us. Thus, we gleaned that Dairy NZ, Beef and Lamb, Farm Forestry Association, Deer Industry NZ, and Federated Farmers all have an important part to play in encouraging farmers to consider shelter for their animals and how to approach it. Several farmers talked about how valuable the discussion groups e.g. LIC and Dairy NZ, are as a forum or a way to get issues on the agenda and to understand them further. From this we deduct there is considerable potential to utilise discussion groups to good effect.

"Round here we've got the Dairy NZ run discussion groups. They're good places if you've got questions and they normally go to different types of farming systems round the place and you can see what other people are doing and it's a good place to discuss things. So Dairy NZ are good - they provide a lot of information for farmers out there. Likewise Fonterra. I think they've got people who you can ring up and they'll come out and help you with shelter belts and planting and all that sort of thing on farms." (Dairy, Otago Coastal)

"I trust Dairy NZ and Fonterra - what they might say. I go to the farm discussion groups and they are really good. A great meeting point to share views." (Dairy, Canterbury Coastal)

"Beef & Lamb are really good. They have a lot of information on their website." (Beef, Otago Coastal)

"I would trust the industry leaders, like Deer Industry NZ or Deer Farmers Association or a discussion with them and Federated Farmers. The Deer Industry NZ put a bit out now and then. A manual sort of thing on different things about shelter and about animal welfare and nutrient leaching and things like this." (Deer, Canterbury)

Many read the farming papers and consider them to be a useful way of raising issues and imparting information and approaches that individual farmers can think about, reflect, weigh up and possibly take action on. Articles relating to shelter, published in farming magazines and publications or

online are likely to be digested by many farmers. The local vet/accountant/farm adviser also all have a role to play, as many farmers look to each of them.

“Friends and neighbours or people who are in the business. I glean a lot out of the farm publications - Farmers Weekly.” (Beef, Waikato)

Organisations that farmers supply to are also respected and can influence and direct. Fonterra was noted for its on-farm assessment. One farmer, for example, commented on receiving a useful dairy farm assessment last year - happy and healthy cows. Silver Fern Farms, Alliance and ANZCO were mentioned in terms of the stipulations they promote. Alliance in particular was considered to provide helpful information in relation to requirements for positive farming, of which shelter is a part.

“I’d trust Alliance or Silver Fern Farms.” (Sheep, Otago Coastal)

Regional councils - especially Horizon Regional Council - were talked about as being a good source of advice. Beyond this, we believe companies that serve the interest of farmers, such as PGG Wrightsons and Farmlands, might also be places where farmers are receptive to messages and advice relating to shelter.

“If you have shelter you are going to thrive a lot better than if you don’t have shelter and maybe getting some knowledgeable farmers out there saying - hey, I’ve found that the animals that were in this paddock did way better and I reckon shelter might have had something to do with it...Just doing things right makes it profitable...” (Beef, Northland)

In terms of influencing farmers, we believe that for the majority (i.e. those who are doing their best) the approach is education and encouragement coupled with sharing the success stories. One strategy is to identify and enable farmer mentors or gurus and facilitate them to talk about what they are doing. Give them the platform to share what they know about the benefits of shelter and the financial gains.

“I know a guy who used to have an organic farm in Wainatuni and he would have a lot of open days and a lot of local farmers went there even though they were not organic, but they just wanted to have a look at what principles he had put in place. So if you can show it in a tangible way, yeah.” (Beef, Waikato)

Pushing the productivity angle is an approach for those whom profit is a key driver. Demonstrate to them that good shelter equates to stock faring better and therefore improved or optimum yields.

“I think if you were trying to encourage farmers to have shelter you’d probably push the production angle. I’m sure there’s farmers out there who don’t see shelter as I see shelter, so if you went down that line, assuming profit is their driver, they might think - hang on a minute, I’ll look at that.” (Sheep, Otago Coastal)

Looking ahead to the next generation coming through is important. It was suggested working with Young Farmers to make animal shelter a part of what is seen to be good farming practices in New Zealand, so that for the cohort coming through in the years ahead, shelter is just something that is intrinsic to how one farms. Finally however, we acknowledge that there will be the stubborn few (e.g. Cowboys, some of the Profit is King types) for whom enforcement will be required and this has to be followed through.

The overall objective should be to get the subject of pastoral animal shelter on the agenda in the first instance, so that people are talking about it, but also to educate where needed. The driving philosophy should be to allow farmers take ownership so they see it as their idea. We believe that ownership is vital for broad-based action.

9.2 Stakeholder perspectives

The stakeholders we spoke to emphasised the need to consider a sophisticated approach to encouraging farmers to provide more shelter for their livestock where required. The approaches suggested included supporting, educating and guiding people, considering shelter within its wider context rather than just animal welfare, and utilising market signals.

Supporting, educating and guiding the provision of shelter could involve:

- Talking about shelter by encouraging farmers to think about animal welfare and shelter. Getting it on the agenda so that farmer organisations start talking about it and it becomes a way of thinking.
- Educating farmers to understand that animal health, feed AND shelter are the critical three factors; that shelter contributes to productivity and has an economic benefit.
“I do think that if there’s encouragement in place for farmers to think about the welfare of animals in a sense, we talk about shelter and it becomes a type of thinking that is taken up by the hierarchy within the farming industry, like Federated Farmers, if it just becomes a thing that’s on the agenda all the time.”
- Provide guidelines for farmers in terms of what they can do, for example, Farm Forestry workshops and videos that use farmer stories to explain their tree plantings and the benefits of that shelter for their farm (not just for animal shelter). Deer sector stakeholders described their industry as thirsty for knowledge.
- Show examples and success stories, particularly productivity outcomes to which the shelter contributed. Farmers share what works and passionately advocate their experiences.

Considering shelter in the wider context of farming and working in conjunction with sustainability initiatives and farm environmental planning processes is suggested as important. For example, providing the opportunity for sectors to encourage conversations with farmers that can encompass animal shelter. One sector group commented, for example, that prioritising shelter for animal welfare as an issue would take the focus away from water quality, which is the number one priority right now.

“Get the water right and farmers will think about re-fencing and creating shade by the stream.”

Utilising market signals and consumer led preferences and demands is a largely unknown approach to shelter. However, it could be important if it provided financial returns from participation in farm assurance programmes provides the opportunity to generate more revenue from providing more shelter. Conversely, lower payments for those farmers who choose not to meet minimum, corporate-led, shelter standards sends market signals to encourage behaviour change. These developments may be important as the growth of lab-grown meat and alternative products causes the farming industry to think about its social licence.

“If farmers want to justify their existence they may have to prove that they farm better, and shelter is part of that.”

“Shelter has been driven more by compliance with erosion and dairy farmers have had to plant up riparian strips because of the water quality issue. There hasn’t been a stick yet, but there are farmers who are selling direct into premium markets who have to prove that they’re providing particular shade for their livestock.”

In the event of farmers not changing, public pressure may become a significant influencer, although stakeholders would prefer to see farmers take ownership and make changes proactively, rather than be forced to do so by public opinion.

“The high profile areas, a place like the Canterbury Plains where of course they all had fantastic shelter and they’ve all gone. That’s pretty upsetting to see those vast prairie expanses where these poor dairy cows standing up given the sun and I think those are the sort of examples which actually are going to force farmers to change. The pressure is going to come. Even on National radio and the Jim Mora show in the afternoon this last summer day after day, it was them talking about shade and discussing why cows aren’t given shade. Common sense will prevail, partly driven by the sort of fear of public backlash and partly driven by the fact that most farmers do care about their animals and do want them to be comfortable, because it affects their bottom line. Farmers have all planted up their riparian zones because they had to. And if Fonterra says to them we are going to come out and inspect your farm and if you haven’t got a certain percentage of shade...”

9.3 Identifying where the issue is and approaches to address

Looking at how to tackle the issue of pastoral animal shelter provision with farmers, it might be helpful to mix communication methods, messages and even policies according to each of the different farmer types identified in this study (see summary below). This suggests no single solution will be expected to work for all farmer types.

FAMILY STALWARTS	HOLISTIC FRONT RUNNERS	NEWBIES and STRUGGLERS
<ol style="list-style-type: none"> 1. Acknowledge current practices 2. Encourage to continue and do more 3. Sustainable steps - inform and educate about “new” planting practices and provide advice and guidelines – (regional councils?) 4. Offer carbon credit rewards 5. Success stories, best practice, helping the next generation, passing on the benefits to next generation 6. Farmer is hero 	<ol style="list-style-type: none"> 1. Acknowledge current practices 2. Encourage to be spokespeople and mentors to other farmers 3. Disseminate approaches and learnings 4. Share the successes 5. Offer carbon credit rewards 6. Farmer is hero 	<ol style="list-style-type: none"> 1. Educate 2. Talk about small steps to make a difference and offer an agenda for what to do 3. Provide performance planning 4. Mentoring and support
COWBOYS	PROFIT IS KING	
<ol style="list-style-type: none"> 1. Communicate options that are not costly or time-consuming 2. Enforcement and fines, if do nothing 3. Peer group pressure 	<ol style="list-style-type: none"> 1. Give a tangible reason why shelter matters – what’s in it for them 2. Outline the measurable profitability and productivity benefits 3. Highlight improved animal production – milk yields, less stressed stock 4. Rules and regulations for shelter provision 5. External producer company audits 6. Tangible examples / plans for replanting pivot irrigated land 7. Highlighting the consequences of not adequately addressing shelter 8. Community pressure 	

10 The role of MPI

INTRODUCTION

This section discusses stakeholder and farmer views of the role/s that MPI could or should play in relation to animal shelter.

10.1 Farmer perspectives

Handling of the *Mycoplasma bovis* outbreak has, at least in part, influenced how farmers relate to MPI. Interviewing took place at the height of the crisis and this shaped responses considerably.

10.1.1 Current image of MPI

MPI is seen as a large conglomerate that is somewhat divorced from farming realities. There are perceptions that it has lost its way, which is resulting in a farmer loss of faith. At the heart of this, is a view that MPI is overly bureaucratic and ineffective.

“MPI. Those guys have never run a business and you’ve got politicians who live in a little dreamboat making decisions that have major impacts on people’s business.” (Beef, Northland)

The *Mycoplasma bovis* outbreak was spreading and worsening at the time of interviewing and MPI’s response to and management of it have influenced how farmers view MPI, with a trend towards the critical and negative. Stakeholders and farmers that talked with us believe MPI have responded to and been dealing with the outbreak in a poor manner, by:

- taking too long to respond to farmers, and
- adopting a ruthless and heavy-handed approach in mass culls of all cows on a farm. They question the necessity of killing stock that could be immune and therefore worth breeding from because it is crippling farmers. They ask why do so many cows have to be killed?
- Failing to provide sufficient or timely information, and,
- demonstrating a lack of logic to what is being done.

“Well, all we can see is that they are mucking up terribly with the Mycoplasma. They can’t organise a piss up in a brewery, MPI. I’m not even sure what their actual primary role is. If somebody asked me exactly what their reason for existing is, I would struggle.” (Beef, Northland)

“MPI are just too slow and not informing people of the true situation and not being, making decisions, concrete decisions, so many grey areas. We’ll wait and see and you could tell weeks ago that it was not going to go away. You could tell that and even this decision that came out today. I just don’t think it was the right one. So I don’t hold any hope in their decisions.” (Deer, Canterbury)

“Unfortunately everybody looks at this plasma outbreak and MPI seem to be in the middle of why it has all gone wrong. It’s typical of a government department that was too slow or doesn’t employ enough practical people within the system. Perhaps they need a practical mix amongst their academics.” (Sheep, Canterbury Coastal)

“I don’t think much of MPI. At the end of the day they were shocking. They are making a big deal about this, they are killing all these cows. One, it doesn’t affect the meat. Two, it doesn’t affect the

milk. All it's affected is the perceived status of the country because we were the 1 or 2 that didn't have it. That bug could have been here for 20 years. So all they are doing is going round and killing all these cows unnecessarily because they want to eradicate this bug which actually causes no issues." (Dairy, Waikato)

10.1.2 Desired MPI role

MPI are not regarded by stakeholders and farmers that talked with us as experts in farming so farmers feel that any information should not come directly from them or be led by them. Rather, they would prefer that MPI partners with farming industry bodies to deliver messages about the provision of pastoral animal shelter. Generally, they said MPI should encourage rather than regulate except for extreme cases and stubborn offenders. From our conversations it became clear the key theme is that MPI should not dictate to farmers and tell them what to do.

It is accepted by stakeholders and farmers that spoke with us that MPI should promote a standard. They said they wanted to first see a practical resolution to providing shelter to animals, so that farmers feel that they are being understood and being given a fair chance. Further, they believe MPI could play a part in helping narrow the urban-rural divide by showing the practical reality of farming. They believe that would counter unrealistic public perceptions of farming. Finally, they would like MPI to have more visibility in rural areas and on farms generally, not just when there is a crisis and things are bad. The following narratives illustrate these views and suggestions.

"They can encourage it through other parties but I don't see them having a direct role engaging with farmers. I perceive them more as a regulatory body, a market access sort of organisation, rather than having good farm systems knowledge, good technology transfer skills and experts in the field of farm shelter. I'm not convinced that they would have those." (Deer, Southland)

"I would like probably for MPI, I would like them to probably look at actually putting more people in the field, so that they actually know what's going on. It's not just people behind a desk perceiving, because that's the kind of feeling I get from MPI at the moment. It's the fact that they are not out in the field, they are not dealing directly with farmers. They bring in these rules and regulations without understanding what goes on and how it really works." (Dairy, Waikato)

"You want somebody you can trust telling you what to do rather than the government with their wooden spoon." (Beef/Dairy, Waikato)

"MPI can help promote a standard, but before that they should be seeking a practical resolution to that solution. And they should try and mediate between the practical reality and public perception." (Sheep, Canterbury Coastal)

"I think MPI could provide information. Knowledge I think, that's the better way to go for most than saying you must do this and this. Provide them with that information, and do it through the networks that are already set up is the easiest way, and through the likes of Fonterra. I think encouraging farmers to do stuff is a far better way than just regulating and saying you must do whatever. I think most farmers, if you give them time to think about it and work it out, can see where they are going with that stuff. Nobody likes the heavy-handed tactic." (Sheep, Otago Coastal)

“As a farmer I’ve never seen anyone from MPI on a farm. You see people like Dairy NZ and those sorts of organisations. They’re actually out there doing stuff with farmers. I guess MPI are only getting called to places when there’s something gone wrong. I think they need to have more sort of people out in the field doing it daily, actually working with farmers so that when something happens they’ve got a rapport with farmers, rather than just being the big man that turns up to start waving a big stick at people.” (Dairy, Otago Coastal)

“I would want it to come from the industry leaders, I mean as in like either Deer Industry NZ or Deer Farmers Association or a discussion between them and Federated Farmers or something, but the way MPI have handled this current Mycoplasma bovis situation, I don’t think they are capable of handling it really.” (Deer, Canterbury)

10.2 Stakeholder perspectives

Stakeholders’ views of the role MPI should play in relation to animal shelter were varied, reflecting different perspectives and biases. There is acknowledgement that to create change will require collaboration across the entire agricultural sector, with industry organisations, corporates and farmer organisations and MPI all involved. They believe the dairy industry requires the major focus, because of its intensification and move away from traditional farming systems. We want to note here that dairy related interviewees said there are initiatives underway on this.

By and large, stakeholders are keen to see MPI play a role that encourages and educates farmers, and supports the endeavours of industry sectors, rather than punishes them for failings. Getting farmers to take ownership of the idea that shelter is important is seen to be helpful.

There was little enthusiasm by participating stakeholders for MPI dictating what to do, given that farmers are under a lot of pressure managing environmental compliance, biosecurity issues, profitability, etc. There was a strong feeling among shareholders that MPI should be mindful of the context and timing of any shelter related work. With the current biosecurity crisis and need to contain the spread of *Mycoplasma bovis*, and focus on environmental requirements for fencing waterways, there is little enthusiasm for MPI to develop a separate strategy for animal shelter, unless it dovetails with other related initiatives.

Stakeholders said MPI are in a good position to co-ordinate and lead initiatives as an independent objective third party, in contrast to sector representative agencies who can be accused of self-interest. At the same time they wondered how effectively MPI would manage its multiple roles of: regulator, standard setter, standard assessor and enforcer. Key roles suggested were as follows:

- Focusing on setting the ‘tone’ or encouraging beneficial changes, as well as setting the standards and enforcing them.
- Encourage a culture of shelter by collaborating with industry sector partners like Dairy NZ, Beef & Lamb, who already communicate regularly with their farmer networks, so that messaging is consistent. For example, in the deer industry, stories are shared via Deer Industry News, field-days, sector conferences, etc. Beef and Lamb have a weekly e-diary for their farmers, with seasonal and topical information. This could be undertaken through, for instance:
 - Peer group mentoring – getting those farmers who are trusted and doing it well to share with others.

- Collaboration, as it is key – get farmers who are leaders to demonstrate how easy it is.
- Since some farmers prefer to learn from other farmers, help them to take ownership - (many are already overwhelmed by regulations and don't like being told what to do).
- Provide tools and resources to help farmers keep up to date with latest thinking.
- Help fund research and take a lead role in ensuring there is good science to prove and quantify the physiological benefits of implementing shelter, where there are gaps. Help disseminate learnings and help farmers understand the quantified benefits of providing animal shelter (production values, etc.)
- Play a role in educating the public and advocate the farmer viewpoint.

“I think not enough has been done to perhaps educate the public. This sits right across animal welfare - not just animal shelter. But it becomes highly politicised, which makes the opportunity for objective evidence and rational assessment of costs and benefits. The more public knowledge there is about an issue, the less likely it is that rational assessment of cost benefits practicality will sway decision making compared with emotion and headlines. And we've seen recent cases in the dairy industry. It's my perception that the majority of dairy farms are run in a way which is entirely different from some of the things we've seen on television but that generality is lost altogether. We lost proportion and television medium in particular is quite adept at this - some of the imagery can be so attention grabbing that it can make a rational assessment of proportionality quite hard.”

“Farmers know from experience and watching. They've been dealing with animals for so long and they know how animals respond and note their behaviour changes, which isn't something you can educate the public on, to be able to observe as they drive past. The public has an issue with heat. We less so, because animals are very different from humans in how they thermo-regulate. If you know how sheep respond in hot conditions, you know the public perceptions are inaccurate. So when it's hot sheep will just be sitting in the paddock and they don't move much. People think oh they must not be well, because they are not moving. But that's just the way they are. They tend to eat during the night and on the edges of the day.”

In addition to the key roles above, it was also suggested that

- The Emissions Trading Scheme planting requirements were reviewed giving consideration to incentives to plant smaller areas of trees such as shelter belts.
- And, as a last resort, make use of prosecutions to ensure those who don't provide adequate shelter face the consequences

10.2.1 Industry sector

Industry participants suggested that, in addition to understanding the current situation and keeping everyone updated, MPI helps provide tools and resources, and collaborates with industry partners like Dairy NZ, Beef & Lamb, to ensure a common message. Funding for collaborative projects and enforcement were also mentioned.

As well as suggestions for what MPI should do, there was also support for MPI continuing to partner sector groups in promoting welfare codes and best practice. For example, Deer Industry

New Zealand talked of how well MPI worked with the industry on the velvet removal programme, a successful partnership involving consultation and collaboration.

Nevertheless, MPI's role was seen in obtaining continual improvement (for example, how NAIT worked) through providing information and explanation, enforcement reserved for when it was absolutely necessary. The focus should be on setting the tone and the standards, to be the conscience and create minimum thresholds for pastoral animal shelter. While MPI's Vet and Mark Fisher's Animal Welfare groups were seen to have credibility, there is little enthusiasm for ex-fisheries inspectors coming on to farms, with limited knowledge of pastoral livestock.

"Well MPI has a number of roles and I think the Ministry could do better at demarking what they are and so there's a number of roles that MPI has that are related to animal welfare and except for the compliance guys I'm not sure everybody working in welfare and MPI is always that certain about exactly which of the different roles MPI has in animal welfare they are working to at any one time. Because the setting of standards and the enforcement of them is a different thing from advocating for higher standards for example."

It's never particularly clear to us on the outside because it's traditionally been split up across various different parts and it's just a bit difficult to get a handle on who's coming from what sort of position. There's a bit of a challenge when animal welfare advocates are also the people who set standards, who also enforce the standards. Who are also people who internationally have a role in promoting NZ's reputation. And that becomes all a bit confusing sometimes. The Ministry undoubtedly has a role in enforcing welfare standards.

"Are farmers in our industries expected to do so because it's necessary for our reputation? I would also acknowledge that the enforcement of standards on shade and shelter is so difficult that you'd have to raise questions about whether it's really achievable practice... I think the standards are set. I would acknowledge that there are some difficulties then in holding people to account to those standards but the challenge I guess is also are the standards practical and achievable in the first place?"

"So there's ultimately a role here for market drivers to work. And many of the things that MPI talks about are actually, they are looked after by the industries rather than the government decides them. So we've tried, and we've obtained agreement a wee while ago that I believe MPI has a very legitimate role in, the Government obviously has to play in the space of domestic public opinion and acceptance. The industries are best placed to understand market drivers and sector reputation and in other areas MPI has been a bit quick to sometimes to lecture the industries on market risks, they are perhaps best less well placed to understand than the industries themselves. Because ultimately in an ideal world that's taken care of by commercial drivers so customer wants A, B and C or doesn't want X, Y and Z, then the market will deliver that and the issue with doing it by regulation is that you remove any of the value associated with the ability to realise any value from complying with it." (Sector)

10.2.2 Corporates

Corporates that talked with us consider MPI to be independent and neutral, and hence in the best position to drive change. If MPI do not, then the onus would be on companies like Alliance Meats and Fonterra to do so, potentially resulting in farmers supporting companies less concerned

about shelter. However, if led by MPI, using encouragement and the stick on occasion, then the corporates can help farmers rather than penalise them.

10.2.3 Farmer bodies

The suggestion was made that that MPI could work to educate the public about the reality of animal behaviour and shelter needs vs. their perceptions.

10.2.4 Māori agribusiness

Take the lead and bring people together to help the farmers. Make the farmer the hero.

10.2.5 Animal welfare and advocacy

Among animal welfare compliance and advocacy interests, there was a view that someone has to raise their head above the parapet to tackle animal shelter. It was felt that MPI needs to co-ordinate and lead any such activity to instil a change in attitude. While industry bodies and corporates, for example Federated Farmers, Fonterra, Synlait, Dairy NZ, needed to bring the issue of shelter to the forefront and look at the practicalities, there is a need to drive a wider change, with banks, retailers and consumers all having a part to play.

While proactive farmers can be used to support and encourage other farmers, the law needs to be upheld and Animal Welfare Inspectors holding farmers to account is part of MPI's role (stand by it and act on it). A view was also expressed that MPI needs to better resource education.

11 Where do SPCA and SAFE fit?

INTRODUCTION

This section discusses farmer and stakeholder views of the animal advocacy groups, in relation to animal shelter.

11.1 Farmer perspectives

The SPCA (Royal New Zealand Society for the Prevention of Cruelty to Animals) was mostly thought to have a reasonable stance and farmers were likely to regard them more favourably than SAFE (Save Animals from Exploitation). The SPCA view on animal shelter was commonly supported by farmers who talked with us, and seen to be sensible. SAFE was viewed as sensationalist and scaremongering, demonising farmers and using underhand practices to get their point of view across and whip up public emotion and action.

“I reckon SAFE are actually, a lot of them are unrealistic. They are probably bordering on nuttish.” (Beef & Sheep, Waikato)

“SAFE, I think a lot of them are probably, I mean, they’re more of an activist group than an animal welfare group.” (Dairy, Otago Coastal)

“SAFE are saying that all farmers are interested in the profits. But most owner-operators aren’t constantly chasing the profit and profit alone. When we were milking, the hourly rate was crap. If you sat down and worked it out. They put out propaganda.” (Beef, Waikato)

“SAFE. It’s totally out of character with what happens. They do illegal things. They went onto a farm at night because they wanted to highlight it and say how bad it is, and all the pigs started squealing, and they said that this shows that they are suffering and how terrible it is, but in truth the pigs started squealing because they were excited because they thought they were being fed. It’s just sensationalist. And things like that...you know you hear that people overseas think that we kill a sheep to shear it. It’s crazy.” (Beef, Canterbury Coastal)

11.2 Stakeholder perspectives

While not all stakeholders commented on animal advocacy considerations, there was some acknowledgement of their value and role in starting a conversation and discussion, with the potential to create societal change and improve farming systems in the longer term.

But a more common perception among stakeholders who spoke with us, was that animal advocacy groups (more so SAFE than SPCA) are contributing to the urban: rural divide, and that their perceptions are emotively rather than fact based. Animal advocates are seen to focus on single drivers (animal comfort), without considering the broader farming system. Stakeholders acknowledged that poor farmer behaviour is inexcusable. Stakeholders would like animal advocates to know and appreciate that the majority of farmers do respect and care about their animals even if it is primarily as income generating units; and that natural surroundings (tussocks/gullies) can provide viable shelter.

“I generally think there is a bit of a disconnect between...Some people with a very strong set of values about animal welfare may not be on the same page as others about the level of discomfort that it’s appropriate for an animal to experience.” (Sector)

We note here that livestock sector groups talked of positive relationships with SPCA and working well with SPCA officials when animal welfare cases are alerted to them.

12 The impact of public perceptions

INTRODUCTION

This section discusses farmer and stakeholder views of public perceptions and the impact of these on expectations for animal shelter.

12.1 Farmer perspectives

As mentioned in Section 4, farmers are very aware of increased media exposure, public views and international scrutiny. Farmers commonly see this positively, “keeping us up to scratch as we should be” and believe there is a widening gulf between urban and rural New Zealand. They believe that this is fuelled by media and reporting of bad farming behaviour amongst a small minority of farmers.

Farmers who talked with us said the rural-urban divide is further exacerbated by the perceived shock and sensationalist tactics of organisations such as SAFE. Farmers feel that they and their practices are not understood by the vast majority of those who live in cities and towns, but that these people then take it upon themselves to judge the farmers and to take action against them in some circumstances. Farmers generally had a story to tell of well-meaning, but misguided members of the public complaining without understanding the fundamentals of farming. This leads to a waste of resources, time and money, and adds to farmer stress. Farmers feel that they are being victimised, yet they are the backbone of the country. It would seem that there is a need to educate the public about farming ways and to focus on the farming majority that are doing good.

“We have a friend just near Moeraki and he actually got a phone call from MPI last winter. Someone had driven past and made a complaint that the cattle were in mud. And he said - well it doesn't look good from the side of the road but they were on a crop - that was their food source. I think there is a real lack of knowledge between people driving past and people that are actually farming.” (Sheep, High Country Canterbury)

“I guess probably people who drive down the road and they see cows in mud - even if farmers have got them on crop or something and it's really wet, and they might only be there for a couple of hours, but if someone sees them they assume that they're there for the whole time. It probably doesn't help with the perception.” (Dairy, Coastal Canterbury)

“People don't understand why you are lambing at this time of year. They don't understand the shelter thing. You can think that you have done your absolute best and put your ewes in a nice sheltered paddock and they'll go into the most exposed part of it and have their lambs. You can't - it's just nature, it's what they do.” (Sheep & Beef, Otago Coastal)

12.2 Stakeholder perspectives

Stakeholders typically talked of public pressure being a key driver for change, and how perceptions of farmers and farming practices are being driven by public conversations, which are prompted by the highly visible impacts of dairy conversions on the Canterbury Plains landscape.

“Public perception is a big driver. Farmers are aware that cars driving past their road, with an animal standing in mud, they know that it's not a good look and I'd say 90% of the farmers try to avoid it. The 10% that don't, it gives everyone else that reputation. The majority are very proud of the way they treat their stock and their farms and their staff, so they don't like reading stories of the one percent that aren't good. Everybody that is passionate about anything, they hate it when there are negative stories on whatever they are passionate about. So farmers feel that more than anybody else because they're out there 7 days a week, 10 hour days trying to do their best and then to come back and get scrutiny over what you're doing is never, especially over what you're

doing from people who aren't aware of what to do, how to do it, it's just never, not very nice for anyone really." (Sector)

"Talking about Canterbury and all those shelterbelts that came out... What people don't know is that those shelterbelts were put in there in the first place to stop wind erosion. The pivots went in, and you see now in Canterbury there's starting different forms of planting because a lot of those shelterbelts were of a species that if cows ate them they caused them to abort and others like pine are just not suitable in Canterbury. The nor'westers keep blowing them over. So the perception is that the greedy farmers pulled the trees out so they could have every square inch grazed. Well the reality is that they were forced to change their practices with irrigation on the plains because they shifted from flood irrigation to pivot irrigation which is more efficient water wise, and unfortunately those shelterbelts had to come out. You'll see now that it's slowly changing there but it takes trees and shelterbelts a wee while to grow." (Farming body)

Stakeholders believe negative public opinion is driven primarily by dairy farming practices and the more traditional beef and sheep industry plays a much smaller role.

"I personally think that our sector is in a good space with respect to public opinion because I think NZ still respects the pragmatism and the hard work of the sheep-beef farming system which is much, I believe more traditional and more kind of, trying to find a different word than wholesome but it's not big business, it's farming do you know what I mean? And I think other production sectors are less like farmers and more like businesses." (Sector)

There is a strong belief that public views are based on emotive anthropomorphic beliefs and a lack of understanding of pastoral animals' actual needs. Stakeholders also talked of social media playing a large part in promulgating misinformation, and people basing their views of New Zealand farming practices on what they have seen and observed in other countries (e.g. shed based wintering in the northern hemisphere).

"It's part of the (farm assurance) programme that the farmer supplies adequate shelter for the animals. Now, when we dealt with Waitrose we had a lady from Waitrose come out and saying it was too cold for the sheep that were in the tussocks. And we said 'go and crouch behind those tussocks and see how much shelter you've got', and she couldn't believe the shelter from those tussocks." (Corporate)

"You've got the perception of the public. So for example one farmer could be lambasted for putting his cows in a herd home or in a paddock that had shelter for trees, because of the environmental damage, the farmer down the road could, in the exact same conditions could be vilified for not doing that even though they've tried to act in the best interests."

13 General public attitudes towards pastoral animal shelter

13.1 Summary

The aim of the general public survey was to understand public perceptions in relation to pastoral animal shelter. Questions explored the importance of animal welfare within the context of a number of other social issues; the welfare of animals kept for different purposes; the importance of each of the welfare needs; how those needs are believed to be catered for; and the barriers to the greater provision of shelter.

While of lesser importance to the general public than more pressing issues such as reducing domestic violence, dealing with environmental problems and housing, ensuring the welfare of animals (protecting them from unnecessary pain and distress) is an issue that three in four New Zealanders consider is very or extremely important for New Zealand to address, now and in the future.

New Zealanders are concerned about ensuring the welfare of most groups of animals, with greatest importance attached to zoo animals and lower importance attached to animals living in the wild. Ensuring the welfare of animals farmed on open pasture is very or extremely important to over seven in ten New Zealanders (75%), while that of animals farmed in enclosures is rated very or extremely important by nearly eight in ten (78%).

All of the Five Freedoms¹ (five needs or aspects of animal welfare) are considered important. Not surprisingly, New Zealanders attach highest importance to ensuring that animals have ongoing access to food and water (92% rating this as very or extremely important). Over eight in ten (85%) consider ensuring good shade, shelter and comfortable resting areas to be very or extremely important.

Perceptions of how well farmers care for their pastoral animals are positive overall, although there is room for improvement. Only half (51%) consider that farmers are doing very or extremely well at providing good shelter and comfortable resting areas, compared with over six in ten (66%) thinking they are doing well at providing ongoing access to food and water. Around one in ten (13% and 5% respectively) consider that farmers are doing a poor job of each one.

Less than optimal perceptions of farmers' level of provision of good animal shelter are based both on media stories and on seeing animals without obvious shelter in farming areas. Television coverage of intensive farming practices (cows in mud) did not go unnoticed, with respondents mentioning this specifically as influencing their opinions. Others' opinions were based on seeing animals without shelter in the heat, or in inclement weather. Verbatim comments suggest that the public feel that it is a minority of farmers who are not providing good shelter (as farmers and stakeholders also suggested). Less than optimal shelter is associated primarily with dairy cattle and cows, with sheep second.

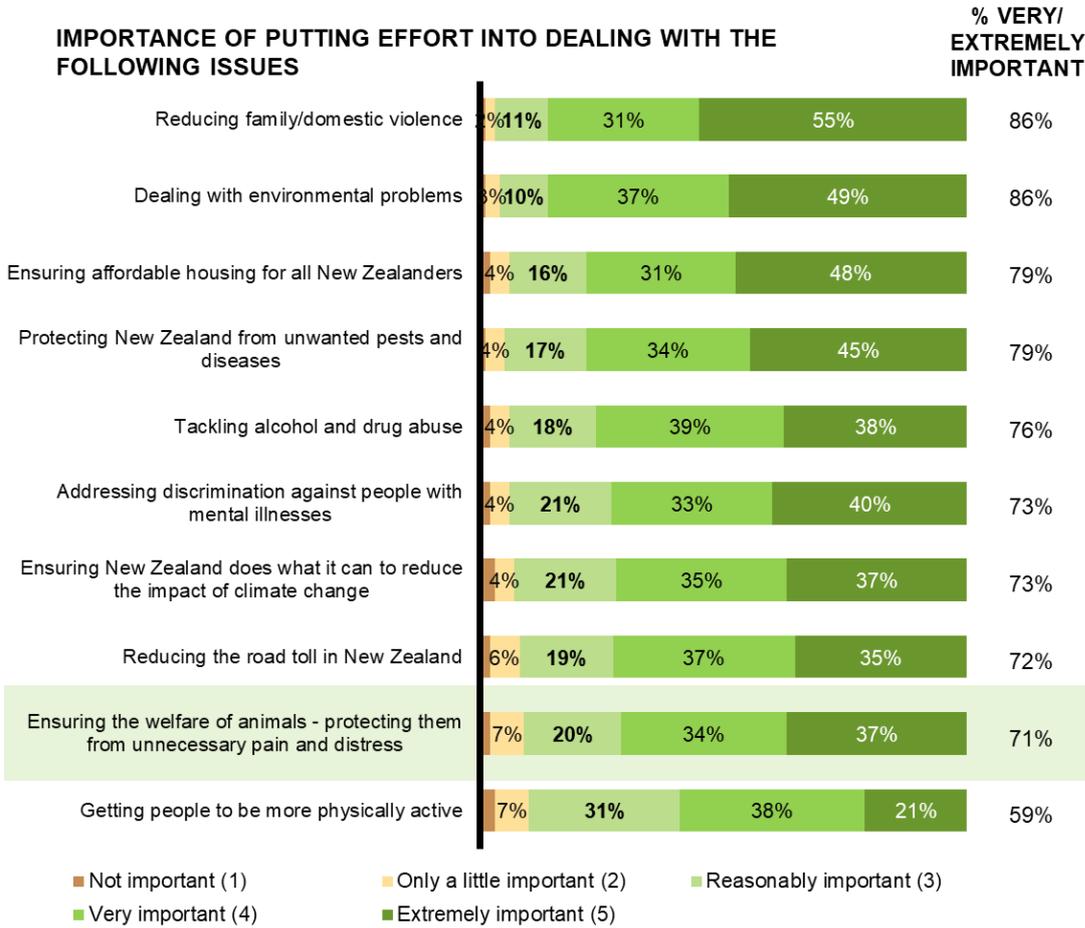
When asked to rate perceptions of barriers that might stop farmers providing more animal shelter, respondents mentioned two barriers as being more significant. Farmers' belief that animals can cope without shelter was considered the top barrier (with 48% nominating it a moderate or major barrier). Lack of financial resources ranked second. The perceived unlikelihood of farmers being prosecuted for not providing animal shelter emerged third.

13.2 Where animal welfare ranks relative to other public interest issues

To put animal welfare and shelter in context, New Zealanders were first asked how important they feel it is overall that New Zealand puts effort into dealing with each of ten issues now and into the future. While "ensuring the welfare of animals – protecting them from unnecessary pain

¹ The Five Freedoms are internationally recognised and paraphrased in New Zealand's Animal Welfare Act in relation to the needs of animals. They were developed in response to a 1965 UK Government report on livestock husbandry, and were formalised in 1979 by the UK Farm Animal Welfare Council.

and distress” ranked ninth out of the ten issues, seven in ten people (71%) said that it is very or extremely important to ensure their welfare, with nearly four in ten (37%) saying it is extremely important. Fewer than one in ten (9%) considered ensuring the welfare of animals is unimportant. Issues such as reducing family violence and dealing with environmental problems ranked as the most important issues to be dealt with (both 86% very/extremely important).



Base: All respondents (n=700)
 Q1. Overall, how important do you feel it is that New Zealand puts effort into dealing with each of these issues now and into the future?

Note: There was television coverage during the week of 23 August 2018, with images shown of cattle in mud during news bulletins, and some discussion of the appropriateness of intensive farming on morning television programmes. There is a possibility that this may have heightened awareness of animal welfare issues.

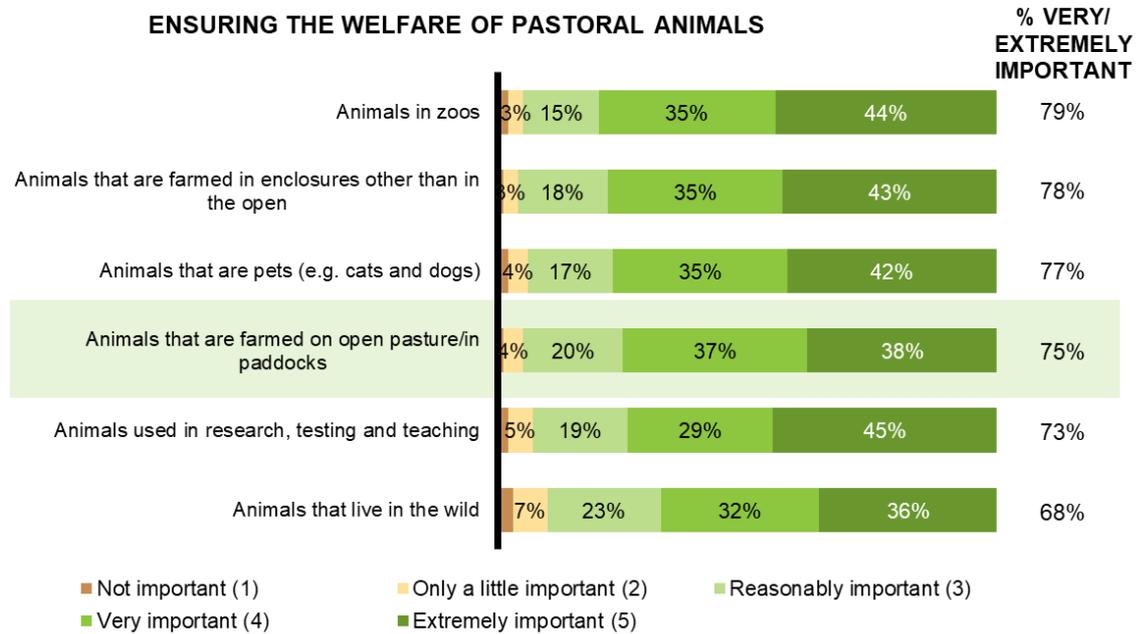
Subgroup differences

- Being in contact with the farming community did not impact the perceived importance of ensuring the welfare of animals.
- Those who rated it of higher importance than the average included women (79% vs. 62% among men), those from the South Island (79% compared with 64% among those in the Auckland region).

13.3 Concern about pastoral animals

To understand where pastoral animals rank as a concern relative to other types of animal, respondents were asked how important it is that the welfare of each of six groups of animals is ensured. There was not huge variation across the different sets of animals. In total three in four people (75%) said it is very or extremely important that the welfare of animals that are farmed on

open pasture or in paddocks is preserved. Only a small minority (5%) considered this to be unimportant. Greater concern was expressed about ensuring the welfare of animals that are farmed in enclosures, with 78% saying ensuring their welfare is very or extremely important.



Base: All respondents (n=700)
 Q2. How important do you think it is that we ensure the welfare of...

Subgroup differences

- Women attached higher importance to pastoral animal welfare than did men (85% compared with 64% among men).
- Older people also rated farmed animals as a higher priority than did younger people (80% of the over 55 year olds rating the welfare of pastoral animals as very or extremely important, compared with 73% of younger people aged 18 to 39 years).
- Again, being in contact with the farming community did not impact the perceived importance of ensuring the welfare of animals.

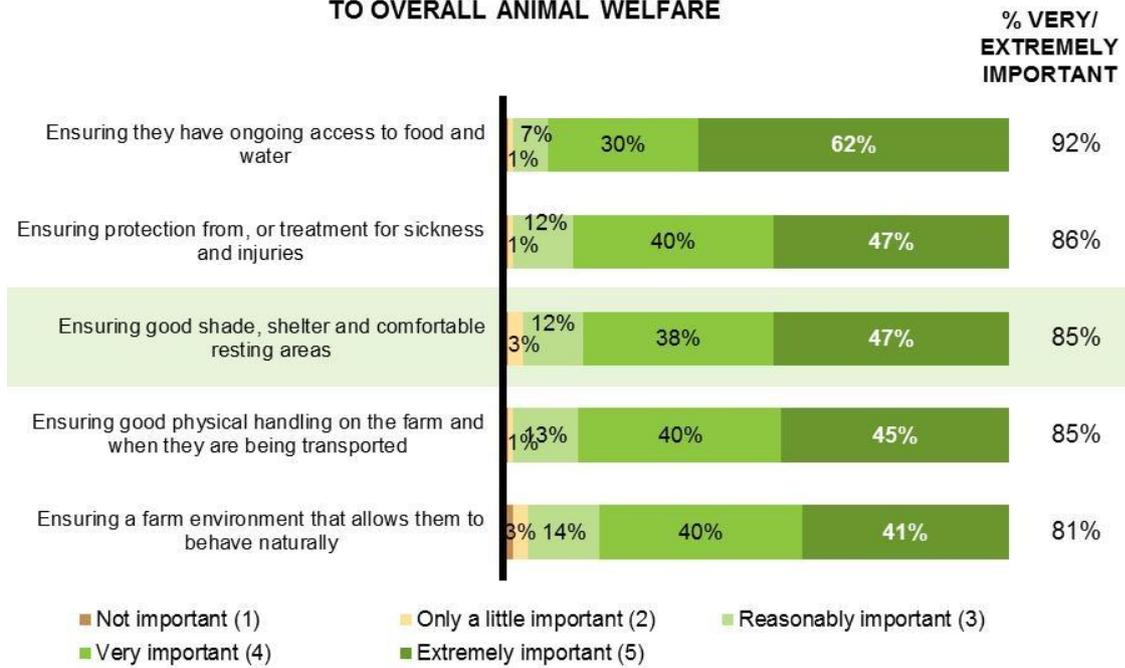
13.4 Importance of shelter compared with other aspects of animal welfare

When asked how important shelter provision is relative to the other four aspects of animal welfare, respondents ranked it third out of the five aspects (taken from the Five Freedoms). Ensuring ongoing access to food and water is considered to be most important overall, with nine in ten (92%) rating it as very or extremely important.

“Ensuring good shade, shelter and comfortable resting areas” was a close third, with the majority of people (85%) considering it very or extremely important.

Note: all five aspects were considered to be of high importance.

IMPORTANCE OF PROVIDING ANIMAL SHELTER IN RELATION TO OVERALL ANIMAL WELFARE



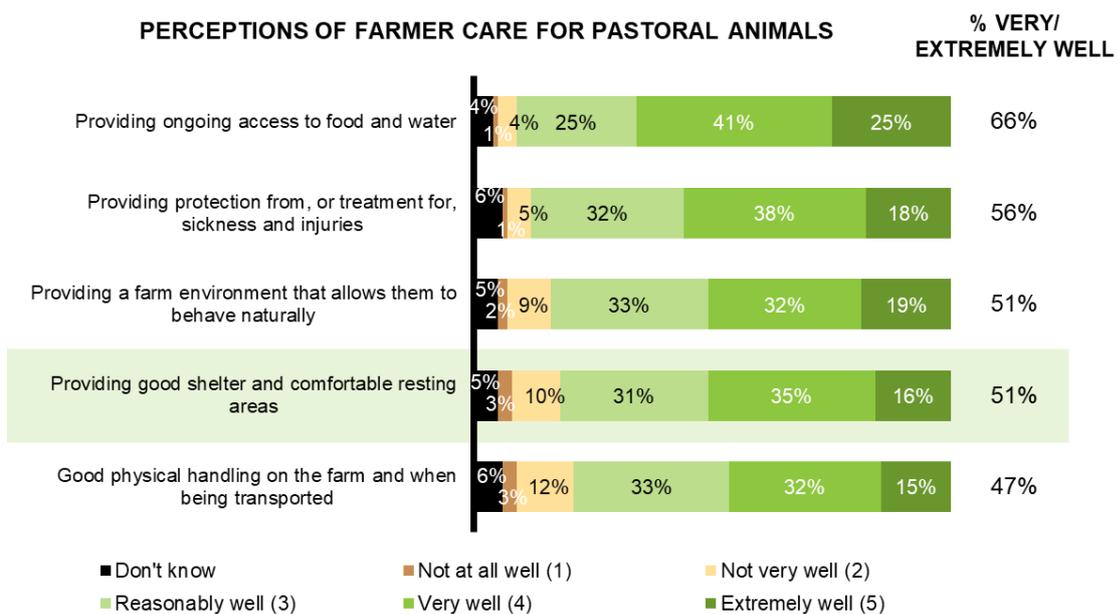
Base: All respondents (n=700)

Q3. Thinking now only about animals that are farmed on open pasture/ in paddocks. How important do you think each of the following aspects is for their welfare?

13.5 Perceptions of farmer care for pastoral animals

People were asked how much they consider farmers care for their pastoral animals including in terms of providing good shelter and comfortable resting areas. Perceptions of the provision of good shelter lagged behind perceptions of the provision of ongoing access to food and water. Just on one in two (51%) people said they think New Zealand farmers provide good shelter and comfortable resting areas, while 13% said they think the provision of good shelter is not done well.

PERCEPTIONS OF FARMER CARE FOR PASTORAL ANIMALS



Base: All respondents (n=700)

Q4. Generally, based on what you have seen, read or heard, how well do you think New Zealand farmers care for their pastoral farm animals in each of the following ways?

Subgroup differences

- Those in contact with the farming community generally gave higher ratings to farmers' provision of shelter, than those with no contact (61% very or extremely well, compared with 50% among those with no contact).

13.5.1 Reasons for less positive ratings

Those who rated farmers only middling or negatively for their animal shelter (n=309 of the 700 respondents) were asked why they did not rate farmers more favourably for providing good shelter and comfortable resting areas. Responses were based on media stories and what they had observed driving through rural areas.

Responses highlight the power of the media to influence public views about farmer behaviour. (Note: Television news on 23 August 2018 showed graphic images of cows in mud, in an intensive farming setting. And TV1's Breakfast programme the following morning had discussions with Fish and Game and media commentators talking about the issues associated with intensive farming practices.) Some respondents replayed these in their responses.

"Recently seeing and hearing news about the conditions of these animals. This has impacted my view on farmers' care."

"We saw last night cows up to their knees in mud and barely able to move. What disgusting conditions. We see all the time animals in the fields without shelter from adverse weather conditions. If there is a tree animals gather under it for protection - therefore the weather conditions must affect them and they seek shelter - therefore we should provide shelter."

"Intensive farming - having animals in part of paddock closer together and not necessarily access to shelter if needed."

Critical opinions from some of those who have been farmers or who are in contact with the farming community were based on past experience in the farming sector.

"I was a farmer myself for more than 30 years, so I have some knowledge in what I am saying. There are some farmers in NZ who think good shelter and comfortable resting areas aren't that important to pastoral animals! A more positive rating is relatively unimportant to the outcome - this becomes a political argument!"

"I was a herd tester for four years and saw how dairy cows were handled. It depended on the individual farmers. That was in the 1960s, things may have changed now. I don't know about sheep."

The visibility of paddocks without obvious shelter to passers-by also impacts opinions of shelter provision.

"Some farms are still focussed on volume of productive animals rather than producing quality animal by products."

"Almost every paddock you see is barren."

"I have seen when on road trips farm animals left on the open in the winter days."

"There is not enough shade available in the summer - virtually no trees on too many farms so the poor animals have no choice but to be in the blazing sun all day. Most animals given the choice will always choose shade."

“Even in windy areas, dairy farmers are taking out all shelter to make way for more COWS!”

“Seeing animals - more cows where there are only a few trees for shelter in the hot weather.”

REASONS FOR NOT GIVING A MORE POSITIVE RATING	RATED FARMERS MIDDLING OR NEGATIVE ON ANIMAL SHELTER PROVISION N=309 (%)
Negative news / negative media reports	17
News / media reports	2
Talking to farmers/friends	1
Lack of shelter / shade	30
Lack of trees / hedges	14
Lack of shelter from rain / floods	4
Lack of shelter from snow	2
Lack of shelter from the wind	2
Lack of shelter from the cold	2
Seeing animals knee deep in mud	5
Too much concentration / intensive farming	6
Farmers put profit before animal welfare	4
Feedlot conditions/lack of water/fresh feed	4
Have seen/heard about mistreatment of animals / animal abuse	11
Farmers generally provide good shelter. Doing ok on average (<i>note: this was from people giving a 'reasonably well' rating</i>)	5
Some farmers are better than others. A few bad farmers	5
Just a perception/feeling that it could be better	3
All other	9
Unsure	5

13.5.2 Specific animals of concern

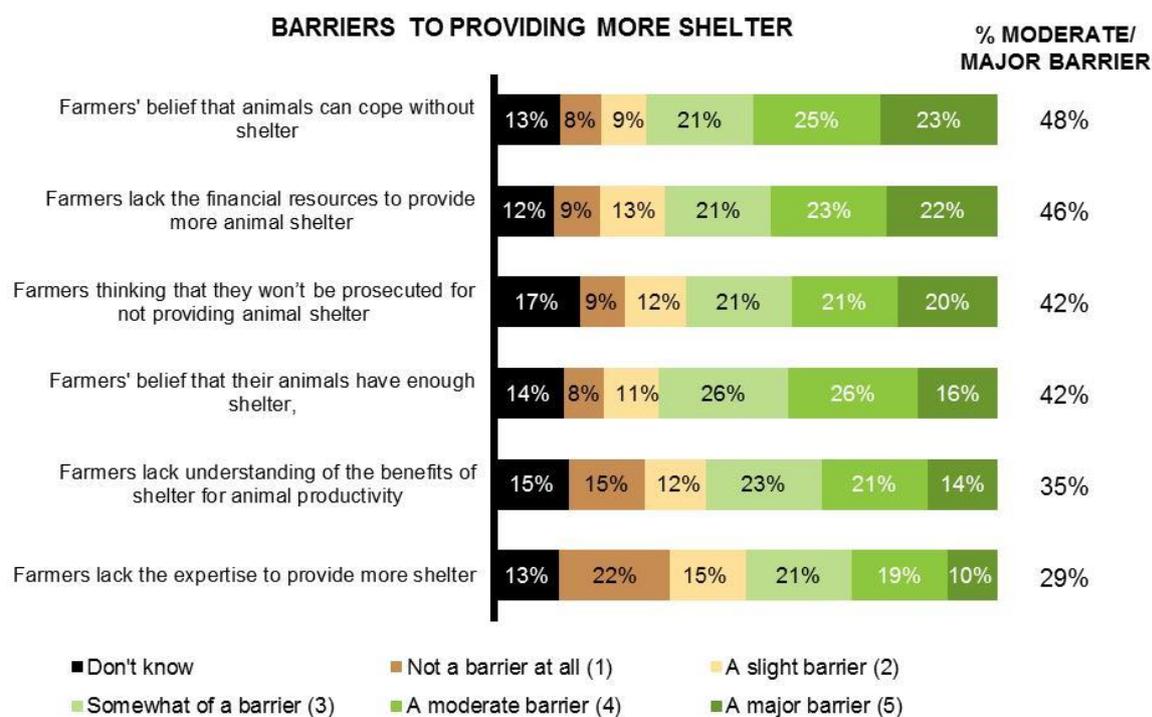
Those who rated farmers as only middling or negatively for providing good animal shelter (309 of the total 700 sample) were asked which animals were of particular concern. Dairy cattle and cows were the main species of concern with mentions by more than one in two people (supporting the farmer and stakeholder view of what the public notices). Sheep and lambs ranked second overall, with one in three people mentioning them. (Note: respondents could name more than one animal species.)

ANIMALS OF CONCERN	RATED FARMERS MIDDLING OR NEGATIVE ON ANIMAL SHELTER PROVISION N=309 (%)
All livestock	15
Dairy cattle / cows	45
Cattle	13
Beef cattle	3
Sheep / lambs	30
Poultry / chickens	15
Pigs	10
Horses	8
Other (incl. goats, deer)	6
None / don't know	15
TOTAL MENTIONS	160

13.6 Barriers to providing more shelter

Finally, respondents were asked to rate a series of potential barriers to farmers providing more shelter for their animals. Farmers' belief that animals can cope without shelter and lack of financial resources are considered to be the two main barriers to greater provision of animal shelter, with nearly one in two people saying each of these is a moderate or a major barrier.

Just over four in ten consider that the unlikelihood of being prosecuted is a significant factor.



Base: All respondents (n=700)

Q7. Based on what you have seen, read or heard, what do you think stops farmers from providing more shelter for their animals?

13.7 Involvement with farming community

At the end of the survey, respondents were asked about their level of contact with the farming community. Over half the sample said they have no contact with the farming community. This varied by region.

LEVEL OF CONTACT WITH RURAL COMMUNITY	TOTAL N=70 (%)	AUCKLAND N=246 (%)	UPPER NORTH N=136 (%)	CENTRAL N=154 (%)	SOUTH N=164 (%)
Am a farmer	4	3	6	3	3
Closely related to a farmer	15	15	18	16	13
Advise or work with farmers	3	4	4	0	2
In regular contact with farmers	13	7	23	14	11
Have occasional contact with farmers	26	21	32	27	27
Have no contact with farming community	51	63	34	46	50

13.8 Sample profile

The sample had the following profile.

GENDER	N=700 (%)
Male	49
Female	51

AGE GROUP	N=700 (%)
15 – 24 years	19
25-39 years	26
40-54 years	26
55 plus years	29

ETHNICITY	N=700 (%)
European /Pakeha	19
Māori	26
Asian/ Indian	15
Pasifika	3
Other	5

REGION (URBAN AND RURAL)	N=700 (%)
Auckland region (<i>Rodney, North Shore, Waitakere, Auckland City, Manukau, Papakura, Franklin</i>)	35
Upper North (<i>Northland, Thames/Coromandel, Waikato, Bay of Plenty</i>)	20
Central region (<i>Hawkes Bay, Manawatu, Wanganui, Taranaki, Wellington</i>)	22
South Island	24

HOUSEHOLD INCOME	N=700 (%)
\$40,000 or less	22
\$40,001 - \$60,000	15
\$60,001 - \$100,000	24
\$100,001 or more	20
Prefer not to say	12
Don't know	8

14 Appendix

14.1 Stakeholder discussion guide – animal shelter

STAKEHOLDER CONSULTATION AIMS – PASTORAL ANIMAL SHELTER EXPECTATIONS

1. Understand views on how much shelter should be provided for agricultural animals. This includes consideration of why shelter should/should not be provided, the reasons for this, what the range of practical options are and the main challenges involved.
2. Understand views on why there is variation in the level of shelter that farmers are prepared to/actually provide and the main barriers to (greater) shelter implementation.
3. Explore ways of influencing behaviour (farmers, animal advocates).

1 INTRODUCTION

Outline nature of the research project. Qualitative interviewing. Opinions. Confidentiality. Length. Recording permission.

2 ROLE AND RESPONSIBILITIES (warm up)

- Name, position in the organisation/advocacy group, description of their role, key responsibilities
- What are you busy with currently?
- Are you yourself a farmer, or have you ever been a farmer? *(if yes)* How important is this farming background for your work?
- What, if any contact, do you have with farmers? *(if yes)* what is the nature of this contact? What are the issues/matters relating to farmers?

3 OVERVIEW OF ORGANISATION PERSPECTIVE ON AGRICULTURAL ANIMAL WELFARE AND ANIMAL SHELTER

- What is your organisation's point of view on agricultural animal welfare and animal shelter? What are your goals around animal shelter?
- Where and how does animal shelter fit into the values and principles that your organisation holds?
- How does it fit with the broader priorities your organisation has around farming practices?
- Where would you rate the relative priority of animal shelter, on a scale of 1-10 where 1 is Not a priority at all and 10 is Huge priority? – why is that?
- How does your organisation go about defining expectations for animal shelter on farm? What challenges does your organisation face in defining specific expectations/requirements of animal shelter on farm?
- What does your organisation believe to be the most important factors to consider in terms of animal shelter? How does this vary or differ by region, farm type, etc.?
- How knowledgeable would you say your organisation is about the physiological impacts of adverse heat or cold on animal production in the absence of shelter? - *explore*

Specific expectations for provision of pastoral animal shelter

- What are the specific expectations that your organisation has for the provision of animal shelter?
- What drives these expectations? How do expectations differ for different animal species? Different regions?

(Clarify difference between the gold standard... the acceptable... and unacceptable, with examples)

- If you were to put where farmers sit on this spectrum (***show Gold standard to Inadequate spectrum***), where would you put current levels of animal shelter provision in NZ?
- What does your organisation consider is a gold standard in relation to the provision of animal shelter on farm? How would you describe it? How achievable and realistic do you believe this to be? How does this vary by region e.g. from Northland to Southland? How often do you think this gold standard is met?
- What about the middle ground? What does your organisation consider is adequate shelter for agricultural animals (sheep, cows, deer)? What are the compromises and trade-offs? How does this vary by region e.g. across the whole of New Zealand from Northland to Southland? (*if not clear from above probes*)
 - Can you give some specific examples of what your organisation considers to be acceptable shelter for agricultural animals – cattle, sheep and deer? What makes these acceptable?
- And what does your organisation consider to be unacceptable? Can you give me some examples of unacceptable situations that you have either heard of or seen first-hand? What makes these situations unacceptable in terms of shelter? How does this vary by region e.g. across the whole of New Zealand from Northland to Southland?

4 **VIEW ON FARMER PERSPECTIVE EXPECTATIONS, BARRIERS & TRIGGERS – NOTE: UNDERSTANDING THE BARRIERS TO ANIMALS SHELTER IS ABSOLUTELY CRITICAL**

- What do you think are the key issues farmers are facing in the current environment? What are farmers' top priorities? Where does agricultural animal shelter fit in these?
- In what context (e.g. production, animal comfort, animal survival, etc.) do you think farmers think about animal shelter? What's important to them in implementing animal shelter on farm? – *probe* How does it differ by region, type of farmer, type of farm, farm property characteristics, etc.?
- If you were to put farmers' motivations for providing pastoral animal shelter on this spectrum (***show Comfort – to Survive spectrum***), where would you say they are?
- Would you say that farmers generally have a good knowledge and understanding of the benefits of animal shelter – both to the animal and to them as farmers and their business? – (*explore why / why not*)
- What are the reasons for farmers to consider doing something about animal shelter? – What types of farmers do you think are most concerned about animal shelter? What are those farmers who are doing animal shelter really well, implementing on farm? What drives that?
- Thinking about farmers who are not doing anything about animal shelter.... Would you say that the farmer who is not doing anything consider that he/she has adequate shelter already or are they aware that they should be providing shelter/more shelter – but face other barriers?
- What do you think the barriers are to farmers' doing anything (more) about animal shelter? Please tell me all the things that you think stops farmers providing (more) shelter? What stops farmers from addressing animal shelter? *Write down on cards all the barriers the stakeholder mentions?* Which of these do you think are the most significant barriers?
- How important do these farmers think animal shelter is?

Show additional list of 11 potential barriers (SHOWCARD)

- Thinking about the barriers that you haven't mentioned, that are on this list, do you have any comment on those?
- What do you think the three biggest barriers are overall – from this list and those you mentioned? For what reasons do you say that?

Show shelter planting images

- We've got some examples of different types of settings and shelter for pastoral animals. Let's look through them, and it maybe that they bring up some other points about providing animal shelter.
- How widespread do you think these types of shelter settings are? Amongst which type of farmers? What makes you say this?
- How adequate do you consider the shelter to be? Would you want to see anything else? *If so, what?*

5 HOW TO INFLUENCE CHANGE- WHAT CAN MPI DO

- *(Ask all)* Taking into account the complexity of farm systems and the multiple demands farmers face, if it were your job to encourage farmers to consider and put in place agricultural animal shelter, or more adequate animal shelter, what would you say/do to most effect change?
- *(Do not ask animal advocates)* What about animal advocacy groups - what do they need to know about animal shelter, for example how wide spread it is, animal needs?
- What do you think the role of MPI is in relation to animal shelter? Specifically do you consider MPI could be doing to create change around animal shelter? What are the key priorities for them?

14.2 Farmer discussion guide – animal shelter

FARMER DISCUSSION AIMS – PASTORAL ANIMAL SHELTER EXPECTATIONS

- 1. Understand farmer views on how much shelter should be provided for agricultural animals. This includes consideration of why shelter should/should not be provided, the reasons for this, what the range of practical options are and the main challenges involved.**
- 2. Understand views on why there is variation in the level of shelter that farmers are prepared to/actually provide and the main barriers to (greater) shelter implementation.**
- 3. Explore ways of influencing behaviour.**

INTRODUCTION AND WARM-UP

CURRENT SITUATION AND FARMING GENERALLY – WARM-UP

- How long have you been farming?
- What type/s of livestock and how many do you have on your farm?
- What are the things that you most get out of farming this type of farm – the rewards and the benefits?

KEY ISSUES AND CONCERNS

- What are the main priorities for you on the farm currently?
- What about the key challenges you are facing? What are the things that keep you awake at night?
- What are your future concerns and priorities in relation to the farm? How does this differ between natural pressures and regulation/compliance pressures?
- Why are these such an issue?

Please note if animal welfare and/or animal shelter is raised in any way.

RATIONALE FOR ANIMAL SHELTER PROVISION

- What does animal welfare mean to you as a farmer? Where does it fit within your priorities as a farmer, compared with production or profitability? How much of a

priority (where 1 is “not a priority at all” and 10 is “a huge priority”) is the issue of animal welfare on this particular farm?

- What about animal shelter? What does this mean to you? How does it fit your farming practices? How does it relate to other animal welfare considerations?
- What is important for your animals, in terms of shelter? How do you tell if your animals have enough shelter?
- What other things do you consider when deciding the level of shelter your animals need? – probe to understand in relation to:
 - Livestock species (more of an issue for sheep than beef? And why?) and breed of species
 - Stages in the animal production cycle (what stages and why)
 - Climate (heat and/or cold); and weather events
 - Farm topography.
- What do you see as the key benefits of having good animal shelter for your animals – how do you quantify the benefits?
- What negative impacts, if any, do you think there on your farm from not having (adequate) shelter? Can you tell me a bit more about these?
- What need do you think shelter provides in your farming system? (show survival-production-animal comfort prompt).

LEVEL OF ANIMAL SHELTER PROVISION

- Specifically, what types of shelter do you have on your farm?
 - what is there already (natural farm topography, old standing trees, etc)
 - what have you actively put in place and
- What were your reasons for using these types of shelter?
- How adequate do you feel your animal shelter is (on a scale from gold standard... adequate... not as good as I would like)? How do you know whether it is adequate or not?
- (If excellent) – what is it about the shelter that makes you rate it positively?
- (If less than excellent) – What concerns, if any, do you have about it?
- What would you do differently, if you could?
- What, if anything, stops you from providing (more) shelter at this point?
- What about your future plans in relation to animal shelter? – what changes if any, would you anticipate making, if you could?
- Have you removed any shelter in the last 5 years? If so, for what reasons?
- In what ways do you manage animal heat/cold stress? What part does shelter play?

ANIMAL SHELTER BARRIERS

- What do you think a farm with inadequate shelter has in place for their animals? In what ways is such a farm different from a farm that provides good animal shelter? – how does the shelter differ?
- Do you know of any farms/areas in your region that don't have much shelter for animals? - What is lacking in their shelter provision?
- What do you think are the main **barriers** to farmers' providing good animal shelter? - *for each one probe:*
 - Why is that?
 - How widespread do you think this barrier is?
 - How does it relate to you?
 - How can this be overcome?
- Thinking about all of these barriers, which are the biggest barriers for you and/or other farmers?

Show the list of barriers, if these have not been spontaneously mentioned, and ask for each one:

- What about these barriers? How big a barrier is this? What makes it a barrier?
- Now, looking at all the barriers – the ones you have mentioned and the additional ones – which is the biggest barrier to you/other farmers providing adequate shelter for their animals?... through to the least.
- (for key barriers) How can we overcome these?

SHOW SHELTER PLANTING AND SHELTER IMAGES

- I have some photos here of various animals with/without shelter. What do you think the key issues are for the animals?

INFLUENCING FARMERS

- Who do you go to for advice and guidance on farming issues? Where do you get your information from? (other farmers, industry groups, field-days, workshops, etc) – which do you find are most useful to help you on your farm?
- Where would you expect to hear and learn about animal shelter and new ways of doing things? Who would you most trust?
- What would most encourage you/other farmers to provide (more) adequate animal shelter?
- How should you/other farmers be approached and what should be said? Who would you/they would trust to encourage you/them to provide animal shelter?
- What support do you/they need? What are the knowledge gaps? What do you/they need to know in relation to providing more animal shelter?
- What are the key messages you/they need to hear? And who can deliver these messages? What about the role of trusted peers helping you/other farmers to consider providing animal shelter? Are there any experts that you/other farmers would trust? Who might these be?

VIEWS OF INDUSTRY ANIMAL WELFARE CODES

Show relevant Code (e.g. Deer Code, Sheep and Beef Cattle, and Dairy Cattle Code):

- How aware are you of these guidelines and codes produced for your sector?
- How well do you feel this Code understands what matters to you as a farmer and the issue of animal shelter on your farm?
- How well do/ would these shelter provisions work on your farm situation? How realistic are they for you?

ROLE OF MPI

- Based on what you know about MPI, how could they help and guide you/other farmers in relation to animal shelter?
- What should they be saying or doing to help you/other farmers? What do they need to know about farmers if they are to encourage those not providing shelter currently to consider it?
- And what about their enforcement role? How do you think MPI should be enforcing animal welfare requirements?

STIMULUS MATERIAL USED IN INTERVIEWS

MPI SUPPLIED LIST: BARRIERS TO PROVIDING PASTORAL ANIMAL SHELTER
Animals manage and cope. Shelter is not necessary
The farm provides a suitable environment now and additional shelter is not needed
All paddocks should have trees or hedgerows
Management and animal-related factors designed to afford resistance to adverse weather (e.g. breeding for cold resistance)
Financial resources needed to put shelter in place
Farm productivity vs. comfort (e.g. removing shelter belts to enable irrigation systems)
Time and resources required to put animal shelter in place
Lack of knowledge about what is really important to the animal
Difficulties in measuring the benefits for different impacts on animals (e.g. comfort compared with productivity)
Lack of knowledge about animal shelter initiatives being undertaken and their success
Unrealistic standards in Animal Welfare codes
Difficulties enforcing the lack of animal shelter. (Prosecution requires evidence that animals are suffering.)

ADDITIONAL STIMULI MATERIALS:

- Animal Codes of Welfare.
- PowerPoint document of images showing different types pastoral animal shelter. These were used with stakeholders and farmers to explore perceptions of good, adequate and inadequate animal shelter in a prompted way, after unprompted discussion. They were not used in every interview.

14.3 General public questionnaire

Introduction

1. Overall, how important do you feel it is that New Zealand puts effort into dealing with each of these issues now and into the future? (5 point scale: *Extremely important, very important, reasonably important, only a little important, not important*)

(rotate order in which issues appear)

- Ensuring the welfare of animals – protecting them from unnecessary pain and distress
- Reducing the road toll in New Zealand
- Protecting New Zealand from unwanted pests and diseases
- Addressing discrimination against people with mental illnesses

- Reducing family/domestic violence
 - Getting people to be more physically active
 - Ensuring New Zealand does what it can to reduce the impact of climate change
 - Ensuring affordable housing for all New Zealanders
 - Tackling alcohol and drug abuse
 - Dealing with environmental problems (e.g cleaning up our fresh water, managing waste, plastics, etc)
2. Thinking now specifically about animal welfare— that is, protecting them from unnecessary pain and distress. You may have different feelings depending on the type of animal. How important do you think it is that we ensure the welfare of... (*Extremely important, very important, reasonably important, only a little important, not important*)

(rotate order – but put on one screen so can see all at once)

Animals that are pets (e.g. cats and dogs)

Animals that are farmed on open pasture/in paddocks (e.g. sheep, dairy cows, dairy cattle, deer)

Animals that are farmed in enclosures other than in the open (e.g. barns, cages)

Animals that live in the wild

Animals used in research, testing and teaching

Animals in zoos

3. Thinking now only about animals that are farmed on open pasture/ in paddocks. How important do you think each of the following aspects is for their welfare? (*Extremely important, very important, reasonably important, only a little important, not important*)

(rotate order)

- Ensuring a farm environment that allows them to behave naturally
- Ensuring good shade, shelter and comfortable resting areas
- Ensuring they have ongoing access to food and water
- Ensuring good physical handling on the farm and when they are being transported
- Ensuring protection from, or treatment for sickness and injuries

4. Generally, based on what you have seen, read or heard, how well do you think New Zealand farmers care for their pastoral farm animals in each of the following ways? (*extremely well, very well, reasonably well, not very well, not at all well, don't know*)

- Providing a farm environment that allows them to behave naturally
- Providing good shelter, shelter and comfortable resting areas
- Providing ongoing access to food and water
- Good physical handling on the farm and when being transported
- Providing protection from, or treatment for, sickness and injuries

(if not extremely or very well answered at Q4 – ask the following two questions).

5. You rated NZ farmers as doing only <.....> in providing good shelter and comfortable resting areas for pastoral land animals. What observations or concerns do you have that stopped you giving a more positive rating? (*write in own words*)

6. And what specific types of farms or animals, if any, are you mainly concerned about with regards to this? (*write in*)

7. Based on what you have seen, read or heard, what do you think stops farmers from providing more shelter for their animals? Please rate each of the following on the following scale (a major barrier, a moderate barrier, somewhat of a barrier, a slight barrier, not a barrier at all, don't know)
 1. Farmers believe that their animals have enough shelter,
 2. Farmers believe that animals can cope without shelter
 3. Farmers lack the financial resources to provide more animal shelter
 4. Farmers lack the expertise to provide more shelter
 5. Farmers lack understanding of the benefits of shelter for animal productivity (e.g. milk yield, weight gain, etc)
 6. Farmers thinking that they won't be prosecuted for not providing animal shelter

8. Which of the following best describes your contact with the farming community in New Zealand? (*responses will be grouped: 1/2/3; 4/5; 6*)
 1. You are a farmer
 2. You are closely related to a farmer (e.g. spouse, sibling, child, etc)
 3. You advise or work with farmers
 4. You are in regular contact with farmers (e.g. have visited a farm in the last 6-12 months)
 5. You have occasional contact with the farming community (e.g. go to rural shows, stay on farm)
 6. You have no contact with the farming community