Ministry for Primary Industries
Manatū Ahu Matua

Primary Industries Advisory Services System and Workforce Research

Part 1b – Appendices to qualitative analysis

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1.1.1 Overview – What does the farm system advisory system look like?

The farm systems advisory services sector consists primarily of private consultants, working with dairy, sheep and beef farmers. New Zealand Institute of Primary Industry Management (NZIPIM) also plays a role as an independent professional membership-based organisation and vital knowledge network for rural professionals working within New Zealand.

Pathways into advisory roles have evolved over time, particularly for farm systems advisory services. Conventional pathways shifted in response to institutional reforms in the 1980s that reconstructed the basis of the advisory system.

Until the 1980s, agricultural extension services in New Zealand were publicly funded and administered by the New Zealand Government through the Advisory Services Division of the Ministry of Agriculture and Fisheries (MAF). The MAF extension system trained advisers and allowed them to develop a range of different skills. MAF advisers received apprenticeships where they could build up their experience and networks while receiving mentoring from more experienced staff.

MAF provided a clear pathway into and through the advisory system. 9 of the 50 advisers interviewed for this work begun their career with MAF, including all those interviewees with 30+ years' experience.

Reforms of the 1980s disbanded the Advisory Services Division and with it, a clear pathway into advisory roles. Over time career pathways have become less clear-cut and more varied.

A diverse network of paths into advisory roles now exists, which we loosely categorise into three groups.[1]

1. **Direct from study to advisory role –** The 'traditional' pathway beginning with an agriculture-related degree at Massey or Lincoln, leading directly into a graduate role in a farm system advisory capacity.
2. **Indirect path through the primary sector –** While still beginning with an agriculture-related degree, this pathway diverts through a wide variety of other roles in the primary sector first. Many come from other advisory roles including work as vets, researchers, and advisory roles

[1] An online survey in the next phase of work will quantify the proportion of new advisers entering through different pathways.

in industry good organisations. Others comes through farming, or business services and sales.

3 **Indirect path through other industries –** Several interviewees began their career outside of the primary industry and began advising to the primary sector later on in their career. Entry points ranged from near the beginning of their career, right through to the end of their career journey. Many in this category had no pre-formed plan to go into farm systems advisory, but rather 'fell into it'.

These three pathways are the same for all advisory types that follow, including horticulture advisers, forestry advisers, Māori agribusiness advisers and environmental advisers.

While many farm systems consultants do come from other industries, a farm systems background is still preferred by some farm system consulting employers.

> *People who come from farms usually have a big advantage just being able to talk the language. They know something about the industry, but I wouldn't say that it's absolutely necessary. You find people that don't come from farming background do struggle sometimes.*

> *Most of the people we've taken on do have some sort of farm background. But I think there is a risk of taking on someone with an environmental skill set and then trying to wrap farm systems around them. I would much prefer to take someone with farm systems background then skill them in an environmentalist capability.*

1.1.2 Capacity – What are the issues and opportunities relating to the *capacity* of farm system consultants?

Interviews suggested that there could be a shortage of consultants within the farm system advisory services, with a few key causes.

Current business models make it hard to employ new graduates

Some advisers feel that the nature of farm systems consultancy services makes it difficult to build scalable business models using the 'pyramid' model common to many other advisory businesses. This constrains the supply of new farm systems consultants being developed.

> *The difference between farm consultancy and the likes of accountancy businesses, or banks, is that you don't have the 'churn' business that means you can employ junior people.*

> *The biggest challenge is that (farm systems advisory) is a poor business model in the sense that it's based on how many hours you can work and how much you can charge per hour. And it has a ceiling on both. And that model of having ten people out back doesn't really work because farmers want to deal with someone who knows what they're talking about.*

Another perspective recognises the issue but argues that advisers should look to change their business model to address this.

> *It's a dumb business model… because there are only 24 hours in every day and charging for time (has) got an upper limit. So, you've got two options. You can grow the number of people or you can grow the charge out rate. Or three options really. Or you can automate some of the function and then change your revenue stream. We are trying all three.*

Consequently, pathways for new graduates that lead directly into a farm systems advisory role are limited. Leading farm systems consultancies can only take the 'best of the best' each year, and the potential pool of graduates interested in farm consultancy to choose from exceeds the number of positions available each year.

Changing graduate numbers, and possibly the nature of the work, are contributing to the decline in experienced farm system consultants

Many of the farm system consultants (and other advisers) that trained under MAF Advisory Services are starting to leave the industry, and few are entering.

> *I went to Massey University and graduated in 1981. Back then I think there were 135 of us in our class doing horticulture. And now I think there's like 20 or 25 or something like that. So, it has been very bad for a very long time. It's been very, very tough for us to get guys to stay in the industry.*

All of the advisers we spoke to loved what they do and were passionate about their work. However, some interviewees had a sense that some advisers are disillusioned, and this also contributes to people leaving the advisory sector. Consulting requires hard work and resilience, and the financial benefits alone may not justify staying.

> *We say in our firm that you have to love what you do so much that you don't mind if you don't get paid for it... And that gets kind of troubling.*

Indirect pathways enable an inflow of diverse talent and experience

While the *direct* pathway appears to be constrained, the *indirect and industry-change* pathways offer opportunities to grow the pool of farm system consultants.

> *We need to stop relying on university leavers as the main channel of new advisers.*

> *There is also a mixture of university graduates, these tertiary qualified farmers, out there some of whom will be suitable. Then there's career changers.*

Arguably, recruiting from diverse talent pools offers some advantages.

> *The area that I was in forced me to work with lots of different interest groups. It was a really good learning curve in terms of sitting down and actually listening to the to the different parties that were sitting at the table. And I think that's something that certainly came into this role.*

Farm system consultants are good networkers and many actively cultivate and maintain a pool of potential recruits.

> *If we had a big job tomorrow and we needed two or three more people, I reckon probably within a month, I could have them.*

> *There was someone who is very skilled in farm environment plans, running their own farming business and she could have joined our team tomorrow. So, she is sitting in the wings for when demand picks up.*

While the ability to grow capacity would probably be tested if farmer demand was to, say, double over the course of 12 months, it seems likely that the sector will be able to find new people to service more realistic rates of growth in farmer demand.

> *I'll find the people - that is not the issue. If we could create the market signals it is probably going to sort itself out.*

1.1.3 Capability – What are the issues and opportunities relating to the *capability* of farm system consultants?

There are capability gaps in farm systems consultancy today

Some advisers perceive there to be capability gaps in the PIAS system today, particularly in regard to farm systems consultancy, and land use change. Indicators of capability gaps include inability to refer

farmers onto other advisers with the required skillsets (e.g., finding someone who specialises in land use change) or re-doing the work of others who do not have the competency required.

> *I am still convinced that we haven't got enough rural professionals out there and there are certainly not enough good farm advisers out there. There are a few ordinary ones and they pick up a fair bit of work, but they don't do our industry any good.*

> *We often find it very hard to refer to other farm consultants or businesses that we actually feel comfortable referring clients to.*

One perspective is that the shortfalls are particularly felt in the beef and sheep sector.

> *I can find dairy farm systems consultants and will train them up pretty quick to do that. But the sheep and beef side its harder because the systems are more complex and there's just not many of them around. You know, there certainly is an overall capability gap in farm systems just because it's more complex and some people get it and some don't. That holistic approach can be challenging.*

Farm systems consultants need a holistic set of diverse capabilities

Farm systems advisers need a range of skills that cover the gamut of running a good farm business, as they need to be able to recognise and balance conflicts that may arise when trying to achieve economic, environmental, governance and human resources goals.

> *I go about improving productivity of their land, increasing profitability and making sure that animal husbandry is performing.*

> *I talk about riparian planting and protecting waterways (as well as) production and farm development.*

> *It's about actually how do you run a good business that takes into account four or five things that are in tension - productivity, risk, resource management, people.*

With this holistic skills set, farm systems advisers can identify risks for farmers who rely solely on specialist advisers who don't consider the implication of their advice or recommendations across the entire farm business.

> *Nutritionists offering good advice, which was nutritionally sound, but it is sending the farm broke. So, you know, you've got to have that balanced approach and that just takes time and experience and training.*

> *I remember, when we're doing the training on the go, someone made an example of someone in South Auckland in a farm business who was ramping up productivity of the farm and said everything is looking fine and no discussion whatsoever on the debt levels and financial performance. And yes, that was a big weakness of the business. So, no holistic view.*

However, this also means farm systems consultants need both on-farm and off-farm skill sets. This does not suit some who enter the profession.

> *We are doing analysis, doing research, doing, you know, the management stuff, signing accounts, running farms. I mean, there's a lot of it, a lot of in- house stuff and not everyone can to cope with it.*

Farm system consultants emphasised the importance of pairing generalist farm systems skills with specialist skills

Farm systems consultants emphasised the importance of having generalist farm systems skills, which are paired with specialist advisory skills – particularly those specialist skills relating to the environment.

You cannot specialise until you've got enough basic understanding to know what you know and what you do not know ... we need an understanding of business in farm systems and then an understanding of the environmental stuff.

I want people to take a moment to understand farming, to know what it means to shift irrigators, to understand the seasonality of stock reconciliation.

Today, data management and modelling tools are becoming increasingly important

Data management and software to model farm systems were raised in different ways through the interviewees, highlighting the increasing importance of these tools in the role of farm systems consultants.

I realised that if I could systemise my consultancy offering, then I could also automate it. ... I hope that I can get other people to populate our dashboard and then we can give them their data back, graded and amalgamated for different catchments and we can get GIS information into it.

(Something) that really helps understanding the farm system is feed planning. I did most of mine on a spreadsheet in the early days, but now you could use Farmax.

We approach understanding the opportunities for a farm business, using a whole farm assessment tool.

Almost all farm systems consultants raised the importance of soft skills

Farm systems advisers emphasised the importance of soft skills in a variety of different ways. Those include problem-solving skills, …

Farm systems consultants are also problem solvers and draw on their understanding of whole farm systems to understand the implications of change rather than providing prescriptive advice.

… strong relationship building and communication skills...

We do a lot of reporting. Even with clients we do 1-1 work with, we do the reporting. Whether it's an email or whether it's 120-page research report, you have to be able to communicate effectively.

… and empathy and relationship management.

(Soft skills) are highly undervalued (by society) – but also extremely hard to teach. And so, self-awareness is really important - we place a huge amount of value and weight on having people who have self-awareness.

Farm systems advisers approach their working relationship with clients as co-learners and knowledge sharers.

It takes time to build capability in farm systems consultancy

Becoming a farm systems adviser takes time – about 3 to 5 years. One reason is that farming works on an annual biological cycle and this constrains the rate at which advisers gain the experience needed. Climate and markets are also sources of variation that bear directly on farm planning and performance.

It takes on average three to five years to train a farm consultant to be 'industry ready' at either their own cost or that of the consultancy firm they work for. It is at this stage that there is a blockage in the pipeline, with only a small number of graduates entering into the consultancy profession each year.

It could be three to five years. Because the other part of it is you have to go through this. Part of the frustration in some ways is that farming is on a yearly cycle. If you do you want to do something different, you have to wait another whole year to see the difference in inputs or outputs.

The other thing is that the climates and the market drive it so much and there's just so much variation. You really have to go through probably five years of variable climates or markets to see the upsides and downsides, to see how your theoretical plan can fly to pieces. And you know, with one storm or one drought or one market drop in prices.

Some capability areas, including governance and succession, generally require advisers to have a proven depth of experience and maturity.

It's not until someone's really got a few years under the belt that they're comfortable dealing with governance and succession type issues because, it does take a little bit of maturity and a few grey hairs sometimes.

As well as the time taken to build technical skills, it takes time to build credibility with clients.

It doesn't matter how good you are, it would still take three years for people to pick up the phone and start calling. It just takes that long to build your reputation and credibility.

However, farm system consultants use a variety of strategies to provide the range of advice required of them

The scale of some large farm system consultancies allows some advisers to develop their strengths while the firm covers the gamut of advisory needs for their clients.

Your standard 400 cow dairy farm needs a mixture of governance advice, environmental advice and financial advice. We can deal with all of that in-house quite comfortably. It's within our skill set.

Other, mainly smaller, farm systems advisers identify skill sets that they prefer to call on others for. Some farm systems advisers define their services by identifying their core skill sets and choosing to work within these.

I decided that I couldn't do everything. So, I needed to be a 'specialist generalist'. I focus in the areas that I can add value and (reach out to others) for specific areas that they need.

Farm systems advisers also recognise that farmers learn from each other and that supporting this creates opportunities for farm systems knowledge sharing.

Ultimately the perfect world for me would be that we kind of somehow unlock a movement of farmers advising farmers.

Farm system consultants can quickly grow capability in some specialist areas

Compared to the time taken to become skilled as a farm systems consultant, it is relatively quick to upskill new advisers to deliver many of the services needed for regulatory compliance - such as preparing farm environment plans. Indeed, doing so can be a good strategy to utilise new entrants in a farm systems consultancy firm while they build a broader skillset (see above). It seems likely that, if farmer demand exists, advisory firms will be able to respond to meet that demand.

If you want me to take on 10 advisers to develop a thousand farm environment plans later on this year, I can do that. We've got a pipeline of people who want to join our company, and we know how to train them, but where is the market need?

Training courses can be effective interventions if skills can be monetised

Perhaps the most obvious way to grow advisers' capability is to offer training courses and certification schemes. This does have some level of support.

> *If somebody wanted to put some money into it, helping train farm systems people and if we got paid to go to a day with a workshop with some researchers that would be a fantastic thing to do, take some pressure off the costs so that would be a pretty practical thing to do.*

A range of training and certification schemes for farm system consultants already exist, including those developed by the Transforming the Dairy Value Chain PGP and the Red Meat Profit Partnership (RMPP).

The experience of courses developed by the Transforming the Dairy Value Chain PGP (which have been available for longer than those developed by RMPP) offer some insights into the success factors needed for programmes to be effective interventions to grow advisory capability. These programmes include:

- Nutrient Management Adviser Certification Programme
- Greenhouse Gas Rural Professional Certification
- Dairy Farm Systems Certification
- People Management Certification.

Adviser demand for these programmes closely mirrors farmer demand for the related advisory services. This implies that the main constraint on growing capability in these areas is farmer demand.

> *I think the nutrient management one is really well-placed and was very successful. And the reason that one was so successful is because it had volume. You need to have a real purpose behind what you're doing.*
>
> *It's very well highlighted by the People Management program. There just really wasn't ever a market drive for that program and it struggled uphill from day one.*
>
> *If you've got volume and you've got a real purpose and a drive to build capability in certain areas, then the certification programme has a place.*

There is mixed support for certification for farm system consultants

Farm system consultants have mixed views on the value of certification for their skills. One value proposition is to enhance the recognition and credibility of the professionalisation.

> *I would always tell people, look for a registered farm management consultant. I would only ever refer people to other registered farm management consultants.*

Presumably, those farm systems consultants that feel that there are capability gaps within the farm system consultants operating today would recognise this value proposition for the advisory sector collectively. However, this does not necessarily translate to a value proposition at the individual or firm level.

> *They'd find it hard to see that (certification) would actually get them any more business. And most of them already (have) full books anyway.*

Another potential value proposition is to accelerate the development and billability of new consultants.

> *But the real value would be if, as a result of going through the program, firms could have younger staff have a faster road to 'flying'. And what they call 'flying' is basically making their own money.*

However, while accelerated billability appears a compelling value proposition, it cannot be assumed that training or certification will, in fact, help new advisers to grow their earnings more quickly. As discussed above, the time to gain experience cannot be easily substituted by training.

Other capability building models were discussed

One respondent described peer to peer learning as an effective way to build capability within the sector.

> *We (farm system peers) used to have staff days two or three days a year. We would go to one of their clients and look around the farm. We would ask 'what would we do here?'. And that was that was pretty powerful. It's just three of you sort of sitting down nutting that stuff out.*

> *I basically just used to sit and listen a lot to hear how these guys tackle the problems. They would study the farm systems problems with Farmax. Here's a problem or situation ... how are you going to do it or what's the opportunities? So just listening to how people went about it.*

New structure and partnerships, including public-private partnerships could be a way to address farm systems skills development.

> *Let's create a public-private partnership where we can develop skills for rural professionals. (MPI) can have them for some of the time and we will have them for some of the time... there are definitely opportunities there. But it's got to be on some sort of commercial footing...make it work for everybody.*

1.1.4 Collaboration – What are the issues and opportunities relating to the *collaboration* between farm system consultants and other advisers?

Collaboration is recognised as an important way to extend capability…

Farm systems advisers already recognise collaboration as in the best interests of their clients. However, they will increasingly need to work with other professionals as changes, for example in compliance requirements and operational scale, impact the pastoral sector. Even large farm systems consultancies recognise that collaboration is more important than ever.

> *I guess I've always got the view of what's in the best interests of my clients, and I've also got the view that I'm happy to make referrals too.*

> *... and with a business like that, our role is a lot of its strategic advice. But we'll be working closely with the likes of Ballance and other farm consultants, other advisers or rural professionals to provide that full range of service to that business.*

Geographic spread also creates a need for collaboration.

> *I've been involved in a couple of projects where I've needed to involve consultants from outside our firm because of the geographic (spread of the client).*

The need to collaborate is also acknowledged by industry good organisations who recognise the role of other advisers.

> *We don't have the resources to touch on every single farm necessarily in any depth. But we work alongside rural professionals or advisers to empower and enable them to do specific pieces of work.*

… but several barriers act against farm system advisers collaborating more

Perceptions of the quality of work undertaken by other firms, may act as constraints on the degree of collaboration between farm system advisory firms.

We are often very mindful that we think that there often aren't a lot of good ones around. .... I would ask in this area who I would actually willingly or happily refer people on to because often the skill set is quite specific.

Farm systems advisers are wary of the advice bundled with products and services. The concern here is not simply the independence of that advice – again the ability to contextualize advice within the whole farm system view is important.

Farmers want to know about the soil or about plant health or plant quality. And fertilizer helps with that. But they don't always want to hear from the fert companies because they know that (the rep is) trying to sell products.

Too many people walk up the driveway of farms or the rural sector and are selling fert or selling solutions to one part of the farm, but not considering other aspects.

1.1.5 Demand – What are the issues and opportunities relating to the *demand* for the services provided by farm system consultants?

Farm systems consultants' willingness to invest to build the capability and capacity needed to address productive and sustainable land-use challenges is constrained by their ability to make a return on this investment. This, in turn, is constrained by farmer demand. In this section we consider the constraints on farmer demand for farm system consultants.

Farmers sometime fail to recognise the value of farm systems advice

Many of the farm system consultants that we talked to felt that the value of specialist advice is more readily accepted and understood than that for farm systems advice.

Farmers aren't used to engaging with (farm systems consultants) for advice. I mean, they're used to dealing with stock agents, fert reps, the banker or whatever. But they're not used to looking at their farm as a system and getting advice on that system.

The systemic skills of farm system consultants may be masked by a client's focus on operational symptoms, rather than its underlying cause.

A recurring theme in discussion with many farm system consultants was a perspective that a segment of farmers lacks the capability to be skilled users of advisers.

The bottom 40% (of farmers) don't know what they don't know, and they don't really want to know.

However, there is a risk that this view is overstated and that many farmers that are making a conscious choice not to use advisers, and/or that farmers that are motivated by goals that do not require advisers.

It's interesting that some of them say, no, I don't want you to do that. It's not what you're here for. We just get you when we need you.

Farm systems consultants may struggle to charge the full value of their services

As providers of independent farm systems advice, consultants need to charge fees that fully recover their professional time.

As a profession (it is important that we) don't undervalue what we do.

As an independent business operator, to give my shareholders a realistic return on their capital, we need to charge a base rate of one hundred ninety-five bucks an hour.

Some farm systems advisers are confident in their value.

We're not the cheapest farm consultancy business around. We don't shy from that. But we think that we give exceptional value.

However, many farm systems consultants identified barriers to capturing the value from the advice that they provide. Advisers may be reticent to charge fully in the face of what they perceive to be farmer reluctance to use their services.

There is a risk that farmers resent using farm consultants because they think that they'd be getting someone to do a job they thought they should be able to do for themselves. Or that's the perception amongst our profession. We're not brave enough to say, 'we've found ten thousand dollars more profit for your business every year from now on. I want to charge you three and a half grand for that'.

A related barrier is the diffuse and delayed nature of the benefits provided.

I worry about things like often what we do on farm doesn't necessarily have immediate effects. So, (farmers think) 'I paid this money and I haven't seen anything today'.

A specific issue may arise for advisers who have transitioned into private consulting after working for a salary in another organisation.

If you're coming from a role, where farmers don't pay you directly it is important to get your head around sending an invoice for your time and not feeling guilty.

Farm systems consultants could do more to demonstrate their value

Several advisers argued that advisers themselves need to promote the value that they provide more.

I think we need to show the value of being involved and engaged with a farmer and with a farm. And I don't just mean the economic. I mean that broader environmental and societal role.

The profession itself needs to stand up and promote itself more. For all sorts of reasons, including if you want to attract people into the industry you have to tell them that it's there.

Farmers may not be the only audience for this promotion – industry bodies and possibly other parts of the primary sector could also be targeted.

In order to be able to keep doing my role, it is important to have continued support from farmers and from industry bodies that the work that we're doing is valuable.

Uncertainty of regulation also constrains demand

Having clarity on what is required of farmers, and by when, is likely to lead to an increase in farmer demand for advisory services. Many of the advisers interviewed in this work are frustrated by current regulatory frameworks, and unclear timelines. While government agencies are invariably singled out, many also identify a failure of the wider primary industries to come together on a way forward.

Advisers agree that expectations need to be set.

I think that government has a role to make sure that there is good regulation in place and set high expectations of everyone.

But policies need to be seen to be achievable.

What needs to come out of government is something that is actually achievable. Something that the masses buy into. They need to know that what they're doing is actually attainable and within a reasonable scale of time and continuous improvement.

Just as farm systems consultants need to integrate and make sense of the components of farms systems, so government need to integrate and make sense of different policies.

> *There is a trio of policies around freshwater, zero carbon emissions and indigenous biodiversity. That triplet of policies, the lack of integration between them, the timeframes, and the national versus regional policy. It's a real shambles.*

If government – regional or central – can make policies and timelines clearer, it is likely to lead to an increase in demand with subsequent benefits to capability and capacity.

> *If I had taken on ten advisers three or four years ago, when the first version of Plan Change One came out, to do the nitrogen reference points and farm environment plans, I would be broke by now because the things dragged on for so long to get to a stage where there's a (market) need.*

While the government needs to take the lead in providing clarity, many advisers acknowledge that other parts of the primary sector, including the advisory sector, also have a role to play. However, a lack of co-ordination is identified as a problem.

> *"We don't have the kind of unified, mandated cross-sectoral leadership that we need."*

1.1.6 Other themes – What other themes came through from discussions?

Advisers are aware of a need to differentiate themselves from competitors

Farm systems advisers are sometimes wary of industry good organisations that may undermine their value proposition.

> *Trying to distinguish between the external (farm systems) consultants and DairyNZ COs, and their roles, was actually quite important in this and in particular in its early days because they, and there is always a little bit of tension there, I guess. And there's a perception of DairyNZ COs providing a free service.*

Nevertheless, they are aware of professional farm system consultancy competitors and position their business relative to others. This enables them to identify potential collaborators or referrals. It also highlights that the profession is also at risk due to poor quality advice.

> *We are often very mindful that we think that there often aren't a lot of good ones around. And so, I know I've got a very, small number of people who I would say who I think are actually my competition. I would ask in this area who I would actually willingly or happily refer people on to because often the skill set is quite specific.*

> *I'm not worried about the competition. There's plenty of sandpit. It's pretty big. But I am concerned around well, the quality of the advice that's been done. And we often feel we have to come in and mop up behind other people, which is not great.*

Commercial sector advisers and salespeople also play and important role

Farm systems advisers work with commercial sector advisers and salespeople when their clients have specific technical or product needs. These are more likely to be one-way relationships initiated by the farm systems advisers. Commercial reps may also be farmers and aware of the wider farm business.

> *I think there is just a matter of where they are employed. A lot of them are probably actually farming themselves. It depends how you use them. If you think about the banks, the fert companies that are advising farmers, but not in a traditional paid way I guess a great salesperson is considering the wider farm business or should be when they're giving advice or giving them sales advice or products.*

We do work closely with them, but it's when we've got to match our clients. And they have mentioned where they get their seed or what species to put in from their technical sales. So, I would reach out to them rather than them reaching out to me.

In contrast some agribusinesses are clear with their staff that they are not to advise clients outside a clear-cut commercial boundary, such as the banks.

I got into trouble a few times for dabbling in the productivity side of things. And I was told under no terms am I to go into that space. I was representing the bank.

Nevertheless, some farm systems advisers are wary of commercial reps because of the value they put on providing independent advice and regard their independence as an indicator of their integrity and a commercial advantage.

So, people don't get independent advice from people who are selling a product be that seed or fertilizer or whatever it is.

Basically, the companies that I've worked for, part of our integrity is that we are not involved in selling anything, that we are completely independent of any commercial products. But I'm always happy to work with the farmers and their commercial supplier. And so never had a problem working with them.

Farm systems advisers perceive that farmers are wary of commercial reps and keen for information that helps them better understand their system.

Often the groups that I work with want to actually hear independent kind of people because they know that the commercial ones are actually out there to sell a product. And the farmers want to know, they want to understand more about the soil or about plant health or plant quality. And fertilizer helps with that. But, you know, they don't always want to hear from the fert companies because they know that this guy, they're trying to sell products. So often they don't engage, not with commercial.

Tools are available to support farm systems advisers

A range of tools are available to support farm systems consultants including DairyNZ's Whole Farm Assessment approach.

We also have a process at DairyNZ, our farm systems kind of focus. We approach understanding the opportunities for a farm business, using a whole farm assessment tool.

Spreadsheets and now Farmax are also key tools.

To be fair, the two things that really help understanding the system is feed planning. I've done most of mine on a spreadsheet in the early days, but now you could use Farmax. I don't mind. You just start understanding how the things link in the system, change one thing and see what else changes. And financial budgeting because this links everything together in the business. It's one thing that I really enjoy doing because I know that when we do a financial budget with a farmer, we can discuss everything about the business.

1.1.7 Wellbeing - What issues affect the wellbeing of farm systems advisers?

Producer wellbeing is impacted by a range of factors

A host of factors impact producer wellbeing. For example, poor public perception of farmers erodes their morale and sense of wellbeing.

Public pressure on farmers over the last few years has been quite intense. You know, on TV and the radio and the newspapers and just 'dirty' dairying and animal welfare issues and all of those sorts of things.

The cost of compliance and potential impact on the viability of farming business is also identified by advisers as a significant source of stress on producers, especially when there is uncertainty around the potential implications of new rules.

There's public perception and how the government is to make farmers do things... for example the whole water issue.

For farmers trying to find a way around managing these compliance costs, that are ever increasing, on marginal returns to start with, that makes it really hard to go farming and to continue farming. So, the mental well-being of is tough for a lot of them.

Some businesses may lose part of their farm because under the new rules they won't be able to farm that land. What's left of the farm won't run enough livestock to actually give them an income.

There were lots of issues in those early stages and half of them were because the people making the rules and setting everything were based in Wellington and they actually didn't have the practical experience.

Some of the government rules around freshwater now are causing some real angst.

Producers with high debt are vulnerable when banks exert strong repayment pressure. Local bank staff who understand farming may take careful approach to reduce stress on producers. Wellbeing issues can be triggered when banks are not prepared to negotiate through financial issues with producers.

Banks may put forward someone who is very experienced, who will perhaps take a quiet, steady approach and work through things with people. That's the best way of doing it. But occasionally the local manager gets overridden by credit control.

Some of those (credit control) people can be quite tough at times. They just come in and say, this is what it's going to be.

Succession issues may also have a significant impact on producers' wellbeing. Advisers identify that working through complex family issues can be very stressful for producers.

There is a lot of stress around succession planning. How do they hand their farms or their assets on to family, particularly if one's on the farm and another 2-3 are not? What does that look like going forward? How do they work through that? And then you sometimes disagreements between kids and that sort of thing.

About three years ago an old guy I know was trying to go through a succession plan. He'd lost his wife a few years before and missed her dreadfully and was trying to go through a succession plan with his kids. They were arguing and so one day he wrote them a letter and then took his life and said, 'you can sort it out'.

Younger producers appear to be better at handling compliance-related stress compared to older producers. Advisers suggest this is because they are generally better educated and able to accept the need for paperwork associated with compliance.

A lot of the younger generation farmers are able to handle it better, I think because they've grown up with it. And a lot more of the younger generation farmers have been through a university and they

learned how to do all of that technical kind of paperwork. But the older generation, there are still plenty that just stick their head in the sand.

Advisers play an important in producer wellbeing

Advisers are aware that producers' wellbeing is a critical issue. Most are not qualified to provide counselling, however, they know that producers who are socially isolated are particularly vulnerable.

They get into strife and they don't actually know where to turn. And some of that could be because they are young and they haven't established those relationships or that or they're trying to do it on their own and trying to be too self-reliant and not prepared to listen.

We've had clients who, if I drive past their farm gate, I make a point of calling in to make sure they're not hanging in their garage.

It's not a core part of our role, but I think it's part of being effective in this (advisory) space so we keep an eye out ...I have told my staff to contact three clients every week to make sure they're okay.

Sometimes, the only time a producer works with an adviser is when a bank has referred them to the adviser to help plan a viable way forward. At times, this may be too late.

Some of the problem is that a lot of people who use farm consultants often don't unless they're in an at-risk situations and are referred by the bank.

Advisers are highly motivated to learn how to better manage issues that give rise to producers' wellbeing issues, such as biosecurity risks.

We're keeping an eye on the farmer welfare side of things and liaising with the Rural Support Trusts. You've got the M. bovis restrictions and if the same farm is in the middle of a drought that has an impact, and then we get Covid-19 on top of that again. It gets pretty complicated.

Our responsibility is to help them get through it (M. bovis) as painlessly as possible and to be better biosecurity-wise at the other end of it.

Advisers refer producers to the Rural Support Trust

The Rural Support Trust is dedicated to supporting farmers struggling with wellbeing issues, including mental health. RST members who work directly with producers are volunteers and many are current or former farmers. It is this organisation that advisers refer to when a producer is experiencing wellbeing issues.

We try and use Rural Support Trust pretty much...We are really fortunate we know most people who are on the RST here and we know some of the farmers who are those 'go to' people. I've got complete confidence that they're the right people. I've seen the results with them locally as well.

I would recommend that someone contact the RST if they really start struggling. So that is a really good network of people.

So, we do see a role in being able to support them. We do offer training to our staff so that they can work alongside the Rural Support Trust, so that they can identify some of the warning signs we might see in a farmer before there is an issue.

The Rural Support Trust welcome referrals from anyone working directly with producers. The RST also provides training to advisers, so they are better prepared to support producers if they come across wellbeing issues.

Advisers are not trained to handle those mental health issues and that sort of thing. So, when they get stressed clients, we get people referred to us through a number of organizations including dairy company reps, fertilizer reps, sales reps and all sorts of people who are out here.

We can teach them (advisers) to give farmers a value proposition. We can teach them to talk in a way that motivates farmers, and we can teach them technical skills. But how do we teach them how to actually care for a farmer when it's ugly?

We try and train rural professionals to sort of observe when people are under pressure, when they are behaving differently to what they used to, when they're talking differently to what (how they did before).

The RST take a team-based approach to working with farmers experiencing wellbeing issues. They take time to develop understanding of what issues a producer is facing and ensure they offer an action-based, positive way forward.

It's about not having a massive agenda the first time you go to the farm. It's becoming a team with someone and getting to know them and just getting an idea of who they are and how they are.

I am highly conscious when I leave a farmer, even when they've got a very significant problem (that I need) to identify the problem, clarify what their actions are, and then leave them a positive way forward.

The wellbeing of producers has an impact on advisers

Advisers who work closely with producers and develop strong relationships with their clients may also be affected by the stresses they experience. Support for consultant wellbeing, as well as producer wellbeing, is a priority in consulting businesses.

The issues of farmer well-being and consultant well-being are just so important. We support our team really strongly on that. We've got one or two people in the business who pick up if things aren't right with the consultants.

1.2 Horticulture advisory services

In this section, we discuss findings from interviews from horticulture advisers and others that work with them. Due to the overall scope of the wider project, not all horticulture industries could be represented in this qualitative research. Six advisers were interviewed and represented kiwifruit, viticulture/winegrowing, outdoor vegetables, avocados, and arable crops. They hold advisory roles in private consultancy, industry good and merchant/supplies organisations. The advisers focus mostly on supporting growers' productivity however some are also working on environmental, food safety and compliance issues.

1. **Overview** – What does the horticulture advisory system look like?
2. **Capacity** – What are the issues and opportunities relating to the *capacity* of horticulture consultants?
3. **Capability** – What are the issues and opportunities relating to the *capability* of horticulture consultants?
4. **Collaboration** – What are the issues and opportunities relating to the *collaboration* between horticulture consultants?
5. **Other themes** – What other themes came through from discussions with horticulture consultants?
6. **Wellbeing** - What issues affect *wellbeing* in horticulture?

1.2.1 Overview – What does the horticulture advisory system look like and how does it differ between horticulture industries?

The horticulture sector is broad ranging growers producing 100 different fruit and vegetable crops. As such, the horticulture advisory sector has specialist advisers working with each of the main crops, and few generalist advisers working across a range of crops. A limited number of private consultants position themselves as providers of 'independent' advice, while others advice is 'bundled' with a sales role for example, as fertiliser or agrichemical reps.

The horticulture sector differs from the pastoral sector as produce is typically sold fresh through integrated value chains that involve overseas ownership. In addition, in recent decades small growers have sold to become corporates, and now large horticulture companies (such as Zespri), packhouses and grower cooperatives typically employ in-house advisers who advise their own grower client base.

1.2.2 Capacity – What are the issues and opportunities relating to the capacity of horticulture consultants?

Advisory capacity varies across the sector

Perceptions of horticulture advisory capacity vary across horticulture industries and organisations. Organisations such as PGG Wrightson and Zespri are well-resourced with horticulture expertise and are confident in their capacity to support growers.

> *We (PGG Wrightson) fluctuate with between about a 165 and 170 rural and horticultural sales reps.*

Zespri are in the process of expanding their specialised expertise in kiwifruit production to include sustainability and good agriculture practice (GAP).

> *There'll be 11 plus an administrator, and the team manager, so 13, I guess. We've got somebody focused on sustainability and good agricultural practices. Somebody will be coming next year focused on the production systems. Somebody is focused just on the new cultivars. And also, extension design.*

There are, however, capacity gaps. For example, there is a lack of advisers in the outdoor vegetable industry and private horticulture consultants with expertise across different horticulture industries.

> *We've kind of got a bit of a crisis in the (outdoor vegetable) industry and have had for the last ten years.*

> *We've been short of advisers or agronomists for years and years and decades. It's very, very hard to find someone like (...), a young guy who wants to be an agronomist and stay in the industry these days. You advertise for extension delivery specialists, where do you find those?*

For other industries, such as viticulture, advisory capacity is not fully understood. However, this is a current research focus of that industry.

Respondents identified gaps in advisory capacity as an important issue for their industry.

> *There really aren't a lot of (independent) consultants. If a grower wants to employ a consultant, they really have to search far and wide for somebody who's got the capacity to fit them in. So that's a real challenge.*

> *Our industry (kiwifruit), it's very light on private consultants. You know, there is Fruition, there may be three or four others in the Bay of Plenty, there is a couple in Nelson and that's about it.*

Uneven regional distribution of growers and resources calls for tough decisions

Given limited resources and regional dominance of a crop, such as kiwifruit, decisions need to be made about how to invest those resources geographically.

How much focus do we put on issues that are impacting a small number of growers vs the 80% who are in the Bay of Plenty? And we know that in the Bay of Plenty there's a whole lot more technical support than out in the outlying regions, where there's a whole lot less. But there are also fewer growers. So, it's about balancing the effort that you put in those different areas.

Structural changes highlight a gap in advisory capacity for smaller growers

Several respondents noted that the structure of some horticulture enterprises including outdoor vegetables and kiwifruit, is changing. What were mainly family-owned and run businesses are becoming larger and more corporate, enabling them to employ in-house technical expertise. A concurrent trend appears to be an increase in small horticulture businesses operated by immigrants with limited English.

The ability of some large businesses to employ in-house expertise reduces the pool of available advisers and highlights a gap in advisory capacity for smaller growers.

We don't go anywhere near the vegetable sector anymore because those big growers have their own agronomists. But what about the medium sized growers that can't afford their own agronomist? Who do they go to?

Attracting new advisers can be a challenge

Attracting and retaining new advisers with the right skill set and 'personality' can be difficult.

It is very challenging to find people with technical and advisory skills sets, and the 'personality' suited to consulting.

Employing new graduates is a challenge for small consulting businesses, as it is in the wider primary sector. It is hard for small consulting businesses to match salaries offered to potential employees when competing against large organisations such as banks.

It is a big issue for us. We're a relatively small organisation and it is a big issue to take on people with us at a competitive salary. And it changes through cycles. At some stages, the banks were the main people (employing graduates) and we couldn't match what the banks were paying.

Once appointed, a trainee horticulture adviser will probably need time to acquire practical and technical experience. They also need to start building trust-based, mutual learning relationships with growers.

It's difficult because getting a graduate is just the start. We say for any graduate we get, that it is 18 months before they're really useful because it's very much an industry where it's relationship driven. So, the growers have to get comfortable with them and they have to go through a couple of seasons to actually know what happens because a lot of the stuff we do is not in textbooks. You often learn as much from the growers, especially when you're a young rep, as you do from the people around you in your company.

New advisers also need time to develop facilitation and people skills to leverage the broader knowledge and skills of growers themselves.

I think building facilitation skills is really critical because it's not about them necessarily being the expert, but about knowing how to get the expertise out of a group.

One respondent explained how they have addressed the dearth of 'tailor-made' qualified applicants for new adviser roles by clearly identifying the skill sets needed and being prepared to train 'smart' people albeit without a specific horticulture qualification. Nevertheless, new advisers need to be concurrently developing their consulting skills and contributing productively to the business from the start.

In horticulture there just aren't any graduates. And so, you make people into the people that you want them to be, somebody that's got the smarts and some relevant qualifications. There's very few that come

tailor made. We are getting better at figuring out that we need to use people productively from day one at the same time as we're developing them.

New advisers are then difficult to retain

Once employed, the challenge shifts to retaining good people. With experience and aptitude, new advisers gain opportunities to work for commercial companies, large corporate growers or become self-employed and be directly paid by growers.

It's been very, very tough for us to get guys to stay in the industry. Which is unfortunate because I love the industry, it's a great job.

(...) was one of the ones that was brought in underneath me and mentored for a few years, and then he was head hunted by (...) to be their agronomist, and then he got out of (...) and set up his own agronomy service.

Succession for established advisers is a challenge for some horticulture businesses. One respondent explained that his organisation had been investing in succession relating to his skill set over a number of years without success. Despite investment in training and mentoring, talented advisers may be 'cherry picked' by competitors.

We've tried doing that for a number of years. The problem being is that there's a shortage of graduates through the industry. We've tried bringing guys into work with me or under me or whatever, mentoring. And we lose them. Basically, once they've been with us for 18 months or a couple of years or whatever, three years, they get cherry picked out, shoulder tapped, and we lose them.

While they may not be lost to the greater industry, their loss is a cost to their employing organisation.

Basically, what happens if they just go out into the broader industry, they're not lost to the industry, but they are lost to the company, which can be pretty frustrating.

1.2.3 Capability – What are the issues and opportunities relating to the capability of horticulture consultants?

Advisory capability is undergoing change

Kiwifruit

In the kiwifruit industry, there are few private consultants. Instead, packhouses, Zespri and commercial organisations (merchants/suppliers) are the main providers of advice.

A lot of the advice that growers get is very much tied to either their merchants or their packing facilities. And the kiwifruit industry also has quite a bit coming from Zespri itself.

Those private consultants that do operate are not affiliated to other businesses and can therefore provide advice that is independent of commercial interest.

Our role is to be everybody's friend. Because we do jobs for our clients that may involve 'which packhouse do I choose? Are these people managing my orchard well? Who should be managing my orchard?' And we do some peer review stuff.

Zespri is the single desk marketing organisation for kiwifruit and provides extension through an Orchard Productivity Group which until recently provided direct group-based extension for kiwifruit growers. To reduce duplication of extension efforts, Zespri is now in the process of changing its approach to support packhouses to provide direct extension to growers.

Until the end of last year… we (Zespri) would run a round of 14 field days in all the growing regions three times a year, which was fantastic. But there's a lot of work for a small team to deliver… the industry is growing, and the post-harvest are (already) pretty active in the next space. And so rather than compete with them…we now focus more on supporting (them) to do extension. Where there are gaps, we fill those gaps.

Nevertheless, Zespri expressed some concern about the technical capability of some packhouse based advisers, particularly those working for smaller packhouses and carrying dual roles - technical and grower services. The exit of experienced advisers in recent years has left at least a temporary hole in technical capability in the kiwifruit industry.

Bigger packhouses will have dedicated technical people (who work as advisers) … There are some that are doing a pretty good job and some that are very mediocre. But the smaller entities, they'll have a person who's responsible for their grower services and all of the relationship stuff falls to them as well. And some have left in the last few years. So, there are some pretty new people who might not understand a whole lot about kiwifruit growing.

Productivity has traditionally been the main focus of kiwifruit extension. However, attention is now on sustainability as well. Both within New Zealand and outside due to Kiwifruit being a minority crop worldwide, there is limited technical knowledge. This makes new skill development and training necessary.

Productivity is a massive focus of what we do, and sustainability too. Sometimes there is a limited amount of resource available, even to us, for things like sustainability…sometimes we don't have the technical information ourselves especially because kiwifruit is a minority crop (in relation to) the world.

In terms of sustainability, people in our team have been to Massey and done courses on sustainable nutrient management.

Viticulture

For the viticulture industry, as with many other horticulture industries, advisory capability resides in a range of organisations. Extension is provided by a mix of researchers, consultants, industry good and commercial organisations.

You have numerous organisations and people that are in the business of sharing knowledge with industry… Some of those are science partners… regional industry organisations, viticulture consultants and also technical sales field technicians for a handful of agrichemical companies.

The recently formed viticulture industry good organisation, Bragato, has been reviewing extension services and considers the skill level of viticulture advisers to be high. While there does not appear to be a need to grow extension capability, there is a need to enable better coordination and liaison across informally networked providers, particularly to ensure there are better processes for sharing new research findings.

There's quite a high skill level in the industry already (…and) there are multiple people that are informally involved in extension. We don't have plans at this point to grow extension, more to just improve coordination and some processes so that when new research is approved, we have some very structured and considered extension plans in place for each research component.

Commercial (Merchants, supplies)

Several **commercial** entities employ horticulture and soil specialists to support grower clients. Large commercial organisations may also operate inhouse research and development focused on key input products and crop monitoring services that inform growers about pest levels. They work with international agrichemical companies to ensure they are knowledgeable about the agrichemical

products and that New Zealand growers have access to new registered products. Part of their knowledge strategy is working with growers to understand pest threats through proactive crop monitoring.

> *We have pip fruit/summer fruit, vegetable, grape, kiwifruit, avocados, berries and citrus specialists. And we have a soil scientist who specialises in horticultural crops. Our research and development team work alongside major chemical companies and global fertiliser companies and we develop and help register new products for the New Zealand market. We also try and grow our knowledge around the use of those products. Often, we will try and know more about these products than the actual suppliers.*

> *(Our crop monitoring services team) capture pest and disease information. And this is all tabulated through a database we maintain and run. The growers are able to actually keep real time information.*

Horticulture consultants face numerous capability challenges

Horticulture advisers are required to navigate through a range of complex issues to support growers effectively. This can include concurrently balancing goals of productivity, profitability and sustainability. Respondents faced similar dynamic knowledge challenges including compliance with market and environmental standards, changing status of agrichemical registration, grower trust and relationships, weather and climate, and specific place related issues.

Navigating compliance

The horticulture sector is highly dependent on agrichemicals and fertiliser inputs. Advisers may be asked to support growers prepare and implement compliance documentation for auditable good agricultural practice plans (e.g., GAP 'Good Agricultural Practice' programmes). To provide this professional support advisers must have a full range of knowledge of growers' practice that impacts on food safety and environment.

> *I think over 90 per cent of growers are registered in a GAP programme and those GAP programmes audit growers on farm practices including food safety, but also include environmental factors.*

Growers and advisers need to navigate through complicated processes and understand complex structures to achieve compliance and therefore the right to sell their produce. Capacity to manage compliance in the horticulture sector requires a mix of skills including 'certifiers' who work directly with growers to ensure processes and practice are documented and meet the requirements and standards of GAP; and auditors who independently audit the growers' documentation and practice. Some of the larger horticulture industries, such as kiwifruit, have their own group GAP scheme (ZespriGAP) but many growers outside this require independent auditors. Auditors carry out a specific quality assurance role and are unlikely to be horticulture consultants.

Horticulture consultants are working with HortNZ to trial the proposed roll out of Farm Environment Plans to ensure it will be a robust process. Certification for 'certifiers' is still being developed but is likely to be a role undertaken by consultants or rural professionals employed by commercial entities. Growers may also in the future opt to become certified themselves.

> *We've got a small capacity at the moment in terms of rolling out the EMS that we're trying to build. We're just making sure that the process works …trialling that through a case study with consultants. Once we've gone through those… then we'll be certain that that process is robust.*

> *(A separate person would) help growers develop their farm plan (FEP)... And now this is where we see something a bit more like a Growsafe scenario where growers themselves could become certified… Then they might need some sort of sign off…from someone with a higher level of certification... Or they could just use people from the consultant pool. So, people like AgFirst etc., Rural professionals, fertiliser companies.*

Some advisers within the horticulture sector have until recently focused almost exclusively on productivity. They are now coming to terms with environmental issues, including nutrient and water management, and how these will need to be addressed in terms of both compliance and practice.

> *The whole nutrient management space is new for us (Zespri). There hasn't been a lot of investment in the (nutrient management) innovation space for a long time. And so that is really coming to the fore. And water. There are some big changes coming in terms of, not the compliance side of good agricultural practice, but the priority we need to place on those good practices.*

Navigating registration

Registration should ensure that growers can identify reputable consultants. However, registration causes frustration among consultants.

Two consultants described that their business model includes contracting for government projects. They described the process to become register with government as a preferred supplier as 'tortuous' as they needed to provide evidence of their expertise and experience. Despite doing this they are frustrated that they have mostly been engaged only as sub-contractors to large companies who take a large portion of the value of the contract.

The consultants were sceptical that there was commercial value in being registered horticulture consultants despite having acquired CPAg (Certified Practicing Agriculturalist) registration through NZSAHS (New Zealand Society of Agriculture and Horticulture Sciences).

> *So, I'm a registered horticultural consultant. For what it's worth. That's another one of those things. We'll go through this process. And no one when they purchase services goes through the list and says 'I will purchase from you because you've gone through this process'.*

Navigating agrichemicals

Horticulture advisory work is highly technical and requires scientific knowledge particularly about chemically based inputs. Knowledge of agrichemicals is a speciality of several commercial entities and therefore advisers, and agrichemical suppliers are in frequent communication to ensure growers receive topical and consistent advice. Advisers also draw on their expertise and experience to make recommendations, particularly off-label use of agrichemicals. Advisers are aware that making agrichemical recommendations is a serious responsibility.

> *When you're accountable for (agrichemical) residues, sowing rates, water usage. It's a real balancing act. And a lot of it is about science.*

> *All the chemical companies have reps visiting them. So, they are specialists and they've often come from being … supply company agronomists. They tend to be specialists in their own chemicals obviously. I tap into their knowledge of their own chemicals.*

> *When the topic is best practice for a particular pest spray or something, it's important to have discussions and be in agreement with those chemical supply companies about what this practice actually looks like. Otherwise, we'll be saying one thing and they'll be telling their growers and clients something else, and we won't get anywhere.*

> *We have a lot of off-label use that requires significant technical expertise to be able to deal with it. A little bit of guesswork but a fair bit of experience. We rely on the reps or the chem reps and the companies selling to us to give us information and Mr. Google is a very wonderful thing.*

Advisory work involving agrichemicals includes identifying ways to reduce or eliminate their input on horticulture systems. This requires liaising across industry stakeholders and a good understanding of New Zealand agrichemical regulation.

In trying to understand best practice, we also try to understand how we might reduce or eliminate some of those agrichemicals. Then we need to be very clear on the messaging and understand the regulatory requirements because the NZ Wine relationship is everything, very important.

For an adviser there are potentially significant liability risks in providing agrichemical advice that necessitates effective insurance cover. The liability risk to advisers in New Zealand is particularly acute because overseas based agrichemical registration may not cover some crops grown in New Zealand. This means that advisers sometimes need to adapt their recommendations to ensure application rates do not exceed minimum residue levels.

There's a lot of chemistry research, but it seems to be very expensive and it doesn't happen in New Zealand. We get quite a bit of new chemistry registered in New Zealand, but it gets registered on one crop knowing that we will adapt it. Because under New Zealand law, we can use any chemical on any crop, pretty much, unless its specifically outlawed. As long as you're under the minimal residue level at the end ...the growers normally pay for that testing.

You carry the risk basically (when providing agrichemical advice) which means our company pays a fair bit of liability insurance.

Advisers are also grappling with the withdrawal or likely withdrawal of key agrichemicals such as Hi-Cane in the kiwifruit industry, Mesurol for bird control in the outdoor vegetable industry and glyphosate in the arable industry. While most advisers understand public concerns about the safety and environmental impact of certain chemicals, they are also aware of the impact on growers' productivity and management. Some other advisers are not convinced of the perceived risk. What they share however is uncertainty over how to advise growers given the current lack of alternatives that are cost-effective at the scale of most professional growers. In the arable industry advisers and growers face a dilemma that without glyphosate, growers may need the option of cultivation that will increase use of fossil fuel, soil compaction and GHG emissions.

Take Hi-Cane out of my system... some gold kiwifruit, maybe it's a clearing 130-150k but it then drops it down to 100,000. Plus, I'll have paid four hundred thousand dollars for the license, which has a huge impact on my business. I've just lost a third of my production. And the reality is we have no viable alternative. There are some biological products that we're currently working with, but... they operate at about 60% efficiency... and they cost 20 times more.

Mesurol liquid has disappeared...but there's nothing else to replace it. The other products for bird control don't work very well and they're very expensive. We're too broad acre. That might work in a small patch, but it doesn't work on 50 acres.

One respondent pointed out that with the loss of some agrichemicals the cost of horticulture-based products is going to rise significantly.

Uncertainty over the future of agrichemicals appears to be enabling new, unproven products to enter the marketplace. Advisers are concerned about growers being taken advantage of by unscrupulous sellers

Navigating new tools and technology – Overseer, Precision agriculture

Tools, such as Overseer, were developed for the pastoral sector but can be a blunt instrument in the context of horticulture industries. Arable is an example where one paddock in a single year may be used for several different crops, each of which have different environmental effects. There is currently no Overseer data specific for arable crops, meaning that advisers and growers cannot accurately assess the environmental impact of their growing systems. Arable growers have become distrustful of Overseer.

For the horticulture sector more generally, respondents raised emerging issues including the need to monitor water use and educate growers about how to improve irrigation practices. This will require growers to learn how to use new technology including drones and ground probes and better understand their soil types. Advisers will themselves need to upskill to be able to advise growers about how to integrate precision management, technology, and data management into their future practice.

Some horticulture businesses are already gearing up for the demands of future farming.

> *I also manage what we call our future farming project which is looking at some big data, smart farming and precision.*

Advisers anticipate the increasing complexity of horticulture including sustainable water and fertiliser use, and new learning they will need to do

Navigating a lack of data

For advisers to be able to inform growers about the potential of different horticultural enterprises they require access to accurate, current data. While there is a limited number of advisers who are capable of advising across a range of crops, those who can do this are finding it difficult to access robust data outside of the main crops. This constrains opportunities for growers to understand crop options particularly under the impact of climate change.

> *I did some work recently on some different crops... If I do it for kiwifruit there will be some really robust, meaty figures behind that... but if you gave me a list of 30 crops, by the time you got down to about crop five, you're probably getting into the rough as guts kind of territory.*

Navigating weather and climate

Advisers need to understand seasonal variability and climate risks. One respondent from the viticulture industry explained how wine quality is critically dependent on the timing of harvest which in turn is dependent on weather and productivity management. All directly impact crop profitability and grower livelihood.

> *I'd say that the challenge is understanding how you drive the vineyard in terms of maximising profitability and productivity without impacting quality and also mitigating the risks (involved in) growing in a cool climate, as in most of the South. And the seasons can be quite short. They can end very abruptly with high rainfall or frost… There is a real risk that if you don't get a crop to a certain quality level it doesn't get harvested.*

It takes time and experience over multiple seasons, all of which are different, for advisers to understand whether certain risks can be managed or mitigated - and then how to respond to them.

> *Because of seasonal variation, no two seasons are the same. So having experienced multiple seasons, on a single or multiple sites is the only way really to build up the knowledge that you need… to mitigate some of those risks that you can't control (like) climate risk, but also then how to respond to them when they happen.*

Navigating place

By working in a location over time, advisers acquire physical and historical knowledge of their area, for example how variations between soil types impact on crops. This form of institutional knowledge includes understanding how different growers work with each other to maintain soil health.

> *We know all the growers' paddocks. We know who's who, and who swaps land with who to get their rotation going. You've got to have an intimate knowledge of the area and know that the soil is different in Pukekohe to the soil out in Karaka.*

Navigating growers' trust and confidence

Advisers understand that growers prefer to trust and learn from other growers and may be distrustful of new practices. In offering new practices and technologies advisers need to firstly establish growers' trust but also somehow prove that what they suggest will work.

> *It's probably quite similar in other industries. Growers in the viticulture industry … are likely to be distrustful of new practices, technology or new ways of doing things if it hasn't been verified at a neighbour's place or in their region. So, when you're sharing new information that's probably one of the biggest challenges, which is having the trust of the growers that information is actually going to work for them.*

Yet, privatisation across some horticulture industries means there is a limited pool of trusted peer expertise to draw on. Horticulture reps employed in commercial entities can face significant grower distrust because growers perceive that their advice is 'bundled' with product sales or they are not adequately qualified. New Zealand, unlike in the UK, currently does not require agronomists to be specifically certified. This can leave growers vulnerable to poor or unsafe advice. Employers of horticulture reps recognise that reps need to be able to present proof to growers that they are qualified to provide advice or recommendations.

> *There really isn't an advisory service anymore, it's basically based on private people. (..) that's something we miss, having someone who you can ask questions or who will give you independent advice. If I ask a chemical company, then I know I'm going to get advice from their point of view, from their company making a profit. And the same if I ask a fertiliser company, it's done from their perspective, looking to make a profit.*

> *We try to have the most robust system we can. (It's important that) our horticultural customers understand the certification or the legitimacy of people who are coming onto their properties to make recommendations. In New Zealand, agronomist is not a protected term… Anyone can call themselves an agronomist… The only thing we've got in New Zealand is you have to be a certified handler, which means you can handle and recommend agrichemicals and that's it.*

Navigating language barriers

Structural change creates challenges for horticulture advisers communicating with growers for whom English is not their first language. Some organisations are ensuring they provide translations of compliance information to ensure communication is unambiguous. Other advisers are not sure that what they explain is understood.

> *We have translated the EMS into traditional Chinese. Yet we still probably will need to have translators whilst the audits are being undertaken. That's good because previously we had been relying local (bilingual) growers to translate. But that puts too much responsibility on their bilingual role.. especially when there's sometimes things that get lost in translation.*

> *Some of the people you're dealing with speak English as a second language. So… you explain something to them and they nod their heads and say yes, but maybe they're not understanding it.*

1.2.4 Collaboration – What are the issues and opportunities relating to collaboration of horticulture consultants?

Collaboration is a priority within some horticulture industries

Zespri has an ongoing commitment to facilitate a 'Tech Forum' in which horticulture consultants meet to share their knowledge and experience about good practice as well as address new challenges.

> *We have what's called a Tech Forum. (We invite) a couple of people from each of the post-harvest entities and management companies, and some of the consultants, to bounce ideas off them, test things*

on them and get their feedback on stuff, because they are sort of our next user for some things that we're doing. But also, they're out there with growers, understanding the issues probably a little bit more immediately than we are.

We have had some really good sessions talking to the fertiliser community, the providers and the consultants around what as an industry we are doing, what our goals are, where they feel they can add value and the kinds of questions they're getting from growers. In the next sessions, we'll be hearing from a few more of them about what they're working on. Things like can they be recommending less nitrogen or lower rates of nitrogen? (Research) takes a long time... (So that's why we think we should ...) learn from these guys that have been doing it for a long time.

There is aspiration to develop advisory networks…

Strong advisory networks or a 'knowledge transfer ecosystem' is needed to enable advisory leadership, understand growers' needs and facilitate critical knowledge sharing.

I'd like to see a really strong network where we are… a sort of knowledge transfer ecosystem, not necessarily leading every aspect of it, but being in a very centralised position within that network so that we understand what's going on.

We'd know who's got the best new information on a particular topic, who is best to deliver that information and be able to offer some real coordination to those involved in extracting knowledge from the industry. We'd also be able to share the results and useful things with the industry, whether that be science or innovations directly from growers or new technology.

The viticulture industry is working to address duplication and improve information management. This will start with an assessment of industry networks.

We need better coordination to avoid duplication between all of the different people and companies in viticulture and winemaking that are generating new information for industry. But also, we're thinking harder about how we share and store information with industry.

… and to stay connected with growers and researchers

Advisers in the kiwifruit industry acknowledge that staying connected with growers means they can quickly understand and respond.

(It's important) to stay connected. There is so much going on and so many people. How do we make sure that we're staying really connected to what's happening out there and what the need is amongst growers?

Connections between public MAF advisers and researchers used to be integral to the network behind development of the horticulture industries, including kiwifruit. Thirty to forty years later some advisers have sustained important knowledge sharing relationships with researchers. However, they attribute this to their personal, rather than professional, networks.

Some of those relationships still exist, but they are very much personal relationships. …When we started our careers, you had to meet the (research) team (on the farm). But I've not even considered that as part of the professional development for our two new graduates. But I've thought recently, oh, we haven't done it and maybe we should have. So those relationships exist… but there's no formal system.

Yet there is a disconnect between advisers and researchers

Several respondents shared their concern that there is a gap between research and industry that has weakened science-based knowledge transfer. A reason given is that the New Zealand research model

is flawed because researchers spend too much time preparing funding applications rather than doing research.

The disconnect between research and industry undermines communication about research needs. Advisers are also concerned that dissemination and storage of research information is inadequate. Nevertheless, they see their role in connecting industry and research as critical.

> *Part of (an advisor's) role is to help manage that relationship between industry and scientists. More people who can translate between the two will improve the connection between those different groups.*

The on-farm value of some current research is limited by the standardised format in which it is reported and the platforms through which it is delivered. There is a greater need to focus on whether or not that information was reaching the target audience and in the right way at the right time of year to ensure the target audience receives the greatest benefit from research findings.

While many researchers do contribute significant specialist expertise to advisor-led extension activities, several are nearing the end of their careers.

1.2.5 Wellbeing - What issues affect *wellbeing* in horticulture?

Horticulture is an industry 'always at the mercy of the climate'

Horticulture is a high-risk industry because growers have no, or very limited control over the effects of the climate. Hail is a risk to all fruit and vegetables, particularly in spring; drought and floods can cause both short- and longer-term damage to all crops; and crops harvested between autumn to early winter are at risk of frost and storm damage. As in the pastoral sector, The Rural Support Trust (RST) are the 'go-to' organisations that advisers refer growers to when they are stressed or struggling due to the impact of a climate event.

> *We had quite a severe hail event in Hawkes Bay last year and ended up putting on a seminar with MPI funded rural advisory services and the Rural Support Trust. It was about how to respond and manage a vineyard after hail damage. Part of that seminar was focused on well-being.*

The merchant/supplier sector provide training to their reps to be able to identify when growers are stressed. However, they also refer growers to the Rural Support Trust.

> *We do offer training to our staff so that they can work alongside the Rural Support Trust and identify some of the warning signs we might see in a farmer before there is an issue.*

Crop diseases can severely impact grower wellbeing

Significant crop health impacts, such as PSA, the bacterial disease that was first identified on kiwifruit in 2010, can have a severe impact on grower wellbeing. At that time, advisers were trained to recognise if growers were under stress and needing support. They would then recommend growers make contact the RST.

> *Growers' wellbeing (was a serious issue) in the dark days of PSA, the bacterial disease incursion in 2010 . We were trained in how to recognize when people might be at risk of suicide. We were out there on orchards and people were pretty desperate.*

> *I (private consultant) would recommend that someone contact the RST if they really start struggling.*

Covid initially caused anxiety

The arrival of Covid 19 to New Zealand in 2020 coincided with the start of kiwifruit harvest. Growers faced intense uncertainty about whether the harvest would proceed. A major potential impact on growers' livelihoods and wellbeing was averted when government determined that harvest staff were an essential service.

At the beginning of Covid19 only 5% of the crop had been harvested. When we went into lockdown it was a highly anxious time. But (luckily) the government was aware that the industry was an essential service.

1.3 Forestry advisory services

In this section we discuss findings from interviews with six key individuals in the forestry advisory system, across private consulting, research, education and industry good organisations.

1 **Overview** – What does the forestry advisory system look like?
2 **Capacity** – What are the issues and opportunities relating to *capacity* within the forestry advisory system?
3 **Capability** – What are the issues and opportunities relating to *capability* within the forestry advisory system?
4 **Collaboration** – What are the issues and opportunities relating to *collaboration* within the forestry advisory system?
5 **Issues** – What are the issues and opportunities relating to the forestry advisory system?
6 **Wellbeing** – What are the *wellbeing* issues in forestry?

1.3.1 Overview - What does the forestry advisory system look like?

In New Zealand, 95% of forests are planted in Pinus radiata, some Douglas fir and eucalyptus (for pulp). There are also small 'niche' plantings of cypress, acacia, and redwoods. However, there is a growing interest in native forest plantings for landscape and biodiversity purposes as well as returning 'mana' to the land. In some regions, for example Northland, regeneration of native species including Totara has been undertaken on Māori land.

The advisory capacity and capability to support large forest owners is provided by in-house technical advisers. For smaller forest owners, contracting companies such as PF Olsen offer full management advice and support from planting to harvest. Alternatively, there is also a limited number of private consultants, most of whom are sole operators.

Aside from these groups, there are public sector players and incorporated organisations:

Te Uru Rakau (Forestry New Zealand) provides advice to current and future forest owners particularly in relation to the 1 Billion Trees initiative as well as other funding opportunities. Government has also recently appointed a 'Restoration Ambassador' to advise landowners on native forest planting. The forestry sector is supported by a number of incorporated organisations including The New Zealand Forest Owners Association (FOA) that represents the owners of New Zealand's commercial plantation forests and Farm Forestry New Zealand who promote the wise use of trees for profit, amenity, sustainability and the environment.

Similar to other adviser types, an agriculture related university degree is a typical foundation for forestry advisers, although forestry training for advisers is also provided through vocational training at Toi Ohomai based in Rotorua.

1.3.2 Capacity - What are the issues and opportunities relating to *capacity* within the forestry advisory system?

The advisory sector is organized, small and tight knit

Advisory capacity in the forestry sector is provided by in-house technical experts employed by large forestry companies such as Timberlands and Nelson Forests. Smaller forest owners can access advisory support from private independent consultants and consultants employed within organisations whose services include planting through to harvesting. The advisory sector is small and tight knit. Farm Forestry New Zealand provides a network through which forestry consultants and growers can connect.

> *I would say three quarters of us are independents and 25% may be employed by (organisations such as) PF Olsen.*

I know everybody. I know somebody in senior management in every forest management company in New Zealand because it's a relatively small industry and I've been around a long time.

The core (of the advisory space) are forestry consultants who are up and down the countryside, maintaining local branches and chapters, and holding events reasonably regularly, maybe three or four a year.

Te Uru Rakau provides a highly valued advisory service

Te Uru Rakau is a renewed government initiative to support the forestry sector implement the One Billion Trees (IBT) policy and works with Māori on land development opportunities, climate change, the ETS, native planting, forestry and wood processing exports and workforce development. Advisers in the sector have welcomed this initiative and the opportunity to fill a gap in the support of Māori and smaller landholders interested in forestry options.

Te Uru Rakau, they fill the gap in that industry that I think the industry has neglected.

I found in the early days that there was a big gap, especially with Māori landowners, with knowing where to start. Not just what they're planning to do but filling out the application form… helping them put together their maps, their planning around what tree species to plant and things like that.

Advisers at Te Uru Rakau ensure the small forest owners are aware of issues that may affect an investment in forestry, from costs associated with engaging consultants through to accessing appropriate funding support.

We give free and frank advice on what forestry consultants should or shouldn't charge. This was definitely an issue before for the smaller forest owners. We help with the ballpark figures they could be looking at for returns on that investment.

We advise on what may or may not fit into the One Billion Trees grant fund or whether it (would fit) a potential Partnerships Fund.

Regional council staff, particularly Land Management Advisers also play a key role through their connections with landowners.

I think the regional councils are really important because they're well connected with landowners. Particularly the land management staff, they're out meeting landowners often and know the landowners.

Yet advisory capacity in exotic species and natives are 'poles apart'

The advisory capacity for exotic species, particularly Radiata pine is well resourced.

The exotic forestry sector is so well resourced and structured. Forestry techniques have been refined in practically every way economically and there are markets established for everything. The planting and harvesting technology (for radiata) is so streamlined and refined.

However, there is limited advisory capacity with respect to native species.

Some people don't necessarily want pine trees, they might want natives. (But) there aren't many people around who can help with that. So that is definitely a gap.

(Advisory support for exotic species) is poles apart from the technology, support and advice that's available for native forestry. It is absolutely neglected and has just been left to people that are doing quote, 'restoration', which might be community groups.

I think there's a big disjuncture between how exotic forests and native forests are resourced. There's a huge appetite out there in landowners to have native forests, but they are really struggling to get adequate funding and advice.

There is a shortage of advisers with expertise in both forestry and farm systems

Government is encouraging the integration of forestry and farming in the pastoral sector, however, there are few advisers with expertise in both forestry and agriculture.

Agricultural advisers don't necessarily know anything about forestry, and the same vice versa. If you're trying to put an integrated farm plan together, resilient to climate change, with a mix of trees and sheep ... not everybody has the same picture.

Small operators need greater support and training to better manage risk

While big forestry companies have in-house advisory expertise and training support, interviewees were concerned that small contractors who don't have this need more access to resources and training to better manage risk, particularly around harvesting.

The big companies have got lots of expertise and advisory staff. So, it's probably the small contractors who can't successfully avoid the risks. Some might not harvest certain bits because it's too risky. Others might say, well, I need (to harvest) it all because I want to make money.

The Future Foresters group is encouraging entry into the sector

The Future Foresters group is a recent (2018) innovative initiate aligned with the New Zealand Institute of Forestry, in which young New Zealand foresters are working to raise the profile of their industry and provide support for those looking to develop careers in the sector.

(The Future Foresters group) has grown to be an excellent network of young foresters.

1.3.3 Capability - What are the issues and opportunities relating to *capability* within the forestry advisory system?

Advisory capabilities in forestry are broad, coming from both academic and on job learning

Advisory capability covers a broad spectrum of knowledge and skill sets including basic forest management, traditional and alternative forest options, and interpreting data for compliance purposes.

I've got great broad experience, courtesy of the corporates... I became familiar with forestry nurseries, genetics, forest health.

Understanding what species do and understanding non-traditional forestry, like nut crops, understory cropping and different ways of doing a forest.

I have been quite heavily involved in sustainability reporting and frameworks for a long time now.

Forestry advisers manage data and do field work. For senior advisers, the balance is more towards data to inform decision making.

Most graduates spend 60% of their time in the office and 40% of time in the field. For people like me it's probably 80% in the office on the computer.

As for advisers in other primary sectors, an academic degree is just the beginning of a forestry advisory role. Learning on the job and mentoring are critically important in the professional development of early career advisers.

University prepared me very well to know a lot about forestry and the general underlying principles. Then the specifics that you need are definitely gained through workplace learning and mentors.

Some forestry advisers started their careers in disciplines other than forestry.

There's a few of us around with an ecology/zoology background, but we learnt the operational aspects of forestry quite quickly.

Large organizations hire for diverse skills and invest significantly in professional development

Larger organisations may employ people with diverse forestry skill sets. Some recognise the importance of investing in training and education plans.

We've got a range of people…from establishment and harvesting managers to directors, registered consultants and health and safety managers. And then we have an in-house trainer (with whom…) we're each working towards a National Certificate of Forestry or a more advanced forestry qualification.

Advisers are developing skills in sustainability and in providing evidence of sustainability achievements for policy making

The forestry industry has historically been more focused on productivity than sustainability, but now environmental and sustainability issues are becoming more prominent. Forestry advisers need to know how to balance sustainability and financial opportunities of forests.

It is about sustainability. Although saying that, it's pretty evenly weighted between sustainability, financial and the economics of forest.

Environmental priorities include managing the impacts of climate change to ensure that forest systems are resilient into the future when exposed to severe weather events and fire. Biosecurity management and managing the water quality and yield under forest cover are also high priorities. As the focus on sustainability increases, advisers and everyone working in the forestry industry are aware of the need to better manage the environmental impact of forestry.

(There is greater) awareness across the whole industry of the need for environmental management, to work towards best management practice and best environmental outcomes. (We need) to do things differently or better to avoid impacts of extreme weather events and things like that.

The Emissions Trading Scheme (ETS) is now a core capability of some forestry advisers as well as integrating trees onto farms. This may be combined with expertise in landscape management and income diversification options.

My job title is ETS/project manager, but I'm mainly involved with landscape management advising. I work with farmers and rural landowners looking to integrate trees onto their farms for income diversification.

The forestry industry also needs to provide evidence of how sustainability is being achieved. One advisor/researcher explained that his job is to provide evidence for sustainability reporting to underpin policy and decision making.

My job involves providing evidence underpinning decision making and policy. I have been quite heavily involved in sustainability reporting and frameworks for a long time now.

Other advisers are developing niche specialities and aspire to innovate

Some advisers develop specialized advisory capability, for example one adviser is now focused on optimising log recovery value.

I am most passionate about log value recovery, which is that critical phase of turning a forest into money. That process of converting a tree into logs is an opportunity to make good or bad decisions. Too many bad decisions will result in a lower value log.

Some advisers are keen to innovate and look optimistically to realise future opportunities, for example in converting forest waste to biofuel. These opportunities mean capitalising on expertise and technology available in New Zealand for the benefit of forest owners and the environment.

I can see myself building capability in converting forest waste to biofuel. It's a hard business to make financially rewarding without subsidy but if anybody can make it happen, it's NZ, where we have land availability, good growth conditions and reasonable technical skills.

All the logging residue is potentially biofuel waiting to be converted into something economic … then you develop a better return for the forest owner and you dramatically reduce the environmental liability.

Advisers who work with Māori landowners have developed a better understanding of their goals

Forestry advisers who work with Māori are aware that their motivations for establishing forest may be different to those of Pakeha. For Māori, establishing forest cover is not necessarily driven by financial motives but by caring for the land and its mana.

I have done a lot of work with Māori landowners and often it's not about economics at all. It's about restoring forest cover and bringing back that mana to the land.

The Institute of Forestry encourages consultants to register to demonstrate their capability

There is a registration programme available to forestry consultants through the National Institute of Forestry. This includes a programme of Continuing Professional Development (CPD).

As part of my National Institute of Forestry registration, I need to do a certain number of hours of CPD and then I need to maintain it. (I am targeting) CPD in the areas in which I am advising, growing knowledge and technical skill. Because it changes rapidly.

Consultant registration is a way of demonstrating to landowners and potential clients that forestry advisers are appropriately qualified and credible.

It ensures that people have access to information on who is advising and who is reputable. (Because for example,) there are farm consultants (out there) giving advice on forestry or real estate agents giving advice on farming.

1.3.4 Collaboration - What are the issues and opportunities relating to *collaboration* within the forestry advisory system?

There are many examples of collaboration occurring in the forestry industry, some of which are quite recent initiatives.

Collaboration is occurring between education and research providers

A recent collaboration between Scion and Toi Ohomai is intended to provide vocational forestry students with access to research and new ideas.

We identified the need to bring new information to the next generation of (forestry) students, workforce people. At Toi Ohomai we brought Scion experts in to talk about topics which were either new or were in more depth than provided through the Diploma or Degree.

I've been building the links (between Scion and Toi Ohomai). So, student visits, guest lecturing, trying to get some joint research done and shared facilities.

This collaboration has enabled students to participate in summer internship programs where they can learn research skills.

> *(There has also) been a student summer internship program, where we brought six Toi Ohomai students in every summer for the last three years. They work on projects across Scion, building capability and capacity and building student networks. That's been very successful.*

This collaboration has successfully helped develop the advisory capability within Te Uru Rakau.

> *We started actually with Te Uru Rakau because they co-sponsored the development. So the first cohort of students were Te Uru Rakau staff who found it very useful.*

Toi Ohomai's is also working with universities to identify and address gaps in forestry training.

> *We're partnering with Massey to look at how people are getting trained there.*

The Future Foresters group is bringing new perspectives to the industry

Members of the previously mentioned Future Foresters group have had the opportunity to participate and develop leadership in decision making forums. This has opened opportunities for their fresh perspectives to be heard alongside more experienced senior foresters.

> *One of the unintended outcomes (of this group) was that there was a real demand for industry to hear younger voices within the higher-level decision-making processes.*

> *Although experience is extremely valuable, sometimes it's that lack of experience which gives someone the ability to think outside the box.*

The public sector is working to collectively 'problem solve'

Te Uru Rakau, Te Puni Kōkari and MPI's Māori Agribusiness team are working collaboratively to combine their complementary skill sets for the benefit of landowners. By working together with landowners, they collectively 'problem solve' to find the most appropriate planting and funding options for specific landholdings.

> *Quite often we'll (Te Uru Rakau) go out and tag team with TPK. They'll invite us to work with a group of landowners or vice versa. We work well with each other and complement each other.*

> *Quite often we'll go to a group of Māori landowners and there'll be someone from Forestry and Land Use, from MPI Māori Agribusiness and from TPK. We try and problem solve with the landowners what they want to do with their land.*

Regional council Land Management Advisers deliver joint field days to farmers with Te Uru Rakau

> *I have a good relationship with Te Uru Rakau Land Use Advisers and the 1BT scheme. We've done joint field days with Te Uru Rakau.*

And Te Uru Rakau work with regional councils on projects that support landowner's uptake of the 1BT initiative.

> *We're working very closely with Regional Councils. I deal fairly regularly with the Northland regional council because they'll have projects like waterways and a component of that may be the IBT.*

> *(With Bay of Plenty Regional Council and the Rotorua catchment group ...) we talk about projects, different scenarios, areas of discretion, types of funding that's available for fencing and waterways, just to help each other with the 1BT.*

Consultants are engaging the private and public sector, as well as researchers

Project work provides opportunities for government, research, consulting and contracting organisations to work together. This type of collaboration builds industry networks and fosters knowledge sharing.

> *We (Scion) just finished a really big project looking at carbon forestry and erodible landscapes for the council. That was with PF Olsen, AgFirst, and a whole bunch of other companies.*

An adviser specialized in native forests described the complementarity between his skill set and that of Land Management Advisers dealing with erosion control.

> *I had a lot of interaction with Hawke's Bay Regional Council because what I offered (expert advice on native forestry) was very complementary to what they were trying to achieve with erosion control with farmers (through planting poplars).*

One consultant was pleased to have recently reengaged with researchers at Scion after having been disconnected for 20 years.

> *Research co-operatives have now faded into history because of the user pays mentality that ran rampant through those Crown Research Institutes. I got out of the habit of referencing Scion for anything, they were almost not on the sector anymore. I've re-engaged with them recently and been pleasantly surprised by them offering virtually free encouragement and assistance with data bases*

Nevertheless, the relationship between regulatory agencies and forestry advisers can be tense

Tension can arise between regulatory agencies such as regional councils and forestry advisers because the advisers are concerned that some regional council staff in regulatory roles lack shared knowledge and understanding of forestry processes and challenges.

> *I would say the relationship is tense, sometimes due to a poor shared understanding and knowledge of how forestry works and how councils work. There's concern when you have recent graduates coming into regulatory roles within councils. Because they haven't been out there for years, they don't know the region ...*

1.3.5 Issues - What are the issues and opportunities relating to the forestry advisory system?

The forestry industry faces a range of issues that are similar to those of pastoral and horticultural industries, while others are forestry specific.

Forestry shares issues in common with other primary industries

Navigating agrichemicals

As in pastoral and horticultural industries, the forestry industry is facing challenges relating to the withdrawal of a range of agrichemicals such as copper spray for control of pine needle diseases. Advisers also expect that Roundup (Glyphosate), used to prepare planting sites, will be banned within 5 years. More immediately, advisers are concerned about the withdrawal of methyl bromide used to fumigate wood products before export, by the end of 2020. They are worried that with no alternative fumigant in the pipeline for another 3 years the forestry industry will get 'caught out' as log imports are rejected by buyers seeking to avoid biosecurity risks of untreated logs.

Navigating compliance

Forestry advisers feel that they are more confident about managing compliance issues than those in other primary industries because they have been managing compliance challenges for longer. However, they note that landowners may face contradictory policy signals, for example, while landowners are encouraged to plant trees to reduce erosion on steeper land, they must not cause forest fires. Regional councils impose large fines on landowners whose forests catch fire. Advisers explained

that for some landowners, the risk of forest fires and large fines outbalances the benefits of planting, and therefore the risk of erosion is not addressed.

The National Environmental Standards have provided clarity for the forestry industry and are effective in avoiding environmental harm, particularly caused by harvesting. Nevertheless, while the compliance standards safeguard the forestry industry's social licence to operate, they must be workable in practice.

> *The National Environmental Standards have been great for forestry. It's very clear what we can do and what we shouldn't do, to prevent another Tolaga Bay. Of course, if the rules are too strict it suffocates effort. But if it's too loose it's even worse because you lose your social licence to operate.*

Government's role in making policy to safeguard the environment and health and safety is supported by forestry advisers. However, they are wary about potential consent conditions that would constrain how landowners make decisions about their private property.

> *I completely support government control when it comes to environment, health and safety. But when it starts to be about what I can do on my land and with the products of my land? I think that should be an open market decision.*

Navigating technology and data capture

The forestry industry, as in other primary industries, is becoming more reliant on technology for managing its resources, reducing environmental impact and gathering accurate data. Using technology and managing data is increasingly important for forestry advisers responsible for improving productivity and environmental outcomes from large scale and hard to access forests.

> *The forestry industry is very good at capturing and storing data. This is integral for managing large resources, like geographic information systems and maps.*

> *I think forestry in New Zealand will continue to improve through use of technology. Technology improvements in the harvesting side of things will continually improve low impact and low-end environmental disturbance processes.*

> *An aspect of our team is that we were all trained in the use of drones.*

Navigating Overseer

Forestry advisers are wary of Overseer as an environmental monitoring tool in forestry and recognise that it is not licensed for use this industry. Some advisers however are trialling it because it is a monitoring tool that pastoral farmers, who may be considering agroforestry, are already familiar with.

> *Overseer at the moment, treats forests as a black box.*

> *I knew it did well around nitrogen, phosphorus and fertilizers. But I was curious to find out how it treats carbon even though Overseer arguably isn't licensed (for use in forestry).*

> *I think linking forestry models through Overseer is the way to go.*

But there are also forestry-specific challenges

Navigating erosion management

Erosion prevention is a key driver for forestry landowners to work with forestry advisers. Compliance requirements are also motivating landowners to address erosion.

> *People are very, very worried about erosion. Across New Zealand, about 60% of our harvesting is off steep slopes, and New Zealand is highly erodible.*

(Landowners want to) prevent soil erosion, so they retire erodible places. Often there is a regulatory driver behind that. They're being required to do this, or they should be.

Navigating 1BT

The government's One Billion Trees initiative has generated significant interest in planting trees. Te Uru Rakau and private consultants are actively advising landowners about the opportunities for integrating trees where landowners need to retire steep, erodible land. Opportunity to diversify land use and generate income through sequestration of carbon and important financial benefits for producers.

1BT program has been a wonderful example of what farmers can do with government to integrate forestry onto their properties and diversify incomes, diversify land use and retire hard bits of their farms. It's really great not just for forestry, but for Primary Industries, too.

Yet, a lack of public knowledge about the 1BT is a concern for forestry advisers because producers may be missing opportunities to improve the sustainability of their businesses.

There is a lack of knowledge in the public space about the 1BT and what we are essentially here for. If I'm talking to a farmer who is pretty much working in isolation, they are ill-informed. It's not a priority for them at this stage.

Advisers need to ensure that landowners realise that the 1BT is a mixed-native model and not just about planting exotic species. They also need to explain complexities of the policy.

It's a mixed native model. There's a minimum of a hectare, (and it goes) up to 300 ha. That includes other species like exotics. (Those hectares can be) scattered across the property. They don't have to be connected.

With 1BT funds they've got essentially 4 years to get established. And once they're given the green light of approval, they can even take three to four years to begin planting.

Advisers need to manage landowners' expectations and explain that 1BT funding is assistance rather than full subsidization.

With 1BT it's really a token amount ... a top up. So, a 500 dollar/ha top up, which if you are fencing a whole ha, would probably cost you a lot more than 500 dollars. But it's a help.

Advisers must also explain that the 1BT is not intended to poach good cropping and grazing land but is intended to support better management of marginal land and facilitate a range of environmental benefits.

We're not here to put trees on your good grazing land or good cropping land. (Rather, it's about) planting the areas that are marginal, those gullies and valleys that potentially shouldn't have been cleared in the first place.

(It's about) planting trees to keep the soil together, to get better outcomes on carbon capture, filter water, all that sort of thing.

An adviser from Te Uru Rakau highlighted that while the 1BT works well for landowners with general land title and ability to make decisions quickly, it is not straightforward for landowners with Māori land titles.

It seems that the 1BT application process is set up for a single layer owner model ... In a general title, one or two people own the land, and they can make decisions on the spot. (The process) doesn't work well for the multiple owned Māori land model which is one of the key areas of 1BT is trying to focus on.

Navigating the Carbon and the Emission Trading Scheme (ETS)

The complexity of the ETS is a challenge for advisers both to understand themselves and explain to landowners. Nevertheless, the complexity of the ETS is putting off landowners.

> *You need to make sure you simplify it even further when explaining it. If you start to delve into too much detail, people turn off and it becomes too much information to absorb.*

> *There's enough complexity in there that you have to get past the eye glazing period.*

> *I'm a pretty capable, pretty knowledgeable, pretty respected member of the forestry sector. I'd have to spend a fair bit of time getting on top of the ETS and its myriad of changes. And then you have to convey that to landowners.*

Advisers recognise the ETS provides opportunities for diversified income streams, meaning forestry 'is not just a story about radiata anymore'. It also supports establishment of native forests.

> *The economic opportunities around forestry are really very good and pleasingly it's not just a story about radiata anymore.*

> *As soon as carbon forestry ramps up people can quite happily establish permanent indigenous staff and make a reasonable income.*

Navigating limited extension capability in native forests

There is a greater need to support extension providers working with landowners that want to establish native forest. There is demand from landowners but insufficient advisory resources to meet this.

> *There's a huge appetite out there in landowners to have native forestry. But they're really struggling to get adequate funding and advice.*

> *We need to better support native forestry to make it a competitive option (to radiata). I think extension is crucial for this, but I'm the only one doing it. There also needs to be career paths for people like me.*

Advisers promote natural regeneration as a cost-effective way to establish native forest.

> *Permanent native forest is a good option, particularly when achieved through natural regeneration rather than planting.*

They also note that there is interest in sustainable management of native timber.

> *There is a little bit of interest in native timber. So, like having a continuous cover forestry process where you can extract timber sustainably.*

However, the cost of establishing native forest is prohibitive compared to exotic species such as Pinus radiata.

> *So, you might be talking between ten and twenty five thousand dollars per hectare to be planting natives. People might want to do it, but it won't be a priority in their farming system.*

Forestry advisers feel their industry is side-lined by government agencies compared to other primary industries. They are keen to be involved in any land related issues that could include forestry.

> *Forestry is always forgotten, making it very hard to get engaged. Government could definitely help by making sure that anytime they set up something about land use, they remember forests and trees.*

Navigating free or 'bundled' advice

Landowners can receive advice from voluntary consultants through field days. They may also receive advice from forestry contractors and harvesting companies where this is costed (bundled) into their contract. This may compete with demand for forestry consulting services. As noted for pastoral industries, forestry consultants feel that landowners underestimate their professionalism compared to other professionals such as accountants and bankers.

> *My advice is as important as the advice they receive from their farm consultant, accountant, lawyer, and stock agent... But it's almost like (the landowners think) I should be giving it for free or as a volunteer.*

1.3.6 Wellbeing - What are the wellbeing issues in forestry?

The primary focus in forestry is health and safety

Forest owners plant trees as a long-term investment and are therefore not reliant on it as an annual income stream. As a result, compared to pastoral farmers, they are less likely to experience wellbeing issues relating to short- or medium-term threats to their livelihood.

As a result, in the forestry industry, wellbeing issues are focused on the safety of those working in forests, particularly contractors, due to high risks associated with harvesting.

> *There's been a massive amount of work on health and safety in the last few years through the Forest Industry Safety Council.*

But the wellbeing of contractors could be a 'ticking time bomb'

However, the forestry workforce, especially harvesting contractors, are under stress due to the current downturn in forest markets/returns and a drawn-out period of market volatility.

One adviser acknowledged that the wellbeing of contractors is a largely unrecognised issue. Contractors are vulnerable to downturns in the industry because they may carry high debt relating to harvesting and other equipment. In the recent Covid 19 lockdown, staff layoffs were significant and inevitably stressful to employees and their families.

> *We lost 500 contractors who were put on hold in the East Cape over the Covid 19 lockdown. Their stress levels must have gone through the roof.*

This adviser also suggested that while fewer landowners in the forestry industry may be affected compared to farmers, welfare of contractors under stress could be a hidden 'time bomb.'

> *We know that the stress and risk of suicide is considered for farmers. And there are less forestry contractors than farmers, but it could be a ticking time bomb.*

1.4 Māori agribusiness advisory services

In this section we discuss findings from interviews with 14 respondents who presented their perceptions and experiences with respect to the Māori agribusiness sector. Of this group six are Māori and eight are Pakeha. Six respondents are private agriculture consultants, five work within either DairyNZ or Fonterra, one works in government, one is an accountant, and one is a governance consultant.

We have structured the comments to answer the following research questions.

1 **Overview**– What does the Māori agribusiness sector look like, and what are the different needs of Māori agribusinesses for advisory services?

2 **Capacity** – What are the issues and opportunities relating to adviser *capacity* within the Māori agribusiness sector?

3 **Capability** – What are the issues and opportunities relating to adviser *capability* within the Māori agribusiness sector?

4 **Relationships** – What are the issues and opportunities relating to building *relationships* within Māori agribusiness sector?

5 **Approach** – What are the issues and opportunities relating to the *approach* that advisers take when working with Māori agribusinesses?

6 **Collaboration** – What are the issues and opportunities relating to adviser *collaboration* within the Māori agribusiness sector?

7 **Wellbeing –** What issues affect *wellbeing* in Māori agribusiness?

1.4.1 Overview – What does the Māori agribusiness sector look like, and what are the different needs of Māori agribusinesses for advisory services?

Advisers that either specialise in working with Māori agribusiness, or have developed capability to work with Māori agribusiness as a part of their client portfolio, appear in several places in the advisory system. These include:

- **Farm system consultants** – Many developing Māori agribusinesses utilise farm systems consultants and the issues relating to this group of advisers dominates the discussion below.
- **Specialists within large agri-organisations** – Many organisations that serve producers in New Zealand's primary sector have one or more people in their organisations dedicated to working with Māori agribusiness. Examples of organisations we interviewed for this work include DairyNZ and Fonterra. Other examples include AgResearch and Primary ITO.
- **Extension teams within Ministry for Primary Industries** – MPI is building specialist extension capability internally.
- **Advisers within Te Puni Kōkiri** – Advisers within TPK work with a range of Māori agribusinesses including the underdeveloped group.
- **Specialist industry organisations and peak bodies** – A diverse range of peak bodies that unite Māori agribusiness includes the Federation of Māori Authorities (FOMA), the Ahuwhenua Trophy Management Committee, and newer groups such as Māori Kiwifruit Growers Inc (MKGI).

However, it is important to note that Māori agribusiness clients draw on advisory services differently, dependent on their stage of development and the scale of the business. Three Māori agribusiness clusters were described by interviewees (for further detail refer to appendix 5.2):

1. **Cluster one – leaders.** These Māori agribusinesses are self-sufficient and characterised by strong governance and management. This cluster is estimated to comprise about 20-40% of Māori agribusinesses by land area. The group includes Māori agribusinesses such as Ngāi Tahu, Waikaremoana Incorporation, Parininihi ki Waitotara, Wakatū Incorporation and other smaller incorporations.

This cluster are typically well-governed, well-networked and capably managed. Ahuwhenua Awards winners typically come from this group of Māori agribusinesses. They are capable users of advisory services and their advisory requirements may not be all that different to other agribusinesses.

2. **Cluster two – developing.** These Māori agribusinesses are characterised by moderate to weak governance, and they often lack agribusiness expertise. They include Māori Trusts who received Lands and Survey Farms in the 1980's and historical debt burden. This cluster possibly make up about 40-60% of Māori agribusinesses by land area. Many sheep and beef farmers are included within this group

   Māori agribusinesses within this group might enter the Ahuwhenua Awards but don't normally win. This cluster requires significant advisory support to enable Trustees to develop business strategies and plans as well as operational farm management knowledge. Currently several Farm Management Consultancies provide advisory support and/or supervision to Incorporated Māori farming trusts. 'Cluster - 2 developing' Māori agribusinesses are considered by interviewees to potentially benefit most from greater advisory support and are the main focus of Section 3.4.

3. **Cluster three – underdeveloped**. These Māori agribusinesses operate small, disaggregated land parcels with multiple owners that are administered by the Māori Trustee (Te Puni Kokiri). This cluster require advisory support to realise opportunities land suitable for horticulture where blocks are too small to be economic for farming enterprises. It is estimated that this group represent approximately 20% of land area in Māori ownership but this is split across thousands of Trusts (c.f. 80% of land is held by approximately 500 incorporations in the two groups above). The advisory services for this group are often focused on legal, governance and establishment advice.

In addition to the three clusters of collectively owned agribusinesses outlined above, there are also privately owned Māori agribusinesses that operate similar to agribusiness with general land titles and are not discussed further.

The leaders cluster confidently identify and contract advisory services

The leaders cluster are characterised by respondents as having excellent governance, corporatised management structure, large scale, diversified portfolios, brand consciousness and commitment to identifying and using the best expertise available to support every aspect of their business.

> *Within Ngāi Tahu it's more of a corporate structure. So, it's adapting to a corporate reporting structure and not necessarily adapting to a Māori structure.*

> *(In the entities) they will have some very mature central business acumen, whether it's with basic business, financial business or agribusiness oversight.*

> *They do get to another level where they realize that land and asset ownership isn't the only thing that should be in their portfolio. When that happens, the farming business becomes a little bit more measurable and has to stack up on an investment basis.*

The leaders are self-sufficient with respect to identifying and contracting advisory services and don't need outside help or support.

> *That group, by and large, is a reasonably sophisticated group. They don't need any special treatment, if you like. That group is capable of looking after themselves. They'll go out and find that expertise and pay for it.*

> *They're well networked and they just simply move around picking out the best people to take them to the next (stage).*

Advisers that work with the leaders cluster identify the importance of developing and maintaining strong relationships with these clients.

> *You develop a long-term relationship with them, which could grow to 5, 10, 20 years. Having the lead person having a really strong relationship is fundamental. Even more so than your traditional farm client.*

The developing cluster require support to build their knowledge and expertise

There was consensus across several respondents about how to describe the middle cluster of Māori agribusiness entities. There is an estimated 300+ entities in this cluster who require help to develop robust governance, may be carrying significant levels of historical debt, and are underdeveloped. By supporting people involved in this this group, productivity and performance gains can be achieved.

Interviewees targeted this group for support.

> *You've got the mid group – the ones who are not so savvy but that need the most help.*

> *You have a sizable group that are developing, and they are nowhere near, in terms of farm performance, where they could be. And if it's a people change issue, then it's actually the centre group I would focus on.*

Creating opportunities for the middle cluster requires building knowledge and expertise in governance and business planning, as well as providing the technical advice.

> *Governance is one of the most critical things. Have you got the right people? Have you got the right skills? Are they doing the right job? That's a key group that if we want to see productivity and performance gains in that group.*

> *Our advisory service has a what I'd call a multidisciplinary team, (which advises Māori agribusiness in) areas like governance, strategic planning, business and land performance, and about environmental management.*

> *The really important thing is to recognise the people who have got governance responsibilities, in the main, don't understand the primary industry that they run. So, the thing that we would be doing then is actually helping them understand what is a farming system.*

Creating opportunities also requires identifying, aligning and working with different groups of people involved with the business including governors/trustees, managers (most are non-whanau) and farm workers.

> *You've got four layers that you have to get in alignment before change will occur. You can get the governance around but, if the farm manager thinks it's a crock of shit, nothing occurs. Or if the farm manager wants to do something because she is a real techno kind of farmer, but it is too risky for the governors (the same applies).*

> *When you've got a governance group that's not confident, then you can get collusion between the supervisor and farm manager. And they are certainly there for long term gravy train. Sorry, it sounds terrible. They won't go down any particular risky route and things don't move too much.*

The underdeveloped cluster face many challenges

The third cluster include small, disaggregated land parcels with multiple owners under the guardianship of the Māori Trustee. Poor governance, difficulty tracing many owners, and no or minimal returns, places these entities at a severe disadvantage.

Then there's another group, which is a third group that in the main, they don't have good governance, the small parcels of land, totally underutilized. I wouldn't have thought it aggregates up to a large number of hectares, but sometimes it could be good hectares.

Supporting these entities is difficult and presents an intergenerational challenge.

The real issue is that the land parcels are too small and too disaggregated and no one's really actually feeling responsible for them. The owners are multiple and hard to find. You wouldn't have a clue and that becomes the Māori Trustee's problem.

For those that are struggling, (it is difficult) to identify who (has an interest to establish governance entities or get current generations to see to their property.

The real small players need a whole other different type of focus. In the government applications I noticed a trend to try to lift those smaller ones up, but you are going to have a high chance of failure in those smaller ones.

1.4.2 Capacity – What are the issues and opportunities relating to adviser capacity within the Māori agribusiness sector?

Greater adviser capacity is needed to work with Māori agribusinesses

Many of the interviewees shared a perception that there is a shortage of advisory capacity for Māori agribusiness. Only a subset of advisers have the skills and / or motivation to build relationships with Māori agribusiness and have Māori agribusiness work with them. The capacity to 'navigate' the complexities of governance as well as technical and operational aspects of farming is identified as another potential limiting factor to the capacity of advisory services available for Māori agribusiness.

I would hazard a guess that across the New Zealand landscape, that there is enough advisory capacity, but then I would dilute it down and say out of those advisers who want to work with Māori and there'd be some who don't and some who do, and then, do Māori want to work with you? And then I think we would dilute again to get to a smaller, more boutique type pool of advisers who are able to navigate this multiple party landscape and the complexities that come with that.

I think there is only a small pool of people who can do it really well and really understand the total interconnectedness of Māori business.

I think that the Māori sector is especially under serviced.

For some advisory businesses, Māori agribusiness are significant clients

Māori agribusiness entities are very significant clients for some advisory businesses. This, in part, relates to the geographic proximity of advisory business to where Māori agribusiness entities are located, such as Eastern Bay of Plenty.

So locally maybe 15 percent of our work is derived from Māori. Whereas in Rotorua it would be about 90 percent.

The likes of (..) in Rotorua, that's a lot of what they do. And (..), they do a lot of work with Māori groups. Same on the East Coast, that's where they do much of their work.

1.4.3 Capability – What are the issues and opportunities relating to adviser capability within the Māori agribusiness sector?

Advisers need empathy and cultural awareness to work with Māori

Advisers recognise that being empathetic, aware and knowledgeable of Māori culture, tikanga and protocol is important for interacting appropriately with Māori agribusiness clients. Ability to converse in Te Reo is an advantage but not critical.

> *There are very culturally specific needs in the way our advisers support Māori agribusiness.*

> *Having an understanding of Māori protocol and Te Reo is important, certainly protocol. And an empathy is important today. Te Reo, it hasn't become a barrier for us. For our team not all of them are fluent in it by any stretch.*

> *Understanding a little bit about Māori customs. I think that's important. If they're going to go out again and work with iwi. And, you know, if they learn some of the language even better.*

Relationship building ability has an even higher premium with Māori clients

Transactional based relationships between advisers and Māori agribusinesses are unlikely to last. It takes considerable time to build relationships, to both get to know clients and their relationships with each other, as well as become known by them. Some advisers are better than others at building trust and rapport with Māori entities.

> *I've got to a point now where we are tight now. It's taken a year and a half and a thousand cups of tea. You're not going to build meaningful long-term relationships through transactional things. Transactional things aren't meaningful or long term.*

> *Some (advisers) are better than others at actually building trust and rapport with these entities. So, there's a variation in their capability as well.*

Advisers needs capability to align with the aspirations of Māori agribusinesses

Respondents suggest that current capability of advisory services to work with the complexity, interconnectedness and aspirations of Māori agribusiness is limited.

> *I think a role for an adviser is to earn trust and respect and connection to understand that relationships within the Māori sector have a different meaning. To be able to understand translate the aspirations of the whanau.*

> *Aspirations are likely to be quite different from Pakeha aspirations. My understanding, particularly in terms of the broader whanau and not necessarily a focus on only productivity and financial viability. So, there are some longer term goals that come into play here.*

The scale of large Māori agribusinesses requires mixed teams of advisers

Emerging compliance challenges and the scale of some Māori agribusiness entities means that no one adviser has the complete skill set required to address the needs. Larger advisory business may be at an advantage if they are able to draw on a broad range of inhouse skill sets.

> *We've had to pull together teams of people who can work with Māori landowners and provide whatever the technical level expertise may be required to provide advice.*

> *We're dealing with PKW down in Taranaki just as an example. And you know that there's a range of needs there. One is compiling a greenhouse gas profile for their 20 odd farms and on the next breath it*

might be looking at diversification rotation option. So, for the one person to deal with all of those things can be challenging. That's what I mean about scale being an advantage.

1.4.4 Approach – What are the issues and opportunities relating to the approach that advisers take when working with Māori agribusinesses?

Advisers can fall into a 'supervisory' role rather than building capability

Several of the interviewees we talked to argued that some of the advisers working with Māori lack the incentives, capability or simply awareness to build the capabilities of Māori agribusiness governors and managers. Instead, these advisers take a 'supervisory' role. They can be perceived as gatekeepers who are protecting their own businesses at the expense of their clients.

The whanau are none the wiser about any of the farming because the farm adviser holds all the keys. They are gatekeepers, really, they don't build capability.

And they do everything. They hold the purse strings. Like a business model built around being a leech. Well, a business model keeping whanau willingly ignorant and dependent.

Some entities cannot quite get their heads above the parapet, so they have to apply for funds to invest in the stuff that the consultants tell them they should be doing. So that's kind of like how do we unlock that dilemma?

It is quite sad really, because it's not uncommon for them to have a huge amount of money going out for the advisers because they're not really farm advisers, they are supervisors… It can leave them open to exploitation.

Some respondents suggest that reliable revenue streams from established supervisory roles may discourage some advisory business from adopting more enabling approaches to working with Māori agribusiness entities.

So, you know, it's not uncommon for half to a third of the actual profits to go out to farm advisers.

They're too comfortable in terms of that supervisory role.

They're not after the ultimate dollar every year. It's more of a long-term process. So, you know, if you're not trying to sell, you're not too worried about capital gain. You're happy to accept a moderate return. But thinking long term, yeah, it's a pretty powerful position to be in.

While these comments imply that many advisers working with Māori agribusiness are self-interested at the expense of their clients, this seems inconsistent with the values and motivations that farm advisers typically demonstrate. It seems more likely that advisers genuinely feel they are working in their Māori clients' best interest without fully considering the implications of the dependency that they are creating.

Nevertheless, such advisers become focused on 'maintenance mode' rather than growth and development.

The supervisor was actually more just keeping the machines running rather than worrying about, well, how can we run it a little bit better and more efficiently or faster.

The input of advisers may have ensured that some Māori agribusiness enterprises have remained viable however their power within the business has sometimes been at the expense of farm managers.

These guys positioned themselves very cleverly and it's the right thing to do because otherwise these outfits would've gone broke a long, long time ago. So, they needed someone operating as a go between.

The downside of it was that those guys had so much power that they were not empowering the managers or the staff below them.

Some advisers take on a range of roles, however, that can undermine the decision making of farm managers at an operational level.

They were offering a sort of a lower-level financial accounting type provision services. They would go to the AGM to take minutes. They would be involved at the operational level, at a level that I thought would be not that good if I was a manager, trying to have the ability to make decisions myself.

They were in positions where they would buy the bulls, buy the rams, hire and fire the staff and make really, really grunty decisions.

Some advisers do not build relationships with trustees that will support long-term viability

Several respondents expressed concern that while advisers were working with the farm manager, they were not working in the ways needed with trustees responsible for governance and decision making across the overall business.

What I have noticed over time is that a lot of consultants, say in the sheep and beef side, are used to dealing with the farmer or the farm manager without realising that actually in these structures, the decisions are actually elevated and made by the boards of trustees or directors.

Advisers provide a lot of information to their clients about how the farm has been performing, for example, in a previous month. One respondent raised concern that, while this information is important for knowing what has happened, it is only historic reporting. This provides limited understanding of what proactive decision making the entity itself can make to improve or transform performance.

Basically, what farm advisers report to the trustees, are lag indicators. They'll say this month we did X amount of production and we've had five cows die and the fert went on …. All these are lagging indicators that you can't do anything with.

The farm consultant will roll up and there'll be the update will be about where the business is at with production. And there might be some comparisons to the last season - or not. And this is what this means is as far as your income's concerned, these are some issues, we need some more money for these things… Those are my recommendations, and the trustees would go tick because they wouldn't know any differently.

On the other hand, and in contrast to some of the comments above, one respondent identified an issue when advisers 'capture' a Board of Trustees or provide advise beyond their skill set.

What I've seen in the sector over the years is you get a lot of advisers who capture a Board if you like and then they start to provide advice they're not actually qualified to give.

A new approach to the advisor-Māori agribusiness partnership may be needed

Several respondents proposed that some advisers need to reassess their approach and commit to greater sharing of knowledge and enabling learning in their interactions with Māori agribusiness entities.

I think some of our consulting firms need to reassess the way they deliver their services. I think they could share more of their knowledge to help upskill the people that they serve, rather than just provide transactional services.

Projects with Māori agribusiness entities – typically led by MPI and / or industry bodies – include deliberate strategies to enable long-term capability building and knowledge development that will enable these entities to be in control of their own businesses. For a private advisory business this could

be perceived that they may no longer be needed once the entity can draw on its own knowledge and skill base.

> *Our aim is for all of those whanau still meeting once a month in 10 years' time-sharing information, maybe be sharing resources, growing their understanding of farming and moving to a place where they are taking control of the businesses.*

> *If you're a good advisor… (clients will eventually say) 'I've got it. Thank you for teaching me. I can do this by myself now. And I actually want to give it a go myself'.*

On the other hand, a new approach by advisers, and more informed decision making by members of the Māori agribusiness entity, could become the basis of new partnership.

> *If they would change their way of thinking and just think, actually, if I do this, this organization will go from strength to strength, (but) that doesn't mean that I won't be needed. What it will mean is that I'll be able to have more meaningful engagement and work alongside these trusts and their farm staff.*

But this will require working with governance groups as well as advisers.

> *If you actually start asking questions around farm systems – such as what tweaks they might make… usually it's met with stunned silence from a lot of the trustees who don't have that farming expertise. They actually haven't thought for themselves what it might mean to do something different.*

1.4.5 Collaboration – What are the issues and opportunities relating to collaboration within the Māori agribusiness sector?

Advisers already work together to support Māori agribusinesses

Advisers from different organisations already work together with Māori agribusiness entities to support funded projects, industry good initiatives or for other reasons. Industry good organisations generally maintain effective working relationships with private advisers although some industry good projects may be perceived as competing with private practice.

> *We also have, I think, quite good relationships with the farm consultants that operate in the Bay of Plenty.*

> *What I've realised is that they're very, very defensive and very protective because they see us taking their business.*

Private sector advisers working together on short-term projects for a Māori agribusiness entity may experience conflict in their professional relationships and need to manage the defensiveness of an incumbent advisor.

> *You have to put aside professional jealousy and work with the incumbent adviser because that guy has actually been the glue that's keeping the business operating to date. And you've got to work to get it right with him. You must get permission to be able to do what I want to do with the managers, because that is the guy that we work with.*

1.4.6 Wellbeing – What issues affect *wellbeing* in Māori agribusiness?

Advisers working with Māori stressed the importance of creating a safe space for Māori producers where they feel comfortable to learn and share together.

> *You create a safe space and people can start questioning and asking questions without fear of retribution or embarrassment.*

The Rural Support Trust provides wellbeing support for producers across New Zealand however they have limited contact with Māori producers who are more likely to seek support from each other and their marae.

> *They tend to have their own networks ... We don't tend to have a lot of dealings with Māori farmers. I've got a Māori farmer as a neighbour and there's another farmer down the road a little bit. They tend to support one another through the marae.*
>
> *Māori engage with things that are Māori.*

1.5 Environmental advisory services

In this section, we discuss findings collected from 14 interviewees, ranging from environmental consultants; land management advisers; researchers from CRI and universities who focus on environmental issues such as water and nutrient management, biodiversity, and conservation; farm systems advisers working with farmers on environmental issues; and advisers in sustainability roles for industry organisations.

1 **Overview**– What does the environmental advisory system look like?
2 **Capacity** – What are the issues and opportunities relating to the *capacity* of environmental services?
3 **Capability** – What are the issues and opportunities relating to the *capability* of environmental services?
4 **Collaboration** – What are the issues and opportunities relating to the *collaboration* between environmental service providers and other advisers?
5 **Issues -** What *issues* and *opportunities* are there in environmental services?
6 **Wellbeing –** What issues affect *wellbeing* in environmental services?

1.5.1 Overview - What does the environmental advisory system look like?

Being a relatively new advisory sector, the environmental advisory services sector consists primarily of advisers with general skill sets, such as farm systems advisers, combined with a few specialist advisers, such as in water management and biodiversity. Some advisers are employed privately, while others are from the public sector regional councils.

As such, some advisers come through the direct and indirect career pathways described on page 2, while others have alternative backgrounds. Much of the required learning to become a successful environmental consultant occurs on job.

> *I had the farmers set up their farm environment plans and meet their consenting competing obligations. Once I started pulling all of it together, I realized there was such a gap (in my knowledge) and I couldn't even find a textbook to use because the units that you measure things in are all different. So, I had to figure it all out from first principles.*

1.5.2 Capacity - What are the issues and opportunities relating to the *capacity* of environmental services?

There is a shortage of environmental specialists, especially with regard to Farm Environment Plans

There are few specialised environmental consultants working in the primary sector across New Zealand. One respondent estimated there could be approximately 20 environmental specialists working in the farming sector. There is however an imminent need for capacity to help farmers prepare Farm Environment Plans (FEP).

In response, some organisations are building specialist advisory capacity

Some organisations are committed to growing the specialist advisory capacity required to meet regulatory/environmental requirements. For example, Fonterra has built a team of Dairy Sustainability Advisers and Ballance AgriNutrients has built a Farm Sustainability Services team. Fonterra prepares FEPs for shareholding dairy farmer shareholders as part of their service offering.

> *We write farm environmental plans for our shareholders. There's no cost to them because it's already built into their ownership of the co-operative.*

In contrast, a leading merchant/supplies company has calculated the cost/benefit of providing user pays FEP's. They concluded that this is not viable for their business but that the capability will be available, particularly from farm consultants.

> *I can't justify putting 30 consultants on farm environment plans. We've looked at what we can charge. We'd be lucky to break even. What we've decided is that there will be enough resources out there. It's more of a space for consultants.*

However, this FEP capability development makes some consultants feel threatened

Some private consultants feel threatened by the Fonterra initiative as it could exclude them from the FEP market.

> *Fonterra – what are they going to do? Are they just going to provide FEPs for everybody? Does that cut us out of the market?*

Despite Fonterra's plans with FEPs, government agencies still project that currently there are too few advisers available to help farmers prepare FEPs. One adviser was sceptical about an approach proposed by his regional council that consisted of contracting suitably qualified tourists on short term visas to fill the gap.

> *In a regional council meeting, we discussed how many FEP plans would be required by 2025. To do them, they said 150 people are needed (in contrast to the current) 12 ... They said (these people could come) from the tourists because they think they've got empathy with farmers. We were just looking at each other, thinking, oh, somebody will come temporarily, do a plan and then disappear. When the plan is audited, they won't be around, and farmers will have to find somebody else.*

1.5.3 Capability - What are the issues and opportunities relating to the *capability* of environmental services?

Consultants require environmental, farming and business knowledge

Environmental consulting needs to be based on a sound understanding of farming as a business and as a farming system. On one hand, advisers with specific environmental skill sets may not understand or recognise the systemic and/or financial implications of their advice.

> *A lot of people specialising in this area are telling farmers with masses of business experience and understanding of their environment what to do when they couldn't even do a budget for them and have never paid GST or PAYE in their life. They have no idea what risks are involved beyond the environment.*

But on the other, generalist advisers may have a weak understanding of critical ecological knowledge.

> *I think one of the challenges with farm advisers is that almost all of them have no experience or knowledge around indigenous biodiversity. A lot of them have got a BAgSci or BAgCom from Lincoln or Massey (rather than an ecological background) and haven't been exposed to this stuff. That's a real weakness.*

One farm systems adviser with nutrient management qualifications had been advising farmers on environmental issues for several years. She observed that environmental consultancy has now become more specialised and as a result, she was doing less of this work.

They also require soft skills

Soft skills are needed too. To build his reputation and foster positive environmental outcomes for farmers and region, one early career Land Management Adviser is focused on building trust-based relationships.

I'm trying to build my reputation through trust. I try to always get a positive outcome for a landowner or at the very least, show that I can understand where they're coming from and that I'm not just coming in guns blazing and telling them this is how it is.

Experienced environmental advisers focus their advice on what farmers can do to achieve the greatest impact for effort. They provide clear plans that farmers can follow with confidence and they also listen to understand how they can support change.

We try to put the power into their hands and say, okay, you can probably get 80% of the positive impact on the environment from 20% of things you could do. What are those 20% things? We talk about things like critical sources. We talk about the way you manage crops, the way you manage water, how you manage wetlands

What we find is our clients come in confused and we get them a plan and some clarity, and they leave us feeling relief and supported. And if you want people to change, then you truly have to listen to the objectives of the farmer.

Upskilling in all areas would be expensive but collaboration across skills is one solution

It is costly and inefficient to upskill advisers to be competent in the range of skills required within environmental advisory services. The most appropriate way of bringing the required expertise will be to bring in skills where necessary, through collaboration.

Regional Councils can provide quality services by employing Land Management Advisers who are specialists in either, for example biodiversity, or farming practice. To be effective, these different advisers need to work together.

The Regional Councils have Land Management Officers who (have farming practice knowledge), and often they have biodiversity staff. But the biodiversity staff often lack practical farming knowledge and the farming staff vice versa. Sometimes this works well, because they work together.

1.5.4 Collaboration - What are the issues and opportunities relating to the *collaboration* between environmental service providers and other advisers?

Collaboration is strong across the sector

Advisers want to collaborate with government to support farmers with compliance challenges using the leverage of their existing relationships.

If the government has decided that compliance is really, really, really important and they want farmers to do it better, involve consultants working one to one with those farmers they already have a relationship with.

Advisers collaborate with national and international colleagues to maintain their knowledge and professional currency.

In New Zealand there's people (I collaborate with) at AUT, Lincoln, plus other ecologists I work with. I have a strong personal connection with a colleague of mine at University of New England in Armidale.

Land Management Advisers work closely with council colleagues, industry good organisations and Conservation Trusts for farmers who are considering covenanting land.

The RMPP have assisted in the past with running farm environment plan workshops and providing extension resources to assist with certain things. In some areas, we work very closely with the City Council, but we also work with Banks Peninsula Conservation Trust because they are sort of alongside QE 2 Trust. They are the main organizations for covenanting.

Land Management Advisers also work with environmental specialists for specific projects but are less involved with farm consultants.

> *Occasionally we'll contract consultants for very focused work alongside contractors and ecological engineers, for example to design some of our bank stabilization work. But in terms of consultants that are primarily focused on farm stuff, not so much.*

One environmental/farm consultant explained that by maintaining very good relationships with regional council staff, his clients benefited from more efficient resource consent processes.

> *Farmers do use us where there are consenting issues… because they understand that we've got relationships and we can hopefully make the process more efficient. So, they can do it right the first time rather than go back and forth constantly.*

However, advisers within regional council may be seen as regulators

A Land Management Adviser working for regional council suggested that their extension services should operate independently from the regional council. This would enable advisers to educate farmers about regulations and provide critical environmental knowledge without being regarded as regulators.

> *If I put myself in a landowners or farmer's boots, there's all of these rules and regulations coming at me. But who is actually here to help me? Because there's almost an assumption that the farmers are ecologists or botanists but in reality, a lot of them are not and so they don't probably even know where to begin. When you're wearing the Regional Council uniform (Farmers perceive) that you're going to come at them with a very sort of direct compliance mindset. I think that's where an extension service that isn't attached to a regulatory body would be really, really powerful.*

Regulators could step in if needed, provided they first have the knowledge they need to make environmentally appropriate decisions.

> *Provide the education first, provide the opportunities to be educated and to make the right decisions. And if that's all taken into account and people still go ahead and they do things that are detrimental, then then we enforcement does have its place.*

Other examples of successful engagement can be a learning opportunity

A Land Management Adviser suggested that government advisers could understand how to engage with landowners more effectively by drawing on exemplars such as Greater Wellington Regional Council's soil conservation program. Through the long term, stable goals of the soil conservation programme, GWRC have built strong relationships with landowners in their region. The continuity of this, despite staffing changes, has allowed time for trusting relationships to be built. Based on a foundation of engagement and trust with landowners, GWRC have a 'foot in the door' they can leverage for other programmes.

1.5.5 Issues - What *issues* and *opportunities* are there in environmental services?

Changes in government policy around contracting consultants are frustrating

Advisory businesses may be directly impacted by a change in government direction. One farm/environmental consultant explained that they had been affected by MPI's change in engagement focus from consultants to catchment groups.

> *More latterly we've found that MPI decided that, at least in the meantime, the way they want to engage with farmers is not through consultants, but through catchment groups.*

Some advisers try to anticipate and prepare for business opportunities that support government implementation of environmental policy. They become frustrated when government does not recognise their capability.

> *We knew that there was 26 million put aside by the Crown to assist landowners to take on board the National Fresh Water Policy, and regional and local council policy. Some of that was to go into some sort of consultancy support and we were trying to work out how to (get a contract). But we just kept coming up against a brick wall. MPI basically didn't see the opportunity that we saw around employing those resources. So, a little bit frustrating for us. We take it on the chin at the moment.*

Meanwhile, changes in environmental policy mean a 'waiting game' for consultants

Some advisers describe playing a waiting game for the release of key government policy.

> *We're waiting to see the shape of (the National Fresh Water Plan) and the Indigenous Biodiversity legislation. And also, we've got the Zero Carbon Bill and the He Waka Eke Noa work that's being done to measure and account for carbon on farm. We need to know what that looks like. So, there's a whole lot of chicken and egg stuff.*

> *We're probably a wee bit in limbo I suppose, in terms of waiting for what unfolds with the National Policy Statement.*

Resulting policies are perceived as poorly constructed

There is also concern that some policy makers have insufficient knowledge of farming, both financially and biologically.

> *There's a huge gap between the understanding at the regulators level, particularly around MfE and MPI and what actually happens on the ground. A huge gap in understanding of the dynamics of a farming system both biologically and financially.*

Farm/environmental advisers are wary of compliance approaches that are overly simplified and fail to address the seasonality and practical challenges of farming.

> *MPI really want to tick a box on environmental capability. So, they want advisers to understand and be certified in nutrient management. (But) I want people to take a moment to understand farming, to know what it means to shift irrigators, to understand the seasonality of stock reconciliation.*

Concern was expressed about data quality informing government policy and modelling.

> *Simon Upton wrote a report that I would agree with entirely. He suggested that regulation was being set in a vacuum of useful, detailed data.*

> *A lot of the policy stuff going out now is based on inappropriate assumptions, at least poorly researched ones and there is so much we do know, that we could be doing.*

> *The quality land-based layer of the system (at MPI) that outlines what the farm is and what it runs. I think that the statistics department information has a stocking rate attributed to it but the boundaries of the properties the land uses were incorrect. And there was just a heap of stuff that led to completely inappropriate assumptions being made that then populated the models.*

Current practice on many pastoral farms with steeper land, such as in the Waikato, will need to change significantly, but one adviser raised concern that current topographical data on which regulatory requirements are based, is not robust enough to justify the consequences for farmers' livelihoods

There's a lot of talk… with Plan Change One, the Regional Council rules around class 6E land… They are saying that there's to be no cattle over 400 kilograms on that land for 2-3 months of the year in the winter. There are heaps of farms with that type of land, rolling but not steep. But its land that they crop and that they cut hay and silage off. And the maps are not accurate to describe where it is anyway. How are farmers going to farm under that scenario?

Such policies can be tough on farmers, with consultants needing to break difficult news about the impact that environmental compliance will have on farm productivity and profitability.

(I might have to say) 'It's not within my skill set to find a way to allow your business to still generate a profit, with its environmental support dropped by half' or 'We have to de-intensify your farm business from a nitrogen point of view by 55%, that's just not possible to do without some erosion of profitability'. Both of those are mentally tough conversations to have.

Moreover, policies written by people with insufficient farming knowledge can be open to interpretation, resulting in a 'situation of unlimited uncertainty' for advisers and their clients. Advisers may face liability for policy changes that impact their clients and need to ensure that clients understand the risks.

We inadvertently find loopholes or differing interpretations all the time. The key is to get that in writing from the regional council, local government or central government. (But) it can be really tough to say to clients 'look, you're going into a situation with unlimited uncertainty. You could do all of this and find that later they say no, or that they've changed the rules again and you didn't need to do what you did. How badly do you want to go down this path?'

The liability for policy changes can unfairly fall on consultants' shoulders

The fluid regulatory context makes some decision making highly risky for farmers who may blame farm advisers when things go wrong. Some farm/environmental advisers are prepared to write off their fees over concern that disappointed clients may undermine them professionally.

We get clients caught out all the time (by changing policies) and often we bear the brunt of that.

I've one client in particular where I have written off 15-20 thousand dollars worth of work. I was concerned that (they could go) running around the local community saying, 'these guys gave us shit advice and ripped us off'.

It's a really, really hard space to operate in. That's why we're paid the big bucks.

While there is uncertainty, farm/environmental advisers are urging their clients to accept environmental management as part and parcel of their overall business plan. They tell farmers:

Don't think of environmental management as simply another job you've got to do that has no return for you. Think of it as just one small part of the big picture and business plan.

Finances are a real barrier for farmers in meeting regulations

Advisers know that the cost of environmental regulations is having a huge impact on farming businesses. They also point out that while most farmers agree with the need for environmental stewardship, many find that the cost is prohibitive.

(The difference between what) landowners are wanting and what they're being asked to achieve, (mostly) isn't because they don't agree with the changes. It's because it is financial.

I think it comes down to the brutal reality of whether or not individual farmers or landowners are in a position to fund these types of things.

You only have to start talking about fencing off waterways and you've got huge capital costs involved in doing that.

Nevertheless, one adviser worried about the lack of value that his farming clients get from compliance spending and questioned why policy makers would impose this.

I really struggle to have farmers spend money on compliance when they can't see how they'll get value out of it. It's ridiculous. Why would New Zealand (impose) that?

An adviser working in the biodiversity space identified a problem with some ecological consultants and conservation advocates who fail to recognise that farming businesses must be viable for ecological issues to be effectively addressed on farm.

You can't be green if you're in the red… I think a lot of people who work in the biodiversity space, certainly those from organisations with a primary advocacy role, and even a lot of the ecological consultants out there… (aren't) really tuned into the fact that you can't manage biodiversity unless you are able to balance your budget every year.

There is concern that regulations could 'break' the agriculture sector

The pace at which compliance requirements are being imposed means some farmers will not be able to maintain viable businesses. While advisers support the 'direction of travel', they question the 'speed of travel and the risk this places on farmers and industries given current capability.

I've got a pragmatic view... (So) I'm more interested in the direction of travel than with the speed of travel. If we don't have viable farm businesses that are well supported with capable people, then we haven't got an industry going forward.

(The industry will possibly) set a goal that is admirable... And we've got some good science. But we don't have that practical on farm capability to do things. I'm a little concerned that the only way we can meet the (resulting) gap is to reduce production.

Some advisers fear that environmental compliance requirements could 'break' the agriculture sector as it currently operates while others are more confident.

If we lower our stocking rates by 20 percent, yes, we will have a lower environmental footprint. But we also have a broken agricultural industry.

I look at the current legislation that's been proposed and I don't see major changes to the way we actually farm, just a few minor things. The nitrogen caps are going to be interesting to operate around, but only in a small percentage of farms.

Advisers identify that 'massive' environmental legislation now being imposed on the farming sector will result in market failure unless farmers have better access to expert advice and support

I believe in the free market and I don't believe in government interfering with private practice in the free market. But when we get massive legislation impost into a sector such as we have with the environmental stuff… for them (government) to expect it to be adopted and managed without any support for expertise is a market failure.

There is also concern a drop in productivity will be an opportunity for international competitors

As a supplier of food and fibre internationally, New Zealand is in competition in the global marketplace. One adviser pointed out that international competitors will quickly capture the opportunity to fill whatever production gap is created as New Zealand farmers reduce productivity to meet environmental requirements.

If we reduce our production, someone will step in and do it instead of being far less efficient. Sorry, I'm not towing the government line on this one. I can understand how that is a vision for the future. But let's not go broke in the meantime.

Avoiding market failure will require farmers to understand their impact, plan to mitigate and articulate with peers

Avoiding the risk of market failure requires firstly that farmers understand the impact of their farming practice, secondly that they have a plan to mitigate environmental impacts, and thirdly that they can articulate with their peers why and how environmental impacts can be managed.

I also don't think we have enough information out there to give the landowners an understanding of the very basics. (Like,) why are we interested in preserving or enhancing?

So, the first step is to help farmers understand how they impact the environment. The second step is to get a plan for them to be able to manage that risk in the future. And then the third step is to assist them in articulating it to others.

But environmental changes on farm take time

Managing the impact of environmental changes required will be a significant process for both advisory and farming businesses. One adviser estimated this is likely to take at least 3 years.

It will bring a massive change in the way both we and our farmers carry out our businesses. So we've got three years to be proactive and to start farmers down the journey.

Other advisers estimated that more time is needed to implement staged, strategic Farm Management Plans.

If you want to achieve a substantial amount of riparian fencing, planting or major pest control, this needs five or ten years in a staged manner. The key for doing that is to have a Farm Management Plan.

Advisers suggest that farmers will need financial assistance if environmental compliance is to be fast tracked in less than 10 years

If the government wants it done in five days, it ain't gonna happen. Through user pays it's going to have to be assisted. But if they can see it's done over 10 or 15 years, then maybe it can be done.

We can fix the problem... But we can't fix problems that take 100 years (to fix) in 20 years. If you want this, you're going to have to stump up with the goodies.

Environmental compliance can create perverse outcomes

Advisers are concerned that some environmental compliance requirements may exacerbate other problems, for example fencing of riparian strips:

My concern is as soon as we've fenced a waterway, the river or riparian margin becomes invisible on farm. (Is this) not just creating large scale weed corridors and biosecurity risk?

Further research is needed to support advisers and producers mitigate the impacts of compliance

More robust research data is needed to support advisers and producers in mitigating the impacts of compliance on production systems while maintaining viable businesses. Research is needed that focuses on how producers can achieve environmental outputs under a range of production scenarios/models within a specific ecological and physical production system. Research programs are needed in which producers are engaged in on-farm research and are encouraged to innovate.

If you cap the inputs, all my flexibility is gone. We're now into uniform farming and we're now more into trying to find exceptions or exclusions, ways to work around these restrictions rather than trying to come up with solutions to work within them.

Having a clean data set is so important when you are trying to get insight.

I can review another person's Overseer file, for example, and I can sign off that the information was entered appropriately. But you can't sign off that the human capturing that information asked the questions that they should have or that the human that answered the question, answered it as it was intended.

Increased productivity is still possible with smarter technology and precision

To address compliance challenges, advisers will need to help farmers farm smarter, use technology and be more precise with inputs.

I think there's always scope to increase production. Yes, 10, 20 years ago, (increasing production) was easy, just put more cows, bring on more feed. Now, you have to be smart. You're going to have to embrace technology, precision agriculture and things like that. You just become more precise with your inputs so that every dollar you spend you are generating more money from it.

1.5.6 Wellbeing – What issues affect *wellbeing* in environmental services?

The cost of audits, consents and compliance cannot be passed onto the supply chain

While advisers emphasised the cost of compliance and auditing on farming businesses, they also highlighted that the 'buck stops' for farmers who cannot pass additional costs onto the supply chain.

Every few years they have to pay for these audits at twelve or fifteen hundred dollars a pop, that they never had to pay for before. They will have to pay for consents to winter graze their own animals on their own land. And God knows how much those consents are going to cost. But they can't pass their costs on to anyone.

Advisers working with farmers in discussion groups have observed that challenges involved in managing compliance costs is putting many farmers under stress. One benefit of discussion groups (RMPP) has been that farmers are able to talk to each other about their challenges and realise they are not alone.

When there are increasingly marginal returns (due to compliance costs) it is really hard to go continue farming. Mental well-being is tough for them.

RMPP has been great for mental well-being, getting farmers off farm to catch up with people and chat about the challenges that everyone in that group is facing or have faced at some stage. Like a problem shared is a problem halved.

Uncertainty around legislation prevents planning for the future

Uncertainty over environmental legislation makes it difficult for advisers and farmers to identify optimal land use change options for both medium- and long-term needs.

If things were black and white, then you could actually do some sums around it. Some of the dry stock farms with some steep land may need to go into trees (which will supposedly eventually be worth something). (But while that's happening) in the meantime what's left of the farm won't run enough livestock to actually give them an income.

Concerns about their farm's future and their family weigh on farmers' minds

Advisers also observed that not only is environmental legislation a real cause of financial stress for farmers it has increased their uncertainty about the future of their farm and for their families.

> *Productivity was probably really high on farmers' minds 10 years ago. Now they're absolutely packing themselves about the impact of all this stuff to do with emissions and water management.*

> *They don't know what the future looks like. What the farm will be worth, if anything. What will happen to it and what will happen to the family. Will they have to give up farming and live somewhere else?*

Overwhelming compliance is leading some farmers to leave the industry

One adviser noted that compliance issues are prompting older farmers to plan farm succession because they are not prepared to go through further change. If no younger family member wants to take over, the farm is sold however in regions like Canterbury farm sales are currently slow.

Another adviser suggested that a potential systemic consequence of farmers, overwhelmed by compliance issues, exiting the industry could be a downturn in production.

> *If the government keeps going the way they are with their heaping constraint after constraint after constraint, all that's going to happen is that there'll be less farmers and there'll be less production.*

1.6 References and resources

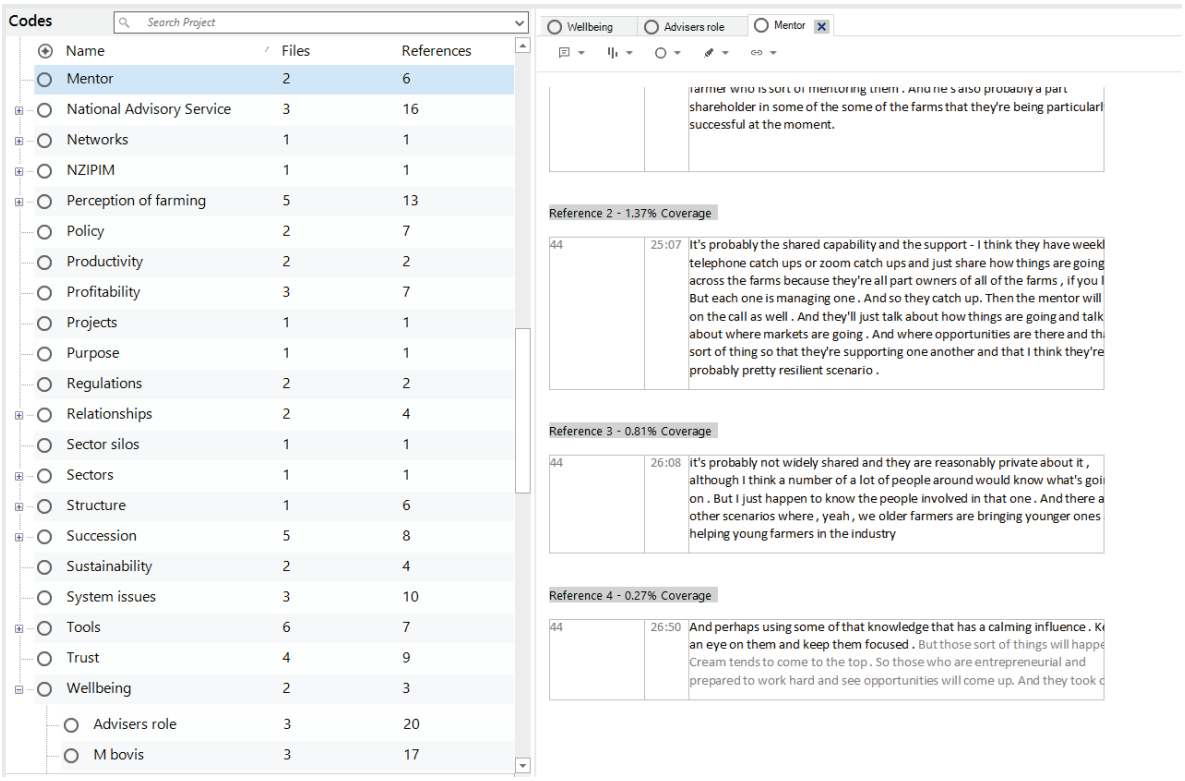
Gratton, L., and Erickson, T.J. (2007). Eight ways to support collaboration
Harvard Business Review

Appendix B: Other

1.1 Table of interviewee adviser type

Sector / group	Organisations		Interviewees
Farm systems consultants	Perrin Ag Baker Ag AgriMagic Headlands	AgFirst NZIPIM Other independent advisers	15
Other dairy / sheep and beef	DairyNZ Fonterra Federated Farmers	RMPP VetEnt Agribusiness Group	10
Horticulture	Horticentre Bragato Institute Fruition	HortNZ Zespri	6
Arable	FAR		1
Forestry	Forest Growers Research Forbes Ecology Logjiztix	Scion Research Forestry Management Ltd Te Uru Rakau	6
Seafood	Clement Group		1
Land and environmental management	Water Strategies Environment Canterbury	University of Canterbury	4
Other	MPI PGG Wrightson Ballance AgriNutrients Rural Support Trust	ANZ TPK BDO	7
Total			**50**

1.2 NVIVO coding of key themes



1.3 Summary of Māori Agribusiness Clusters

Attribute	Front end	Centre group	In the cold
Drivers	Wise, sustainable asset use for future generations	Create viable farm businesses to benefit whanau	
Purpose	Succession, self determination	Transform moderately preforming businesses carrying historical debt inherited from the Crown into viable farm businesses to benefit whanau	
Strengths	Strong governance – trustees are only whanau; smart and well networked; 'cherry pick the best experts/ most highly skilled advisers	Some Trusts starting to reduce inherited debt burden	
Weaknesses	Not evident	Not yet engaging with the right expertise and governance; Debt inherited when farms passed to Trusts from Lands and Survey in the 1980's; alignment across 4-tier operations (Trustees who govern/Supervisor (e.g. Farm consultant)/ Manager (most non-whanau)/ Farm workers alignment between supervisor and farm manager may block effective interaction across 4 tiers, governors not knowledgeable, skilled or experiences in primary sector businesses, Trusts locked into supervisory relationships with Farm consultants who do not build knowledge capacity of governors and staff; undersupply of	Landowners receive minimum return on land leases; debt including rate debt; small, disaggregated land parcels with multiple owners including some who are untraceable

		locally available whole farm system advisers/consultants; lack of access to capital	
Threats		Alignment between outside supervisor and farm manager may block effective interaction across 4 tiers	Non controlled gorse; poor/lack of governance
Examples	Tahu Farms (Sheep and beef, horticulture), Tainui (Dairy), PKW, Tauropaki Geothermal; Miraka (dairy, glasshouse tomatoes and peppers direct to Queensland), Whakatu (horticulture, fisheries)	At least 300 Trust entities Tairawhiti Land Development Trust (Chair – Kingi Smiler), predominantly sheep and beef, dairy, some horticulture; some Māori owner-operators	Some owner-operators; Māori land administered by the Māori Trustee/Te Puni Kokiri
Business Strategies	Develop, acquire, operate and invest in broad portfolio of businesses including non-primary sector, intensification, excellent governance, sound infrastructure, long term and large scale, vertical control of supply chain	Need to be confident and competent to 'run a good business' including development of strategic and operational farm plans, farm budgets, market strategies	
Aligned with	FOMA, Ahuwhenua Best Māori Farmer Competition	Providers of governance workshops (Gavin Sheath)	The Māori Trustee
Need for government support	Low, because this group have resources and networks within New Zealand and overseas to access expert advisory support as needed	Very high to support Trusts develop governance capability, business plan, management and production skills to ensure viable businesses; need to access advisory support that is local and committed to developing and maintaining long term relationships and trust with Trustees and farm staff; build farm stakeholders skills in fencing, fertiliser, genetics …; commitment to address loss of trust due to historically being let down	Very high, need to address core issues

1.4 Suggestions for further research

Considerations for the National Certification Scheme for Farm Environment Plans data collection and structure

Accurate census of advisers in PIAS enables other interested stakeholders including government and producers, to identify whether advisory resources are available to support producers meet compliance requirements or other goals relating to productive and sustainable management. This project will provide a census of advisers throughout the sectors and regions and there is a significant opportunity to combine this dataset with the ongoing adviser data collected during the National Certification Scheme.

With a relatively small effort these two datasets could be developed in parallel to provide an opportunity to start a national adviser register that could be used to monitor changes in advisory capacity and identify how well strategic capability and capacity targets are being achieved. For example, the qualitative findings of this report indicate there is currently a shortage of advisers with expertise in agronomy, environmental services, native afforestation and agroforestry advisers. This finding can be verified and tracked over time using an adviser register to determine if efforts to increase the amount of advisory capacity in these areas are effective and targeted where they are needed.

To achieve a way of combining these two datasets a common set of fields would need to be identified and made mandatory upon collection to ensure they could be assimilated and used for a common purpose. The suggestion for further research is to have the NZIPIM work together with this research team to design a common data schema and central database to collect this information.