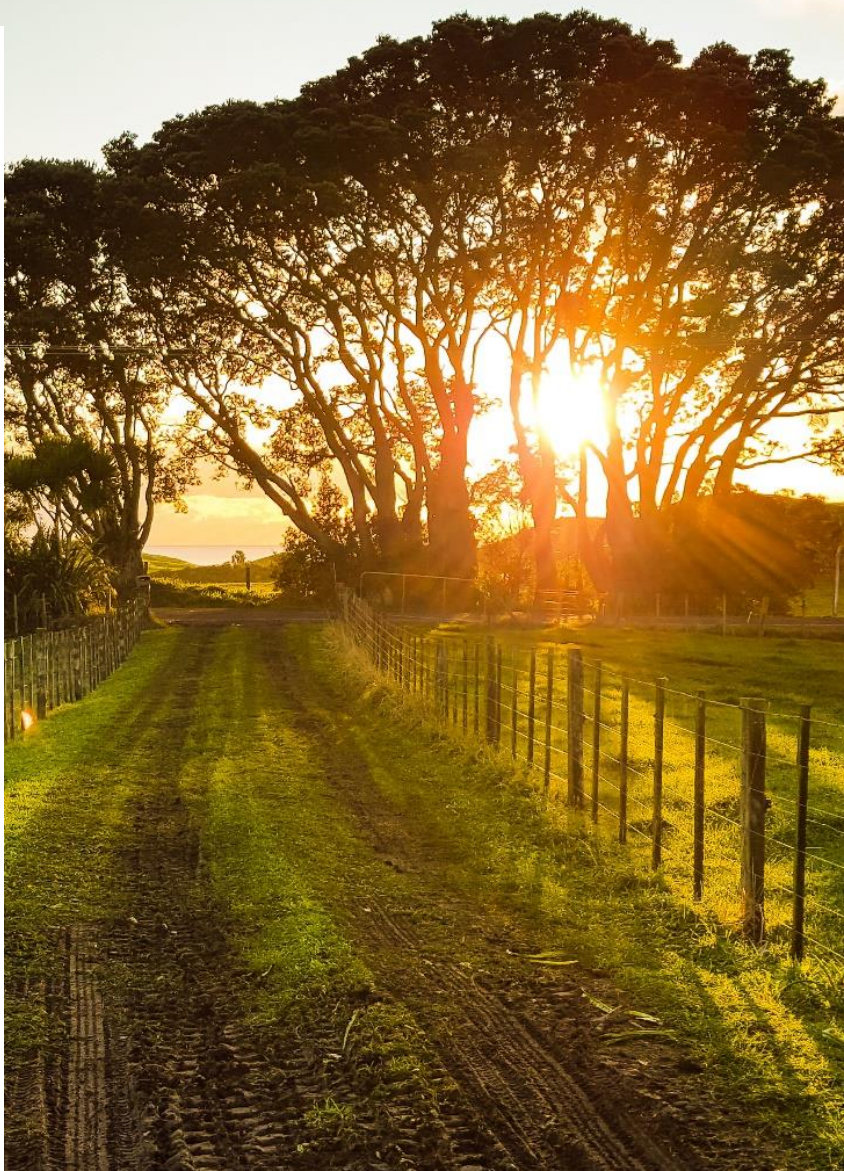


What is the future for farm compliance in New Zealand?

**KELLOGG RURAL
LEADERSHIP
PROGRAM**

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*Laura Keenan
Agronomist – Environmental Consultant
0272143776*



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Laura Keenan

Agricom

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Executive Summary

Compliance and regulation are the two words that make many farmers roll their eyes. The shed-load of rules and regulations to be aware of and act in accordance with are vast and cover aspects such as staff recruitment and employment, health and safety, animal welfare, water and effluent management and more recently, greenhouse gasses.

Many land owners, lessors or managers feel there is more “red tape” attached to farming nowadays which causes a large amount of confusion and general uncertainty around long term production, productivity and profit (Soper, 2019; Stretton 2019). Farming is a multi-facet job with physical and academic requirements, the sheer level of knowledge required to farm at a high level is astounding.

We can be the champion of farm compliance enhancing our competitive advantage and cementing our brand on the world stage. Nutrient management has been the first mover when it comes to recording on farm practices and mitigation, however, there are many more facets to farm compliance and long term success for our agricultural nation. Encompassing all facets of a farm management system while connecting a specific business to a value chain has significant benefits with transparency and traceability. When it comes to market access, compliance can be a powerful tool in terms of retaining our social licence to operate.

“In the future, imagine compliance being easy, valuable, and simply part of everyone's mindset. The benefits for our loyal and esteemed customers widely recognized and synonymous with brand New Zealand. Farmers leading the regulatory discussion, fulfilling market requirements and supporting economic, social and environmental sustainability for our entire country”.

In twenty years' time New Zealand will be a markedly different place. It may still be rich in natural resources, but as a society, we will probably be using these resources in very different ways. Our demographics, population and economy will all have changed markedly. We will continue to face complex issues and trade-offs between conservation of our natural environment and using our natural resources to support our society's health, well-being and economy.

The focus of this study is on understanding the current compliance challenge for farmers in New Zealand and looking out to the future of farm compliance. The appetite and ambition for a change in compliance is among us as we look to a more holistic view of sustainability and what it means for our future production systems.

Table of Contents

Acknowledgements	2
Executive Summary	3
1. Introduction	5
2. Aim	6
3. Methodology	6
4. Current compliance	7
4.1 The Conundrum	8
4.2 The Process	10
4.3 Inventory analysis – current tools on the market	12
5. Behaviours and attitudes towards on farm compliance	12
6. The potential - what on farm compliance could look like?	15
6.1 People	15
6.3 Farm Profitability and Enterprise	17
6.4 Farm business effects	18
7. Collaboration	18
7.1 Who owns the data and the system?	19
8. Conclusions	20
9. Recommendations	21
10. References	22

1. Introduction

Since arriving in New Zealand, humans have used its natural resources to support their lives and lifestyles. Over time we have profoundly altered the natural landscape to accommodate agriculture, forestry and urban settlements (MPI, 2019). Our economy continues to be based largely on land-based primary production and exports, and we are a high-value provider of protein to world markets.

There are over 55,250 land holdings in New Zealand (Agriculture Environment Guide, 2019) which now must incorporate highly technical land use rules into their business. This farmer-facing component of the Resource Management Act has created a significant barrier for many landowners. Mr. McHardy (2019) from Farmlands summed it up well in a recent interview where he said “catchment level rules and regulations are driving an unprecedented level of uncertainty into farmers even at a time when commodity prices have been positive for cashflow, which is usually the primary measure of determining farmer moral”.

Like any business, the long term driver of success is profit. Compliance has been added to the annual list of tasks which need to be completed for business survival. The complexity and liability around completing and submitting a property’s environment information has led to a new role termed an “environmental consultant” emerging in the primary sector (Lambie, 2019).

The diversion of money and time costs into compliance activities means that fewer resources can be put to purely productive uses, resulting in constraints to business growth. The point was raised by an arable farmer in Canterbury where “the cost of undertaking environmental improvements has little or no financial returns” to the farm business (Nielsen, 2018).

As a nation, we need to consider whether our current policies for resource use and environmental management are wise when viewed from a future perspective. We also need to ask ourselves what exactly our future policies might need to look like and address. Scientific knowledge can help us make good policy decisions, and choose wise management practices for resource and environmental use. However the conundrum with policy is it is often fixed, in a period of time when there is a particular set of challenges and there is little flex for advancements in technology or systems adaptations in the future.

To add another dynamic, the primary industries are also facing a greater void in terms of the rural and urban divide. In five years, positive perceptions of New Zealand dairy farming have slipped from 78%

to 47% for urban respondents as have rural respondents' views, though slightly higher, going from 83% to 50% (UMR Research, 2017). On the other hand, in an industry survey of 707 rural respondents 92% said they have done something in the last five years to make their farms more environmentally sustainable. However, these stories are not making it to the urban population.

If you asked most New Zealanders, including farmers what future, they wanted for the New Zealand environment, it is likely that their answer would include having a clean and healthy 'natural' environment with relatively intact natural ecosystems such as national parks, and coastal areas, and a healthy and sustainable productive landscape that supports a sustainable economy (Coriolis et al. 2017). We need to ask ourselves the question of, what is the best way to achieve this?

2. Aim

In this research I will look to answer the question: what is the future for on farm compliance in New Zealand? A simple, collaborative, structured approach to deliver a better understanding of on farm compliance and to deliver some tools farmers can understand and implement on their farm systems. This in turn will contribute to bridging the gap between farmers, industry co-opters and also regional council and government.

I will review current information and policy combined with associated literature to better understand how these reports are created and what the content needs to look like. Thus, the aim of this study is to garner a better understanding of on farm compliance in New Zealand, the implications for farmers and regional councils, and what it might look like in the future for New Zealand farmers.

3. Methodology

The methodology used for this report involved a literature review, thematic analysis and interviews.

The literature review was the major component of the research and included resources from domestic and international publications, opinion pieces and industry reports into the topic of on farm compliance, the current situation and the future. A main focus of the literature review was a survey completed by Nielsen (2018) of 707 rural respondents over a ten-year period. This survey was focused on how well farmers are managing environmental sustainability and focused on the impacts of climate change on the rural sector and to what extent farmers are improving their knowledge, practices and business to cop with these changes.

In total, 38 interviews were completed with members, in all different capacities of New Zealand's primary industries ranging from the Minister for Agriculture, industry representatives and farmers. Males and females were interviewed from a range of experience levels and ethnic diversities.

These three methodologies allowed a great depth and breadth of information to be collected throughout this process and to give me a better understanding of what the future of on farm compliance looks like.

4. Current compliance

Society, primarily through national, regional and local government and through various government agencies has become increasingly involved in regulating farming activities through the *Resource Management Act 1991 (RMA)*. The RMA was set up to promote the sustainable management of natural and physical resources (Greenberg, 2014). This directly affects almost all aspects of land use in New Zealand. The hierarchy of the RMA is shown in Figure 1. The location of each agricultural or horticultural property will result in geographical sorting based on first district and then regional council boundaries. Each council has different responsibilities with different levels of importance under the RMA (figure 1).

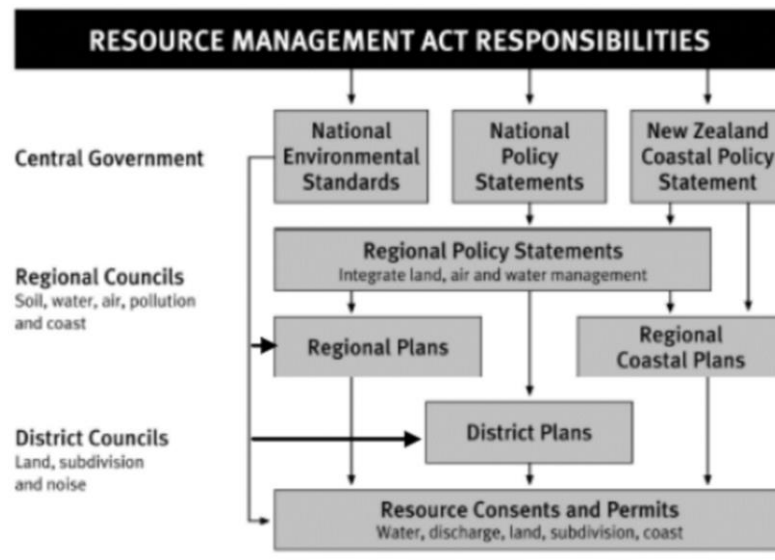


Figure 1 Hierarchy of Resource Management Act Responsibilities (Greenberg, 2014)

A review of current compliance requirements in New Zealand indicates there are 36 acts, 47 regulations and 17 codes of good practice, all of which directly affect the farming community (MPI, 2019; ECAN, 2019). The requirements for compliance stretch from legislation to food safety and animal welfare (figure 2) of which enforcement falls back to the statute. Assurance programs are industry led and affect the actions on farm. Monitoring and testing all facets of a farm is currently done with a Farm Environment Plan (FEP). Underpinning the whole system is data, communication and integration (figure 2).

The intensification of our farming practices has led to a large spotlight hovering over farmers. The RMA is used to legislate on components of this intensification and is often used as the prosecutory tool in the environment court. From an urban perspective, there is little understanding of how the RMA affects a biological business such as farming. Many urban perspectives stress that intensification appears to be resulting in environmental trade-offs, which put the country's "green" reputation at risk (Stuff, 2018). On the other hand, 63% of the food producers agreed that human activity is the largest contributor to climate change (Nielsen, 2018). It seems the communication channels and the stories which make it to urban New Zealand are not functioning and reconnection needs to occur.

4.1 The Conundrum

Agricultural and horticultural land occupy more than 40% of New Zealand, meaning there is significant pressure on farmers to manage the effects of their land use on water quality (Beef + Lamb, 2019). The quality of water in New Zealand's lakes, rivers, wetlands and aquifers varies and depends largely on the main land use in specific geographical catchments. All regional councils have a different physical landscape and thus different regulations when it comes to the main contaminants - nitrogen, phosphorous, sediment and e-coli.

The varied and vast landscape in this country means biological and chemical problems are often isolated to specific regions. For example, the Canterbury Plains have the glacial headwaters located near the Southern Alps which feed the three main rivers: Waimakariri, Rakaia and Rangitata (TEARA, 2019). The braided shingle river beds reflect the "leaky" stony soils which are used for meat, milk, fibre and crop production on this type of land. This environment is immensely different from the clay based rolling hills of the Manawatu or the pumice soils of Lake Taupo.

As such, a wide spanning system is needed to encompass and document land management practices, inputs and mitigation strategies for each and every farm. The emergence of irrigation schemes in Canterbury derived a document-based approach for the purpose of environmental compliance. ECAN (2019) explain that a Farm Environment Plan (FEP) is a tool that can help you recognise on farm environmental risks and set out a program to manage those risks. They continue by stating that an FEP is unique to a property and reflects the local climate, soils, type of operation, and the goals and aspirations of the land user. The level of complexity of a FEP will largely depend on how much farm system change is under way or being considered.

In most cases, to satisfy regional council requirements for nutrient management a farmer has to complete a FEP. They have largely been accepted as the tool of choice as Waikato Regional Council (2019) explains that FEP's are a tried and tested way for farmers to organise their thinking about how to manage environmental risks on farm. A component of an FEP is the on farm losses which are calculated via farm inputs and outputs through the Overseer® Nutrient Budgeting Model.

Lyttle (2018) explains that Farm Environment Plans are an essential management tool for farmers who need to better manage their contaminant losses, maintain or enhance indigenous biodiversity and cultural values of the environment and to improve water use efficiency.

FEP's include seven areas, each of which has a management objective. The management areas to be addressed are:

- Nutrients.
- Irrigation.
- Cultivation and soil structure.
- Animal effluent and solid animal waste.
- Waterbodies (riparian areas, drains, rivers, lakes, wetlands).
- Point Source management (silage pits, farm rubbish pits, offal pits).
- Water use (stock water and wash down water).

Completing an FEP is time consuming and it generally only outlines business risks associated with nutrient losses. It does not include other facets of farm management such as human resources, waste, business planning, succession and greenhouse gasses. In addition, there is much frustration in the farming community that there is little integration between current compliance measures. It creates duplication at the farm level, which is incredibly frustrating in these busy systems.

Given the, often, long lead-time from scientific investigation to implementation, the information needed to inform government policy development and management practices today can only come from research that was initiated some time ago. The work that is being done today will only provide answers sometime in the future. This means that we need to be very thoughtful and forward-looking to ensure we are best placed to deal with future challenges and have the capacity to take on new opportunities.

4.2 The Process

Nutrient management has been the leader in terms of having a certification process for advisors and having plans in place for nutrient management within council catchments. As early as the 1980's the North Otago Sustainable Land Management (NOSLaM) group were the first to pioneer documentation of farm inputs and outputs (Lambie, 2019). While individual farms often have many differences, all business require good planning to ensure continuing viability.

However, to date, all forms of farm planning have been fragmented with little integration between the different facets of a farm business. The two factors making management planning a necessary part of farming are:

- The approval required for development or Land Use Change such as resource consents, and;
- The need to be able to demonstrate sustainable land management as part of product marketing to maintain a competitive advantage (Norton and Reid, 2013).

There is currently no single correct or complete management plan structure available to New Zealand farmers. Approaches to plans vary between sectors, regions, product suppliers and markets. From all the literature (Norton and Reid, 2013; MPI 2019; Synlait 2019; Nielsen 2018; McCauley 2019) it seems that an "integrated farm management plan" would include three key elements. These are:

1. People.
2. Environment.
3. Farm Profitability or Enterprise.

Each section may vary in detail and the inclusion of subsections under the three categories, however, Norton and Reid (2013) suggest that two key components should be included at the centre of all management plans (Figure 4):

- Clear, time specific management goals with appropriate performance indicators, and;
- A monitoring program that enables objective assessment of the success of management in achieving farm goals.

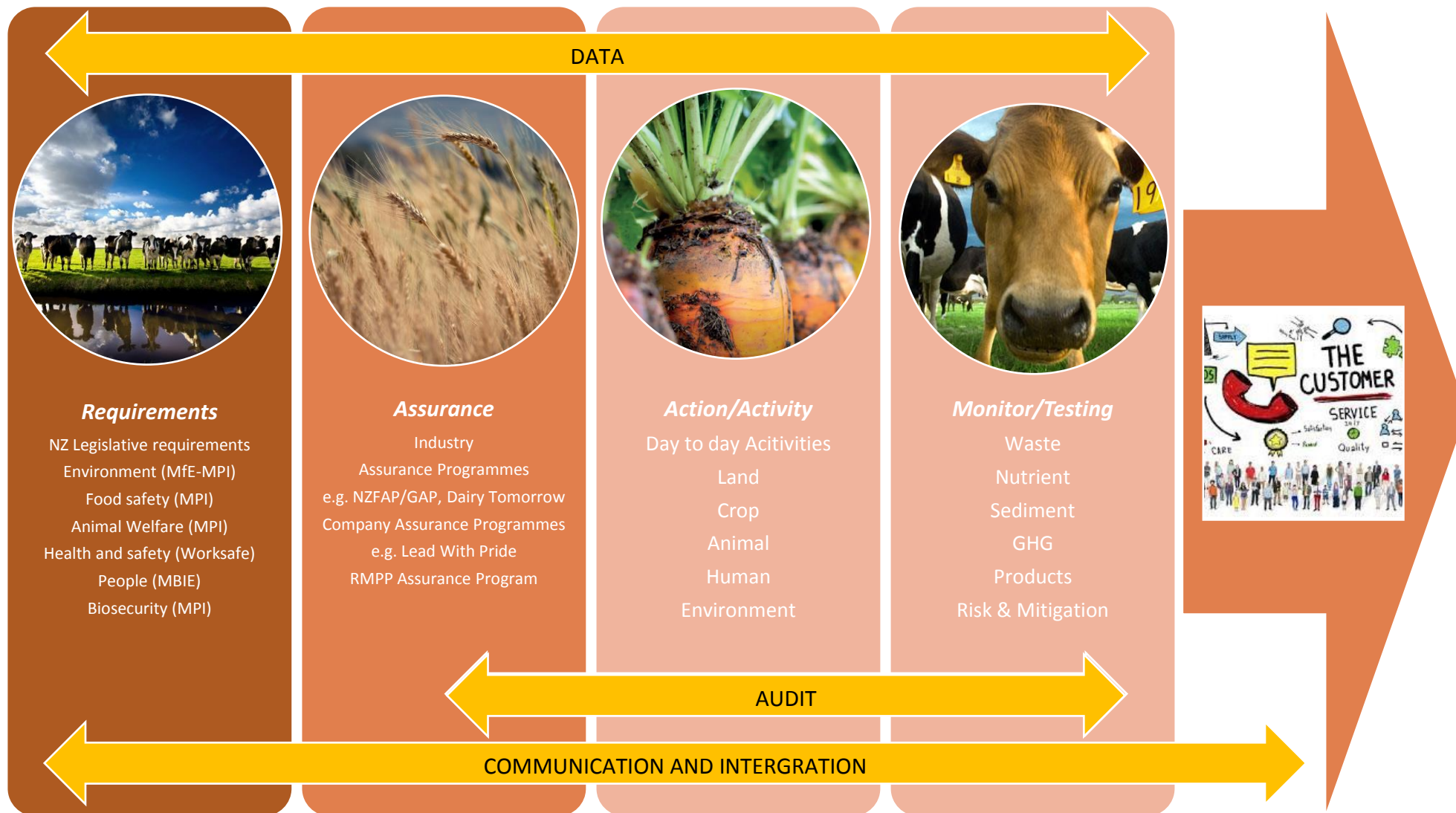


Figure 2 The current compliance system: A review.

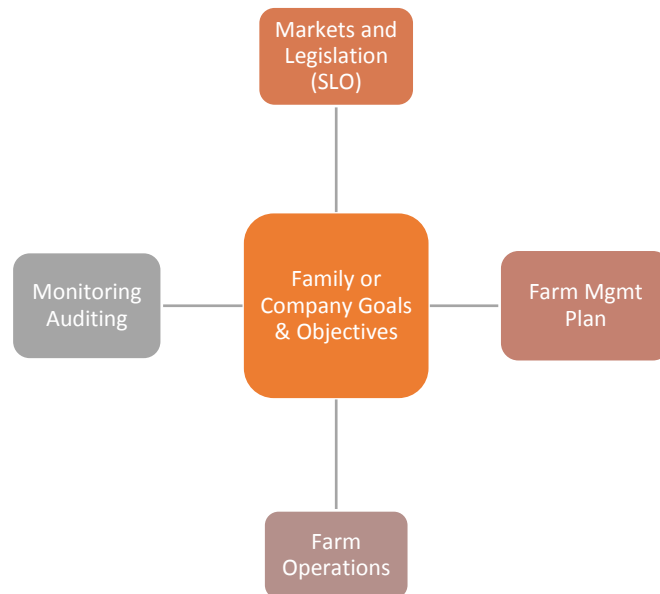


Figure 3 The relationship among various components in integrated farm management planning (Norton and Reid 2013).

4.3 Inventory analysis – current tools on the market

Following regional regulations and intensive land developments over the past twenty years a new work stream has emerged. This addition to traditional farm book keeping is becoming increasingly time consuming for farmers and many are choosing to pay a qualified expert to undertake the work, which is currently portrayed as a “costly problem” for New Zealand farmers (Nielsen, 2018).

In today’s market there are currently over two hundred qualified individuals under the Certified Nutrient Management Advisor’s Program (NMACP, 2018). This is a national network of advisors required to undertake annual professional development and to have their work audited annually as a quality control procedure. These individuals stretch the length of the country and include employees from the two large fertiliser companies; Ravensdown and Ballance, milk companies, small independent consulting companies and irrigation schemes. In addition, it is widely known there are also a number of non-certified individuals completing this work.

5. Behaviours and attitudes towards on farm compliance

Fresh water is a problem labelled "a continuing challenge" in New Zealand government circles (Stuff 2018). It has been included in the same context as Climate Change, of which climate change is likely to affect almost every aspect of environmental and conservation in the next twenty years. Being on farm each and every day, it is evident that the compliance conversation can cause some mental stress and frustration which is shaping farmers’ behaviour.

Human behaviour is incredibly complex and countless theories and models have been developed over time to try and explain it (DPMC, 2019). The intricacies around what shapes our decisions and actions, including the ways we process information, how we make decisions and what information is considered when we do, is encompassed in an individual’s behaviour. These intricacies are heightened when you have a vast range of daily tasks varying greatly in type and ability required. This is farming.

Compliance and regulation are the two words that make many farmers roll their eyes. The fickle situation about compliance is it is often set at a point in time to overcome a specific challenge or to improve a set of parameters. However, farming includes the use of a biological system which is constantly changing. In addition, these systems have been paired with new technologies, which are developing at an exponential rate and can often change the outcomes of these biological systems, however in early adoption stages, there is not well documented examples of how this directly affects policy outcomes like water quality.

A recent study conducted by Nielsen (2018) of 707 farmers, which compiles two identical sample units from 2009 and 2018 and the same question format, showed that 92% of farmers had done something in the last five years to make their farms more environmentally sustainable. Many dairy farmers in the study were quick to comment that “they pride themselves in leading the way in making their farms environmentally sustainable (Nielsen, 2018). When asked to identify the risk and impact of climate change on the farm business, 59% of farmers believed the threat of climate change was ‘major’ to their business when looking out over the next twenty years (figure 4) (Nielsen, 2018).

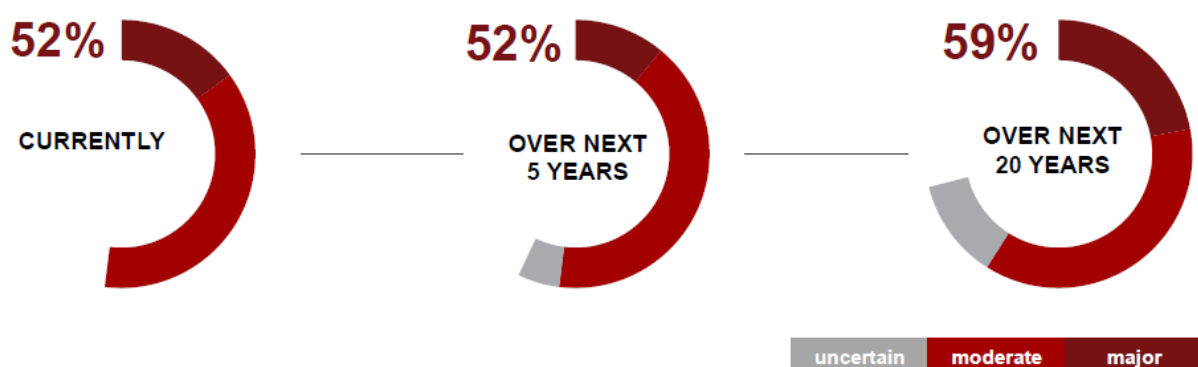


Figure 4 Impacts of climate change on farm business over the next twenty years (Nielsen, 2018).

The four big issues outlined by many farmers, and also throughout the interview process of industry personnel, are *land management, water quality, financial viability and legislation and regulation* (McHardy 2019; Munro 2019; Lambie 2019; Nielsen 2018). With our greenhouse gas commitments with the UNFCC Paris Agreement, many farmers are not prepared. Nielsen (2018) explained only 14%

of their survey respondents having made calculations of on farm GHG estimates, and even less (2%) knowing the total emissions of GHG's from their farm. In addition, the threat to their business is building as we look out to the future (Figure 4).

Taking action with compliance requires clear and timely information to make calculated decisions which positively affect the business. Farm systems rapidly change, which requires managers and owners to have resources with easy access. The high level of confusion around compliance and a farmer's requirements has led to many business owners "burying their head in the proverbial sand". Unfortunately, the number of farmers seeking out advice about sustainability and climate change has reduced 16% in the last ten years (Nielsen, 2018).

Confidence also plays a large part in information farmers will assimilate and use for their farm system. Many farmers are kinetic and practical learners, thus 55% get information from participating in a field day. Disturbingly, only 20% of farmers seek or receive information from MPI (Figure 5). This low statistic when paired with the quality of information farmers feel they are getting from central government, an 11% reduction in quality in 2018 when compared with 2009, suggests we may have a problem. There is much talk about the rural and urban divide and potentially it all starts with information sources and quality of the information.

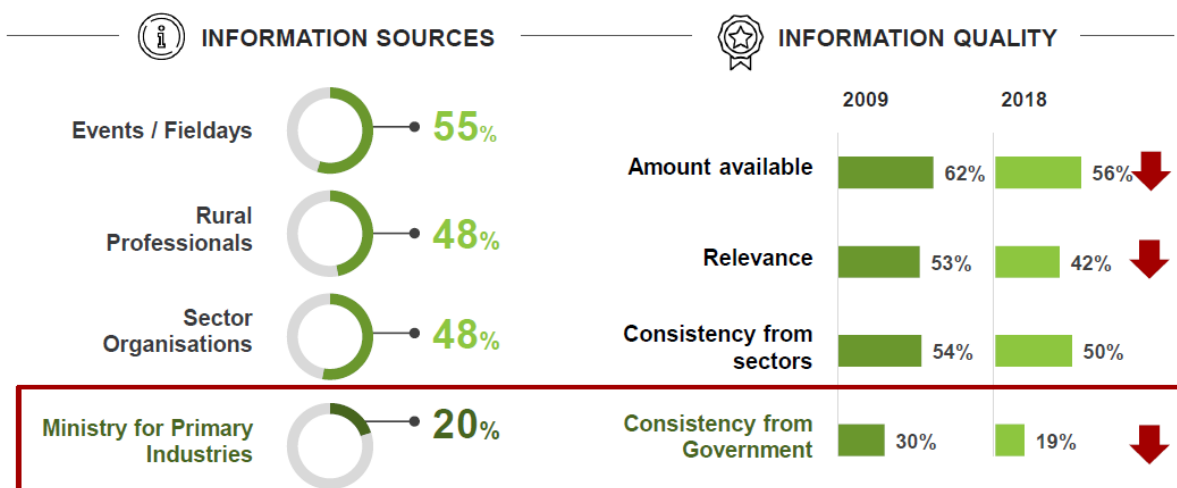


Figure 5 Farmer scores of information sources and quality (Nielsen, 2018).

It is evident that any change in behaviour is going to come through constant and consistent information streams. The message from government needs to be extremely clear and consistent. Farmers are fearful and with the goalpost continuing to move, communication channels must remain open (Munro, 2018). Taking action also requires financial sustainability. One farmer stated that "the

farm business needs to remain profitable, so that we have the discretion to be able to invest in ways of continuing to reduce our environmental footprint while increasing productivity” (Nielsen, 2018).

6. The potential - what on farm compliance could look like?

Good scientific evidence and advice underpins good decision-making, whether those decisions are made by consultants, rural professionals, farmers or government. Evidence-based decision-making is particularly critical for big, cumulative issues relating to compliance and the environment. The key components of compliance need to be structured to ensure there is significant uptake from farmers and also there are some benefits in a plan for a farmer to use to assess strengths, weaknesses, opportunities and threats within their business.

“In the future, imagine compliance being easy, valuable, and simply part of everyone's mindset. The benefits for our loyal and esteemed customers widely recognized and synonymous with brand New Zealand. Farmers leading the regulatory discussion, fulfilling market requirements and supporting economic, social and environmental sustainability for our entire country”.

The relationships among various components of integrated management planning is represented below in Figure 6. There is no single correct management plan structure and approaches to plans vary between sectors, regions and markets. Not all management plans necessarily cover all these issues, or they may include additional sections depending on enterprise type and supplier requirements. However, this platform could be on a national scale and underpin biosecurity responses, quality assurance, artificial intelligence and help New Zealand retain its competitive advantage.

One plan will encompass all facts of a farm management system while connecting that specific business to the value chain. This will provide transparency and traceability when it comes to market access and be a powerful tool in terms of retaining our social licence to operate.

Goal setting is without a doubt the most important part of management planning and sits at the heart of figure 6 as it describes the farmers vision and the goals with which are needed to live the vision every day (Figure 3).

6.1 People

People are undoubtedly the most important part of the solution when we are talking about the long-term success of our primary industries (Lambie 2019, Munro 2019, Stretton 2019, McCauley 2018). In terms of farm planning, people represent a business's culture, values and performance. Human

resources, labour management, health and safety and success are all considered categories when it comes to managing this resource.

Documentation of “people” based activities can be difficult in large operations, although not inconceivable. Behaviour change often starts with a culture change and begins with the head, or owners, of the business. Incorporating the aspects shown in Figure 6 will ensure longevity and accomplishment within a business for owners and employees. If a clear strategy is designed and lived, staff feel like their roles have an added depth, which creates accountability around responsibility and adds value to this compliance plan for day to day activities.

6.2 Environment

In the current era, it is rare to go on farm and the conversation not to drift towards compliance, nutrient management, natural resources such as erosion or greenhouse gasses. The frequently used words “clean and green” which used to be synonymous with New Zealand, have been exchanged with “dirty” words like pollution, emitters and inefficient.

We live in an information age where customers can access as much information as they would like to make an informed decision on a product they are purchasing. As the rate and flow of information increases, consumers are making more decisions based on the wider effects of a product, such as its environmental footprint.

“A bad story makes its way around the world before the truth even has its boots on...”

Like it or not, environmental regulation is here, and it is here to stay. It also has some positives. It ensures we are not degrading our natural resources to ensure the next generations have the right to farm. Also, it elevates us above our competitors. Documenting farm practices around compliance is a way to directly demonstrate our behaviours and morals to our consumers.

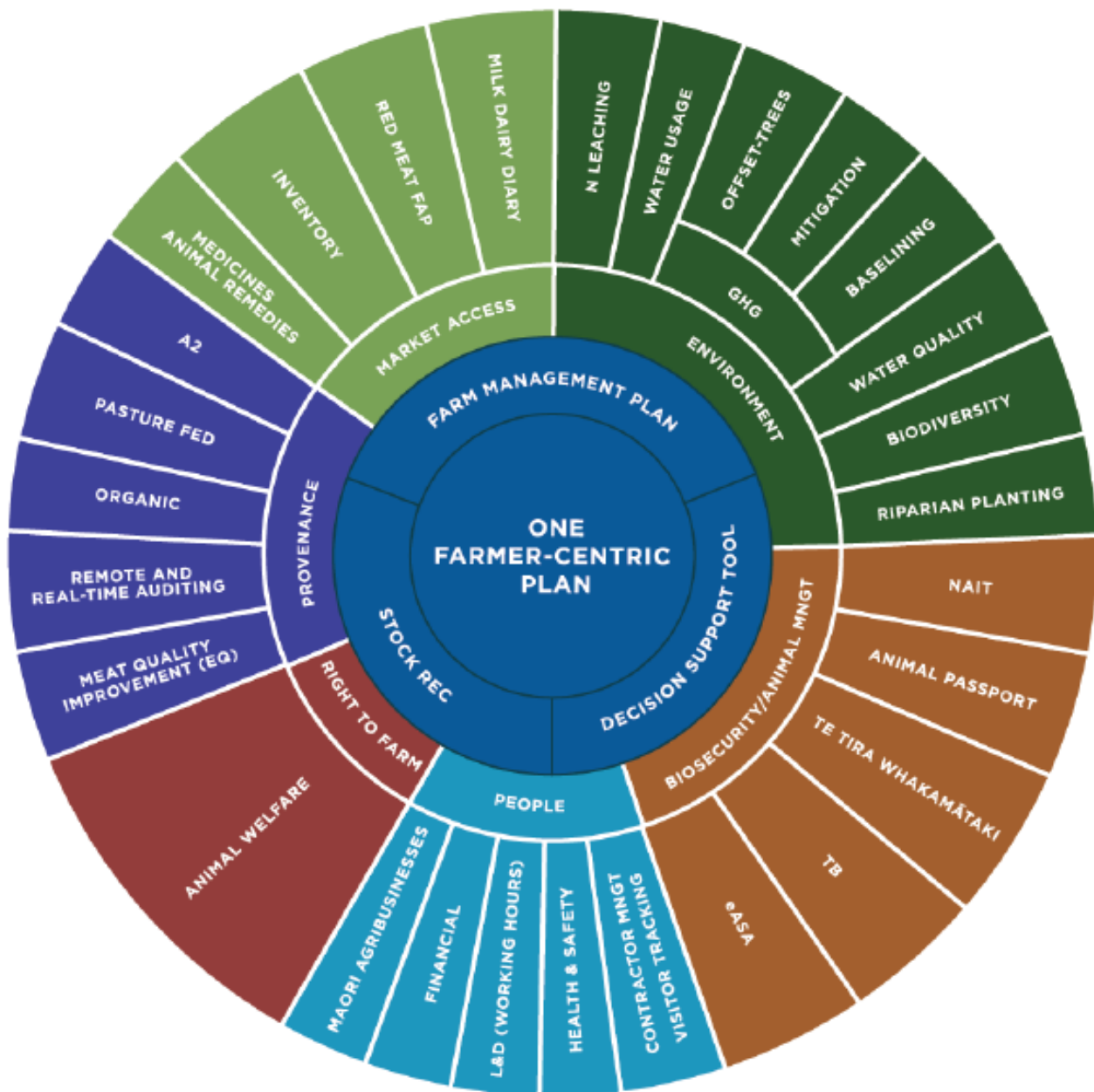


Figure 6 A Guide to integrated farm planning. (Farmlands and FarmIQ, 2019)

6.3 Farm Profitability and Enterprise

Financial management is the basis of any business, agricultural or not. This part of the plan is practical and demonstrates how farmers achieve financial success through physical inputs. It includes soil and agronomy, irrigation and animal systems and how they are integrated on a property.

The diversion of money and time costs into compliance activities means that fewer resources can be put to more productive uses, resulting in constraints to business growth. Yet there may be business benefits associated with compliance activities, it is usually difficult to know in advance which costs will

be beneficial over the long run. Complicating this is New Zealand's small size, i.e. while we can influence international standards and other market players, our size means that we are generally a "policy taker" and must conform to market requirements and/or international standards.

However, the notion that "people will pay for sustainability" is becoming more integral to New Zealand companies. Just like us, the discerning customer is requesting more information about their product choices, which creates an opportunity for a compliance model to become valued in terms of the price received at the farm gate for our agricultural goods and services.

6.4 Farm business effects

An integrated farm plan can act as a professional business plan for a farm system. There are many positives for a farm if they complete this task, such as an ability to structure the farm for the future by compiling baseline data. In addition, this makes the farm more attractive from a salability point of view and allows an owner to market their business better if they are selling direct to customers.

In addition, financial institutions are becoming stricter from a lending perspective and an integrated farm plan of this nature would be an excellent way to profile a business to outsiders looking in. It also allows you to identify areas of risk and underperformance and to produce scenario analysis to identify the effects of disruption to the business in terms of biosecurity or technology.

7. Collaboration

Transparency is extremely important to this country as a small scale producer. The work we are currently doing in sustainability is "pre-competitive". As an industry, we have realised we need to raise our game as we are going to be under increasing pressure from a growing, discerning customer base. The ability to share information to improve knowledge uptake throughout the primary industries represents an enormous opportunity, however, it is not something we do well.

The corporate nature of our large agribusiness and the vast number of small to medium sized businesses creates a unique dynamic for collaboration in New Zealand. The conundrum sits with large companies having much greater capital investment capabilities than the smaller companies, however, it is these very businesses which often have the creative, "no8 wire" kiwi ingenuity factor which is exactly what creates innovation if paired with investment.

Collaboration and integration need to start at a fundamental knowledge space with government, the Ministry for Primary Industries, regional and district councils and the members of the primary

industries and farmers. There is a poor understanding within each party, their challenges and opportunities. Channels need to be free flowing in both directions consistently for collaboration to be successful. The bounty for each party lies in more exposure to facets of the supply chain, faster reaction times to industry outbreaks like Mycoplasma Bovis, depth around consumer influence, more resilient businesses and clear and open communication channels for financial, environmental and social aspects of the largest export earner for this country.

7.1 Who owns the data and the system?

Adopting digital technologies and modernising farming enterprises poses a challenge to navigate in the coming years. The digital transformation that is taking place on farms and the amount of data that is now being collected, used and stored is enormous. When you look at the three main farm merchandise suppliers in New Zealand, each is working on their own version of a customer relationship management tool to better utilise the data which their staff collect in their day to day roles. However, little attention is being paid to the complex legal environment that these technologies bring.

Digital literacy is relatively low with farmers, as is their knowledge of their legal rights and obligations and the commercial relationships with their suppliers and customers across the broader agri-supply chain. This is where the ownership question surfaces. Opinions on this matter were 100% unanimous when it comes to data ownership, the farmer owns the data (Stretton, 2019; Munro, 2019; Soper, 2019; Lambie, 2019; McCauley, 2019, Woodfeild, 2019). The idea of a government public depository could also be considered for benchmarking social, environmental and enterprise parameters for farm systems.

The problem with data, particularly farm system data, which is hugely dynamic, is that in its raw form it is often worthless. The power of data is that it can be manipulated and organised to derive information that can be used to affect real time decisions, to forecast, particularly inventory, to make systems on farm more efficient. However, this takes time and a comprehensive analysis for this data to be valuable. As such, commercial systems are already being designed to tackle this exact problem.

It is imperative those who are looking in to provide this solution communicate, as does the government. The variation created through the “first mover right” theory can cause market confusion and frustration, which is heightened within the legal landscape. Navigating this period of advancement is critical to the success of New Zealand’s agri-food sector.

8. Conclusions

New Zealand has a unique and valued environment and conservation estate, which its people are determined to protect and, where possible, improve (Wheeler, 2018). There are many benefits to New Zealand having clean air, clean water, unpolluted seas and thriving native biodiversity while using its resources sustainably. Not least of these is New Zealand's strategic economic advantage relating to our 'clean and green' brand, and to our key natural environment-based industries.

The future for farm compliance in New Zealand boils down to effective communication and trust between all parties from central government to the farmer. Simply, there is not enough communication and integration between all facets of the sector and current communication is not nearly clear or consistent enough from both ends of the legislative chain.

The process for improving farm compliance gets easier still if we look at compliance from a holistic view, encompassing the facets of farm systems and streamlining them to generate a plan or system whereby there can be some whole industry analysis for ourselves and our discerning consumer. This adds direct value to the compliance argument for those who have increased costs of production in order to complete regulatory requirements.

The confusion around compliance and legislation needs to be removed and all parties to communicate, discuss and dictate what the path forward might be. Those being regulated need to be a part of the conversation. Not just innovators and early adopters who are open to futuristic ideas and business development, but a portion from the middle of the bell curve, where the vast population lives and uptake can span across a majority.

Although farming systems are complex and varied, a system approach with consistency across regions would have significant merit. It would streamline compliance, reduce consistency errors, reduce duplication for the farmer servicing different customers, and portray a united, disciplined and focused front to our consumers, that we want to be the best food producers in the world.

The opportunity to secure 'premium' high prices for our exports based on a brand is compelling. Compliance is becoming a large part of that brand and it is evident that more customers are willing to pay for sustainability. Protecting and enhancing this brand will enable sustained and value-added economic growth, and this will need to be linked to conservation and the environment in mutually reinforcing ways. It is already challenging to build and maintain this strategic advantage; it will become

more so as customers become more discerning, and as product traceability becomes more widespread.

There are many challenges ahead. There are complex policy trade-offs between environmental protection and economic growth that current and future generations will have to address. The challenge of compliance to farmers is one of the most significant challenges they may experience in their lifetime.

The complexities of the interactions that now exist between human and natural ecosystems require critical decisions to be made with pre-evaluated impact; these factors and skills combined are rare and not dissimilar to superpowers. We need more people with these “superpowers”, people with deep farm systems knowledge, environmental knowledge, provenance and market knowledge, animal and biosecurity knowledge and people who show empathy and a pathway forward when challenged with adversity. My recommendations are as follows.

9. Recommendations

Navigating the future of on farm compliance in New Zealand is going to be a challenge, a challenge that if overcome will represent a considerable opportunity for our country to maintain our competitive advantage. To ensure resilient, legitimate and equitable systems the primary industries need to:

1. Take accountability for the current state of our agricultural landscapes and our past actions with intensification and make consideration towards the future use of our resources.
2. Build much better communication channels between farmers, rural professionals, local, district and national government. This will make us nimble and swift when dealing with future industry challenges.
3. Consider our landowners and how their businesses have changed over the past twenty years and contemplate their expertise and understanding in the area of compliance.
4. Set strategies to address stakeholder concerns and try to better understand their business. If there is not mutual respect among vested parties the industry is at risk.
5. Consider our customers and build strategies around compliance that satisfy their needs and values now and in the future.
6. Due diligence is going to dictate the future of farm compliance. Regulatory engagement and tested approaches with appropriate transition periods are key for farmer uptake.
7. Research into innovative technologies, processes and their impacts. This will help us make decisions on how to produce more primary goods on less land, while sustaining both the primary sector economy and our terrestrial ecosystems.

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