From knowing to implementing:

How to support and achieve environmental compliance in a world of change.

A production forestry case study.

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Executive Summary

The New Zealand Forestry Industry has witnessed an exponential growth in Environmental Regulation in the last five years and this will only but continue. The implementation of regulation however has been challenging to the current workforce as there is a lack of support, education, understanding, decision making and leadership across all levels of the industry and government.

Most of the challenges we face are not old, but we now have to consider them through a different lens. What has been done in the past is now obsolete and the next generation of foresters will be key to the industries success. The industry needs to embrace diversity, nurture change, innovate, try new ways of engaging people and build talent for the future. Nothing will change if nothing changes.

This research report attempts to answer the question "how to support and achieve environmental compliance in a world of change?. This was done by looking at the environmental culture of a production forestry company, exploring leadership styles, motivation towards change, understanding of individual environmental responsibility and performance expectations. Then, to analyze gaps and barriers to deliver on meeting environmental performance standards and make recommendations on how we can effectively support a movement towards a high level of environmental compliance at both a company and industry level.

Key findings

The forestry industry needs to lift the quality and capacity of workers in the industry. Higher levels of education, understanding, decision making and leadership is required across all levels of the industry.

There is an aging workforce with both contractors and forest mangers across all aspects of the forestry industry. Effort is required to attract, support and grow the next generation in the industry.

More credible and functional relationships need to be formed between the forestry industry, central and local government. Significant investment is required in promoting forestry as a sustainable and viable industry in New Zealand.

Recommendations

- Individuals who regulate and work within the industry need to get better support and gain the training and skills required to understand and be confident in knowing what regulation requires and how to achieve that on the ground. Known and proved change management techniques should be followed to assist individuals on the journey at a political, industry and company level.
- New Zealand Forest Owners Association (NZFOA) need to be promoting for a greater number of students to enter the forestry degree programmes.
- NZFOA and wood councils need to strengthen regional environmental working groups and work together, alongside regulators, to address the most environmentally challenging areas of rule implementation of the industry.
- Action the development of spatial tools and guidance to determine high risk land areas to give better clarity to all stakeholders of where the real environmental risks are. Determine land classes and landforms where production forestry as a land use is not suitable.

- Those writing and amending regulation need to better describe measurable standards and targets that can implemented and complied with on the ground.
- Rules and regulation need to have a clear purpose which gives clarity on the values we are protecting.
- NZFOA need to invest in some real expertise to help address the significant reputational issues the forestry industry has.

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1.0 Introduction

The food and fibre sector is continuing to adapt to a world of change. As society moves away from dependence on fossil fuels and towards a more sustainable, biological-based economy, forestry will become even more important as a major producer of sustainable and renewable resources for New Zealand. The role forests in our society and economy will become even more crucial (Te Uru Rakau, 2022).

There are some 1.7million hectares of planted forests in New Zealand, and about a third of these are on erodible steep land terrain (Te Uru Rakau, 2022). Many of these forests were originally planted for erosion control and are now being harvested. (Scion 2017). The complex nature of these forest create a real challenge for the forestry sector to provide for our food and fibre needs as well as the health and wellbeing of our environment and our people.

The National Environmental Standard for Production Forestry (NES-PF) came into effect in May 2018 (MPI 2017), developed to provide nationally consistent regulations to manage the environmental effects of forestry. Since then, a one year review has been completed (TUR, 2021) which identified some key changes to the regulations which would improve environmental outcomes including guidance and training with greater clarity about the purpose and intent of the regulations as well as support to ensure the regulations are well understood and can be consistently and effectively implemented. In 2022, Te Uru Rakau released a document outlining the proposed national direction for plantation and exotic carbon afforestation which looks to better manage both plantation and exotic carbon forests (TUR 2022).

Our reality as producers in New Zealand, is that change is constant. The food and fibre sector is experiencing unprecedented political scenes, volatile markets, climate change and pandemics at the forefront of our current situation. How can the forestry industry live up to the expectations of society and how can the forestry industry support government to not just listen to the loud few? How can forestry leaders ensure that there is enough information to understand how to meet environmental obligations? Does the forestry industry have the right culture to deal with these changes and the right relationships to know who to talk to?

This research report attempts to provide an insight into the challenges that those on the ground have in understanding how to comply with regulation in a production forestry context. How can we go from knowing to implementing regulation?

2.0 Aim and Objectives

The purpose of the research project is to understand the environmental culture of a production forestry company, exploring leadership styles, motivation towards change, understanding of individual environmental responsibility and performance expectations. Then, to analyze gaps and barriers to deliver on meeting environmental performance standards and make recommendations on how we can effectively support a movement towards a high level of environmental compliance at both a company and industry level.

2.1 Objectives

- To understand environmental culture and an individual's alignment towards environmental business goals and values
- To understand the barriers faced to meet environmental regulation
- To provide practical recommendations on the opportunities for supporting change based on the findings of a literature review.

2.2 Scope

The scope of this research was limited to the operational staff of a production forestry company that operates in multiple regions across New Zealand. Although this research provides an important insight into the challenges the industry faces, it is not a complete representation of the industry.

3.0 Method

The first task was to complete a Literature review of relevant material exploring leadership, culture, change, regulation and compliance. Resources included books, central government reports and international journal articles. Once sourced, an attempt was made to compare, contrast and evaluate the information to determine common themes.

The second task was to undertake semi-structured interviews with 14 operational staff who were randomly selected out of 25 located in all regions within New Zealand that the company operates within. The interview questions can be found in Appendix 1. Ideally the interviews were conducted in person and audio recorded however where this was not possible (2 interviews), this was done via Microsoft teams and audio recorded.

Prior to the interviews, the participants signed a consent form. It is intended that the identity of individuals who participated will remain anonymous in any discussion in this report. This was explained at the start of the interview.

Once all the interviews were complete, I used thematic analysis (Braun & Clarke, 2006) to critically analyse the interview responses and identify and evaluate key themes from both responses and the literature. Not all of the questions and responses were used to form this analysis in particular the difference between a family owned or corporate style of operating.

Lastly, analysis of the question of so what, now what was considered from the information collected to form recommendations on how to overcome some of the challenges that the forestry industry faces with environmental compliance.

4.0   Literature review

The literature review included examples of both international and domestic research on relevant topics of the study question. The research articles were largely focused on change, leadership, environmental compliance and motivation. New Zealand government reports were then sourced to understand the current context of regulation and challenges that are faced with the food and fibre sector, with a focus on forestry. Change leadership models were also explored to understand how to implement change effectively and then what might be missing based on the responses from the case study.

4.1   Change

The New Zealand regulatory environment is in constant change. The forestry industry needs to be geared up to accept and adapt to change in order to meet environmental regulatory requirements. No two days are the same for forestry workers. But change is difficult and needs to be managed in a way that brings workers in the industry up to speed, both as individual forestry companies and the sector a whole.

Kotter's eight-step change model.

Its critical to communicate the need, and reason, for any change for employees to see change as a possible solution to an existing problem. Kotter suggests that for change to be successful, you must obtain the buy-in of at least 75% of the organisation's leadership. A significant amount of time needs to be spent on step one as described in Figure 1 before moving onto the next steps.
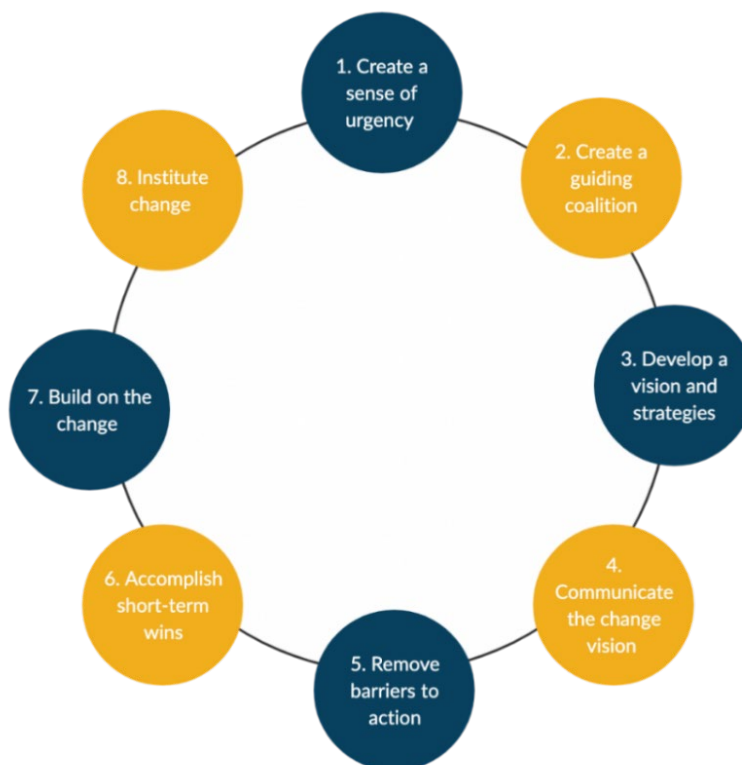

Figure 1: Kotter's eight-step change model as described in Kotter (1996)

Organisational changes need multiple leaders' opinions, ideas and support. In order to lead change, you need to find the true leaders within your organisation and support them to share

the vision. Emotional commitment from those needing to adopt the change is needed to gain a coalition against members and successful implementation.

Communication of the change or change vision is key to ensure it is understood and supported by staff for it to be successful. This includes talking often about the change and the vision, addressing and listening to concerns, applying the vision to all operational aspects from training to performance reviews. Everything needs to link back to the vision.

Generate short-term wins. Nothing motivates people more than small wins and success. You need to make results visible, communicate them and have clear short term targets Constant momentum, debriefing and learning from what went right and what went wrong, talking about progress at every chance and making it relevant to your purpose will create change.

The Prosci ADKAR Model

The Prosci ADKAR Model is similar in nature to Kotter (1996) however it puts more emphasis on how to facilitate change in one person. It looks to describe how you need to understand the individual needs of each person within an organisation or group before you can effect change.

ADKAR is an acronym for the five outcomes an individual needs to achieve for a change to be successful: Awareness, Desire, Knowledge, Ability and Reinforcement. These must be achieved in order for an individual to adopt and implement the change.
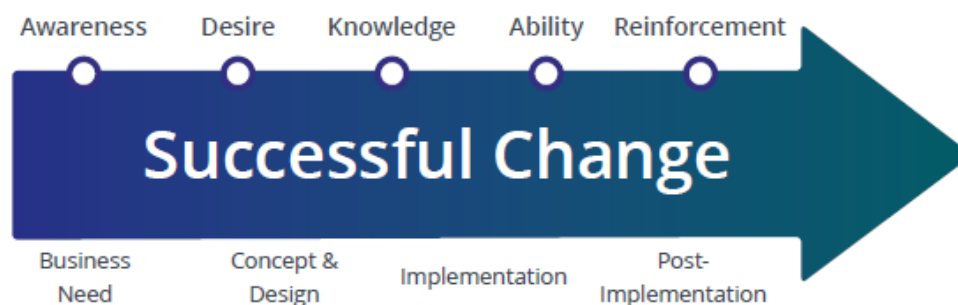
Figure 2: ADKAR model as described by Prosci.

Awareness: This is awareness of what the business reasons are for the change. Does the individual understand why they should do something differently? Awareness should be the goal or outcome of early communications related to what the change is.

Desire: Desire of the individual to engage and participate in the change. Is the individual motivated? Desire should be the goal or outcome of sponsorship of staff leaders and the way the organisation approaches resistance management.

Knowledge: What does an individual know about how to implement the change. Does the individual know how to effectively and safely exercise the change?. This is provided by training and coaching.

Ability: The ability of the individual to realise or implement the change at the required performance level. Can they put knowledge into practice?. This is achieved through additional coaching, practice and time.

Reinforcement: This is to ensure that change sticks. Reinforcement is a goal or outcome of adoption measurement, corrective actions and recognition of successful change. Do you have the reinforcements in place to prevent you from reverting to your old habits?

There are two parts to change – the project management of implementation but also engaging the hearts and minds and influencing the people side of the change. You will not bring successful change unless you put effort and focus onto these two parts.

4.2   Culture

Culture is our way of working. Its who we are and determines how we act. There are some critical aspects of forming and maintaining a positive culture and these include having a trusted leader who encourages communication at all levels, getting people aware and understanding of how they fit in the picture and feeling valued. Lastly culture needs to define people so they themselves know how to be in line with the common goal.

An organization with a strong culture will influence behavior and effectiveness of employee performance. Employee performance will run following the culture adopted in that organisation. (Sasanto, 2021). When there is a high level of values alignment, a high norm anchoring and a high level of agreement, this will allow for significant system and environment compatibility (Thommen, 2002).

Thommen (2002) referred to specific criteria, namely 1) the level of anchoring, which shows how much the values and norms are accepted by the co-workers, 2) the level of agreement, which defines the collective character of cultural norms and values, 3) system compatibility – the level of harmonization of organizational culture with all other systems of an enterprise meaning they can be better and more easily implemented and 4) compatibility with the environment, the external focus – the organisational culture should be developed in harmony with the culture of the environment in which the enterprise functions.

Leadership

Leadership is a crucial part of culture. An organisations culture is created, enacted and whenever appropriate transformed by the organisation's top leader and other decision makers (Armenakis et al, 2011). Leaders need to have credibility in order to lead and make change because the change recipients will not believe the message if they don't believe the messenger (Armenakis et al, 2011).

The readiness model described by Armenakis et al, 2011, speaks of efficacy as being necessary to allow for organisational change because the change recipients or people who have to follow a new process or procedure must have confidence that they can acquire the knowledge, skills and abilities to successfully perform the tasks required from the organizational change.

Compensation programmes should be designed to reward change recipients for achievements consistent with the change and training / development should be designed to enhance the skill level of change recipients so that they can perform their new jobs, also reinforcing the change message. (Armenakis et al, 2011).

Organisation leaders need to create a view that influences the organisations emotional and cultural resources, sharing with its staff the values, commitments and aspirations they intend to achieve in the business domain, but also the health and safety and environmental area.

Leaders' main objectives should be to focus workers and put attention towards the issues they consider essential. (Fernandez, 2003).

A frequent problem is that managers and workers may see the challenges differently. Managers can see environmental improvements for example as an opportunity to improve business, however from an individual point of view, it could be seen as a new or unnecessary challenge. (Fernandez, 2003)

People and awareness

In relation to environmental improvements, effective implementation demands a culture based on ecological values. It includes a deep awareness of the environment and change on the part of the workers. (Fernandez, 2003)

But it is important that individuals are included in the problem solving and solutions. If companies do not allow workers to contribute with their ideas and suggestions, they lose the advantage associated with their skills and motivation. (Fernandez, 2003). One of the more important goals is to create the sense that employees are an important asset to the firm (Argenti, 1998).

Education becomes inadequate if it is not accompanied by the necessary instruction each activity demands because it is this that brings out the capacity to make good use of knowledge. (Fernandez, 2003) The importance of the workers environmental training – a conjunction of education and training is key.

Training is an essential aspect in systems that need high performance. These are based mainly on front line workers skills and initiatives to solve problems, suggest changes and be responsible for the product's environmental quality. (Fernandez, 2003)

An environmental training program should involve: an increase in workers motivation, the promotion of the integration of good practices into the company and fostering integration, along with collaboration at all levels with the company's policy (Cook and Seith, 1992).

Supportive behaviors from supervisors, like allocating time and resources to experimenting / developing ideas, rewarding ideas for environmental improvements, providing environmental competence-building opportunities and being open to employees' ideas can demonstrate that the company encourages eco-innovation. (Fernandez, 2003)

Environmental leadership and management

Not everyone believes in environmental improvements and largely that is a fact of "what you don't know, you don't know". In order to overcome resistance to environmental changes and a culture that regards the environment in all decision-making individuals need to understand the "what" and "why".

Leaders who consider the environment in every environmental activity, such as reducing the consumption of scarce resources, reducing environmental impacts, and making strategic environmental policies for their companies, will build an organisational culture that cares for the environment which in turn will improve the environmental performance of employees themselves. (Sasanto, 2021).

When environmental protection is valued and encouraged by the company and line managers, individuals are more likely to experience a genuine sense of attachment and

responsibility to corporate environmental goals and values, which is enacted through moral behavior. (Sasanto, 2021).

The success or failure of environmental management programs is determined in the willingness (or lack thereof) of employees to support continuous change and take responsibility, on a discretionary basis and at their own level, for the environmental impact of the company (Smith and O'Sullivan 2012).

Ramus and Steger (2000) show that by allocating time for training and competence building, adopting an open communication style, or sharing information, supervisors provide employees with the conditions of possibility for greater emancipation and change.

By helping individuals in organisations to look at environmental issues with a new perspective, it is reasonable to think that supervisory support behaviors will influence the employee discretionary sense of attachment and responsibility to environmental concerns in the workplace. (Raineri & Paille, 2016). But we need to make sure that environmental policies, objectives, and practices are actively communicated through internal channels in ways that are appealing to, and understood by, non-green believers. (Raineri & Paille, 2016).

Motivation
Our people need to be motivated to get on the journey. If they are not motivated, they just won't get on board or will do the bear minimum.

Ethical values help establish and maintain standards that delineate the 'right' things to do and the things 'worth' doing. Such ethical values influence individual's choices and lead to actions that every organization supports (Garcia-Marza 2005).

However, increased knowledge about the environment does not necessary lead to environmentally responsible behavior (Payne 2016). The knowledge component is only one part of the complex network, made up of various factors such as motivation, social norms and supporting structures (Birdstall, 2010).

Behavior can be sustained on a long-term basis if the motivation for those set of actions are self-determined and internally regulated, rather than directed using external systems of rewards and punishments (Darner, 2009).

High self-efficacy, or increased belief in one's capacity to control events in one's environment, may tend to increase the practice of workplace behavior (Singh et al, 2019)

4.3 Our environment – physical, regulatory and political
The forestry industry is challenging. Forestry is seen as a dirty industry in the public eye – we kill people, clear-fell harvest is ugly, log trucks are dangerous on public roads, we export 70% of volume to China, during storm events we put logs on the beach and silt up and dirty streams and rivers and forestry work is dangerous and unskilled. How does the industry navigate these perceptions and realities to ensure that it remains a successful and prosperous part of New Zealand's Food and Fibre sector?

Environmental challenges
The environmental impacts of what are being experienced today are in many case the result of decisions made in the past (Envi Aotearoa 2022).

There is increasing concern and media attention about the environmental effects of steep land planted forestry (Scion, 2017). However, predicting the exact conditions under which a debris flow will occur and its resulting damage, is challenging (Scion, 2017) and there is no silver bullet.

Landslides and debris flows during high rainfall events are not uncommon in New Zealand, in plantation and native forests, and on land under pasture (Te Uru Rakau, 2021). There needs to be an understanding from public that landslides and debris flows are now natural processes, largely as a result of large scale vegetation clearance during colonisation, and it is not feasible to stop erosion occurring completely. (Scion, 2017). Damage from these events is exacerbated where forest slash become entrained in the flow (Te Uru Rakau, 2021). Land managed for plantation forestry is more vulnerable to high rainfall events in the period when it is exposed following harvest; the previous crop's roots have broken down; and a new tree canopy has not yet established. This is called the 'window of vulnerability' and last between 3 and 8 years from time of harvest. (Te Uru Rakau, 2021).

Geomorphologists agree (Te Uru Rakau, 2021), that where a weather event is severe enough, or part of a sustained weather pattern, no form of land over will prevent slope failure. Even the best forestry management practices will not prevent it from happening. Regulations on their own cant solve the issue of slope failure on highly erosion prone land, which will remain a risk no matter what land-use practices are put in place. (Te Uru Rakau, 2021)

Real improvement will require consistent understanding and application of site-specific best practice from foresters. This needs to be supported by sound understanding of risk factors, and consistent and proportionate enforcement from council officers. (Te Uru Rakau, 2021)

Improving the understanding of past debris flow occurrences and then the development of predictive tools, coupled with an understanding of the likely downstream consequences of debris flows could help to develop effective risk assessment and hazard zoning.

Regulation challenges

Environmental regulation in New Zealand is challenging to navigate no matter what industry or land use you are in. Local and central government are not working collaboratively and are focusing more on timelines and agendas rather than ensuring that rules and regulation is achievable and has a purpose.

Good regulatory design and practice requires considerable attention, skill and collaboration. (NZ Govt, 2017). Real value of environmental regulation is achieved when it sets out legal obligations and regulator expectations and practices in ways that are easy to find, easy to navigate, and clear and easy to understand.

The New Zealand government expects local government regulatory agencies to adopt a whole-of-system view, and a proactive, collaborative approach to the care of the regulatory system within which they work. (NZ Govt, 2017). Regulatory agencies should work collaboratively to test existing operating assumptions and consider the perspective and experience of regulated parties and others directly affected by the regulatory system's rules and practices, when undertaking their monitoring and review work. In a forestry context, this is not happening.

Good regulator practice is to provide frontline regulatory workforce with the necessary knowledge, skills, tools and support to be able to discharge their responsibilities with integrity, review and improve their professional practice. (NZ Govt, 2017).

The NES-PF one year review (Te Uru Rakau, 2021) found that further implementation support for councils and the forestry sector is required to lift performance and compliance, including:

1) specific guidance and training
2) greater clarity about the purpose and intent of the regulations to support the uptake of best practice
3) enable the development of comprehensive decision-making metrics based on data and evidence collected overtime.
4) better national data and the implementation of a nationally consistent compliance, monitoring and enforcement framework.

It identified that support is particularly important as:

1) councils lack capacity and experience with forestry activities
2) Foresters and forestry contractors can lack experience in identifying and managing environmental risks and applying appropriate practice.

The one-year review, (Te Uru Rakau, 2021), details the feedback from Councils and foresters that the planning processes are becoming more complex as the volume of national direction increases, and that it can be challenging to reconcile the various instruments. (Te Uru Rakau, 2021)

Various companies were described to have suggested that the resource management framework's complexity has led to increased administrative and operational expenses, greater focus on paperwork than field outcomes, confusion over rules in different jurisdictions and a reduction in the industries ability to attract investors (Pendly, 2015).

The review above reiterates the lack of alignment with how regulation is intended to work and how it is working in reality. Our physical environment is challenging, everyone should know that, and evidence and research should inform the public that we are not environmental vandals, we don't intentionally do a bad job, so our beaches and infrastructure get chocked with logs and our streams are destroyed. This is a result of past decisions, and we need to be realistic and work together to reduce the impacts on communities as best we can right now.

4.4　Relationships

There is tension with conflicting agendas and purpose with land uses such as production forestry, carbon forestry, crop and dairy farming. There is value in all of these, however, there needs to be clarity of priorities for each and a common path forward to start breaking down the disconnect between regulators, land users and the public.

Better environmental, safety, and commercial outcomes could be achieved through greater discussion between industry experts, experienced council staff, and less-experienced staff over what good practice and risk management looks like. (Te Uru Rakau, 2021)

There will often be a trade off with environment and health and safety (Te Uru Rakau, 2021). Worker safety is a crucial factor in decision making. Contractors and supervisors need to use onsite judgement daily, and the conflict cannot be addressed thought changes to regulations.

This requires conversations over time with compliance officers and mutual understanding of risk and trade-offs between safety and environmental controls. (Te Uru Rakau, 2021)

In (Blackstock et al, 2010) study findings on socially negotiated learning suggest that to achieve resilience and enable adaptive management in an agricultural setting, farmers need to be knowledgeable, aware and pro-active, working with policy makers and scientists, rather than passively receiving knowledge transfers and instruction. This is relevant to forestry industry, we can't just be told the rules, we need to know how to do it and be involved.

Trust-based environmental regulation as described in Lange & Gouldson (2010) is a specific regulatory style that involves openness and co-operation in interaction between the regulated, regulators and third-party stakeholders in order to achieve environmental protection objectives. The real potential of trust is to open up to new ways for participants in regulatory regimes to engage in collective action, to go beyond a perception of regulation as driven by the competing interests of individual actors, and thus, to open up new channels of influence for behavioral change toward greater environmental protection.

But regulators do not always know the regulated process as well as the regulated do (Lange & Gouldson, 2010). How do we upskill the regulators?

Discussions of trust relationships in environmental regulation are part of a wider debate about the search for 'rational', 'objective', or 'evidence based' responses in democratic societies to a range of natural and technological hazards which sometimes trigger 'irrational' reactions, such as fear, anger and empathy. (Lange & Gouldson, 2010). How do we upskill the public and reduce the compounding pressure on regulators to act on perception?

In an ideal world, the regulator and regulated should consider each other as partners. Regulatory authorities can see to influence positively the motivational postures of co-operation and resistance of the regulated by communicating their trustworthiness to be regulated. (Lange & Gouldson, 2010).

4.5   Confidence

The Job Demand – Resources Model (Bakker & Demerouti, 2007) describes how work-related stress are constructed in the balancing of demands and resources. When demands outweigh resources, stress results. The demands of the people in the forestry industry with growing environmental regulation and concern is immense and they are rapidly needing to adapt and understand what is required of them.

The imperative with health and safety management is to go beyond ensuring workers survive to enabling workers to thrive (Best et al, 2021). There is an opportunity for the NZ forest industry to promote worker health and wellbeing, and this should enhance both the industry's economic performance and its environmental sustainability (Best et al, 2021). Psychological demands on a person can be motivating as long as the person has the resources to meet the challenge.

Roger's (1983) protection motivation theory proposes that messages or change will be effective when recipients are convinced that (a) the problem is serious, (b) they are susceptible to the problem, (c) the recommendations will alleviate the problem, and (d) they are capable of performing the recommendation actions.

Human development approaches emphasize the need for people to develop their own solutions to problems. In the former, the role of extension is to persuade, in the latter to facilitate interaction, learning and innovation (Blackstock et al, 2010). Individual decisions and actions do not take place in a social vacuum but are shaped by ideas and practices negotiated by the social groups in which they are necessarily embedded.

Through a review of social psychology's persuasion approaches revealed how important it is to understand the individual and adapt and target messages accordingly (Blackstock et al, 2010).

Brunton (2017) found that there can be some discconnect between what mangers believe they are communicating and the messages employees believe they receive.

4.6 Summary

The literature review explored change, leadership, environmental regulation and motivation. New Zealand government reports have concluded that there is work needed in order to ensure that the regulators and the regulated understand what is needed to be implemented in order to achieve environmental compliance. Leaders within the forestry industry need to explore and adopt change leadership styles in order to bring the workforce on the journey to full compliance. Forestry workers need to feel confident in their decision making and be part of the innovation required to lift environmental performance.

5.0 Interview Findings and Discussion

The interviews conducted in this study provided insights from the people who are managing contractors in harvesting, earthworks and silviculture activities. These people provide information and guidance to those who are on the ground, to those who are inevitably needing to follow the required performance standards in order to achieve environmental compliance.

It is important to identify that the organisation that was interviewed has a pronounced aging workforce. The age range of individuals was not captured or identified but many of the staff are ex Forest service employees who are not necessary degree qualified, solely coming from an operational context. A different tone of comments would likely have resulted if this exercise was undertaken in a company where there was a more balanced age distribution.

There were five key themes that emerged as part of the thematic analysis which are grouped as: change, environment, culture, relationships and confidence. These groupings move from outside (blue) to inside (orange) the control of the industry and individuals that work within it. This is depicted in Figure 3.
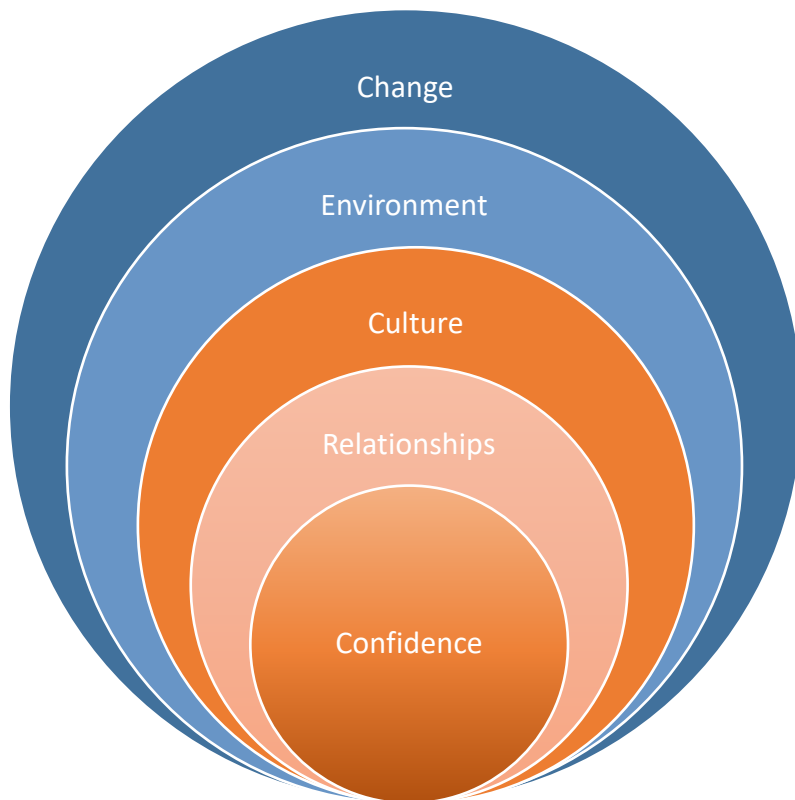
Change: Outside of our control.

Change is our new constant. We need to adopt and adapt to change to be ahead of the game. Change affects the status of all of the 4 themes within it.

Environment: Outside of our control.

Our regulatory, political and physical environment is at constraint change. Every day is different.

Culture: Within our control.

Environmental culture within the workforce is changing. Greater alignment with environmental values is being set. It's up to our leaders to lead.

Relationships: Within our control.

We can't do it alone. Both internal and external relationships need to be formed and strengthened in order to adapt to our environmental change.

Confidence: Within our control.

At an individual level, we need to have the confidence and support to gain the knowledge we need to know how to implement the rules and know we are making the right decisions at each challenge we are faced with.

Figure 3: Common themes from thematic analysis of interviews

5.1   Change

Our workforce has had to adapt and adopt immense amounts of change. Health and safety has been at the forefront to ensure that our men and women get home safe. Insights into how we feel dealing with changes in environmental regulation are quoted below. It is clear that it is easy for regulators to write words on paper. Regulation may mean forestry is not appropriate in some areas but what land use is? People management is difficult and changing mindsets is hard particularly of those that don't understand the problem and purpose of environmental expectations. For forest managers, it is not enough to just know how the operation works. Our people need the skills to apply to the changing regulation, technology and environmental challenges.

Some statements from the interviews were:

- *It's easy to say we need to stop doing something, but it takes a long time to get the standard right. It's all about **training**. People need to be shown.*
- *It's hard to change people's **behaviors** in a job that they have done for so long.*
- *It's **our new way**, this is how we do it now and if you want to be a compliant contractor with a future, this is as important as health and safety.*
- *We can do anything you like in order to achieve 100% compliance with the rules. But it might make it that we can't operate because the cost of doing it is horrendous. So, it's looking at the trade offs and **understanding t**he costs of our decisions.*
- ***Work routines** have gone from being lots in the forest and a bit in the office to being lots in the office and a bit in the forest. You've got to be pretty good at **reading and retaining** new information to make sure you are actually getting things right.*

- *At the moment, with all the changes, it is so hard to keep up. And you get to a stage where you **can't take it all in**. We (as supervisors) are trying to do a whole range of things that we think management require us to do. I'm not sure if we are doing it right or not.*
- *The goal posts have shifted but all we get is new documentation that we need to follow rather than **support**ing our staff and contractors.*
- *Bring in new rules but we need to change the mindset of our staff and contractors. How do you **support** them through that?*
- *We need to get a bit better at **showing examples visually** on where we are trying to get to as opposed to a specification or rule about what we need to achieve.*

5.2   Environment

The environment both regulatory and physically is constantly changing. We know we can't avoid it or control it. But do we know how to interpret it and align our work to meet what is expected of us?   Public feedback (though a largely negative media lens) compounds pressure to act on central government. Understanding the implementation of rules is lacking and education is essential. In our own organisation there has been regional silos and the environmental challenges differ by region, forest, by compartment and setting. This comes through in the comments with the desire for greater connection and group problem solving and complexity.

Insights from the interviews as below:

- *We are **tainted with the same brush** as carbon farming and farmers can't compete with forestry buying pastoral land.*
- *We are considered a thief in the night that steals their land and plants pine trees.*
- *A lot of the environmental standards seem impractical, but health and safety seemed impractical originally too.*
- *The environment (physical) changes all the time. The terrain is all different. You can do things here but not there. It's **hard to predict**.*
- *Harvest planning isn't about going into a forest and coming up with three options. Often there is **only one option and its not a good option**. We might need to walk away.*
- *I think trying to achieve what we think that we understand is really difficult. It's a big job to understand all the things we have to do and make them measurable. I think its going to be the biggest challenge. **Implementation.***
- *When **conditions are suitable**, we are aligned really well. When conditions are difficult, mid winter or after a storm event, we really struggle. To be fully aligned all the time isn't achievable.*
- ***Historical decisions** around planting to the stream edge affect us. You can't magically pick up a tree and take it away.*
- *Rules and regulations need to be practical and workable. And have a **purpose**.*
- *Because we are moving to fully mechanized operations to achieve our health and safety targets, **things are now done differently**. Now days with this big clumsy grapple, picking logs and debris up with accuracy is difficult, it's like trying to pick up a grain of salt with chopsticks.*

5.3   Culture

To create or change a culture is a difficult thing. Our leaders need to lead. Our followers need to align with a common goal. It's hard to build skills and experience and strong relationships built on trust. It's hard for our younger staff as the older forest managers are trying to pass on

old ways of doing things because that is all they know. There also is visible change resistance by older workers waiting to retire. Better quality people will be achieved by stronger change leadership, increased understanding of requirements, more effective application and meeting of standards, greater use of common goals as mutual respect, trust and credibility between working groups.

Insights from the interviews on the theme culture are as follows:

- *Be more practical, be more compliant, **work together as a team**. If you are unsure ask.*
- *We need to **tell** people when they have **done a good job**.*
- *It's not about winning all the battles; it's about winning the important ones. Some might just be felt good things but are not actually **adding value**.*
- ***Step in the gap**. People can drive past things that look obviously wrong but don't do anything about it.*
- *People have to change their own inner thinking in order to achieve the goals and values, but we are not driving from them and then we **default back to our old ways**.*
- *If we are going to retain good staff and contractors, we have to make them **feel like they matter**.*
- *We need to **understand the why**. If you don't, then you are not motivated to do it. You question whether it is adding value.*

5.4   Relationships

The only way we can meet our environmental requirements is by forming relationships with those who can share our challenges. Staff turnover is a big issue for contractors, forest mangers and regulators. There is little trust between groups – competence, understanding, integrity, confidence, reliability, lack of common goals and lack of effective communication.

Insights from the interviews on relationships as follows:

- I think you have never not got the right contractor, the contractor you have is always the right one, it's about him **knowing, learning and being trained** on what we require.
- I guess it's having really good lines of **communication** and talking about things lots and being onsite lots, I see that the guys (contractors) are trying.
- I think the best thing we can do with Councils is create a working **relationship** and rather than them being reactive, it would be really nice if they were a little more proactive and we had them out more often.
- Regional council staff are **leaving**. New people don't understand forestry. They could make our lives easy or miserable. We need to get these guys on our side. But it's hard to do when it's a revolving door at the other end.
- Go and visit some other companies. What do we see as **acceptable as an industry**? Rather than just an individual company.
- We don't involve enough people in our decision making or how we do things.
- Try to get our **teams** to work better together. Manage and discuss, have better outcomes – having an integrated team.
- The only way we can do this is by **doing it as a group**. People can't do it alone.
- *Contractors don't understand. Key thing is **staff turnover** in our crews. Training up contractors, getting them to think environmentally, get it drummed in, and then he goes*

to another crew, and you have a new guy coming in. Staff turnover and performance in contractor crews is a challenge.

5.5   Confidence

The forestry workforce needs to be confident in their decision making. There is a lack of culture of accountability, there is knowledge and skill gaps, people are not clear on the 'why' and there doesn't seem to be connection to the 'greater purpose'. Greater focus on change management is required – what is changing and why, addressing what's wrong with how we're doing it now. What are the consequences if workers don't do it? How does it benefit workers and their teams? Structure and support around implementation of changes is currently not meeting the mark and people need direction. A lack of clarity and steps to get to our environmental goals is a big area that needs focus.

Insights from the interview around confidence where:

- *If we are all on the same page, then it would be easy to teach the contractor. We need* ***clearer guidance****.*
- *You can't do it alone. You need* ***support.*** *That is for health and safety, that is for everything.*
- *Key drivers to not meeting our environmental standards is the contractors not understanding what the rules are. That is difficult too, especially if our supervisors are not sure what is acceptable.* ***What does this look like, what should it look like? Have I got this right?***
- *Its all about risk management. We just* ***don't have those skills*** *in our company and understanding of it to make good risk management decisions.*
- *All we have got so far is words, rather than some* ***plan of action*** *on how to get there.*
- *I may do something wrong as I didn't have the confidence to say that that it needed to be done differently. As supervisors we need to gain the experience and then we can confidently know what is right.* ***Mentoring and training*** *staff can't come from one person but multiple perspectives.*
- ***Knowing*** *when to spend the money on mitigation measures and how to spend the money and talking to the right people at the time to make sure you are doing the right thing.*

Confidence is about knowing, doing, having the right guidance and support to understand what is required and being aware of what good looks like. Mentoring and training is required within the forestry industry to ensure that the workforce has all the skills and understanding to undertake their roles and be confident they are making the right choices.

5.6   Summary

From the survey, it is clear that workers within the forestry industry are challenged. Forestry workers need to adapt to change, workers need to understand the regulatory and physical environments that are relevant, there needs to be better relationships with stakeholders and effort is required to create a culture of doing the right thing and supporting the workforce to get there.

6.0   Conclusions

Life in the food and fibre sector is dynamic. What is considered right one day, might not be right the next. There is disconnect between regulation and reality, there is disconnect with relationships, there is disconnect with workers on the ground who ultimately need to understand what the purpose and intent is of our environmental regulations.

Forestry needs to lift the quality of workers in the industry. We need higher levels of education, understanding, decision making and leadership across all levels of the industry. For forestry mangers, it's now not enough to just know how operations work. The volume of information required to competently perform has expanded exponentially. The skills for the future are knowing the theory, understanding and applying regulations and codes of practices, understanding data analytics and trends, applying technology and creative solutioning, understanding impacts and applying all of this to a commercial context.

The forestry industry has an aging workforce with both contractors and forest mangers across all aspects of the industry from truck drivers to machine operators to forestry mangers and engineers. New Zealand Forest Owners Association (NZFOA) need to attract, support and grow the next generation in the industry. We need diversity, more women in leadership positions, we need to nurture change, build talent for the future, innovate and try new ways of engaging people. Fresh industry leadership will help effect change and see environmental goals being met.

More credible and functional relationships need to be formed between the industry, central and local government in order to understand the realities of production forestry as a land use and what can actually be achieved on the ground. There needs to be strong, fresh industry advocacy between groups and established relationships at all levels. NZFOA need to invest significantly in promoting forestry, to gain the trust of the public they must acknowledge the challenges as well as the positive. More industry representation needs to be on local boards and councils. The industry needs to demand to be at the table with policy makers.

7.0 Recommendations

This report and research recommend the following actions:

- Individuals who regulate and work within the industry need to get better support and gain the training and skills required to understand and be confident in knowing what regulation requires and how to achieve that on the ground. Known and proved change management techniques should be followed to assist individuals on the journey at a political, industry and company level.
- New Zealand Forest Owners Association (NZFOA) need to be promoting for a greater number of students to enter the forestry degree programmes.
- NZFOA and wood councils need to strengthen regional environmental working groups and work together, alongside regulators, to address the most environmentally challenging areas of rule implementation of the industry.
- Action the development of spatial tools and guidance to determine high risk land areas to give better clarity to all stakeholders of where the real environmental risks are. Determine land classes and landforms where production forestry as a land use is not suitable.
- Those writing and amending regulation need to better describe measurable standards and targets that can implemented and complied with on the ground.
- Rules and regulation need to have a clear purpose which gives clarity on the values we are protecting.
- NZFOA need to invest in some real expertise to help address the significant reputational issues the forestry industry has.

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9.0   Appendix

9.1 Appendix One – Survey Questions

1a   How well are [Company Name] environmental business goals and values communicated and understood by all employees and contractors?

1b   Why do you think this is the case?

2a   How important are [Company Name] environmental business goals and values to an employee or contractors?

2b   Why do you think this is the case?

3a   Whose responsibility do you think it is to make sure [Company Name] is environmentally compliant?

3b   Why?

4a   How would you describe the alignment of actual and desired environmental behaviours of employees and contractors?

4b   Why do you think this is the case?

5a   What do you think is the biggest motivator to be environmentally compliant? Regulation, stakeholder pressure, management pressure or having witnessed an event?

5b   Why?

6   How would you describe [Company Name] environmental stewardship culture?

7a   What are the costs to [Company Name] when there is non compliance?

7b   What could be done to reduce these costs?

8a   What do you see are the key drivers for not meeting environmental standards?

8b   Why do you think these are important?

9   How do [Company Name] leaders demonstrate a commitment to our environmental values?

10a   What is the current perception of forestry in your region?

10b   How does that impact the workplace?

11a   How important is it that [Company Name] participates in community environmental initiatives?

11b   Why do you think this is important?

12   What do you think are the differences with [Company Name] as a family owned business compared with a corporate structure?