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How well farmers understand their finances? Looking at the implications of low levels of financial literacy

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Executive summary

Agriculture is a turbulent industry with many variables and challenges affecting different businesses throughout New Zealand. This is not new but more pressure is building to challenge one's social license to farm, being added compliance through environmental management and climate change policies. A resilient business will overcome these challenges and be well positioned to drive direction and the strategy going forward. With current high commodity prices and low interest rates, many farmers will still struggle to be profitable, limiting their ability to access capital and restricting any opportunities for growth and the next generation. Financial literacy has a significant impact on one's business and its profitability.

The purpose of this report is to understand the current level of financial literacy within farming agricultural sector, be it, horticulture, arable, dairy, sheep and beef sectors. It is important to measure the current level of financial acumen to understand what the barriers are impacting one's ability to upskill, and what the implications are to farmers and their wider support networks. From understanding the barriers and implications we can then conclude with recommendations to where and how farmers, rural professionals, industry-good organisations, software providers and government bodies can help improve and upskill one's financial literacy to create resilient businesses and a stronger economy.

In order to measure the current level of financial literacy there were two elements to the research, a survey questionnaire was undertaken interviewing farmers within four agricultural sectors along with rural professionals over similar industries. A review of historical research included industry reports and articles of relevance. The findings were compared and contrasted against the surveyed findings. Once the surveyed data was collected, a thematic analysis method was used to analyse the qualitative data. Themes that emerged became the barriers and implications within this report.

Financial literacy has shown to have only improved by 15% over the past 12 years in the sheep and beef sector. This against all measured sectors demonstrates that sheep and beef farmers continue to have the weakest financial acumen. Over all sectors, 40% of businesses are what I would call "flying blind", with no insights regarding their current financial state or year-end 2021 performance. A further half of all businesses have no formal plan or strategy in place to direct/govern their business appropriately.

It was obvious very early within the survey that a lack of financial planning and forecasting was prevalent, the larger the variables, the weaker one's financial literacy. For example, only 50% of sheep and beef farmers complete planning and forecasting, with many variables impacting their production and performance.

Discussion groups were however considered to add significant value to the business. Five barriers were identified to be restricting an improvement in financial literacy, these are: time, technology, education, training and rural professional support. Education is deemed the only uncontrollable factor and this has been identified by some survey respondents as being their "biggest concern". Part of their concern is having no compulsory personal and financial management courses in the school curriculum, and their staff having weak financial acumen, such as "spending their pay cheque before they have earned it". A further concern identified is weak rural professional support with lack of honest feedback, a rural professional quoted "you can kill people with kindness".

While these barriers restrict financial literacy and awareness, they not only impact the farmers but their supporting networks as well. Many implications were identified with profitability being the

biggest impact to farmers, rural professionals, rural communities and New Zealand's economy. Further implications include financial wellbeing; impacting health and the number of young farmers coming through into the industry. Constant rural professional changes and lack of capacity, impacts on the level of trust within the rural professional network and an organisation.

The key to creating high levels of financial literacy within a person and business is having trust; trust in themselves and trust in their network team. To gain trust people must be willing to learn and play the infinite game. "The infinite game, a game where players come and they go, there are no winners or losers, only being ahead and behind with no defined endpoint" (Simon Sinek 2019).

New Zealand farmers are known by their "do it yourself" mentality but now more than ever, farmers need to utilise or build their trusted team to create resilient businesses in times of increasing regulations and compliance. To enable this farmers must be willing to move out of their comfort zone and value their time using the \$25-\$100-\$1,000 concept. This concept helps identify that being on farm completing day to day jobs is replaceable by staff at \$25/hr. Management decisions are valued at \$100/hr, whereas being prepared to strategize and plan the business direction is worth \$1,000/hr. At \$1,000/hr, million dollar decisions can and will be made.

Working on their business rather than in it, and seeking a second opinion will result in further insights, which ultimately impact decisions and outcomes. Farmers must also look after themselves and their financial wellbeing along with supporting the next generation with their financial skills and involve them in strategic decisions.

"Empowering individuals with the knowledge of financial literacy will have a dramatic impact on societies and entire nations. The impact of financial literacy can no longer be ignored. It is up to policy makers, educators and people with sufficient private equity, to make financial literacy a priority in our society. As awareness spreads and people make their voices heard, the impact of this skill set will no longer be overlooked. Education in financial literacy will become ubiquitous and these critical life skills will become the norm. The positive impact of financial literacy is undeniable and the sooner this movement spreads, the better off everyone will be" (financial educators council).

1. Acknowledgements

To Rural Leaders and the Kellogg Rural Leader programme team, I would like to thank you for the time and effort you have all put in to making the programme an exciting, rewarding and educational journey. While COVID-19 was continuing to disrupt the course, we are all very grateful for the work you put in behind the scenes. A special thanks to Patrick Aldwell, Scott Champion, Lisa Rogers, Desley Tucker and Chris Parsons, for sharing your insights and valuable knowledge along with your guidance and passion throughout the programme.

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A huge thanks must go to my employer, Rabobank, for funding me through this course and investing in me as a future leader. As a proud Rabobank employee, I recommend them to be a strong consideration as a bank of choice for both staff and farmers. To Micheal Dunn, a special thanks for your time and effort which has contributed to me reaching this final product.

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To all those considering to be part of the Kellogg journey and cohort, I strongly recommend it to all those that are passionate and excited about the future of Agriculture.

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2. Introduction

Is your business profitable, can it withstand the economic cycles and severe climatic events? Some businesses can and some cannot. Some farmers throughout New Zealand do not complete any form of business planning or forecasting so how do they actually know how their business is performing?. Come end of year's balance date they can compare their cash balance to the prior year's balance date and adjust for stock and produce on hand movements or wait up to six months before finalising their financial accounts. How can you alter or improve your business if you do not know which direction your business is heading in, and if you are working in the past rather than the future.

On the other hand, some farmers know exactly what direction their business is heading in and can adjust their actions accordingly in times of distress or downward commodity price pressures. They can do this through their forecasting and planning which reduces the impacts of detrimental events and can stare them into different opportunities.

Financial Literacy has an important role to play in everyone's future. Financial Literacy is defined as

“the ability to make informed judgments and to take effective actions regarding to current and future use and management of money” (Basu, 2005:1).

For instance, two farmers are trying to successfully purchase the neighbour's property. Farmer one is unprepared with only livestock numbers and the sales brochure, which then requires their rural professionals (time and money) to create a current year and projected year budgets to demonstrate if their business would be viable. Farmer one shows very little financial skills and the numbers are not farmer owned. Farmer two comes prepared with a current season forecast with projections out three years. These forecasts have been reviewed by either their advisor and or accountant showing strong viability. With COVID-19 uncertainty and financial institutions capital being tight who would you lend too? This is one of many situations where farmers with poor financial literacy are being impacted.

Within New Zealand, markets are volatile and the agriculture industry is continually changing with additional compliance and regulations (a new normal), which is taking up precious time of which the majority of farmers lack. How is it that some farmers have an in-depth knowledge and understanding of their business and others do not?. Why is there a large degree of financial separation in farming?. Does it start with education and the school curriculum, university level or on farm education?. Federated Farmers survey results show that 67% of employers claim to provide no formal training to their staff, with arable employers at 83% (Farming Salaries, 2020). Or does it come down to specific industries (sheep/beef/arable etc), rural professionals (Banks, Accountants or Advisors), commodity prices, capital pressures, and time or software providers?.

The aim of this report is to clearly understand the level of financial literacy within our food and fibre industry comparing and contrasting research data from other reports and research data carried out from a survey. From this data collection we can then determine the current level of financial literacy and what this means for farmers, financial institutions, rural professionals, industry-good organisations and software providers. We can then conclude our recommendations and support of other researched findings.

3. Aim of objectives

- The purpose of this report is to clearly understand how well farmers know their finances and how they, rural professionals, industry-good organisations, software providers and government bodies can help improve the agricultural industry's financial literacy.
- To clearly understand the implications of low levels of financial literacy on farmers and rural professionals.
- To explore recommendations to help improve areas impacting low levels of financial literacy.

4. Methodology

To capture in-depth qualitative information, semi structured interview survey questions were undertaken from interviewees via organised phone calls. Open-ended free-form survey questions were completed allowing respondents to answer questions using their own understanding and knowledge which did not restrict them to limited answers. The information collected was analysed using thematic analysis to determine themes from the respondents.

Thematic analysis is a widely used methodology to analyse and report themes and/or patterns within a researched topic (Braun and Clarke 2006). Themes were identified through a process of data familiarisation and theme coding. Themes were then reviewed, researched and defined.

Defined themes appeared clearly demonstrating the barriers and implications which make up the key findings within this report.

I personally have included information based on my prior farming experience and the last five years' experience within a financial institution.

The survey was conducted using farmers from each of the chosen sectors dairy, sheep and beef, arable and horticulture alongside rural professionals throughout New Zealand. An initial survey was conducted with a local farmer to pilot the questions, which was useful for measuring the effectiveness of the questions & responses, but also to factor time. Farmer survey times averaged 45mins with professionals averaging 20 minutes. In total 23 surveys were completed, which had been randomly selected as farmer and rural professional contacts had been supplied by my industry networks and their associates. The survey consisted of 22 questions for farmers and 16 questions for rural professionals (See Appendix 1).

All interviewees are anonymous

5. Barriers affecting financial literacy upskilling

While undertaking this survey, themes had emerged after three interviews which were then supported by using thematic analysis. These themes are broken down into barriers that identify the current levels of financial literacy and impact on one's ability to upskill. These barriers are identified as below:

5.1 Time - as previously mentioned above, many farmers lack time and see that the drivers to profitability are physical work, which is true but they don't all see that it needs to be in conjunction with financial planning. So what is the value of your time?

The \$25 - \$100 - \$1000 concept

How valuable is your time and how to value it. Physical work includes stock movements, tractor work, repairs and maintenance etc. whilst these jobs can be hard and back breaking they are known as the simple tasks that an employee could work on and complete. This is known as the \$25/hr category. Animal health, crop rotation, GST coding etc. are tasks that require increased knowledge and skill sets which fall under the \$100/hr category as these tasks can have larger impacts to any business. Financial planning, business strategy planning and succession planning all have a significant bearing on the direction of a business, hence these tasks fall under the \$1,000/hr category. Many opportunities, decisions and direction is said to come about by completing these tasks.

An example could be – husband, wife and children are going through a drought, knowing a neighbouring property is coming up for sale, times are tough with the drought and they initially think they are unable to afford it. They all sit down for three hours with their trusted go-to team and discuss the future of their business, family goals and analyse their current position and complete SWOT analysis (strengths, weaknesses, opportunities and threats) on how the neighbouring property could influence their business. Initial family thoughts are no it would be a stretch to far impacting on their profitability, but once they complete their financial analysis they then understand the full positive impact purchasing this property will add. Such as, giving them a stronger balance with the ability to become drought resistant, increasing performance, assisting with future family succession and overall improving profitability. Three hours spent understanding the numbers may become a million dollar decision.

5.2 Technology – from the survey data captured and in support of Osborne's report, most rural professional's indicated that technology was a barrier impacting on the level of farmer financial literacy. They also indicated that there were sufficient software and tools available but there was a lack of trusted independent advice and local courses available for farmers to upskill. In Fleming's report she discusses her attendance on an UYFB course (Understanding your farming business), a programme consisting of three modules. Module One – Measuring farm performance, Module Two – What the numbers mean and Module Three - Planning for better farm performance. These are key drivers for stronger financial literacy, but this course is only available to women, providing a further barrier for a family run business. Given this, men are less likely than women to participate in financial activities.

In support of Fleming's report, older farmers tend to leave the finances to their wives and/accountants. Although many of these farmers have seen record high interest rates, very low commodity prices and have overcome those challenges to still be still farming. They have signs of succession or retirement in the coming years, therefore their opinion is that the next generation should be focused on upskilling and preparing for the next significant financial shock.

A key finding from some farmers, rural professionals and ex rural professionals (now farmers) was that whilst the technology and software is good, many use their own independent resources (excel spreadsheets and budgeting tools) as some technology/software was over complicated to complete tasks such as cash flow budgets and stock reconciliations. Osborne alludes that the biggest limitation for clients to accurately forecast was the ability to complete stock reconciliations, as they need to be accurate to determine stock on hand movements which affects the annual cash performance. Although many stock reconciliation tools are made available, it is the writer's opinion that the majority are over complicated and are not farmer friendly.

All surveyed data noted that the cost of technology did not impact on financial literacy upskilling as it is either paid through farmers using a tool or paying a professional to use the tool on their behalf.

5.3 Education – Lack of willingness was strongly reported from farmers and professionals. Farmers referred to willingness being weak for the next generation to become upskilled in financial and business management. Whereas professionals described that the farmers did not have the willingness to learn this either. Many farmers had undertaken some form of study being a degree, diploma or a certificate which from the survey data showed that it had minimal effect or correlation on the level of financial literacy. What was demonstrated via the study was that people who had the willingness to learn and continually grow their skills and knowledge base through training courses, all had a good level of financial literacy. Furthermore, farmers who had good financial literacy mentioned they had learnt the majority of their skills from older farmers, discussion groups and like-minded professionals support.

When asked "how well do you believe the next generation are being upskilled within business and financial management?" close to all respondents said very poorly, with three respondents saying it was their "biggest concern" and "they are spending their pay cheque before they have earned it". One respondent mentioned that at school curriculum level "there is no requirement for children to undertake economic classes". Fleming's report also notes with a recommendation that school curriculum should include personal and business financial skills, which is supported from the survey respondents.

On farm education is regarded as being weak with a survey conducted by Federated farmers which claims that only 33% of employers offer formal training to their staff (Farming Salaries 2020), but this survey does not have the breakdown of physical or financial education. As previously mentioned, many farmers have learnt their skill sets from older farmers but the data shows that this important training is no longer being passed down. From the survey data collected and Fleming's report it is clearly seen that education is having a significant toll on one's financial literacy.

5.4 Training - Investing in your future – Discussion groups have been continually growing within New Zealand's agricultural sector. It is where like-minded farmers can strive to learn and develop current and new innovative ways of working, therefore promoting best practice amongst farmers. All farmer respondents were asked "how could local discussion groups add value to your business?" with many saying it adds "significant value to their business as it gives new and different ideas, other farmers tend to ask the hard questions and make you justify them". One farmer mentioned "it was great for

mental wellbeing”, for example, it creates the ability to get off the farm and see what it is like from the other side of the fence.

Noticeably horticulture and the arable industry had predominantly industry-good organisations promoting and leading field days rather than discussion groups. Whereas the dairy, sheep and beef industry had a strong mix of discussion groups and field days led by industry-good organisations, rural professionals and farmer led groups.

A professional respondent mentioned that 20-30% of their client portfolio would like to improve their financial literacy. The conversation then led onto the length of time it would take to upskill a farmer wanting to learn the task of cash flow budgeting, stating “it would require two to three hours of one on one or in peers training over three periods”. Many courses are and have been made available for financial training and range from online, off farm and small to large groups. Most courses are provided through industry-good organisations, financial institutions and accountants with a small cost associated. However as mentioned by a rural professional “that small cost could create a large opportunity”. While a number of courses are available, farmer uptake is regarded as weak.

A report by Murray-Prior (2000) focused on farmer uptake of formal training which discussed that in general the older and more experienced the farmer is, the least likely they are to be aware of and attend any formal training. It found 32% of women were more likely to attend training than men, and lack of attendance to training courses came down to lack of suitable location, informal training over formal training and the lack of confidence within the activity.

A report by Paul Satherley (2017) looked into adults’ financial literacy activities and notes in New Zealand, men on average have stronger financial knowledge than women but are less likely to participate in financial behaviours. In support of Fleming’s findings; tutor, mentor and small group based learning are solutions to increase farmer uptake with the likes of RMPP and UYFB courses receiving positive feedback, but dependent on location and time of year, which will determine the applicant uptake. Tutor and mentor based learning were the two most preferred training methods for farmer uptake on software packages, although throughout this survey and research findings the lack of recommended mentors or tutors was prevalent.

5.5 Rural professional support - Strong analysis within the survey data suggests that weak professional support plays a vital role when it comes down to farmer financial literacy. In the early stages of undertaking the survey a theme had appeared, it came about by asking farmers “how well do you feel supported by your rural professional’s team?”. The results differed into three categories:

1. Farmers who felt very well supported would be identified as having the strongest financial and business management skills.
2. Farmers who discussed they felt supported but mentioned it could be improved were identified as having sound financial and business management skills.
3. Farmers who lacked professional support through weak stability, lack of trust and poor relationships were identified as having the weakest financial and business management skills.

In support of Fleming’s research and the UYFB course, surrounding your business with a strong trusted team of like-minded people who support the direction of your business but also have the ability to challenge you, is a vital component of continually striving to improve farmer financial and business management skills. As indicated in Fleming’s report, smaller farmers in New Zealand may

not have frequent visits or communications with their bank manager or an advisor, this can somewhat be highly dependent on their financial position and bank risk rating.

A rural professional mentioned “you can kill people with kindness”, this refers to how rural professionals provide feedback to farmers. A weak support team can be driven by their own interest not in support of the farmer’s interest, therefore in some cases courageous and difficult conversations from rural professionals are not being had.

A further barrier affecting financial literacy may also be classed as the uncontrollable or the not knowing. Horticulture, arable, sheep and beef are far more susceptible to climatic events. Severe weather throughout the year can affect or even destroy their years income in one swift blow, while the dairy industry may be impacted by drop in production it is likely to hold or stabilise given the ability to increase feed inputs.

6. Findings and Discussions

New Zealand farmers are proud of what they do and their ‘kiwi ingenuity, do-it-yourself and number 8 wire’ mentality. Farmers spend the majority of their time outdoors doing hard and physical work but can underestimate the importance of having strong financial acumen to support their business. This survey data shows that financially only 50% of farmers surveyed undertake a business plan, whilst only 60% complete an annual budget.

Business planning is considered to be:

“Business planning provides a chance to farm the future of your farm and business which is the first important planning step. A plan is effectively a blueprint that sets out your vision, current state and how your plan will help enable you to reach your goals. It is not a static document and should be revisited regularly. Business planning and farm budgeting are vital ingredients and drivers of farm business profitability and sustainability (*Farm Table*)”

“Failing to plan is planning to fail” (Alan Lakein). Many business plans are informally completed mainly through discussions with family, although it was noticeable with farmers who had ambitions of growth, succession or financial pressures, actually had formal documented plans that are revisited up to four times throughout the financial year.

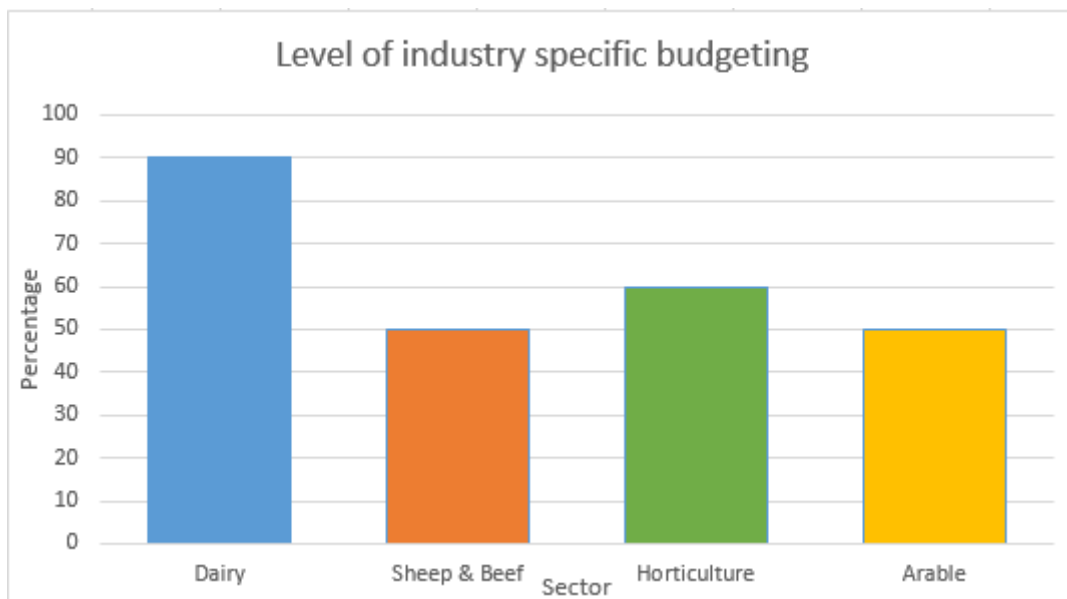
Of the farmers who complete budgets, 90% of them complete the budget in conjunction with or by review of their rural professionals. This demonstrates that rural professionals have a significant role to play within the food and fibre sector. This data somewhat aligns with the rural professionals surveyed as they were asked what percentage of their clients completed budgets with 47.5% completing their own budgets. A report from BNZ (Shift Happens 2020) had studied primary producers which looked into finances and who prepared financial budgets and forecasts. The results aligned with farmers surveyed, with 59% completing forecasts themselves and with their spouse while 30% completed them with or by their accountant or advisor. The results also identified that only 47% of our primary producers felt comfortable and competent understanding their financial documents.

All farms and their day to day operations differ, no one box fits all. One respondent interviewed reported “there is now no need to complete physical budgets and have a business plan as they have repaid the majority of their debt with no financial pressure”.

Sam Osborne (Kellogg 2009) focused his Kellogg report on financial budgeting on sheep & beef businesses, which looked into 3 categories of farmer budgeters. It identified that only 35% of farmers completed budgets. While Annie Fleming’s (Kellogg 2020) report focuses on a suggested approach to help improve financial literacy and business management on farm, in her report she mentions that while attending an AWDT (Agri Women’s Development Trust) course, the results were slightly more improved at 57.2%. Osborne’s reports could be deemed incomparable given that the report focuses on only sheep and beef. Fleming’s report could be deemed comparable given the focus on dairy, arable, deer, sheep and beef. When isolating the survey results to specific industries and comparing sheep & beef farmers to Osborne’s report the data demonstrates that there had been a good improvement over the past 12 years (up 15%) resulting in 50% of sheep & beef farmers now completing budgets.

The below graph 1.0 demonstrates the findings from the research showing the level of budgeting within the four largest New Zealand industries. Dairy having the highest budgeters at 90%, horticulture next at 60% and arable, sheep and beef lowest at 50%.

Graph 1.0 Farmers level of financial budgeting per industry results



When rural professionals were asked “Is there a specific industry that completes budgeting and business planning well?”, they almost all responded that Dairy was by far the industry that has better financial literacy (shown above). When asked why? it was then easy to understand their responses - dairy receives monthly income with most milk companies supplying milk payment predictors, regular and up to date benchmarking data, strong industry-good organisations with leading innovation and consistently shared data through locally run discussion groups such as Dairy NZ. The dairy industry can also face less variables with the ability to lock in fixed term milk prices through milk derivatives or company/industry FX products, and can regulate production through increasing inputs. A rural professional also mentioned that dairy businesses had more governance and structure as many businesses ranged from family owned to equity partnerships.

A key finding that was mentioned was the dairy industry had faced a significant downturn affecting cash flow and equity. This resulted in financial institutions adding financial pressures onto the farmer to improve and have ownership for their own financial literacy. Allowing their business to become profitable and improve their equity position in times of low commodity prices, to build resilience for any future adverse events.

When looking at the dairy industry and comparing it to other industries, the level of financial literacy is identified as being far greater. Horticultural budgeting comes in next at 30% lower but why?, to understand this the survey data demonstrates that horticulture growers have different levels of data available to them, due to the large variations of produce. In specific produce, growers have the ability to create resilience within their business with the use of tools to minimise external threats such as pests and climatic events.

Some produce had strong levels of benchmarking with the likes of Kiwifruit, while locally sold produce had very minimal data available such as apricots, plums and nectarines.

Some growers are able to receive produce predictors from pack houses who can test specific crops determining the yield or tonnage. Also growers with specific types of produce can receive forecast payment schedules from marketing companies. Further benchmarking data is available through pack houses, accountants and advisors. A comment from a grower was that “the best available data came from other growers within the area from a local discussion group that was taking place”.

Discussion groups are considered to be:

where discussion is supported by input from invited providers of knowledge such as like-minded farmers, rural advisors, vets and scientist, can be a powerful extension activity that supports knowledge transfer, idea generation and networking/relationship building both within the farming community and outwards to the trusted advisors (beef & lamb NZ, 2015).

Arable, sheep and beef farming have the lowest financial literacy results from this study at 50%. Arable like horticulture has a large variation of produce sold locally and globally. Like the dairy industry, arable farmers have good access to tools and innovation through an industry-good organisation FAR (Foundation of Arable Research), where they have access to software programmes such as Production Wise – an integrated online farm management system which allows paddock mapping, record management of practices and inputs, and automatically generates reports, gross margins and cost of production. Outside of the Kellogg research survey the writer investigated the use of Production Wise through 5 farmers in Otago/Southland. All farmers had the software program installed but failed to utilise it to its full potential which impacted on their ability to understand their gross margins. It was noted that most of these farmers did not use any advisors other than seed representatives.

Sheep and beef farmers make up 30% of New Zealand’s farmed area (Derick Daniel 2020). Like the dairy industry, sheep and beef farmers have great access to benchmarking data and tools available through many advisors, accountants, farm discussion groups, industry good organisations such as Beef and Lamb NZ and RMPP groups (Red Meat Profit Partnership – A primary growth partnership programme that is working to help the red meat sector increase productivity and profitability).

Given the strong data and tools available, the agricultural industry should have stronger financial literacy. Through comparing and contrasting survey data and similar research reports, it clearly identifies and supports the key barriers that impact one's financial literacy.

7. Implications

Low levels of financial literacy has many implications on farmers and their overall business performance. Farmers maybe unaware but the performance of their business has a significant influence on their support networks and there overall performance. These implications are identified below:

7.1 Farmers – Understanding their stock welfare, pasture management and production is the engine room of their business. However, understanding your financial and business management provides the business with well-informed decisions and direction with longer term financial stability. A number of farmers interviewed have informal business plans and budgets in their heads. While this may give them confidence and direction, it creates uncertainty to others. For example, what if the inevitable happens, does the business just halt? This impacts directly on family and others involved within the business.

What is the cost of capital to your business? You hear your neighbour is on a better interest rate and wonder why. Risk pricing is not new and has been around for many years. In a report by Chris Lambing (2020) he refers to three key aspects on how a bank assesses the risk in your business.

1. **Viability** - strength of the business, looking at historical performance and the future forecasts. Cash is King.
2. **Security** – What security is available to the bank and type (land vs livestock). Stronger equity is more attractive reducing loan to security ratios.
3. **Personal Factor** – A bank manager assesses and substantiates your ability, physically and financially, and how you respond to budget or adverse events. An assessment may be made rating you as below average, average or above average depending your ability.

While viability and security may be sound, personal factor is the key aspect which demonstrates the farmer's level of financial literacy. It controls the direction of the business and the rating a bank will derive based on these attributes, along with historical finance data, which can result in a differentiation in terms of cost of capital.

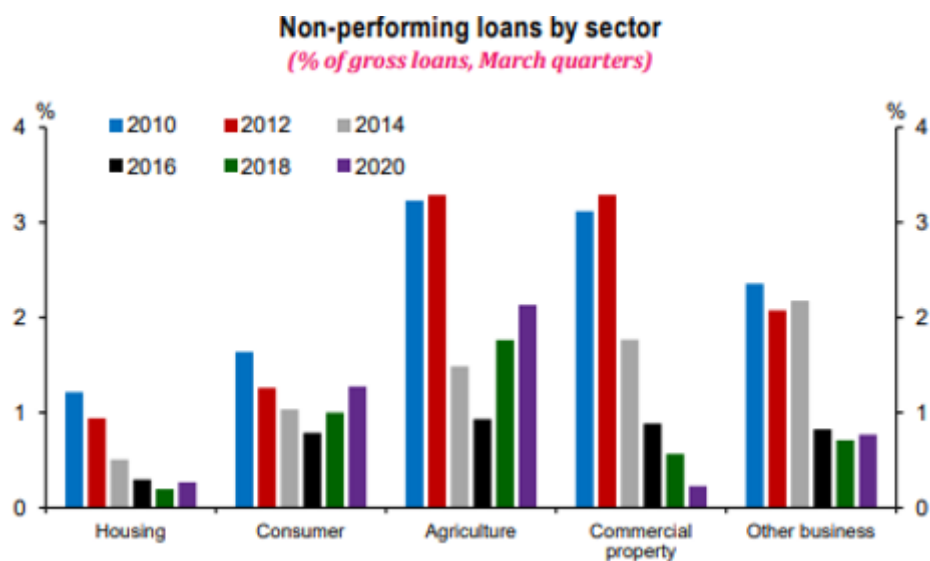
Farm performance is weakened through poor planning, poor forecasting and poor decisions. Farmers with weaker financial literacy are known to have limited knowledge and understanding of the effectiveness and efficiency of their decisions. This is supported through benchmarking data provided by industry-good organisations, accountants, advisors and processors, which in general measures many farming operations performance throughout New Zealand, which compares findings in two categories, average and above average performance.

Benchmarking data from Beef and Lamb NZ in 2018-19 identifies the difference between average and above average farmers in class two South Island hill country. Top performing farmers had an additional \$159.69 or 21.26% more gross farm income per hectare and a lower cost structure with farm expenditure back \$20.42 or 5.11% against average industry benchmarked data. Dairy NZ national benchmarking data identifies the difference between average and above average (the top 50% farmers). In 2018-19 it identified that farm working expenses per kilogram Milk Solid (KgMS) for the average farmer was \$4.34/kgMS versus \$4.13/kgMS for above average farmers. Based on Fonterra milk pay-out in 2018-19 of \$6.35/kgMS, it left approximately \$2.01/kgMS for average

farmers and \$2.22/kgMS for above average farmers to spend on interest, living, tax and capital expenses. In a report by Stringleman (2019), the break-even for dairy farmers had risen to \$5.95/kgMS in 2018-2019 up \$0.08/kgMS from 2017-18.

Farm profitability can be considered strong in many cases but the number of people (in general two families) drawing out of the business is also one of the largest implications of weak financial skills that rural professionals are seeing. Whilst talking with a number of professionals, they all identified a self-inflicted implication, which is the level of drawings predominately reflected in smaller scale properties ranging from 2,000-4,500 stock unit operations. A rural professional mentioned “these properties cannot handle two families (or one family and a staff member) drawing from the business”. It is in the writer’s experience that this would make up for at least 50% of non-performing loans to his knowledge. The below graph shows New Zealand’s non-performing loans by sector over the past 10 years.

Graph 2.0: Percentage of Non-performing loans by sector over 10 years



Source: NZAB 2020

Data from the Reserve Bank's financial stability report (May 2020) shows the level of non-performing loans in different sectors throughout New Zealand comparing results over the past ten years. 2019-2020 had seen record high commodity prices in almost all agricultural industries with interest rates at record lows. Many businesses were disrupted by COVID-19 with the agricultural sector fairsing relatively well. But the results demonstrate that agriculture has had eight out of the last ten years with the highest non-performing loans, while other sectors have continually improved. Further into the report it alludes to the fact that non-performing loans are expected to increase from low levels in 2021, as a result of COVID-19 impacts. This may further result in impairments for financial institutions.

7.2 Rural Professionals - In a study by BNZ (2020), it looks into the future of agribusiness reflecting on pre and post COVID-19 trends. A key finding is that looking into finance, trust is ultimately where a farmer will go for advice. In their study it identifies that accountants are the farmers most trusted go-to business advisors, followed by bank managers then family or friends. While farm consultants, independent industry experts and industry group representatives are considered to be less likely approached for advice. Therefore if trust is not earned by rural professionals, they are less likely to form part of a farmer's trusted team and receive their business.

Lack of financial skills by farmers can result in rural professionals, monitoring or measuring their clients performance in some form or another. Depending on loan sizes, each financial institution will undertake a business review measuring the historical performance and request clients to present them with their forecasts to monitor and measure their viability. If a farmer does not take control of the forecasts then they may seek accountants, advisors and bank managers to complete this.

A bank manager and accountant reported “time spent competing budgets for clients is poor time spent unless in conjunction with them, we are owning the numbers when it’s not our business and ultimately this is time away from doing our job in terms of business strategizing and succession planning”. After receiving forecasts banks will measure this against historical data and apply a Status Quo system or a Stress Test. This consists of a five year average income commodity spread for example \$6.25/kgMS for dairy, \$6.30/kg lamb and \$400/t Barley. Banks allow for inflation in farm working expenses, calculates interest rates ranging from 5.75% to 7% with drawn limits and allows for a realistic level of drawings, tax and capital expenses which may align to a business’s plant and equipment depreciation value and historical data.

Rural professional stability and capacity is known to be a key attribute that can earn strong trust with farmers. All farmers were asked how well they feel supported from their rural professional team with 35% feeling unsupported, with a further 30% saying there is room for improvement. A key finding was that almost all farmers said stability was the driver of feeling supported. An unstable team creates uncertainty and lack of trust with farmers. In a report by Adam Duker (2020) he discussed that new graduate rural professionals are received well by farmers when operating under a respected and credible company. Once those individuals showed and proved themselves they would then earn the farmers respect.

A rural professional’s capacity can be a result of weak farmer financial skill, as a weaker business requires more time spent measuring and monitoring their performance. This restricts a rural professional’s ability to spend time with existing customers and any potential new clients. A bank manager discussed that almost all highly recommended farm advisors had no capacity which impacts not only farmers but their advisory business also.

Non-performing loans can transpire into default loans and bank impairments increasing the cost of capital to not only farmers but also banks. All banks in New Zealand are governed by the Reserve Bank of New Zealand (RBNZ), banks are required to meet their capital requirements set by the RBNZ. Banks are graded on the level of risk on their lending portfolio which is impacted by the number of non-performing loans. Of these loans, banks are required to hold more capital and this may result in a banks rating being downgraded which increases the banks’ ability to source capital and the cost of capital.

In December 2019 the RBNZ proposed capital adequacy to start from 1st July 2021. Its set out to increase the level of tier one capital a financial institution must hold from 10.5% to 18% for large banks and 17% for smaller banks. RBNZ granted a 12 month extension in March 2020 (due to COVID-19) with another 12 month extension until July 2022 being granted to allow financial institutions headroom in lieu of any effects caused by COVID-19, and to support economic recovery. This increase in regulatory capital has placed pressure on the ability for farmers to access capital.

Risk weighted assets (RWA) determines the minimum amount of capital that must be held by banks and other financial institutions to reduce the risk in case of a major financial shock. Different sectors have different risk weighted asset calculations with the RBNZ assessing an agricultural loan with a risk weighting of 80-100% and a residential loan with a risk weighting of 30%. An agricultural loan is

deemed higher risk due the exposure of rural lending to international commodity prices, which are significantly more volatile than the economy as a whole (Harrison and Hoskin 2011). The table below demonstrates the impacts.

Table 1 – Proposed risk weighting and capital adequacy affects

Top 4 Major banks	Current capital requirements (10.50%)	Proposed capital requirements (18%)
\$1mIn Agri loan (90% RWA)	\$94,500	\$162,000
\$1mIn Residential loan (30% RWA)	\$31,500	\$54,000

Source: ASB Economic Note 2019

The added pressure of seeking additional capital which in general impacts on the profitability of financial institutions has seen a shift in attitudes with some banks now exiting agricultural loans completely, increasing margins and seeking capital repayments which impacts not only the farmer but the financial institutions reputation and credibility. This aligns with a report from NZAB (April 2020) demonstrating and forecasting the agriculture sector will repay over two billion dollars. This is driven by capital loan repayments in conjunction with higher commodity prices. Noticeably capital has been redirected into business, commercial and residential loans which have all increased by over thirteen billion dollars. With this in play the ability for farmers to source capital can be varied given different financial institutions have different appetites. In general the stronger the farmer financial literacy and farm business, the stronger the ability to access capital.

7.3 Financial wellbeing - While there are many implications for farmers with low levels of financial literacy, it can have a significant toll on one’s wellbeing. An article (The Country 2019) commented that there is real concern over farmers’ approach to financial wellbeing, it states “financial resilience of some businesses in our farming community is a real concern, some farmers are just surviving month by month”.

Financial wellbeing is considered to be:

“A state of being where a person can meet current and ongoing financial obligations, feel secure in their financial future, and is able to make choices that allow them to live life to the fullest” (Brian Chartier)

In a report published by Bank of America (2019), it indicates that a millennial’s financial state determines their happiness and wellbeing in other areas in life with lack of financial literacy causing anxiety.

Over the past five years it has been noticeable within the agricultural sector that good young, up and coming farmers had been physically and financially worn out and have now exited the sector. While there had been multiple commodity fluctuations over this period and throughout different sectors, many young farmers did not create a resilient business. Ultimately their business and financial wellbeing suffered. Farmer financial wellbeing is not just up to themselves to create a work-life balance, it should also be supported by their trusted team.

7.4 Industry-good organisations are required to ask for levy paying farmers and growers for support and funding under the Commodity Levies Act. These organisations help provide farmers with the tools, technology and training enabling them to upskill and overcome the changing environment.

Levies can be based on production with the likes of Dairy NZ receiving \$0.036c/kgMS produced. Strong farm businesses help make strong industry-good organisations enabling them to invest more into the future. With financial literacy impacting on one's financial performance, it does not only affect them but the support networks around them.

7.5 Software providers make tools available for farmers to plan, monitor and measure their business performance. While many farmers know and master software resources like Trade me and Google, the uptake of farm financial tools is still very low. A bank manager interviewed mentioned that their client portfolio had very weak uptake of software packages due to the limited training courses, over complicated programs and lack of trust. A quick search was undertaken seeking what software providers (Xero, Figured, Cash Manager Focus, and MYOB etc.) offered in terms of training courses, which only showed online training, accounting training and support contacts. Whereas only one provider throughout the search offered personalised training.

In support of Fleming's findings, tutor or mentor based training was noted to be the strongest method for farmer uptake with small group training close behind. However, these training methods are not visible from most software providers. Lack of face to face, smaller groups and suitable location training is proving to be a barrier to farmers, which impacts software providers with lack of uptake and lack of gained trust.

Trust builds confidence. If a farmer trusts and understands the benefits of the software tools, it gives them confidence to adapt and explore opportunities. While talking to a farmer in January 2021, their business had completed a significant change in early 2020, which meant it was their opportunity to financially upskill. A software package was purchased and after adopting it the farmer mentioned, "everything is now live, I know exactly where I'm at and it makes my finances easier to manage". The farmer also noted it took longer than expected to learn the software tool as it was additional time away from farm at an accountants office, which in some cases will be up to 2 hours travel for many farmers. Due to the barriers affecting a farmers uptake of software programs, farmers do not see the value gained therefore opt not to purchase or utilise this tool impacting on profitability on both the farmer and software providers.

7.6 Government bodies – Ministry for primary industries (MPI) published the Te Taiao document, fit for a better world, accelerating our economic potential which focuses on how New Zealand's economy will overcome COVID 19 impacts and increase its export earnings by 44 billion dollars. By creating value and building off the stronger positioned core sectors, while lowering our emissions by reducing biogenic methane from 2017 levels by 24-47 percent, restoring our freshwater to a healthy state within 10 years and employing ten percent (10,000) more Kiwi's into the primary sector workforce. Throughout the report it looks at transformational opportunities to achieve these targets such as water storage, horticulture development, research, science and innovation; while financial literacy is not discussed to be an opportunity to assist with achieving these targets set. If no investment is made into upskilling our next generation and current farmers financial literacy this may see a weakened economy and agricultural sectors. Given farmers may be required to reduce their livestock numbers by up to 15%, this could result in a significant impact to New Zealand's economy.

Financial education starts at home with family, friends and throughout schooling. Understanding and improving financial literacy is critical in this rapidly changing and challenging environment. It does not only affect farming, but affects all businesses/sectors within our economy. Education is known to be a barrier to improving financial literacy as a result of the survey data. A report by Feslier (2006) looks into financial education and financial literacy in New Zealand, the surveyed results showed

that school students had low levels of financial literacy. He discussed that pressure was building to include more structured financial education in schools and the Kiwi Saver initiative was brought in to provide financial education. Looking now into 2021 and discussing education with farmers and rural professionals, financial education is still deemed very weak with no compulsory courses on personal and financial management throughout the school curriculum. Over the course of 15 years the data shows that there has been no improvement to assist the younger generation with personal and financial management skills.

8. Conclusions

While the agricultural sector continues to be forever changing with more variables in play it is vital that businesses become more resilient and adapt with innovation and new ways of working. The survey data and researched findings identify that farmer financial literacy is still deemed very weak with only 60% of businesses forecasting and 50% planning. There is appetite for improvement but my research suggests that it comes back to the willingness of the farmer and the next generation.

Financial acumen must be improved if farming businesses want to survive. If willingness to upskill is not sought then rural professionals must assist or encourage with financial upskilling. If continued weak financial literacy skills are not improved then many businesses will face financial pressures with no opportunities to enable growth or family succession, which will be detriment to local rural communities and New Zealand's economy. Rural professional upskilling pressure applied to farmers may be the answer to create stronger financial skills within the agriculture sector, they all want the farming businesses to succeed and become stronger for future generations. Think of it as creating a strong resilient fence at the cliff top rather than being the ambulance at the bottom ready to pick up the mess.

Financial and business management skills within agriculture should be treated equal compared with other sectors and may possibly be at similar levels. Now more than ever, financial and business management skills could be required for a farmer's financial license to operate within financial institutions, as we now see banks more frequently requesting for farmer prepared forecasts. Lack of financial literacy increases costs to farmers with financial institutions applying risk pricing, farmers could be paying potentially up to 0.5-1.00% in additional interest.

There are many barriers that affect farmer's financial skills whether it be time, technology or training, these are controllable dependant on confidence and willingness. Education is a further barrier somewhat assessed as uncontrollable given that personal and financial courses are not compulsory at school curriculum levels, and in general many young children have aspirations of jobs that never come about. The last barrier identified is weak rural professional support, they have an extensive part to play within farming businesses. Noticeably the difference between highly profitable farmers and less profitable farmers is 'the trusted support team', the stronger the team the stronger the performance. A team always changes but team change is controllable, farmers like other businesses have the opportunity to seek second opinions or request a change if needed.

These barriers further create many implications affecting not only the farmer but the support networks around them. Cost of capital, tools, services, capacity and technology all become impacted which results negatively to the farmer, if the barriers are reduced then the implications will result in a more profitable and sustainable businesses for generations to continue farming successfully into the future.

While financial skills are still deemed weak, all farmers interviewed can see the benefit and opportunities that can be created from stronger financial acumen. With this at play we need to all encourage and support each other to upskill, which have positive flow on affects not only to the farmer but to the local communities, rural professionals, software providers and our economy.

Financial skills are important at many levels of life. It is an essential element which enables people to manage their finances, which makes an important contribution to the stability and longevity of agriculture and to the performance of rural communities and the New Zealand's economy.

9. Recommendations

Throughout this survey and research data, there is no quick/simple fix to create stronger financial acumen within farming businesses. The potential opportunities that will come about from stronger financial skills will be the make or break of many businesses in the future. Whilst there is many stronger financially skilled farmers, they will need to continually develop and improve their business to become resilient in uncertain times. To overcome the barriers and implications of low levels of financial literacy and advance forward, a recommendation follows.

Farmers

- Value your time using the \$25-\$100-\$1,000 concept, work on your business not in it and take control of your finances, own the numbers.
- Financial wellbeing – Seek or ask for help, control what you can control. Get off farm, look at other operations or businesses. It is not always greener on the other side of the fence.
- Create a plan and direction for the business, work backwards to look at ways and/or ideas on how you're plan can be achieved.
- Build resilience within your business, seek feedback from others.
- Extend yourselves (before you're pushed) out of your comfort zone, this will help create willingness through finding purpose, conquering objectives, assist with learning and dealing with changes.
- Establish a strong trusted go-to team who are aligned with the purpose and direction of your business.
- Create governance within your trusted team and maintain discipline. Make measurable targets that will be monitored and hold yourself accountable.
- Join and attend or create discussion groups, this is a place to learn and get new ideas. Other farmers may act as part of your trusted team in a mentor/advisory role. Involve people within the business, bring the next generation into specific farm strategy conversations/decisions, and help them understand the WHY.
- Smaller scaled businesses - seek help if your struggling, get a second opinion on your business and involve those that you trust.
- Use software tools that offer you support and that you can trust. Utilise their training days and courses.
- Play the Infinite game, farmers who play the infinite game will continue to learn and develop. There is no end.

Rural Professionals, financial institutions and software providers

- Work with farmers, looking at different ways they improve their performance and improve a Banks risk ratings via financial acumen. Incentive those who improve.
- Professional's need to create a trusted team and work together to challenge the normal and assist with financial upskilling to those who lack financial acumen.
- Create easily accessible financial courses and promote in areas with poor uptake or weak financial skills.
- Allow for capacity, low capacity will create a weaker trusted team and weaker financial literacy.
- Reassess software packages to be farmer friendly, from stock reconciliations to cash flow budgeting.

Government bodies

- Ministry of Education - In support with Fleming's recommendation, national (urban and rural) school curriculum should involve compulsory personal and financial skills education. Further agricultural classes should involve basic business financial management which could be adopted from the school to the farm.
- Ministry of Primary Industry's - Te Taiao - fit for a better world seeks to add \$44 billion to export earnings, to achieve this they should consider investing in financial training and development within the agricultural sector.

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10. Appendix 1: Survey structure

Preamble

This report is being completed from a rural professional view looking at “how well farmers understand their finances and the implications of low levels of financial literacy. By gaining this understanding, we as rural professionals can work together with farmers to upskill them on any areas that require further assistance/improvement. In my current role within a financial institution I see weak financial literacy on a daily basis and see the benefits of strong financial literacy, therefore have the ambition to help and support those that need helped before it might be too late given the uncertainty and challenging times.

Interview/Survey questions

Farmers

1. How often do you prepare a business plan?
- Business/personal goals & succession plan?
2. How do you go about it?
3. If yes, how do you monitor this plan?
4. How often do you prepare budgets?
5. How do you go about it?
6. What training have you had in business planning, budgeting, monitoring & measuring?
7. In your opinion, are the tools that are available (cash manager, Xero etc.) helping improve your business? If so how?
8. How well do you understand your financial accounts?
- Profit & Loss, Balance Sheet, family loans?
9. How does your business plan or budget influence your decision making?
10. How do you measure your business production & performance?
(Benchmarking – Beef & Lamb NZ, Dairy NZ, accountants)
11. Who else is involved in financial, management and strategic decisions?
12. How well do you believe the next generation is being upskilled within business & financial management?
13. Would you say you're business is viable? If so how?
14. Would you say you're business is bankable? If so how?
15. How do you analyse your businesses strengths, weaknesses, opportunities & treats? (SWOT analysis)
16. How might others perception be of your business?
17. Are rural professionals & other farmers that view/analyses your business providing feedback, if so how?
18. How well do you feel supported from your rural professional's team?
19. How could local discussions groups add value to your business?
20. What opportunities do you believe business planning, budgeting, SWOT analysis and feedback adds to your business?
21. What opportunities are missed if no business planning, budgeting, SWOT analysis and feedback is undertaken?
22. What would take you to complete a business plan & budgets?

Rural Professionals (Bank managers, accountants & consultants)

1. Of your clients how many complete business plans? %
2. How many clients do you assist with business plans? %
3. How do they use their business plans?
4. Of your clients how many complete budgets? %
5. How many clients do you assist with budgeting? %
6. Is there a specific Agri- industry that does business planning & budgeting well? If so why?
7. In your opinion what is stopping farmers from understanding their business better?
8. How well do your clients measure or monitor their performance?
9. In your opinion what would enable/make farmers to complete a business plan & budgets?
10. Do you complete SWOT on their business?
11. How is SWOT analysis used by a farmer?
12. Do you provide feedback to your clients on their business? If so how do they take it?
- 13a. How can rural professionals help upskill farmers?
- 13b. What other ways can farmers upskill?
- 13c. How well do you know & trust the tools available for farmers to upskill?
14. How well are the next generation being taught business & financial management skills?