



**RED MEAT PROFIT PARTNERSHIP**

**EXTENSION DESIGN PROJECT FINAL REPORT**

**October 2019**

**Authors**

Denise Bewsell, Extension Specialist Manager, Red Meat Profit Partnership  
Tony Brenton-Rule, Red Meat Profit Partnership

## INDEX

<b>Section</b>	<b>Topic</b>	<b>Page</b>
1.0	Executive Summary	3
2.0	Red Meat Profit Partnership	4
3.0	Extension Design Project - Structure	4
3.1	Farmer Attributes	4
3.2	Agricultural Extension	5
3.3	Pilot Extension Programmes	5
3.4	Financial Results	6
4.0	Farmer Attributes	6
4.1	Top Farmer Qualitative Report	6
4.2	Sheep and Beef Farmer Segmentation Final Report	9
4.3	Benchmark Report – Business of Farming Workshops	10
4.4	Work with Farmers	12
5.0	Agricultural Extension	12
5.1	Informing Extension Design Project Final Report - AgResearch	12
5.2	Extension Evaluation – AERU, Lincoln University	13
6.0	Financial and Other Results	15
6.1	Overview of the Farm Pilot Programme	15
6.2	Financial Evaluation of Farms in the Pilot Programme	15
7.0	The RMPP Extension Model	17
8.0	Key Lessons Learned from RMPP's Extension and Adoption Work	21
9.0	Looking Forward	22
Annex 1	Agricultural aspects of a case study farm in the South Island of New Zealand	23
Annex 2	Examples of farmer feedback on RMPP's pilot farm extension work	24
Annex 3	List of documents used in report preparation	25

## 1.0 Executive Summary

Red Meat Profit Partnership (RMPP) is a programme to help the pastoral red meat livestock sector in New Zealand increase its productivity and profitability. Structured as a Primary Growth Partnership, RMPP works with farmers and sector businesses to develop, test and put new ideas, new technology solutions and new ways of working into action behind farm gates and between farms and red meat processors. Established in November 2013, RMPP's programme is funded 50/50 by government and industry for seven years ending in September 2020.

RMPP began with an intensive research phase, from which evolved a programme with four components: agricultural extension and adoption; programmes, resources and tools; people and capability; and data and systems. This report concerns the first, agricultural extension and adoption. Work started with an Extension Design Project. Its objective was to develop a coordinated national extension and uptake framework, as the first step in creating a collaborative and highly effective national extension system in New Zealand's pastoral red meat sector. The Extension Design Project ran for four years from 2014 to 2018. Four aspects of it are summarised in this report: agricultural extension, understanding farmer attributes, a pilot extension programme and financial results achieved by farmers in the programme.

RMPP's focus on agricultural extension began with an evaluation of extension projects in New Zealand and overseas to establish best extension practice. Its key findings informed subsequent extension developments by RMPP. These focused on three pilot programmes with the objective of determining how an agricultural extension programme should be designed and implemented to have maximum positive effect with New Zealand red meat farmers. This work is summarised in Section 3 of the report.

In understanding farmer attributes RMPP's objectives were to: identify the characteristics, structures, behaviours, skills and attitude differences between high and average performing farm businesses in New Zealand; understand who or what drives farmer ambition; identify what has driven high-performing farm businesses to adopt new practices; and identify the ways in which top performing farmers may be willing to share their successful approaches with others. These objectives were met. Relevant information from three studies is summarised in Section 4 of the report.

Review by an independent authority during and after the project provided an evaluation of RMPP's extension work. Key findings are summarised in Section 5 of the report.

Financial and production results achieved by farmers involved in the three pilot extension programmes were independently evaluated. This work began with evaluation before the programmes to establish benchmarks, and at the end of the programmes to determine the outcomes of extension activities. A sub-set of eleven of the farms were more intensively investigated, resulting in detailed case study information. This work is summarised in Section 6 of the report.

A key outcome of the Extension Design Project was development of a coordinated red meat sector national extension and uptake framework, the RMPP Action Network, an initiative to support farmers to develop the confidence to turn ideas into successful action on-farm. Section 7 of the report summarises important learnings that were used to inform the design and operational aspects of the RMPP Action Network.

This report concerns only the Extension Design Project. A closing report on the RMPP Action Network is intended as part of RMPP's end of programme assessment.

## 2.0 Red Meat Profit Partnership

Red Meat Profit Partnership (RMPP)<sup>1</sup> is a programme to help the pastoral red meat livestock sector in New Zealand increase its productivity and profitability. Structured as a Primary Growth Partnership (PGP),<sup>2</sup> RMPP works with farmers and sector businesses to develop, test and put new ideas, new technology solutions and new ways of working into action behind farm gates and between farms and red meat processors.

Established in November 2013, RMPP's programme is funded 50/50 by government and industry for seven years ending in September 2020.

RMPP's partners are six meat processors (Alliance Group, ANZCO, Blue Sky Meats, Greenlea Premier Meats, Progressive Meats and Silver Fern Farms); two banks (ANZ Bank and Rabobank); Beef + Lamb New Zealand<sup>3</sup> (B+LNZ) the farmer-owned, industry organisation representing New Zealand's sheep and beef farmers; and the New Zealand Ministry for Primary Industries<sup>4</sup> (MPI).

RMPP began with an intensive research phase, from which evolved a programme with four components:

- Extension and Adoption
- People and Capability
- Resources and Tools, and
- Assurance and Provenance.<sup>5</sup>

This report concerns the first, agricultural extension and adoption.

It is not a report on the RMPP Action Network<sup>6</sup>, which followed the Extension Design Project and is based on what was learned from the project. A closing report on the RMPP Action Network and the lessons learned from it is intended as part of RMPP's end of programme assessment in 2020.

## 3.0 Extension Design Project - Structure

Work by RMPP on agricultural extension started with an Extension Design Project. Its objective was to develop a coordinated national extension and uptake framework as the first step in creating a collaborative and highly effective national extension system in New Zealand's pastoral red meat sector.<sup>7</sup> The Extension Design Project ran for four years from 2014 to 2018.

To assist in understanding the structure of the project and this report, four important aspects are summarised below: understanding farmer attributes; agricultural extension, the pilot extension programme and financial results achieved by farmers in the programme.

### 3.1 Farmer Attributes

*RMPP Focus:* What are the characteristics of New Zealand's red meat farmers that must be understood for an agricultural extension programme to work well with them?

---

<sup>1</sup> <https://www.rmpp.co.nz/>

<sup>2</sup> A joint venture between government and industry, which invests in long-term innovation programmes to increase the market success of New Zealand's primary industries

<https://www.mpi.govt.nz/funding-and-programmes/sustainable-food-and-fibre-futures/primary-growth-partnership/>

<sup>3</sup> <https://beeflambnz.com/>

<sup>4</sup> <https://www.mpi.govt.nz/>

<sup>5</sup> <https://www.rmpp.co.nz/page/our-programme/>

<sup>6</sup> <https://www.actionnetwork.co.nz>

<sup>7</sup> <https://www.rmpp.co.nz/page/extension/>

### *Approach taken by RMPP*

UMR Research<sup>8</sup> was engaged to provide information on farmers from three qualitative research projects:

- i. A review of the characteristics of the very best performing red meat sector farmers in New Zealand to help understand why they achieve such outstanding results
- ii. A segmentation report for all New Zealand red meat farmers to inform the development of pilot programmes to test different extension approaches, and
- iii. A benchmark report focused on farmers who attended financially oriented workshops run by RMPP partners ANZ Bank and Rabobank.

### **3.2 Agricultural Extension**

*RMPP Focus:* How should an agricultural extension programme be designed and implemented to have maximum positive effect with New Zealand red meat farmers?

### *Approach taken by RMPP*

Work was done in three areas:

- i. A review by AgResearch<sup>9</sup> of fifty studies of extension projects, in New Zealand and overseas and in agriculture and other sectors, to understand when and why each of the extension projects succeeded or did not
- ii. Working with its industry partners, RMPP tested three pilot extension programmes that varied in their design and approach to farmers, and
- iii. A review by the Agribusiness and Economics Research Unit, Lincoln University<sup>10</sup> (AERU), from an extension perspective, of the Extension Design Project during and after its completion.

### **3.3 Pilot Extension Programmes**

It has been known for some time that the uptake of knowledge by farmers and its application on New Zealand sheep and beef farms have been very variable, with a widening gap between top-performing and mid-tier farmers. The red meat sector has invested heavily in farmer knowledge and practice-change over the years with varying success. There has been limited formal evaluation to determine why some ways of transferring, acquiring and implementing knowledge behind the farm gate are more successful than others.

Knowledge gained from a review of agricultural extension by AgResearch (see Section 5.0 below) informed the development of three pilot programmes to test specialised extension support for farming system transformation. One worked with RMPP's two partner banks, ANZ Bank and Rabobank. It was focused on farm business accountability structures for financial management and governance. The other two programmes worked with RMPP's meat processing partners.

Three models of engagement with farmers were tested: one-to-many (farmers), one-to-some and one-to-one. These models differ in their demand on extension resources and hence have significant infrastructure, time and cost implications. However, the focus in the three pilot programmes was not on the engagement approach, but instead on understanding red meat sector farmers better and determining their preferred way to learn. The purpose was to help by giving them knowledge and support to make better decisions and by providing an environment to increase their confidence to invest in and implement new processes and technologies, to increase productivity and profitability in their farming businesses.

---

<sup>8</sup> <https://umr.co.nz/>

<sup>9</sup> <https://www.agresearch.co.nz/>

<sup>10</sup> <http://www.lincoln.ac.nz/research/research/rc/aeru/>

### **3.4 Financial Results**

*RMPP Focus:* What financial gains were made by farmers who participated in the Extension Design Project farm extension programme?

#### *Approach taken by RMPP*

A financial evaluation was commissioned from agricultural consultants BakerAg<sup>11</sup> to identify results achieved by farmers involved in the Extension Design Project, with a 2015 baseline evaluation and then over the three year trial period 2016 – 2018.

## **4.0 Farmer Attributes**

### **4.1 Top Farmer Qualitative Report - UMR Research**

Primary objectives for this work were to:

- i. Identify the characteristics, structures, behaviours, skills and attitude differences between high and average performing farm businesses in New Zealand
- ii. Understand who or what drives farmer ambition
- iii. Identify what has driven high-performing farm businesses to adopt new practices, and
- iv. Identify the ways in which top performing farmers may be willing to share their successful approaches with others.

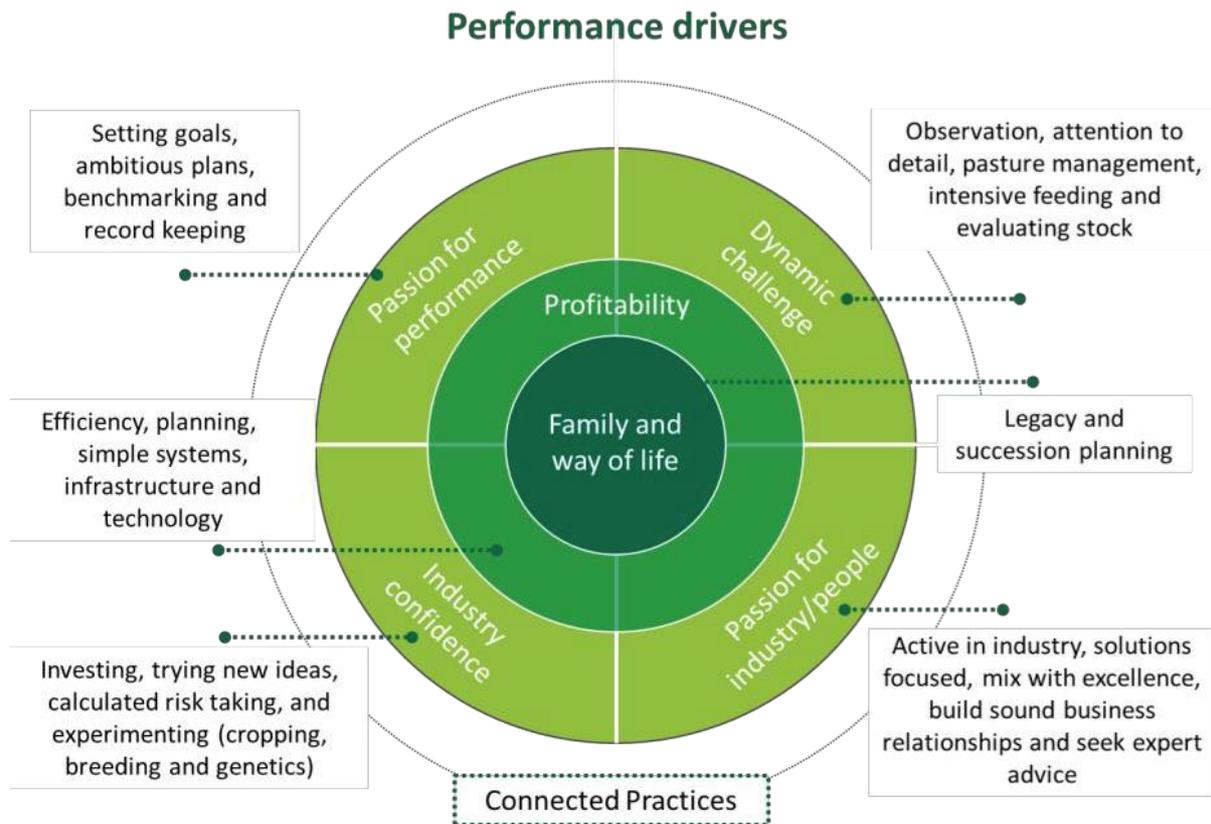
Two key measures were adopted to rank top and mid-tier farmers: financial return on farm assets (ROA) and economic farm surplus per hectare (EFS). Data for these two measures (without farmer identification) was obtained from four sources: B+LNZ Sheep and Beef farmer survey, ANZ Bank and Rabobank, farm advisory firms and the NZ Institute of Chartered Accountants. This data was analysed by RMPP to identify 30 top performers chosen from across different regions and classes of country. The same process chose 28 mid-tier farmers.

Key performance drivers are portrayed in Figure 1 below:

---

<sup>11</sup> <https://www.bakerag.co.nz/>

Figure 1: Performance Drivers



Attributes in the above diagram, working from the inner core out, are summarised below for top farmers. UMR's work showed that in most cases financially mid-tier farmers display the same attributes, but to a lesser extent. The difference is not caused by good or bad seasons, high or low product prices or geographic location, as UMR controlled for these factors across all the top and mid-tier farms. Rather, the difference is in the farming couple. While most farmers have a sense of what needs to be done to perform highly, only the top performers know how to consistently execute decisions at a very high level.

*Family and way of life:* No one driver is the most important for top farmers as all the drivers are connected. While farm profit is critical to them, it is seen by top farmers as the means by which they can provide for their families, live the farming way of life that appeals so strongly and ensure family succession. Most top farmers in this study had strong family historical connections to farming and had high motivation to build on and thereby pay tribute to the achievements of prior generations.

*Profitability:* Top farmers have a strong grasp of their farm performance data and financials and focus their effort and investment accordingly. They have firm plans for growth and willingness to borrow to enable this. To achieve high profit they look for efficiency, innovative practices and low cost ways of achieving tasks that all farmers must do. They scan new technologies, but adopt only those that will make them more efficient and provide high return on investment.

*Industry confidence:* Top farmers have strong confidence in the ongoing success and profitability of the New Zealand sheep and beef industry. They have confidence in market demand (sheep meat more than beef) and their ability to achieve high and increasing farm productivity. This drives appetite for change and exploration of new ideas, underpinned by determination to do better and

belief they can. They experiment by making calculated decisions on opportunities where they are reasonably confident of significantly increasing their farm returns. More often than not they are right. In contrast, mid-tier farmers require much more support with decisions and a clearer path of execution.

*Passion for industry and people:* Top farmers are strongly driven by passion for their industry and wish for it to improve. Many are actively involved in industry initiatives and mix readily with others in the industry. For advice they mostly seek technical direction from specialists, e.g. agronomists, veterinarians and accountants, liking to surround themselves with talent. Many are also good communicators, asking the right questions to get the best information. Top performers are often strong husband and wife teams with a keen focus on staff.

*Dynamic challenge:* Succeeding year after year despite the ever-changing and unpredictable nature of the farming environment is very difficult. Top farmers excel at this and doing so is a prime motivator for them. They pay close attention to detail of the basics, e.g. growing grass, animal health and feeding stock well. They actively observe what is happening on their farm, enabling them to respond to changes quickly and accurately, often reacting considerably earlier than other farmers.

*Passion for performance:* Top farmers are competitive, having ambitious plans and clear goals, with a firm pathway of how and when to attain them. Many top farmers are reluctant to accept failure and work hard to be the best they can. They place less emphasis on the influence of external factors, e.g. climate and prices, than do mid-tier farmers. They have keen interest in record keeping and benchmarking to monitor their own performance and keep on track. Younger top farmers use computers frequently to record data and help them make better decisions.

#### *Lifting other farmers' performance*

Top farmers varied in their willingness to help other farmers improve their performance, being keen to help and show their farms to those who were eager to improve, but not wanting to invest time in those who were not. Factors considered by top farmers in this regard included farmers who would talk, but not change their farm practices; frustration with lower-earning farmers who would not make a few basic improvements to their systems when doing so was so obviously profitable and farmers whose default position was often negative.

Top farmers noted that two simple ways to promote change on farms were firstly to get farmers talking about new ideas with people they trusted, and secondly for both farming partners to be involved in extension activities, as this meant higher likelihood that what was learned would be discussed later.<sup>12</sup> A more demanding way is benchmarking. Top farmers noted that, like car drivers, many farmers think they are doing better than they actually are. However, benchmarks for lower performing farmers have three challenges: the need for farmers to collect their own data to enable comparison; making comparisons in ways that do not put farmers 'under the microscope' or dent their pride too heavily and a gentle approach being more likely to get buy-in for change. These three challenges were addressed in the design of the RMPP Action Network

A wider issue seen by top farmers is the need to increase farmers' confidence in the red meat sector, as poor confidence was impacting on some farmers' willingness to invest in change and on bright and capable young people wanting to join the industry. (In another study, UMR found that 78 percent of all red meat farmers agree that there are not enough young people being attracted into the industry). Top farmers felt that highlighting the many positive aspects of the sector and (especially for young people) the new technologies, environmentally sustainable nature of sheep

---

<sup>12</sup> They noted the challenges this can pose for farmers with young children and no easy options for childcare.

and beef farming and high incomes that could be achieved, would be highly beneficial.

Top farmers also increasingly felt singled out by urban New Zealanders and regulators for special attention and suggested there was not enough of a 'unified voice' with an understanding of agriculture in their corner.

#### 4.2 Sheep and Beef Farmer Segmentation Final Report – UMR Research

Segmentation is an effective market research tool used to gain an understanding of people in a category, e.g. farmers. When applied well it combines quantitative and statistical analysis with qualitative insights. These are crucial in the development of effective segmentation as they are what bring the segments to life and can explain the 'why' behind the segments.

In this survey 789 farmers were asked 54 questions in a telephone survey. To give a flavour of the questions, four examples of what farmers were asked are:

- Over the next five years do you think the profitability of New Zealand sheep and beef farming will increase a lot, increase a little, stay about the same, decrease a little or decrease a lot?
- Do you agree or disagree that learning more about (e.g. re-grassing, animal health and computer skills) will help to increase the productivity of your farm?
- What are the main barriers that have got in the way of you trying something different on your farm over the last three years or so?
- Which of the following units (EFS, EBIT, ROA)<sup>13</sup> do you use to measure financial performance?

Five farmer segments were identified from farmer responses to the questions. They are summarised in Table 1 below, ordered from the most to the least open to making on-farm change.

**Table 1: A description of the five farmer segments from data gathered by UMR**

<b>Segment name, Key features, Description and Incentives needed to make change</b>	<b>% of all survey farmers</b>	<b>Spouse contributes strongly to farm</b>	<b>Tertiary qualified</b>	<b>Over age 50</b>
Overall for all 789 farmers	100%	68%	29%	71%
<b>Primary Pacesetters</b> <i>Change focused Strong planners Advice seekers</i> These farmers are performance driven strategic planners and very interested in adopting new practices and making changes. Strongly open to accessing sound professional and technical advice. Have strong husband/wife teams. Involved in red meat sector off farm. The segment is skewed towards younger farmers, but many older farmers are also Primary Pacesetters. <i>Need a stream of ideas and independent trustworthy information.</i>	22%	80%	40%	64%

<sup>13</sup> EFS: Economic Farm Surplus EBIT: Earnings Before Interest and Tax ROA: Return on Assets

<p><b>Fast Followers</b>  <i>Don't want to cruise Debt Wary Profits depend on own efforts</i>  Will take calculated risks, but only on proven practices. One of the two younger segments. Have energy to keep driving their operation and focus on performance. Less comfortable than Primary Pacesetters with borrowing money to lift farm returns. <i>Also need a stream of ideas and independent information, but want to see the ideas proven in practice before adoption.</i></p>	23%	71%	39%	66%
<p><b>Cautious Conservatives</b>  <i>Low-planners Cautious changers Solo operators</i>  More introverted, less inclined to be involved in industry activities, and tend to be more risk averse. Less likely to be avid planners and more likely to keep doing what they did last year. Know how to farm to stay in business and have kept their farms operating when others have failed. Low spouse involvement on farm. <i>Need local, non-judgemental implementation support focusing on minor adjustments (on their terms) rather than system overhauls.</i></p>	19%	13%	31%	75%
<p><b>Confident Captains</b>  <i>Take it easier Confident in ability Strong family involvement</i>  Most interested in taking it easier, have a strong focus on lifestyle and have confidence to farm on instinct / gut feel. Solid family farmers who are reasonably comfortable financially and have little need or desire to push harder unless an on-farm driver is forceful, e.g. daughter, son or motivated manager. <i>Need benchmarking, targeting via an on-farm driver, clear pathways to financial returns and attracting new talent.</i></p>	19%	88%	14%	74%
<p><b>Seasoned Grafters</b>  <i>Reluctant to change Prioritise manual work Concerned about red meat sector</i>  Oldest segment with half aged over 60 years. Have worked hard throughout their long farm career and now quite resistant to change. Have been successful as evidenced by their ability to survive long-term in a tough industry. <i>This sector would benefit from equity pathways in and out of the sector and attraction of new talent.</i></p>	17%	78%	17%	77%

The main barriers to on-farm change were identified by UMR to be:

- A portion of an aging population taking it easier, especially Confident Captains and Seasoned Grafters
- Financial constraints for those reluctant to borrow funds (all segments but for Primary Pacesetters)
- Uncertainty over the outcome of change (all segments but for Primary Pacesetters, who will back their own judgement and ability to make change work), and
- Belief that factors beyond the farm gate are important, but unpredictable, and therefore are worrying.

#### 4.3 Benchmark Report: Business of Farming Workshops – UMR Research

These workshops were run by RMPP partner banks, ANZ and Rabobank, beginning in late 2014. UMR's report draws on paper surveys completed by 518 farmers who chose to attend the workshops. These farmers are likely to be a more proactive and higher earning group than in a sample randomly generated from a farmer database. Their answers provide a snap-shot of farmers

wanting to learn, to add to the information from UMR's Top Farmers and Farmer Segmentation work.

The main findings from the surveys are shown in Table 2 below. In all cases percentage (%) refers to the percentage of farmers who gave the answer in their survey response. Percentages do not add to 100% as the numbers given are a subset of more detailed survey responses.

In addition to supplementing information on farmer attributes obtained from the Top Farmers and Farmer Segmentation work by UMR, this study provided the baseline data for an on-going study by RMPP that will monitor change in behaviours and attitudes for this group of farmers over time.

**Table 2: Findings from the surveys of farmers attending the 'business of farming' workshops**

	%
<b>Financial planning and performance</b>	
- Have some sort of a business plan	91
- but only in their head	53
- written	16
- written and regularly reviewed	10
- Prepare some sort of budget	83
- which is monitored monthly	35
- monitored quarterly, or	22
- never monitored	7
- Have a statement of financial position prepared every year	92
- Have some sort of succession plan	61
- but only in their head	33
- written and regularly reviewed	13
<b>Measuring financial performance</b>	
- Compare their performance against industry benchmarks	54
- EBIT: Earnings Before Interest and Tax	67
- EFS: Economic Farm Surplus	65
- ROA: Return on Assets	36
- Do not calculate any financial metrics	20
<b>Farm management and planning</b>	
- Prepare a feed budget	40
- Measure total feed harvested for their farm	26
- Planted forage crops in the past year	81
- Have a re-grassing programme in place	84
- Used a SIL/breedplan to select rams	52
- To select bulls	27
- Do not use a breeding plan	44
<b>Measuring animal performance</b>	
- Ewe scanning percentages between 175% and 199%	28
- Between 150% and 174%	36
- Ewe weaning percentages between 125% and 149%	49
- Average lamb carcass weight between 17.0 and 17.9 kg	29
- Between 18.0 and 18.9 kg	27
- Between 19.0 and 19.9 kg	13
- Measure meat and fibre sales for their farm	61
<b>Staff</b>	
- Employ one or more staff	58
- Have a written employment contract with each	57

<b>Environment</b>	
- Have a plan in place to manage land and environmental issues	57
- Farmers of all ages	
- Farmers aged over 60	68
<b>Supplier and processor relationships</b>	
- Do not have any long-term supply arrangements	56

<b>Farmer Age Profile</b>	< 30	30 - 39	40 - 49	50 - 59	60 - 69	70+
% <sup>14</sup>	5	20	23	29	15	3

<b>Stock Units Wintered (000)</b>	None	1-3	3-6	6-9	9-12	13+
% <sup>15</sup>	13	13	34	18	11	10

#### 4.4 Work with Farmers

An observation by UMR summarises a very important lesson learned, which has high applicability to working with farmers:

*If this approach to extension is going to be rolled out, it will be critical that the lessons learnt from inviting farmers to participate in this pilot are used to develop the most effective way to invite other farmers in the future. It appears that getting the correct balance between providing enough structure so farmers are clear what they are signing up to and allowing farmers to drive it so they do not feel like they are being railroaded into a particular course of action will be critical.*

#### 5.0 Agricultural Extension

##### 5.1 Informing Extension Pilot Project Design – Final Report – AgResearch

This work was commissioned by RMPP to provide information on when, and why, different approaches to farm-focused extension succeed, with key measures of success being uptake of the technology or practice and measurable results achieved from uptake. It involved a thorough desk review of fifty studies of extension projects in New Zealand and overseas in agriculture and other industries.

Key findings listed by AgResearch from its review were:

1. To be successful an extension approach must be designed to suit the circumstances. These are the characteristics of the problem to be solved, technologies being implemented and the type of farmers involved.
2. Nine different extension approaches can be distinguished. These approaches differ in key aspects, which need to be designed to fit the circumstances of the opportunity, including:
  - i. Sources and flows of knowledge, and
  - ii. Role of participants (farm team, project team, rural advisors and scientists) as sources of knowledge and in setting priorities for the project.
3. Key factors that need to be understood when deciding which extension approach is best suited to particular circumstances are:
  - i. Farmer awareness of the particular issue or opportunity
  - ii. The complexity of the issue

<sup>14</sup> Percentages add to 95 not 100 because some farmers did not answer this question.

<sup>15</sup> Percentages add to 99 not 100 because a few farmers answered 'unsure' in their survey response.

- iii. The desired benefits to farmers from practices to address the issue
  - iv. The compatibility of the new practices with existing practices, and
  - v. Farmer ability to implement the practice.
4. When farmer awareness of an opportunity is low, the issue is complex and a new practice is less compatible with existing practices and/or difficult to implement, it is more important to include the farm team and rural advisors in setting project priorities and as sources of knowledge in the extension project.
  5. To determine the best extension approach for the circumstances, information about the particular opportunity and practices required to realise the opportunity need to be gathered from sheep and beef farmers and rural advisors.
  6. Successful extension projects include monitoring and evaluation as a key aspect of implementation. This is necessary to:
    - i. Demonstrate the benefits of the project
    - ii. Identify where changes to the project are needed while it is ongoing, and
    - iii. Achieve uptake of practices that do not have immediately observable benefits.

## 5.2 Extension Evaluation – AERU, Lincoln University <sup>16</sup>

RMPP commissioned the AERU to provide during-the-project and post-project evaluation of the Extension Design Project (EDP). Received in September 2018, the post-project evaluation reports on the results for farmer participants and also aspects of the extension system, from project management to critical success factors for group facilitation. It also includes significant points from prior evaluations by the AERU since the EDP began in 2015.

Input from farmers, meat processing company representatives, rural professionals and Beef + Lamb New Zealand contributed to the AERU's evaluation. Key findings by the AERU were:

### Practice change

- *Practice change*: The proportion of participating farmers reporting on-farm practice change was 58 percent when the project began in 2015. This increased to and remained relatively constant at a high level of between 80 to 90 percent for the remaining three years of the project.
- *Speed of practice change*: Practice changes were implemented between 1½ and two years sooner as a result of participation in the project.
- *Areas of practice change*: Changes were made in a wide range of areas, the most frequently reported were in monitoring and recording, new forages and livestock management.
- *Motivators*: Access to independent experts and the group dynamic were the most important motivators or aspects that assisted farmers to implement change on their farms.

### Outcomes of practice change

- *Outcomes*: The proportion of farmers reporting outcomes lifted each year; overall a high proportion of farmers reported achieving valuable outcomes as a result of the EDP.
- *Outcome types*: A wide range were reported, the most frequent in 2016 were implementing a Health and Safety or a Land and Environment plan and in 2018 more meat produced or a higher lambing percentage.

### Overall satisfaction levels with the project

- *Overall satisfaction* with the project declined slightly from high/very high initially to moderate/high in the final year.
- *Higher satisfaction* arose when farmers' interest in the topic was high and the level of support

---

<sup>16</sup> Agribusiness and Economics Research Unit

for farmers were seen by them to be high.

### **Uptake strategies**

- *Focus:* Over the course of the EDP its focus altered to working with farmers via groups rather than individually.
- *Group facilitation:* The challenging aspects of this, e.g. balancing the type, interests and background of farmers participating, need to be continually acknowledged and discussed.
- *Group quality:* This, as measured by the critical success factors of group learning, was high, with the opportunity to review issues at future group discussions rated as moderate.
- *Useful activities:* Group meetings, guest speakers and farm visits were the activities reported as highly useful and also attended by the majority (over 70 percent) of farmers.
- *Information sources:* In the set up phase of the EDP, meat processor representatives and farmer consultants were highly to very highly important sources of information. In the last year, other farmers and information from independent experts, e.g. scientists, became highly important.

### **Underpinning activities and supporting structures**

- *Training:* Usefulness of the training provided has markedly increased over the course of the EDP due to the successful delivery of facilitation training.
- *Communication:* There has been a slight decrease in satisfaction reported by both farmers and non-farmers over the course of the project, caused by farmers becoming more engaged with the work and wanting more updates on how the project was tracking.
- *Future direction:* Any updates to this need to be clearly communicated to those working within and with the project.
- *Support:* Non-farmers have remained moderately/highly satisfied over the course of the project.
- *Financial reporting:* This was the main difficulty in administering the EDP and was noted as challenging by meat processor representatives.
- *Facilitator support:* Strategies to support facilitators to manage the mid and latter stages of a group may need to be developed.

### **Barriers to making change**

- 52 percent of farmers reported in 2017 that they had faced barriers to making changes in management of their farm (63 percent in 2018). Important barriers were time, finances and weather. Additional reasons included health limitations, staff issues and regulatory restrictions.

### **Longer term outcomes**

- A positive start has been made on a national extension network for the red meat sector with a functioning, scaled up successor to the Extension Design Project, the RMPP Action Network.
- As a result of participation in the project the relationship between farmer and meat processor strengthened for over a quarter of farmers, but did not change for the remaining farmers.
- Farmers reported that relationship changes with meat processors were mainly due to each party gaining an understanding of the other's business.
- Alternative ways of involving meat processors in the RMPP Action Network at the local level could be explored.
- Positive unintended outcomes from the project included:
  - Training in facilitation provided for key people in the red meat sector, and
  - Support for farm consultant businesses to employ novice consultants.<sup>17</sup>

---

<sup>17</sup> Because of the facilitation training they had been given by RMPP and the increased opportunities for farm consultancy businesses arising from RMPP's work.

## 6.0 Financial and Other Results

### 6.1 Overview of the Farm Pilot Programme

RMPP's farm pilot programme began in June 2015 and ran for three years. It was established to develop a coordinated red meat sector extension and uptake framework, by testing three different extension frameworks, each in a pilot programme.

Pilot 1 was with RMPP's two banking partners (ANZ Bank and Rabobank) and focused on farm business accountability structures for governance and financial management. Pilots 2 and 3 were with RMPP's meat processor partners.

Pilot 2 focused on a 'one-to-one' engagement model and was intended to test an extension network's ability to support more technical changes or interventions on farm, e.g. forage crops, re-grassing and new machinery.

Pilot 3 focused on a 'one-to-some' engagement model (i.e. small groups) to improve performance and profit for farm businesses. Processors were asked to select up to fifty farmers from across their collective supplier base. A key component of the pilot was the use of farmer segmentation<sup>18</sup> to inform the establishment of collaborative farmer groups.

### 6.2 Financial Evaluation of Farms in the Pilot Programme

RMPP's Extension Design Project involved over seventy farm businesses located across New Zealand participating in a three-year trial. This report draws on information provided by BakerAg<sup>19</sup> and RMPP and focuses on its financial evaluation of the farm businesses over the trial period,<sup>20</sup> including in-depth analysis of eleven Case Study farms.

#### Key Points

1. There is considerable potential to improve the production, profitability and sustainability of pastoral red meat farm businesses in New Zealand.
2. Impact on the environment, legislative and regulatory compliance, and maintaining a 'social licence to farm' is just as important as profitability and productivity.
3. Key improvements on farm were due to several interacting factors, rather than one specific change.
4. The RMPP programme has done a good job of bringing farmers together.
5. It has given some farm businesses a 'wake-up call' on how their business is actually performing in relation to others (seen by benchmarking).
6. There is a distinct lag time between identifying, developing and adopting new technologies in this sort of programme. Some of the advantages were only just accruing when the programme finished after three years.
7. Pilot farmers showed poor understanding of the value of key performance indicators (KPIs) for

---

<sup>18</sup> See Section 4.2 of this report.

<sup>19</sup> BakerAg is an agri-business consultancy specialising in advice to the sheep and beef and dairy sectors throughout New Zealand. In the sheep and beef sector BakerAg has been providing services for over 30 years based on rigorous farm production and financial benchmarking to improve farm performance. <https://www.bakerag.co.nz/>

<sup>20</sup> The first evaluation work was undertaken in the latter part of 2015, and completed in 2016. This was the baseline evaluation comprising a face-to-face interview, a phone survey and three-year baseline financial analysis benchmarking. Year 1 evaluation was undertaken in the latter part of 2016 and completed with the financial data in mid-2017. Year 2 evaluation was undertaken in the latter part of 2017 and completed (provisional data from financial evaluation) by the end of January 2018. Year 3 evaluation was undertaken in the middle and later part of 2018 and completed, along with financially-focused case studies, in March 2019.

performance and financial success in their businesses.

8. The poor quality of financial information available within farm businesses (and sometimes from their accountants), along with a lack of appreciation of the value of benchmarking (against farming peers) was a limitation.
9. Connectors to encourage participants into groups, and the small size of the groups are key points why this extension model was a success and how it informed the Action Network model.
10. Group facilitator capability had a large bearing on the programme's success. Where facilitators were trained, and/or had an aptitude for facilitating, outcomes were more definitive.
11. There is a lack of good rural professional support in many regions of New Zealand.
12. Pilot farmers were given a detailed analysis of their business performance over time, including local benchmarking and summary recommendations.
13. Future such programmes should include more rigorous assessment of how the benefits of the programme will be assessed before programme design is finalised and the programme begun. This was not done adequately for the RMPP pilot farms and caused challenges for BakerAg in later gathering adequate and robust financial information. The lesson was learned by RMPP and factored into organising and structuring the subsequent RMPP Action Network.

### Financial Outcomes

Financial outcomes from successful on-farm practice change often take time to be seen because of the seasonal nature of pastoral farming and the time before each new generation of livestock become productive. However, even at this early stage (the third year of evaluation) four of the eleven farmer case studies showed an improvement in EBITRm<sup>21</sup> of between \$15 and \$235 per effective hectare per year. Across the other seven of the eleven case studies there was an improvement of between \$7 and \$137 using a standardised cost/benefit measure and controlling for variation in the prices obtained for farm products.

An example of the case study farms is one in the North Island of New Zealand, whose owners set out to revitalise all aspects of its operation. These included Farmax modelling; an increase in stock numbers (with significant change in cattle to sheep ratio), new stock handling systems and focus on environmental management (fencing and planting sensitive areas, setbacks against bush and wetlands and Techno grazing<sup>22</sup> to manage pugging and gain more efficient nutrient recycling).

Gross farm revenue increased by \$300 per hectare per year (+33%) and EBITRm by \$160 per hectare per year (+44%). Net farm cost/benefit was \$130 per hectare.

Another example is a case study farm in the South Island of New Zealand, whose owners sought to increase acceptance of their steers and heifers into a meat processor's programme that emphasised aspects of beef meat which are important in the consumer market. Focus on-farm was placed on improved animal genetics (prior to the RMPP pilot programme), and animal selection, feeding and management during the programme from 2015 to 2018.

Results during the three years of the programme steadily improved as lessons were learned. By the final year, animal acceptance rate into the processor's programme had increased considerably: from 41 to 78 percent for heifers and 64 to 90 percent for steers. The national average at the time for steers was 29 percent. Average steer carcass weight increased by 46 kg (+17 percent) and heifer carcass weight by 30 kg (+12 percent). The financial benefit to the farm was significant. In addition, the time taken to finish the farm's cattle lessened, indicating improved feed conversion efficiency

---

<sup>21</sup> Earnings Before Interest, Tax, Rent and wages paid to a manager (family or non-family)

<sup>22</sup> A systematised form of rotational grazing aimed at achieving increases in efficiency, sustainability and profitability

and allowing pastures to be used to feed other livestock.<sup>23</sup>

Research elsewhere (not part of the RMPP pilot programme) shows that these efficiencies probably also lessened farm emissions per kilogram of meat produced.

### Further Outcomes

In addition to on-farm results, outcomes from the Pilot Programme included:

- i. A Farm Results Booklet published in June 2018 that summarises the financial and physical results on 58 farms<sup>24</sup>
- ii. Eleven detailed Case Studies (not yet published because of anonymity constraints)
- iii. Farm visits by BakerAg, enabling discussion about farm results compared to benchmark farms and to highlight what more could be done to further improve farm performance, and
- iv. A copy of their Case Study report was provided to all farmers who participated in BakerAg's case study analysis.

### Farmer and Other Feedback

Farm extension successes can also be seen through the eyes of pilot programme farmers. See Annex 2 for examples of some typical feedback provided to RMPP.

## 7.0 The RMPP Extension Model

A key outcome of the Extension Design Project was development of a coordinated red meat sector national extension and uptake framework. This extension model forms the basis of the RMPP Action Network, an initiative to support farmers to develop the confidence to turn ideas into action on-farm.<sup>25</sup>

Important learnings from the Extension Design Project were used to inform the design and operational aspects of the RMPP Action Network. Some of these are given in Table 3 below, where learnings are exemplified by what farmers said in response to survey questions.

**Table 3: Extension Design Project learnings and farmer comments**

Learning	Farmer Comment
Do not tell farmers what to focus on, instead help them to determine their own priorities.  Ideas need to be owned by farmers if they are to be implemented.	<i>Farmers have to be left to make up their own minds because they are stubborn and independent. You can't tell them something, they have to absorb it.</i>  <i>The old style discussion groups run by the Ministry of Ag and Fish were not well constructed, they became a little bit like a competition, whereas these ones seem much more about a discussion of ideas rather than finger pointing at farmers and telling them what they are doing wrong.</i>
Over half of farmers are open to new ideas, but want to see evidence of them working.	<i>Somebody is going to do it. I will just wait and see if it works out for him.</i>
Hearing the same idea from several sources is important for ideas to take hold.	<i>Farmers talk and swap a lot of information leaning over a fence or driving past someone and talking on the road, or</i>

<sup>23</sup> For readers who may be interested, further information regarding animal selection, feeding and management on this farm is given in Annex 1.

<sup>24</sup> Printed copy available on request from RMPP or a PDF can be downloaded from here <https://www.actionnetwork.co.nz/page/your-stories/>

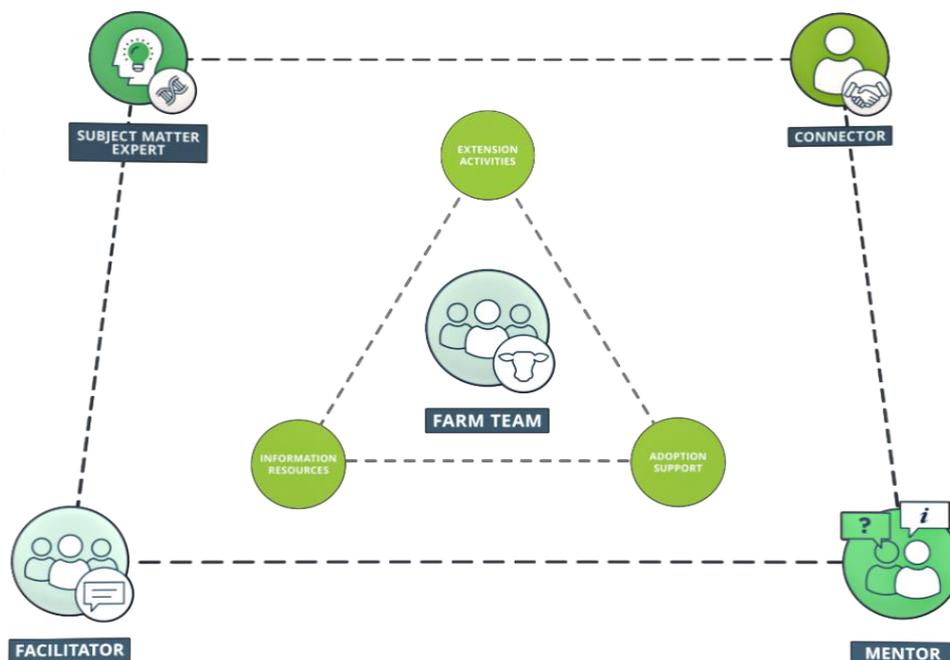
<sup>25</sup> <https://www.actionnetwork.co.nz/>

	<i>picking up your drench at the vet and talking to them. Basically just talking with people you know, like and trust.</i>
Small groups of farmers are very effective at helping each other to find and implement new practices on their farm.	<i>You can be talking with other farmers in the group and then a few days later while out on the farm the penny drops and something clicks about how you can do something differently on your farm.  Talking with other farmers in the group is good. They're all hungry to succeed in their businesses, which gives you motivation to do things in your own business.  The group has taught us to focus on next season, not just the season we are in. The cards are already dealt for the season you are in, focus on dealing a better hand for next year.</i>
Personal development and growth is critical for successful long-term on farm practice change.	<i>Gaining confidence within a group situation is really good. I know a couple of farmers in our group who really gained a lot out of it by the fact that they suddenly put themselves out there more and realised it was not a big deal, but at the start of the group they would have found that difficult to do.</i>
There are benefits from farming couples working together to improve practices on the farm.	<i>Being in a group has changed our business, it has grown and become profitable. As a couple we now listen to each other more when discussing farm issues instead of talking past each other. I have built my own confidence to make changes on the farm. The challenge now for us is to keep going down this track.</i>
Farmer group discussion and activities work much better if they are facilitated by independent facilitators who: <ul style="list-style-type: none"> <li>- Help groups to work effectively together</li> <li>- Oversee a programme of extension activities designed to promote learning and on-farm practice change</li> </ul>	<i>What we did was really good, but we just didn't do enough. We don't know what we don't know so we need to have some structure around it. Like, for example, suggesting that Farmax may be a good idea for you, what do you think?</i>
Enabling farmers to access independent experts to learn from is important.  Almost half of the farmers surveyed said the help of experts had sped up their decision to embark on changes - on average, almost three years sooner.	<i>We would never have approached Tom, we would never have thought that he would be interested in helping us.  Being able to use an agronomist, soil scientist and a few veterinarians for independent advice, has provided us with clear advice and the confidence to apply that advice.  Because it takes three to four years to see benefits from changes it can be hard to know if you're heading in the right direction. Having an independent expert come on the farm and give us confidence that if we just keep going we will get results, was great.</i>
A skilled and successful mentor can be very valuable for farmers wanting to make change on their farms.	<i>Our downfall is our book work, so we have taken on a business mentor who is a dairy farmer and is very astute. He is very good on governance and with figures. We meet with him once a month now, but should go out to once a quarter soon.  It's about practical skills combined with local knowledge. When you have the right people in the room working with farmers - and the personalities gel - then change can occur.</i>
Farmers making decisions based on data creates clarity and is more likely to lead to successful on-farm practice change.	<i>You don't have to say, "I think those lambs are going to go next week," you can say, "They are going to go and all 500 will be going," because we know the minimum weight in</i>

	<i>there is going to make the target weight.</i>
Helping farmers to find, evaluate and use new technology on their farms is valuable.	<p><i>With Farm IQ you can track your stock movement around your farm and have evidence that you have kept your stock separate from the heifer grazers. If you can prove that stock have not touched other stock that have Mycoplasma bovis you have a case for not having all your stock culled.</i></p> <p><i>You just have to look at the lack of uptake on farms with various technologies that have been out for 25 years. Technologies that, if trialled by farmers, might result in them being used. But if they only read about them or see them somewhere else, they might not adopt them. I think these little core groups will facilitate quicker uptake of technology.</i></p>
Supporting change increases farmers' confidence to make change.	<p><i>That is one of the things the pilot has done; it has given us, perhaps not the ability, but the confidence to try some new types of feed.</i></p> <p><i>We may have ended up scanning anyway, but it gave us a lot more confidence to do stuff and it was getting those specialists in, it gave you confidence to do things.</i></p> <p><i>I was probably one of the youngest managers, so for me having those older guys to talk to was really good. That is what made it (the group) for me.</i></p>
Be aware of the potential for misunderstandings or criticism from farmers and ready to meet them with responses that are helpful.	<p><i>I do wonder if RMPP will be targeting the kinds of farmers that go on these types of things anyway, rather than getting those who generally avoid discussion groups.</i></p> <p><i>I think a fair few will fail because they (RMPP) have just gone out and said, "Right, we need eight farmers who want to do this topic." That farmers will say, "OK, I'll come along for a bit of a yarn."</i></p>
Make the measures taken by RMPP to ensure accountability checks and balances clear to group participants and other stakeholders.	<p><i>They (RMPP) need to have complete accountability on how the money is being spent and transparency around where the money goes.</i></p> <p><i>There appeared to be a pool of money and professionals seemed to be getting a big chunk of it.</i></p>
As RMPP's programme ends, find ways for all farmers and stakeholders to learn about successful on-farm practices that were developed within groups.	<p><i>I think if money is being put in, then at the end of these groups surely some summary of results should be made public? If we found out these techniques are going to help to reduce nitrates and decrease use of drenches or I don't know what else, it is not going to make much difference if these findings are kept within the group.</i></p>

An outline of the RMPP extension model developed from the Extension Design Project is provided in Figure 2 below. It is based on groups of seven to nine farmers, because of the evidence demonstrating the impact that groups have on supporting practice change on-farm and that the ideal number of farmers in a group to maximise its effectiveness is seven to nine.

Figure 2: Extension Design Model



At the centre of the diagram is the farm business, made up of the farm team. A farm team is important to success by involving more than one decision maker from a farm business. Around the farm business are three components/roles (shown as a triangle in Figure 2) that help to implement extension and make effective extension programmes. These are:

- i. Extension activities
- ii. Extension resources (information)
- iii. Support for adoption/practice change

Each of these is outlined below:

#### *Extension activities*

Extension activities for learning are a critical element for the extension system. These are activities undertaken to provide opportunities for farm businesses to learn about a subject.

#### *Extension resources*

Well-developed information resources are critical. These information resources can be physical or digital and are a means of providing information on various subjects.

#### *Support for adoption/practice change*

Adoption support is a means of providing follow-up from extension activities and information resources to help practice change to occur on-farm. Adoption support can take the form of mentoring, webinars, one-to-one consulting, accountability through a group of farming peers, or coaching.

Four roles were identified as being critical for the extension system framework. These are shown as a square outside the triangle in Figure 2.

#### *Connector*

This is the person/role that brings individual farmers together into groups through identifying

problems or opportunities in common. They may also help identify the most appropriate subject matter expert for a group or individual to help with this. Ideally, the connector works with a facilitator to develop a programme for a group and can be another support for farmers involved.

#### *Facilitator*

This is the person/role that is important for helping groups to work effectively together and to oversee a programme of extension activities designed for learning and practice change. Facilitators may also help identify the topics to focus on (both with the group and individual).

#### *Experts*

These people have expertise in specific areas (e.g. feed, nutrition, animal health, agronomy etc.). They are invited by groups to provide information and resources at extension activities.

#### *Mentors*

Mentors have a particular role in adoption support to help build farmer confidence when making changes on-farm. Successful mentors in the farm pilot programme were experienced farmers who could work alongside a farmer to ask questions, answer questions and point out the impacts of gradual changes on-farm.

### **8.0 Key Lessons Learned from RMPP's Extension and Adoption Work**

Lessons learned from the Extension Design Project have been discussed throughout this report. They are often inter-related and repay careful thought and understanding. There is no simple 'recipe' for agricultural extension and adoption. However, some key lessons distilled from RMPP's work are given below in bullet-point format. The order of the lessons does not indicate relative importance and no single or few lessons are sufficient. They are all important for a well-designed extension and adoption system which will be meaningful and helpful to farmers.

Extension programmes need to be carefully designed:

- The extension approach must be designed to suit the circumstances, i.e. the characteristics of the problem to be solved, technologies being implemented, and the type of farmers involved.
- Structure is important, as farmers need to understand what is involved to be part of an extension programme.
- Allow farmers to determine their own priorities. Ideas must be owned by farmers for them to be successfully implemented.
- Successful extension projects must include monitoring and evaluation as a key aspect of implementation, as there is a distinct lag time between identifying, developing and adopting new technologies on farms and when production and financial benefits are seen.
- Extension programmes should include rigorous assessment of how the benefits of the programme will be assessed before programme design is finalised and the programme begun.

Small groups are an effective part of an extension programme:

- Connectors can encourage farmers into an appropriate small group.
- Include the farm team in the small group.
- It is advantageous if a farming couple work together to improve practices on their farm.
- A good facilitator for a small group has considerable impact. Facilitator training and support is critical.

- A small group allows introduction and access to independent experts and experience from peers that can assist farmers to implement change on their farms. On-farm change happens when farmers can talk about ideas with people they trust.

Farmers are open to change:

- Over half of red meat farmers are open to new ideas, but want to see evidence of them working.
- Hearing the same idea from several sources is important for ideas to take hold.
- A skilled and successful mentor can be very valuable for farmers wanting to make change on their farms (note that top farmers vary in their willingness to help other farmers improve their performance).<sup>26</sup>
- Helping farmers to make decisions based on reliable data creates clarity and is more likely to lead to successful on-farm practice change.
- Personal development and growth is critical for successful long-term practice change.
- Time, finances, weather, health limitations, staff issues and regulatory restrictions can be barriers to farm practice change – understand what is happening in these areas and how this effects the extension programme.

## 9.0 Looking Forward

This report has focused on four years of work undertaken to develop an effective national extension system within RMPP from November 2013. Knowledge and experience gained led to establishment of the RMPP Action Network in November 2017. Although the formal research, trials and testing outlined in this report were embedded in RMPP's Action Network there is on-going monitoring and evaluation to ensure that the Action Network continues to be improved.

A closing report on the RMPP Action Network is intended as part of RMPP's end of programme assessment.

---

<sup>26</sup> As explained in Section 4.1

## Annex 1

### Agricultural aspects of a case study farm in the South Island of New Zealand

Information below is given for readers who may be interested in agricultural aspects of a case study farm in the South Island of New Zealand whose owners sought to increase acceptance of their steers and heifers into a meat processor's programme which emphasised aspects of beef meat that are important in the consumer market.

Focus on-farm was placed on improved animal genetics (prior to the RMPP pilot programme), and animal selection, feeding and management during the programme from 2015 to 2018.

#### *Animal Selection*

Two important factors were found to be:

- Selecting animal types known to have higher levels of intramuscular fat,<sup>27</sup> and
- Removing animals that showed a poor temperament in mobs.

#### *Animal Feeding*

Important factors found to contribute to successful feeding management were:

- Using fodder beet as a finishing diet in winter
- Maintaining good supply of high quality feed to animals<sup>28</sup>
- Avoiding new diets in the last two weeks of finishing, and
- Ensuring that feeds provided in the last two weeks were high in their quantity and quality. This had two benefits:
  - Improved animal feed conversion efficiency, and
  - Higher glycogen levels, which help animals in bad weather.<sup>29</sup>

#### *Animal Management*

Key management measures that proved successful were focused on minimising stress on animals during their final two weeks on the farm by:

- Not introducing new animals into a mob after it was formed for finishing
- Positioning animals in sheltered paddocks close to the cattle yards
- Not walking animals long distances for paddock changes and loading
- Mustering quietly on foot with minimal use of dogs
- Not using sticks or cattle prods in the yards or when loading
- Not loading cattle in the dark, as spot lights stress animals, and
- Adjusting the incline of loading ramps to be under 25 percent gradient because climbing steeper ramps gives rise to lower meat pH and adverse meat colour.

---

<sup>27</sup> As this is known to enhance perceived tenderness when cooked meat is eaten.

<sup>28</sup> Because intramuscular fat (which improves meat eating quality) is the last fat to be laid down while animals grow, but the first to be metabolised by beef animals if feed is short.

<sup>29</sup> Glycogen is stored in the liver. When an animal needs more energy, glycogen is converted to glucose, which the animal can use as a source of energy.

## Annex 2

### Examples of farmer feedback on RMPP's pilot farm extension work

Ben is confident participation has increased profitability of his farming operation. He has just completed his farm budgets up to 2020. This is the first budget he has done after all the changes from the pilot have been fully implemented. Ben said before the pilot the farm earned roughly \$650,000 gross income, now they are sitting at around \$1.1million. But they are also carrying 1,000 fewer stock units over the summer, which leaves them less exposed to an unfavourable dry season. The increases have come from changes in all aspects of Ben's farm; deer, sheep and beef, through smarter stocking policies and better growth rates. *(Meat processor small group, North Island).*

Robust trial results showed that rotational grazing systems on this farm resulted in \$500 per hectare more in net income compared to set stocking. This result reinforced the need for more subdivision. *"We may have just been muddling along doing 20 hectares a year otherwise. But we went to the bank and said "Look, this is what we need to do and why". The data gave us some guts to that proposal. The bank said, "That looks good, we'll do that." Without RMPP we wouldn't have been able to do that." (Northland beef cattle farmer).*

*"We have achieved an increase of 20 percent in the scanning rate of our two-tooths. We have also attained 60 percent conception rate for our yearling heifers with one round of AI. We had been unable to achieve either of these objectives pre-pilot." (Hawkes Bay sheep and beef farmer).*

*"Using a farm consultant has changed our opinion of farm consultants. Previously sceptical, the family has built up a relationship of trust with our consultant and implemented most of his suggestions on-farm." Preferentially feeding the ewes has produced an extra 1,500 lambs, earning the farm between \$100,000 - \$150,000 extra profit. (Canterbury sheep farmer).*

*"We are currently changing the genetics of our breeding ewes. After one year we are seeing a healthy improvement in lamb kgs weaned. We have increased business knowledge. We are keeping a close eye on cashflow and are making comparisons between budget and actual, helping to identify lean periods earlier." (Otago sheep and beef farmer).*

*"Changing sheep breed and policy and associated gains in performance have added \$60,000 to our bottom line." Being part of the RMPP programme has been a positive experience. "At this stage it's been very beneficial. It has opened my mind to a lot of different things and there is a lot more to come out of it yet." (Otago sheep and beef farmer).*

*"Via the pilot we have been able to draw on a wider pool of expertise, as opposed to previously gaining most of our advice from sales representatives. Being able to use an agronomist, soil scientist and a few veterinarians for independent advice, has provided us with clear advice and the confidence to apply that advice." (Southland sheep and beef farmer).*

### Annex 3

#### List of documents used in report preparation

Fifteen reports, listed chronologically below, have been used to prepare this Extension Design Project Final Report.

	<i>Report Name</i>	<i>Entity</i>	<i>Focus</i>	<i>Date</i>
1	<a href="#">Informing Extension Pilot Project Design – Final Report</a>	AgResearch	A review of 50 studies of extension projects (New Zealand and overseas agriculture and other sectors) to understand when and why each of the extension projects succeeded (or not).	Oct 2014
2	<a href="#">Top Farmer Qualitative Final Report</a>	UMR Research	To gain an in-depth understanding of top farmers' experiences and perceptions to learn what drives them and their practices to succeed, including comparison with mid-tier farmers.	Nov 2014
3	<a href="#">Sheep and Beef Farmer Segmentation Final Report</a>	UMR Research	A benchmark study using qualitative research with farmer focus groups and rural professionals to (i) determine the range and types of questions to use in a segmentation quantitative survey to understand and categorise red meat farmers, and (ii) inform the development of pilot programmes to test different extension approaches.	Dec 2014
4	<a href="#">High Performance Farmer Study</a>	UMR Research	Presentation to the Red Meat Sector Conference, 2015.	July 2015
5	<a href="#">Benchmark Report: Business of farming workshop</a>	UMR Research	'Business of Farming' workshops run for farmers by ANZ Bank and Rabobank.	Nov 2015
6	<a href="#">RMPP Research Summary Overview</a>	UMR Research	Research objectives for and key learnings from all of UMR's research for RMPP.	Dec 2015
7	<a href="#">Extension Pilot Overview Report</a>	UMR Research	Understand what extension model has the greatest impact on assisting different farmers to adopt and apply new farming practices. This report provided benchmark data at the start of the Extension Design Project.	June 2016
8	<a href="#">Extension Design Project Year 1 Summary &amp; Results</a>	RMPP	Learnings from the first year of RMPP's extension design project to determine the most effective extension approaches.	Nov 2016
9	<a href="#">The Secrets of Top-Performing Red Meat Farmers</a>	ANZ Bank	On-farm performance and what sets the top farmers apart from the rest. Amplifies UMR and RMPP's work by analysing B+LNZ and ANZ Bank benchmarking data to draw out which areas of the measurable aspects of a farm are important determinants of farm profit and returns.	Sept 2017
10	<a href="#">Extension Evaluation</a>	AERU (Lincoln)	Evaluation of different levels of the Extension Design Project from an extension perspective, highlighting the strengths and challenges.	Sept 2018
11	<a href="#">Extension Pilot Evaluation</a>	UMR Research	Track farmer progress over a series of four face to face interviews between 2015-2018.	Dec 2018

12	<a href="#">Farm Results Booklet</a>	BakerAg/RMPP	Highlights a two-year range of successes and results from the 75 farmers involved in the Extension Design Project: farm objectives, achievements and benefits of being involved.	Feb 2018
13	Case Studies	BakerAg/RMPP	Detailed case studies of eleven farm businesses in the Extension Design Project. The studies have not been published as they contain confidential information.	2018
14	A framework for a red meat sector extension system in New Zealand	Denise Bewsell RMPP	Denise Bewsell is Specialist Extension Manager for the RMPP. This draft research paper, which is not yet published, outlines an extension framework, summarises trial results and examines the implications of using the framework.	2018
15	<a href="#">Financial Evaluation of the RMPP Pilot Programme</a>	RMPP/BakerAg	Results, major observations and learnings from a financial evaluation carried out with a 2015 baseline evaluation and then over the three year trial period 2016 – 2018.	April 2019