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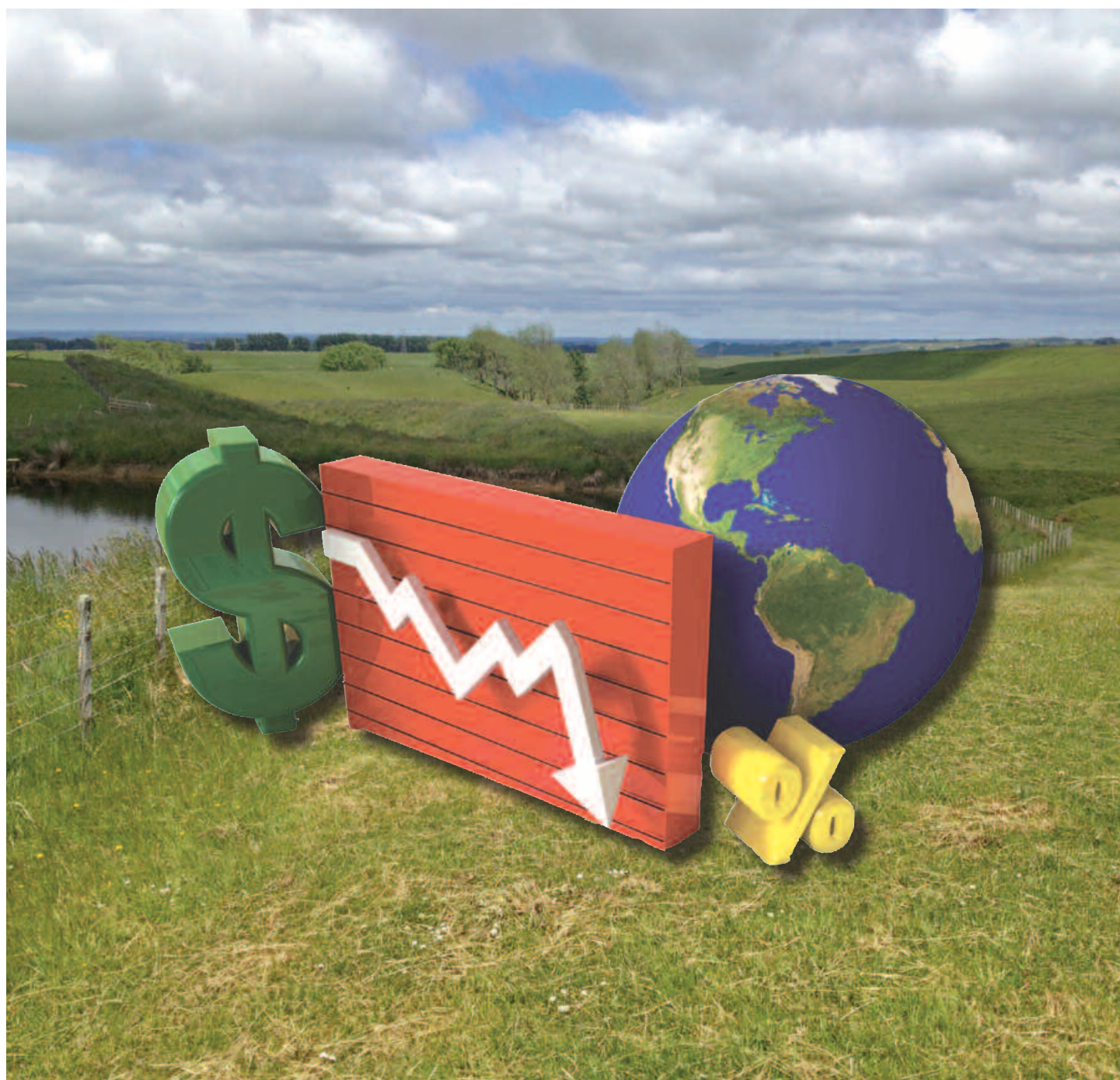
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# Primary Industry Management



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**Paul Dalziel, Mark Paine, Matthew Newman and Geoff Taylor**

## Valuing the skills of people on dairy farms

*A great deal of attention has been given in recent years to how business profitability can be increased by investing in developing skills among managers and employees. This is reflected in The Strategy for New Zealand Dairy Farming launched by DairyNZ in 2009, which adopts as its first two aims increasing farm profitability and attracting talented and skilled people to be retained by the industry.*

This article reports the main results from a study commissioned by DairyNZ to look at connections between farm profitability and the skills of farm managers and employees. The study was between DairyNZ and the Agribusiness and Economic Research Unit at Lincoln University. It was based on a face-to-face survey in 2012 of managers of owner-operated dairy farms in the Waikato and Canterbury regions. Farms had to have a minimum of 450 cows or involve at least three people on the farm.

In total, 150 farms agreed to an interview but 11 surveys were not completed. The survey recognised that farms might be jointly managed by two managers so that the number of farm managers was higher. The financial analysis could not be completed for 17 of the 139 participating farms. These farms were removed from the profitability analysis, which therefore covered 122 farms.

The managers were asked to arrange for their farm employees to be given the opportunity to fill out forms detailing their education and experience. In total, 127 of the 139 returned at least one of these forms, covering 370 employees.

### The participants

The sample was balanced between the two regions – 71 farms were from Waikato and 68 from Canterbury. The farms were usually operated by three to six people, including one or two farm managers, accounting for 83 per cent of the sample. Most farm managers were aged between 40 and 60 years. The estimated average age in the sample was 46 years.

Employees were classified as production managers, assistant managers, herd managers and farm assistants. Over half of the employees were aged below 30 years. The youthfulness of the workforce was even more pronounced among farm assistants. Nearly a fifth of the farm assistants were aged between 15 and 19 and nearly a third between 20 and 24.

The employees were asked if they were working in New Zealand on a temporary visa. One in four employees in Canterbury were on temporary visas with only one in 10 on Waikato dairy farms. One in four herd managers were on temporary work visas compared to one in 20 production managers.

### Experience, qualifications and training

Farm managers had high levels of experience. More than three-quarters of the sample had over 10 years and 51 per cent had more than 20 years in dairying. Experience on the current farm showed more variation. More than a third indicated they had



been on their current farm for less than five years, while for just under a fifth it had been more than 20 years. More than half of the farm managers reported spending more than five years on a dairy farm while at school.

Nearly two-thirds had completed post-school qualifications. The table shows a strong division among the farm managers. About 40 per cent have no more than a school-level qualification specifically related to either business or dairy production compared with a similar sized group qualified at Level 4 – national certificate or above, in both areas.

**Highest qualifications of farm managers**

None		Business qualifications				
		None	Levels 1-3	Levels 4-6	Bachelor degree	Total
Production qualifications	None	78 35.5%	4 1.8%	5 2.3%	9 4.1%	96 43.6%
	Levels 1-3	9 4.1%	3 1.4%	0 0.0%	1 0.5%	13 5.9%
	Levels 4-6	23 10.5%	2 0.9%	53 24.1%	5 2.3%	83 37.7%
	Bachelor degree	4 1.8%	1 0.5%	1 0.5%	22 10.0%	28 12.7%
	Total	114 51.8%	10 4.5%	59 26.8%	37 16.8%	220 100%

Only eight per cent of the managers reported current involvement in formal training, although a larger number had been enrolled in a formal course at some time in the previous five years. Almost all managers indicated participation in informal training during the current season. The most common option was reading industry journals, followed by farmer field days and DairyNZ discussion groups.

Farm assistants had considerably less experience. More than a third had been in dairying for less than two years and more than half had been on their current farm for less than one year. Most had been on their current farm for less than two years, suggesting a high level of turnover in the sector. In their answers about qualifications, 75 per cent of farm assistants reported having no qualifications beyond Level 3 at school, compared to 48 per cent of herd managers, 50 per cent of assistant managers and 47 per cent of production managers.

More than a quarter of the farm assistants were currently in formal training and over half had some formal training in the previous five years. The most frequently mentioned option was AgITO programmes with 70 per cent of those currently enrolled. Employees also made extensive use of informal training with 41 per cent of farm assistants and well over half among the manager roles.

The production managers were more likely to have participated in farmer field days, while the assistant managers were more likely to have read industry journals. Herd managers and the farm assistants were more heavily weighted towards DairyNZ discussion groups.

**Profitability and manager skills**

Profit was measured as operating profit per hectare allowing for differences in the average financial performance between the Waikato and Canterbury regions in the 2010/11 season. The analysis divided the sample into three groups – the low-profit quartile, the middle-profit half and the high-profit quartile.

The farms in the high quartile were predominantly described as established and in the low quartile as developing. The milking sheds of the high quartile were more likely to be described as more up-to-date and the higher profit farms tended to report a lower average milking time.

The farms in the high-quartile group were more likely to be managed by a couple than the low-quartile group. Participants were asked to indicate on an 11-point scale whether they agreed or disagreed with 34 statements about dairy farm management. The strongest difference was that the high-quartile farm managers had a much higher average for the statement ‘we benchmark our farm performance against other businesses’.

Six other questions involved a difference between the high-quartile and the middle half. All of these were statements that the high-quartile considered to be less agreeable –

- Loyalty to suppliers is important
- We prefer not to push the farm to its maximum in case something goes wrong
- We always seem to be fixing something on the farm
- We spend time with new staff until we are sure they understand their job
- We encourage staff to develop their skills and participate in training
- We find planning difficult because the future is so uncertain.

**More similarities and differences**

High-quartile managers were more likely to manage to a budget and to check actual expenditure against expected levels at least once a month. The low-quartile group of farms was less likely to have written production and financial targets, but there was little difference among the groups in their use of medium-term strategic plans.

There was no evidence that the high-quartile group of farm managers were more qualified, on average, than the low-quartile group. This was true whether the managers were analysed individually or as a team when the farm was managed by a couple. Some experience on the current farm appeared to be important – top managers tended to have five or more years of experience. A family background in dairying also appeared advantageous for farm managers.

The farm managers in the high-quartile group were less likely than the other groups to have been involved in formal training over the previous five years. They were more likely, however, to be involved in informal training. In fact, all of the top quartile reported involvement in some informal training compared to 87 per cent of the low quartile middle groups.

## Profitability and employee skills

The relationship between profitability and employees varied in terms of farm assistant and manager roles. Farm assistants on the more profitable farms were more likely to have post-school qualifications, but there was no evidence that a dairy background while at school helped them. The farm assistants with more than 10 years of experience were more common in the high-profit group. In addition it was more common for this group to have farm assistants with at least four years of experience in their role, or on their current farm, compared to lower-profit groups.

Farm assistants on the high-quartile farms compared to low-quartile farms were more likely to have enrolled in formal training over the previous five years and to be involved in informal training. There was a positive relationship between performance and participating in DairyNZ discussion groups where 38 per cent of the high-quartile group reported this type of informal training compared to 10 per cent of the low-quartile group.

Employed managers tended to be older than farm assistants in the general sample, but those on the high-profit farms tended to be younger than on the low-quartile farms. Otherwise, no pattern emerged regarding higher profitability and a background in dairy farming while at school or the qualifications of employed managers. Nor was there any evidence to indicate higher-profit farms were more likely to have their employed managers enrolled in formal or informal training.

### Employee ability and career progression

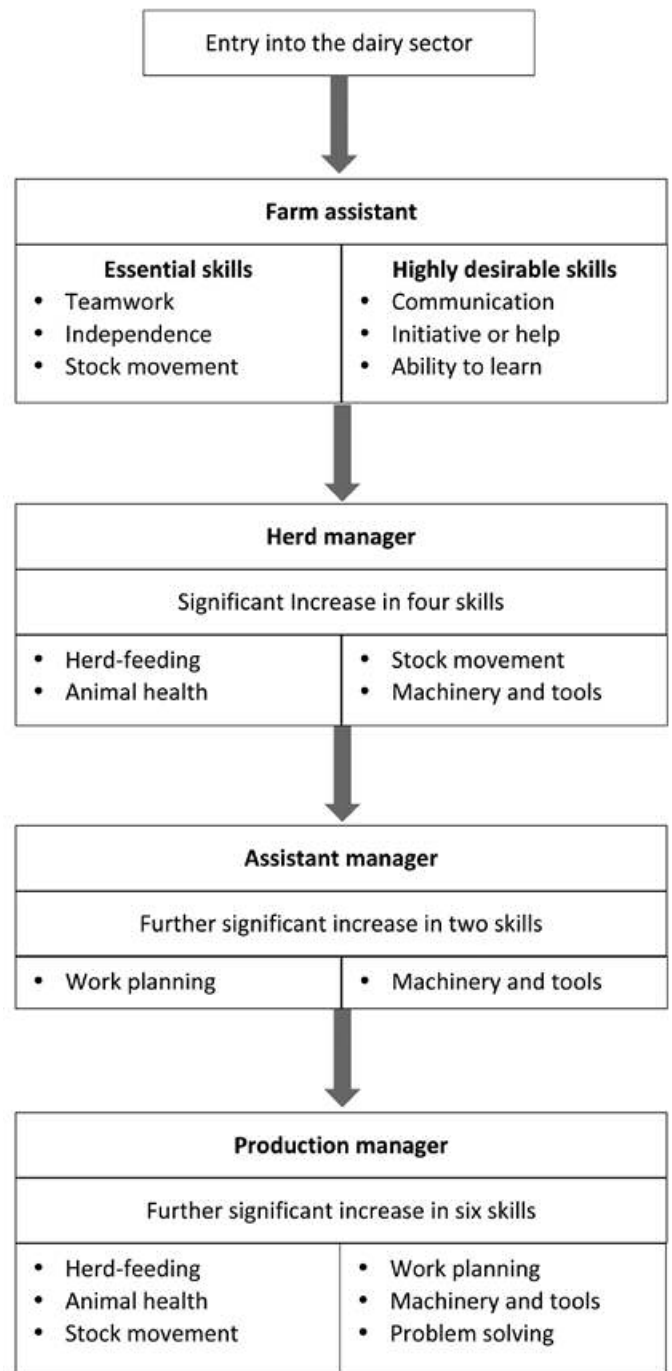
The managers who participated in the survey were asked to complete a form for each of their employees. In this they could describe each employee's ability on a five-point scale from low ability to high ability in 12 areas of ability to –

- Handle movements of stock in paddock and yard
- Recognise and deal with animal health problems
- Allocate feed to the herd effectively
- Use and service farm machinery and tools
- Communicate well with other people
- Work well with other people in the team
- Recognise and solve problems as they arise
- Show initiative and seek help when required
- Plan and organise work that must be done
- Work without close supervision independently
- Learn new skills or new tasks
- Use computer and cell phone technologies.

The first four of these areas covered core skills needed for the day-to-day operation of a successful dairy farm. The remaining eight skills were taken from the Employability Skills Framework endorsed by the National Quality Council in Australia for use in all its training packages. Farm assistants received the lowest average rating of overall skills, and the highest average rating was for the production managers.

Following an analysis of the responses to these questions, the research team constructed a model of career progression in the dairy industry based on acquiring higher skill levels

valued by employers in each of the production, assistant and herd manager positions.



### Model of skill development and career progression

Entry into the industry appears to require three essential skills including the ability to –

- Work well with other people in the team
- Work independently without close supervision
- Handle movements of stock in paddock and yard.

These skills score highly in all four occupation groups. Entry also seems to be helped by three highly desirable skills with the ability to –

- Communicate well with other people
- Show initiative and seek help when required
- Learn new skills or new tasks.

Based on this model, career progression to herd manager requires a significant increase in skill levels compared to the farm assistant position in four areas – the ability to allocate feed to the herd effectively, to recognise and deal with animal health, to handle movements of stock in paddock and yard, and to use and service farm machinery and tools.

Further career progression to assistant manager requires still higher skills involving the ability to use and service farm machinery and tools, but also a significant increase in skill levels in the ability to plan and organise work that must be done. Finally, career progression to production manager requires further development of skill levels in all the areas mentioned above, along with a significant increase in skill levels in the ability to recognise and solve problems as they arise.

### Relative skill ratings

The analysis used the survey data to construct perceived relative skill ratings. These were calculated as the percentage increase in average perceived skill ratings of the production managers, assistant managers or herd managers, relative to the average perceived skill ratings of the farm assistant.

**Perceived relative skill ratings by position in each farm profitability group**

	Increase in average rating relative to farm assistants		
	Production managers	Assistant managers	Herd managers
High profit	40%	19%	25%
Middle profit	22%	21%	13%
Low profit	24%	-3%	5%

Each of the data columns in the table provides strong evidence that perceived skills are important for profitability. The case of herd managers was the most straightforward. On low-profit farms, herd managers were rated as five per cent more skilled than farm assistants on those farms, whereas the rating was 13 per cent for the middle-profit farms and 25 per cent for the high-profit farms.

In the data for assistant managers, the relative ratings for the high-profit farms and middle-profit farms were similar at 19 and 21 per cent respectively, but the figure for the low-profit farms was minus three per cent. The implication of the negative sign is that the managers of these farms rated the skills of their assistant managers as lower than the skills of their farm assistants.

Based on this approach, it is possible to repeat the analysis for each of the 12 skill areas covered in the survey. The most striking differences include the following observations.

- Herd managers and assistant managers on the low-profit farms had perceived skill levels which were little or no better than their farm assistants communication, teamwork, problem solving, initiative, work planning, independence and ability to learn

- There was no correlation between farm profitability and skills in the ability to use computer and cell phone technologies.
- The herd, assistant and production managers on the high-profit farms had considerably higher perceived skill levels in the four core areas of stock movement, animal health, herd-feeding and machinery.

This suggests that low-profit farms, compared to high-profit, pay attention to a narrower range of skills in their employed managers. They also tend to under-use or under-invest in the depth of their employed manager core skills related to stock movement, animal health, herd-feeding and ability to use and service farm machinery and tools.

These results strongly support the connection made by the Valuing People Productivity project between the first two desired results of *The Strategy for New Zealand Dairy Farming*. These are increasing farm profitability along with attracting talented and skilled people to be retained by the industry. The study has therefore provided strong evidence supporting the hypothesis that with more highly skilled farm employees at every level, with those skills recognised and used, it leads to more profitable farm businesses.

### Conclusion

This research has discovered that farm assistants on high-profit farms were older, more experienced, more qualified and more involved in both formal and informal training than their counterparts on low-profit farms. It also found that low-profit farms paid attention to a narrower range of skills in their employed managers.

The analysis identified seven skill characteristics of farm management which appear to contribute to farm profitability –

- Use of benchmarking
- Reliable plant and equipment
- Budgeting practice
- Networking with other farms
- Self confidence in decision-making
- Background in dairying when at school
- Couples as managers.

The study also found that younger farm managers, under 40 years of age, are more likely to have Level 6 or higher qualifications in both production and business and to be involved in formal training. This difference among younger managers provides some evidence that education may accelerate skills development which is achieved from experience. The ranking of skills as the person progresses through the job roles may also provide a good framework for auditing industry training and in assisting employers to develop the relevant skills in their staff.

*Professor Paul Dalziel is based at the Agribusiness and Economic Research Unit (AERU) at Lincoln University. Dr Mark Paine, Matthew Newman and Geoff Taylor are at DairyNZ in Hamilton.*