

Managerial Competencies in Primary Production

The View of Consultants And Other Professionals

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MANAGERIAL COMPETENCIES IN PRIMARY PRODUCTION THE VIEW OF CONSULTANTS AND OTHER PROFESSIONALS

SUMMARY

- 1) Primary production is based on the use of three major resources -land, labour and capital. But the efficiency of the production depends on a fourth critical resource -the skill level of the person making decisions on how the resources should be used (managerial skill).
- 2) Survey records show there is a very wide range of levels of profitability achieved, presumably due to a wide range in managerial skill levels. Over 1999-2000 return on capital for sheep and cattle farms averaged 2.6% but with a range of -5% to over +9%.
- 3) These observations lead to the question of whether the general level of managerial skills can be improved through training programmes. To institute such programmes it is necessary to know the important competences (skills) that should be targeted.
- 4) To obtain the views of consultants and other professionals on important managerial competencies a survey of all members of the NZ Institute of Primary Industry Management was conducted. The mail survey of 708 members obtained 339 useable replies.
- 5) Respondents were asked to rate the importance of a wide range of competencies grouped into classes termed 'Managerial Attributes', 'Entrepreneurial Skills', and 'Personal Attributes'. In addition, respondents were asked to give details of their interests, age, education, views on farmer computer use and preferable training mechanisms. They were also asked to respond to a group of 25 questions designed to classify their individual management style.
- 6) An important finding was there was little difference in the respondents' views on important competencies with variations in age, education, farm type interest, style and self-assessed intelligence.
- 7) The four most important 'Managerial Attributes' were:
 - Ability to identify the key factors in a problem.
 - Effective communication (with employees, contractors ...).
 - Being up-to-date with the current condition of the property (bank balance, animal condition, crop growth, soil moisture ...).
 - Assessing job priorities.
- 8) The four most important 'Entrepreneurial Skills' were:
 - Understanding deadlines and being able to 'act in time'.
 - An ability and determination to look/ask/seek out information thought to be necessary for making decisions.
 - Ability in learning new skills.
 - Understanding sources of risk and what can be done to reduce its impact.
- 9) The four most important 'Personal Attributes' were:
 - Early observations of important indicators around the farm (lambs are scouring, wheat is infected ...).
 - Ability to learn from experience, mistakes and failures.
 - Developing a 'good moral character; involving openness, integrity, reliability, and trustworthiness.
 - Having the confidence to draw conclusions and act quickly and decisively.

- 10) When the full list of 45 competencies (managerial attributes, entrepreneurial skills and personal attributes) were combined and analysed for correlations it was found that the following groupings formed an important 'kit bag' of attributes:
- Understanding deadlines, acting on time and having anticipatory skills.
 - Obtaining relevant information and recognising problems and opportunities.
 - Understanding risk and what to do about it.
 - Identifying key factors.
 - Understanding how to choose between alternatives and ensuring ALL are considered.
 - Effective communication and good negotiation skills.
 - Ability to learn new skills and learn from experience.
 - Knowing the current state of the property.
 - Ability to develop long and short term plans, an ability to picture the consequences of decisions and to assess job priorities, and a belief that the farm is under the manager's control.
- 11) It would be desirable to develop interactive computer based training packages to assist managers in improving these skills or competencies.
- 12) The respondents believed farmers would prefer tutor supported locally based competency training programme. However, this would be a very costly exercise so computer based packages would be more practical (and the second preference).
- 13) A similar survey of over 700 farmers is currently being analysed to see whether farmers have the same views as the NZIPIM respondents. The two surveys should give a clear indication of the competencies the industry believes are important.
- 14) In analysing the responses of 25 questions on managerial style it was clear five basic factors could be used to categorise style. These were called 'anxious responsibility', 'careful logician', 'consultative', 'obsessive professionalism' and 'lively professionalism':
- Everyone will exhibit a degree of each of these characteristics. These characteristics might influence a person's managerial ability and the best competency training methods.
- 15) As farmers' objectives may impact on appropriate competence and training packages, the respondents were asked to rank a range of statements. The top four were:
- Planning for the maximum possible sustainable cash return.
 - Producing products and using farming systems that the farmer really enjoys being involved with.
 - Planning for the maximum possible average annual increase in the net value of total assets.
 - Selecting farming systems that minimise risk.
- 16) Following the results from the farmers' survey the next step in the work will involve deciding on the competencies to target in training programmes. This stage will need farmer involvement. The development of the training programmes and their testing for effectiveness will then follow.

MANAGERIAL COMPETENCIES IN PRIMARY PRODUCTION

THE VIEW OF CONSULTANTS AND OTHER PROFESSIONALS

1. INTRODUCTION

Primary production is based on three major resources – land, labour and capital. But without a fourth, managerial input, production is haphazard. Efficiency, both in a physical and economic sense depends totally on the skill of the manager in combining the resources in an appropriate and effective way. In reality, the farmers and horticulturalist of New Zealand exhibit a wide range of managerial skills if the wide variation in profitability that is exhibited is a yardstick. For example, over the 1999-2000 season approximately 2 % of farms earned a negative 5% or less return on the capital, while a similar percent earned a positive 9% or greater – a range of over 14 % (MWES of NZ, 2001). While some farmers clearly have objectives other than simply profit maximisation, it is likely many would prefer to have greater profitability provided it does not involve a major increase in the time input. Improved managerial skill can, in theory, provide this as if the less competent managers can improve their decision skills to those of the top farmers. Profitability, according to the quoted figures, could increase markedly. The mean return over 1999-2000 was 2.6% with the bulk of the farmers earning between -1% and 6%. Thus leaving room for considerable improvement.

It might be argued that good managers rely on their genetic makeup to provide their expertise. It is not totally clear what the extent of the truth is – research is needed on this factor. However, personality is thought to be around 35% genetic (Matthews and Deary, 1998) with the remainder depending on environmental influences. There is no reason why managerial skill should not exhibit similar influences. Furthermore, there is good evidence to suggest skill and personality can be altered through appropriate training (for a review see Nuthall, 2001). Thus, for the less skilled managers to improve appropriate training programmes are necessary. Currently these do not exist so the objective must be to develop packages that are practical and suited to working managers.

The first step in this procedure is to determine the required skills. To find out industry views on the important skills two surveys were conducted – one of all members of the New Zealand Institute of Primary Industry Management (NZIPIM), and another of a large sample of New Zealand farmers and horticulturists. This report presents data from the NZIPIM members who make up the bulk of all consultants and advisers in the country as well as most other practising professionals such as rural bankers and academics.

It might be argued that the required managerial skills, or competencies as they are commonly known as, should already be understood. This is true to a certain extent, but if packages are to be developed, it is crucial that they be developed for the competencies the farmers and their advisers believe are crucial. In the end, it is the farmers who will decide whether to use the training so it is their ‘problems’ that must be addressed.

There have been a few non New Zealand (mainly Australian) studies on primary production competencies (Salmon, 1980, Lees, 1991), but rather more in industry in general, and a considerable number on what constitutes an expert. An amalgam of all these studies suggest a good manager should be able to (i) identify problems and opportunities, (ii) have good observational and information seeking skills, (iii) an ability to sort the relevant from the irrelevant, (iv) be able to simplify complex problems, (v) be able to handle adversity, (vi)

have an ability to visualise the consequence of possible activities, (vii) be able to anticipate outcomes and act in good time, as well (viii) as have all the appropriate technical knowledge and skills. In addition, (ix) understanding and coping with risk and uncertainty is a particularly important competency in primary production where weather plays such a major impact, both locally and world wide through its impact on supply and demand.

Whether all these factors, are important to New Zealand farmers and their advisers is the subject of this report. The first section contains a description of the sample and questionnaire construction process as well as listing the basic details of the respondents. The subsequent sections describe the responses to questions on what are the important managerial attributes of good managers, the entrepreneurial skills required, and the personal attributes considered important. In addition, as a consultants' managerial style might influence his/her view of skill requirements, the results from questions designed to classify styles are presented. The final sections summarise the respondents' views on whether farmers would use skill training programmes, farmers' objectives and farmers computer use. These latter areas were included in the questionnaire as the results may influence how training programmes should be presented.

2. THE QUESTIONNAIRE AND THE RESPONDENTS

Partially based on the ideas in the literature commented on above, and on simple logic, it was considered likely 'skill' areas could be divided into the desired managerial and personal attributes, and entrepreneurial skills. Thus, sets of questions seeking the importance of all the possible sub-components were devised and pre-tested on members of the NZIPIM. To assess whether views of competencies were influenced by the respondents' farm interests, age, education, and managerial style, sets of questions asking these details were also included. The questionnaire containing the full question set is given in Appendix A. Also included was a question on the respondents' view of their intelligence level – it was not possible to include an intelligence test. The questions on 'managerial style' were based on the five factor model of personality (Mathews and Deary) and included to see if 'style' influenced views on competency.

The questionnaire was posted to the total 708 members of NZIPIM in December 2000 with a reminder and another copy in February 2001 to those who did not initially reply. The number replying was 369 of which 30 were not useable for various reasons. Thus the effective response rate was 43.5%. This is greater than the norm one third for a postal survey (one third).

3. THE RESPONDENTS

Tables 1 and 2 give the farm/production type given as the major interest of the respondents, and the number of clients serviced.

Table 1
Primary Enterprise Type of Interest
Percentage of Sample

Intensive Sheep	22.8	Fruit	3.8
Extensive Sheep	10.7	Cash crop	3.1
Deer	1.4	Ornamental/flowers	0.0
Cattle	8.3	Vegetables	1.0
Dairying	38.6	Other	1.0
Other animal	0.3		

Table 2
Number of Properties Contacted Per Year
Percentage of Sample in Each Number Range

<u>Property range</u>	<u>%</u>	<u>Property range</u>	<u>%</u>
0-10	12.3	61-80	10.0
11-20	11.8	81-100	6.8
21-40	15.9	>100	20.5
41-60	22.7		

*Note that 219 respondents answered as 'practising' professionals – 120, presumably, did regard themselves in this category.

Dairying and sheep are the major interests, as would be expected. The range of client numbers is very high reflecting the different professional groups. The average number of clients was 80.96.

Tables 3 and 4 present the age and education levels of the respondents.

Table 3
Respondents Age Distribution
Percentage in Each Category

Less than 25 years	1.5	46-55 years	30.6
26-35 years	17.2	56-65 years	16.0
36-45 years	30.6	>65 years	4.2

Table 4
Respondents' Higher Formal Education
Percentage in each Category

Secondary – less than four years	0.9	Tertiary – less than 3 years	7.8
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Secondary – more than three years 0.9 Tertiary – more than 2 years 90.4

The median age was 46-55 reflecting that there is not an even distribution of age groups. This may reflect the declining number of producers in the industry. The education levels are as expected, as is the gender ratio (94.4% were male).

Finally, 94.7% of the respondents were happy to self classify their intelligence level. There were 11.2 % in the ‘highly intelligent’ group, by far the biggest majority, 72.3 in the ‘average intelligence’ grouping. Only 2.1 regarded themselves as ‘below average’ or ‘other’. These self categorisation levels might have been expected.

4. MANAGERIAL ATTRIBUTES

Respondents were asked to rate the importance of a range of attributes on a one (not at all important) to seven (very important) scale. Table 5 gives the mean scores.

Table 5
Importance of Managerial Attributes
Mean Scores on a 1-7 Scale (not ... to ... very important)

1.	Ability to identify the key factors in a problem and discard the irrelevant.	6.29
2	Making requirements clearly understood (effective communication).	6.28
3	Being up-to-date with the current condition of the property in its totality (bank balances, animal condition, crop growth, soil moisture, feed levels, machinery repair ...).	6.07
4	Assessing job priorities.	6.00
5	Having a clear understanding of the family’s objectives, values and goals, thus making assessing the value of alternative actions easy.	5.79
6	Developing appropriate and detailed plans for both short and longer term horizons.	5.71
7	Picturing (understanding) the consequences of a decision over the many (or few) months/years it might impact over (e.g., planting an area in forestry, subdividing a paddock).	5.71
8	Being able to efficiently organise and carry out quite complex operations (e.g., a new packing shed operational on time ...).	5.52
9	Developing and maintaining a support network log colleagues and professionals.	5.44
10	Skill at keeping, interpreting and using recorded data about the property and associated factors (e.g., market trends).	5.42
11	Understanding the basis on which to choose between alternatives (e.g., knowing how to cost unpriced labour, knowing how to do gross margins, understanding diversification principles).	5.32
12	Quickly analysing and sorting out situations that have never been faced before.	5.26
13	The ability to predict product prices into the foreseeable future, or at least understanding the factors that determine the prices, and understand market requirements.	4.96
14	Understanding the local political scene as it might impact on rules affecting what can be done.	3.40
15	Being able to predict local weather better than the official forecaster.	3.07

An analysis of variance showed the differences between the means was highly significant

(F = 236.45).

The four most important attributes, were introspection, observation and communication – that is, thinking and deciding on what is important (sorting key factors and job priorities), carefully noting the current state of affairs (which is clearly crucial for correct decision making), and making sure people involved know the requirements.

However, the range of scores is not great, other than for the weather and political attributes, so many factors are considered important. To help summarise these a factor analysis was conducted. This looks at the correlations between all the attributes to see if there are some underlying, but unobserved (in that it was not known at the time what questions to ask so a ranking score clearly doesn't exist) factors that can summarise the ideas expressed by the respondents.

Using the questionnaire (Appendix A) ordered list of managerial attributes. Table 6 gives the correlations.

Table 6
Correlations between the Managerial Attribute Question List Answers
(Ordered as in the Questionnaire)

2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00														
2	.38	1.00													
3	.28	.27	1.00												
4	.00	.21	.00	1.00											
5	.06	.16	.21	.41	1.00										
6	.12	.18	.26	.17	.30	1.00									
7	.20	.31	.17	.17	.23	.15	1.00								
8	.20	.20	.40	-.03	.19	.19	.20	1.00							
9	.32	.30	.33	.00	.16	.21	.23	.39	1.00						
10	.35	.26	.28	-.04	.18	.06	.21	.38	.45	1.00					
11	.24	.12	.26	-.05	.13	.21	.21	.45	.41	.46	1.00				
12	.30	.30	.34	-.03	.20	.20	.31	.40	.43	.44	.42	1.00			
13	.23	.23	.31	.05	.22	.22	.32	.35	.37	.44	.42	.48	1.00		
14	.11	.20	.20	.12	.28	.21	.29	.19	.18	.26	.25	.27	.26	1.00	
15	.26	.15	.19	.00	.04	.16	.23	.25	.40	.25	.35	.27	.25	.20	1.00

The correlation coefficients are expressed as fractions – thus a figure of 1.0 reflects a perfect correlation, 0.5 a half partial correlation, and 0 complete independence. (When one variable increases, the other does not change). Negative values mean the variables move in opposite directions – a correlation coefficient of -1 means the same degree of change, but in opposite directions. For example, attributes 12 and 13 have a correlation of .48 – that is, there is a 48% degree of “togetherness”. People who think 12 is important will also rate 13 relatively highly, but not exactly with the same degree of importance (this would be a correlation of 1.0).

Table 7 presents the results of the factor analysis¹.

Table 7
Factor Analysis for the Managerial Attribute Variables.
 (Refer to the Appendix A questionnaire list for the attribute numbering)

Attribute Number	Factor Number			
	1	2	3	4
14	.78			
10	.55	.33		
11	.55	.40		
12	.50	.41		
13	.50	.37		
7	.50		.33	
15	.42			
3		.77		
8	.32	.62		
6		.48		.33
9	.38	.43	.36	
2			.78	
1			.53	
4				.89
5		.38		.72

These four factors explain 53% of the variance and are statistically significant. Factor one explains most of the variance at 29.5%, with the others explaining 10.8%, 6.7% and 6.3% respectively.

What do the factors mean? Factor one is made up of 78% of attribute 14 (ability to understand and predict product prices), 55% of attribute 10 (understanding how to choose between alternatives), 55% of attribute 11 (knowing the current state of the property), and 50% each of attributes 12, 13 and 7 (understanding impact of decisions, maintaining a good record based information system, and good organisational ability). While other attributes contribute to this factor, their significance is rather less. Effectively, factor one is a kitbag of managerial attributes that the respondents consider as making up an important basic set of skills in managerial success. They go hand in hand.

Factor 2 is also a kitbag, but is less complex primarily being made up of 77% attribute 3 (understanding the units' objectives) and attribute 8 (developing short and long term plans). It is easy to see why these two attributes constitute this factor – planning goes with objectives. Factor 3 is mainly attributes 1 and 2 (identifying key factors and assessing new situations – clearly they go together), and factor 4 consists of attributes 4 and 5 (local weather and political factors). These latter two relate to the local scene and, in the eyes of the respondents, are correlated (not literally!), but, from the rating scores, are not important. If

¹ Throughout this report the factor analysis data reported is based on a principal component analysis using Varimax Rotation with Kaiser Normalisation (as produced by SPSS). Furthermore only the components with a value greater than 0.3 are reported.

the mean rating scores of the attributes are averaged, each factor has the following score: 5.66, 5.46, 5.84 and 3.97. Thus, the first three factors are seen as similarly important, but not factor 4.

For the listed managerial attributes the factor analysis has not been particularly helpful in the sense of condensing down the attributes to components that can be grouped in a training sense. However, it is clear which factors were reconsidered important.

It might be argued that the respondents believe the required attributes vary with the type of primary production. To assess this the sample was divided into three groups – people primarily interested in animal farming other than dairy (mainly sheep), those interested in dairying, and those involved in cropping both broad acre and horticulture. Table 8 contains the average rating of each of the attributes as listed in the questionnaire (Appendix A).

Table 8
Mean Score on Managerial Attributes for Groups Based on
the Main Production Interests

Attribute (See Appendix A)	Production Interest			Probability of Significant Similarity
	Sheep, Cattle, other animal	Dairy	Cropping	
No of respondents:	126	112	52	
1	6.20	6.28	6.35	0.59
2	5.06	5.35	5.38	0.11
3	5.75	5.74	5.86	0.82
4	3.16	2.80	3.42	0.04
5	3.51	3.32	3.65	0.27
6	5.66	5.23	5.36	0.01
7	5.56	5.47	5.61	0.71
8	5.57	5.72	5.81	0.07
9	6.18	6.31	6.35	0.44
10	5.29	5.20	5.48	0.29
11	6.11	6.01	6.00	0.71
12	5.71	5.63	5.92	0.22
13	5.41	5.36	5.44	0.85
14	5.09	4.79	5.17	0.08
15	6.00	5.92	5.96	0.82

It is clear that the ratings are virtually identical in most cases. The last column, based on the F test, indicates the probability that the data comes from an identical population. Using conventional statistical criteria, it is only in the case of attribute 6 (support networks), and possibly attributes 4 and 8 (local weather and planning), that the respondent groups have different opinions. In general, it can be concluded that the ranking of the managerial attributes is the same for all production types.

Similarly it is possible that respondents of different age, of different self assessed intelligence, and different managerial style might impact on the attribute ratings. Statistical tests showed that this was not in fact the case. The respondents were divided into 6 age groups (<25 years, 26-35 years, 36-45 years, 46-55 years 56-65 years, and >65 years) and the attribute scores averaged for each group.

Similarly for the five intelligence ratings. For managerial style (set D in the questionnaire) the respondents were grouped according to style similarities using cluster analysis. The factor scores for each group were then contrasted and tested using the F statistic. The probability range was very similar to those given in Table 8. Effectively respondents' managerial style did not influence their view of the attributes.

In case the list of attributes provided did not cover the main possibilities, respondents were invited to add their own and rate them while many did, none could be considered basically different from those offered.

5 ENTREPRENEURIAL SKILLS

As with the managerial attributes, respondents were asked to score (1 – not at all important, 7 – very important) a range of entrepreneurial skills they considered farm managers should have to be successful. The list of questions used is in section C of the questionnaire (Appendix A). Table 9 contains the results.

Table 9

Importance of Entrepreneurial Skills Mean Scores on a 1-7 Scale (not ... to ... very important)

1	Understanding deadlines and being able to 'act in time' (e.g., spray before insect damage, fertiliser applied in good time ...).	6.38
2	An ability and determination to look/ask/seek out information thought to be necessary for making decisions.	5.99
3	Ability in learning new skills.	5.71
4	Understanding sources of risk and what can be done to reduce its impact.	5.70
5	A belief in being able to control a lot of what happens around the property in contrast to a belief that not much is really controllable due to the weather, markets, government action.	5.69
6	An intuition that gives early warning signs when something is not right, or, in contrast, when something positive needs exploiting.	5.65
7	An ability to look ahead and anticipate likely problems, needs, and opportunities.	5.61
8	When faced with opportunities, ensuring ALL alternatives are sought out, considered and evaluated.	5.35
9	The skill to negotiate the best possible deal (price, arrangement ...).	5.34
10	Being able to seek out, identify, and clarify new opportunities (production, products, marketing ...).	5.25
11	Skills in finding the very best market (price, quantity ...) for all output.	5.03
12	The skill and intuition to forecast well into the future likely opportunities in products and production systems.	4.68

When invited to add skills not listed the respondents did not provide any new concepts – those added were variations on the twelve listed.

In comparing the mean scores the F test was 55.49 indicating the difference were highly significant despite the low range of less than two points. To indicate the low variation that exists in the scores Table 10 contains the frequency distributions.

Table 10
Frequency Distribution of the Answers to the Entrepreneurial Skill Questions
(Rated 1 – not at all important, to 7 – very important).

Percentage of Respondents Giving a Score of:

Skill number	1	2	3	4	5	6	7
1	0.3	1.5	2.1	20.1	33.7	29.6	12.7
2	0.9	0.0	0.3	6.8	15.1	44.4	32.5
3	0.6	0.3	0.9	7.4	27.5	42.9	20.4
4	1.2	0.6	2.1	10.1	25.4	35.2	25.4
5	0.9	3.3	5.0	22.5	29.0	29.6	9.8
6	0.6	0.3	0.3	1.8	8.3	33.4	55.3
7	0.6	2.1	2.7	13.3	31.1	38.5	11.8
8	1.5	1.2	1.8	10.7	18.1	40.9	25.8
9	0.6	0.9	3.3	15.1	30.5	38.8	10.9
10	0.6	3.8	10.7	28.1	30.8	20.4	5.6
11	0.6	0.3	0.6	12.4	26.0	42.0	18.0
12	0.6	0.6	0.9	7.1	29.1	40.1	21.7

*See the questionnaire C list – Appendix A – for the skills.

Low scores were seldom used, but there is a variation amongst scores 4 to 7. For example, skill 6 (understanding deadlines and acting accordingly) is rated a 7 by over half the respondents, whereas only 6% rated an ability to forecast likely future products and production systems “very important”.

As with the managerial attributes, there were few statistical differences in the ratings when the respondents were grouped according to production interests, to age, to self rated intelligence, and to cluster analysis based groupings with respect to managerial style. Variations due to education and gender were not investigated due to the very small variation in these parameters.

In summarizing the skills through a factor analysis, a three factor model explains 59% of the variance. Table 11 contains the skill types’ contribution to each factor.

Table 11
Analysis of the Entrepreneurial Skills
(Refer to the Appendix A questionnaire list for the skill numbering)

Skill Number	Factor Number		
	1	2	3
8	.71		
6	.71		
3	.65		
2	.61		
4	.61		
10		.84	
11	.44	.66	
1		.55	.43
12	.50	.53	
9	.48	.51	
5			.89
7		.30	.70

Note – components less than 0.3 were not presented.

Factor one explains 41% of the variance and is clearly important. It is made up of 71% of skills 8 and 6 (control factor, and understanding deadlines), 65% of the ability to learn new skills, 61% of each of skills 2 and 4 (information seeking, and recognition of problems and opportunities), 50% of risk understanding, 48% of ensuring all alternatives are considered, and, finally, 44% of ‘looking ahead’ skills. Again, respondents rate highly a ‘kitbag’ of skills as all being associated with high achievement.

Factor two is also related to some of the factor one skills (53% of skill 12, 66% of skill 11, 51% of skill 9), but also involves 84% of skill 10 (forecasting likely product and production system opportunities) and 55% of skill (seeking out new opportunities). The two are obviously related. Factor three is dominated by skills in negotiation (70%) and marketing (89%). If the factors are to be named, factor three could be called the ‘marketing entrepreneurial skills’, factor two the ‘new opportunity’ skill, and factor one ‘intuition and control’.

If the skill component mean scores are averaged, each factor has a score of respectively 5.76, 5.42 and 5.32 indicating the relative importance of each factor.

The complexity of factor one indicates many entrepreneurial skills are considered important, as is marketing and opportunity seeking.

6. PERSONAL ATTRIBUTES

The questionnaire included 18 personal attributes that were regarded as potentially important. When asked to add attributes not covered by the list, new ones were not given – thus it would appear the presented list covered all the important attributes.

Table 12 contains the mean scores for each attribute on a scale of 1 (not at all important) to 7 (very important). An analysis of variance showed the differences in the means were highly significant (F value 150.75).

Table 12

Importance of Personal Attributes

Mean Scores on a 1 - 7 scale (not ... to ... very important)

1.	Early observation of important indicators around the farm (e.g., lambs are scouring, wheat is infected, cows losing weight, pasture growth has increased ...).	6.72
2.	Keeping a cool head and putting aside any tendency to panic when faced with stressful situations.	6.28
3.	Having the confidence to draw conclusions and act quickly and decisively.	6.10
4.	An excellent knowledge of facts, figures, procedures and methods, with respect to soils, plants, animals, machines, buildings.	5.95
5.	Being prepared to give it a go and take risks in changing production systems and/or starting new ventures.	5.91
6.	High motivation in constantly seeking better ways and implementing them; in contrast to being happy with current systems.	5.87
7.	Accepting the good and the bad and not letting it affect management and decision making .	5.79
8.	Ability to learn from experience, mistakes, and failures	5.77
9.	The determination to keep working all hours until the high priority jobs are completed.	5.75
10.	Developing a 'good moral character' involving openness, integrity, reliability, trustworthiness.	5.57
11.	Developing a strong personality so that others 'sit up, notice, respect, and act' on what is said.	5.53
12.	Understanding the inter-relationships between all the components of the farm (e.g., rainfall – soil moisture – plant growth – animal grazing ... i.e., what affects what?)	4.99
13.	Obtaining employees'/contractors' co-operation and understanding leading to harmonious and productive relationships.	4.93
14.	Tertiary education in areas related to primary production (agriculture, horticulture, biology, marketing ...).	4.84
15.	Having above average intelligence and school grades	4.48
16.	Successfully judging personality and selecting suitable employees.	4.33
17.	Successfully resolving conflicts on, and off, the property (e.g., dispute between employees)	4.27
18.	Maintaining good relationships with outside people – bankers, accountants, suppliers	4.19

Most of the scores are relatively high reflecting that the attributes listed are all relatively important. However, it is clear the ‘early observation’ skill is regarded as being particularly important, as is the attribute to learn from experience. An important question is how do you teach such characteristics? Acquiring the ability to learn from the past could well be related to genetic factors more than observational skills. Further research needs to explore the possibilities and how best to construct training programmes.

When dividing the sample into production type interests it was again found that the group means were not significantly different in most cases. The two cases where there were some disparities was in ‘understanding the relationships between farm components’, and in conflict resolution. The same situation existed for the age and self assessed intelligence subgroupings – the differences were minor. Furthermore, the ‘managerial style’ respondent clusters were not significantly different in their personal attribute views.

Table 13 contains the results of a four factor analysis of the person attributes thus showing the groupings that tend to be correlated in the eyes of the respondents.

Table 13
Factor Analysis of the Personal Attribution
(Refer to Appendix A questionnaire for a list of the Attributes).

Attribute Number	Factor Number			
	1	2	3	4
17	.74			
13	.72			
16	.71			
18	.69			
10	.61			
8	.57	.31		
12	.55			
1	.48			
2	.44			
7		.76		
5		.72		
6		.51		
4		.49		.32
3	.37			
15			.85	
14			.79	
9				.81
11				.72

*Only values greater than 0.3 are presented.

Factor one might be called ‘people dealing’ – the important constituent attributes include 17 (conflict resolution), 13 (contractor/employee harmonious relationships), 15 (judging

personalities), 18 (good relationships with bankers, suppliers ...) and 10 (good character). Clearly all these attributes go together. Some of these attributes can easily be built into training programmes. The main attributes in factor two are 7 (successfully taking responsibility), 5 (trying new things) and 6 (motivated to seek better ways) – thus this factor could be called ‘responsible experiment’. Factor three (high intelligence (15) and tertiary education (14)) could simply be called ‘bright and educated’, whereas factor four might be labelled ‘the strong and determined’ as it involves attributes 9 (finish the job) and 11 (a strong personality). Training for these characteristics might be more difficult. The average of the 1-7 scale scores of these factors are 5.95, 5.46, 4.26 and 4.58. The first two dominate. Overall, these four factors explain 56% of the variance.

7. COMBINED SKILLS AND ATTRIBUTES – FACTOR ANALYSIS

The challenge is to interpret the data and analysis to assess what the respondents regard as the key factors in managerial ability. Looking at the ratings on the 1 to 7 scale for each grouping clearly assists in this process as do the factor analysis groupings. To further assist this process all the attributes and skills were combined into a single data file to enable looking at the correlations and consequently produce a number of summary factors. The analysis was repeated for both an eleven (eigenvalues greater than one) and six factor solution (major contributions to variance explanation). The eleven factor model explained 58% of the variance whereas the six factor model explained 49%. Thus, the additional five factors only contributed an additional 11% variance explanation and were, therefore, dropped to simplify the interpretation.

Table 14 contains the attributes/skills that contribute to the 6 factors. Only coefficients of 0.5 or greater are presented as their associated attribute/skills are the significant ones. In the table the attribute/skill codes refer to the section (letter) and question number in the questionnaire (Appendix A).

Table 14

Factor Analysis of All Attributes and Skills Combined
 (Refer to the appendix A questionnaire for a list of the Attributes/skills) *

Skill/Attribute	Factor Number					
	1	2	3	4	5	6
C6	.66 (6.38)					
C2	.65 (5.99)					
C12	.63 (5.70)					
B10	.60 (5.32)					
B9	.60 (6.28)					
C8	.59 (5.69)					
C4	.59 (5.65)					
C9	.58 (5.34)					
C3	.57 (5.71)					
C11	.56 (5.61)					
B8	.55 (5.71)					
B11	.55 (6.07)					
C7	.52 (5.35)					
B15	.52 (6.00)					
B1	.51 (6.29)					
B12	.51 (5.72)					
G17		.70 (5.57)				
G13		.67 (5.91)				
G16		.66 (5.53)				
G10		.66 (6.10)				
G18		.63 (5.87)				
G8		.53 (6.28)				
G5			.61 (4.84)			
G7			.60 (4.93)			
G4			.52 (4.99)			
C1			.52 (5.25)			
G6			.50 (5.75)			
G14				.76 (4.33)		
G15				.73 (4.19)		
B4					.88 (3.07)	
B5					.68 (3.40)	
G9						.70 (4.48)

*Note – The figures in brackets are the average importance scores on a 1 – 7 scale (7 = very important).

Note that some of the variables are not listed as their coefficients are all less than 0.5 (though they do appear in the original result).

The main components of factor one are listed below:

- 1 Understanding deadlines and acting on time
- 2 Obtaining relevant information
- 3 Understanding risk and what to do about it
- 4 Understanding how to choose between alternatives
- 5 Effective communication
- 6 Believing in being able to control the farm
- 7 Intuitively recognising problems and opportunities
- 8 Considering ALL alternatives
- 9 Ability to learn new skills
- 10 Anticipation skills
- 11 Ability to develop short and long term plans
- 12 Knowing the correct state of the property
- 13 Negotiation skills
- 14 Assessing job priorities
- 15 Ability to identify key factors
- 16 Picturing the consequences of a decision

Effectively, the respondents have grouped together these skills as a correlated package. A manager with high levels of ability in all the components of this factor would most likely, be very successful.

Factor two contains the following components:

- 1 Conflict resolution skills
- 2 Obtaining co-operation from employees/contractors
- 3 Personality judgement
- 4 Developing a 'good moral character'
- 5 Good relationships with outside people
- 6 Ability to learn from experience

Thus, people skills plus a learning skill make up this factor (which is all from the personal attribute section).

Factor three is made up of:

- 1 Taking risks
- 2 Taking rational responsibilities for outcomes
- 3 Excellent knowledge of relevant facts
- 4 Finding and elucidating new opportunities
- 5 High motivation to find better ways

This might be called the entrepreneurial factor – seeking the new, and sensibly implementing the good opportunities.

Factor four consists of tertiary education and high intelligence. Clearly, they contribute as a package.

Factor five is the ‘local component’ package – understanding the local weather, and the local political scene – perhaps they are equally fickle. They are not rated, however, as being that important.

Factor six is simply made up of the determination factor – clearly an important attribute, but, no doubt difficult to train for!

The average rating scores for each component on a 1 (not at all important) to 7 (very important) are given in Table 14 as the bracketed figures. It is clear that the first two factors are important groupings with respect to the respondents’ views. The average ratings for each factor are, respectively, 5.8, 4.88, 5.15, 4.26, 3.23, and 4.48.

8. MANAGERIAL STYLE

Questions on respondents’ managerial style were included to enable a start on understanding professionals’ approach to their business. Managerial style is possibly highly correlated with personality so the questions were designed to reflect the five basic traits (5 x 5 =25 questions) many psychologists believe constitute personality (Matthews and Deary, 1998). This is the first time that an attempt has been made to clarify managerial style, so the question set can be thought of as being under development. Nevertheless, the answers constitute a body of factual data annotating the respondents’ attitudes. The companion farmers’ survey contained the same basic set of questions, though altered slightly to reflect the nature of their business. The reason for describing the style is to discover whether correlations exist with views on competencies, and, eventually, managerial ability. If such variations do exist, this will impact on the most suitable training methods and packages for each distinctive group. Psychologists believe people are characterised by their personality and intelligence, and, possibly, motivation. Thus the interest in at least the first two factors. See Nuthall (2001) for a review on these factors.

Table 15 gives the average scores on a 1 (true) to 5 (not true) scale for the respondents’ view on the truth of the 25 statements.

Table 15**Managerial Style – Respondents’ Belief in the Truth of Various Components of Style
Average Scores on a 1 (true) to 5 (not true) Scale**

1.	You tend to mull over decisions before acting.	2.32
2.	You find it easy to ring up strangers to find out technical information.	2.17
3.	For most things you seek the views of many people before making changes to your operations.	2.75
4.	You usually find discussing everything with members of your family and/or colleagues very helpful.	2.43
5	Where there are too many jobs for the time available you sometimes become quite anxious.	2.73
6	You tend to tolerate mistakes and accidents that occur with employees and/or colleagues.	3.04
7	You share your successes and failures with colleagues.	2.36
8	Keeping records on just about everything is very important.	2.66
9	You admire colleagues who are financially logical and don't let emotions colour their decisions.	2.35
10	You sometimes don't sleep at night worrying about decisions made.	3.37
11	You find investigating new approaches to your work exhilarating and challenging.	1.67
12	You tend to write down options and calculate monetary consequences before deciding.	2.05
13	You tend to worry about what others think of your methods.	3.47
14	You are happy to make do with what materials you have to hand.	2.87
15	You find talking to others about practice/professional ideas stimulates and excites you as well as increasing your enthusiasm for new idea.	1.73
16	Having to make changes to well established management systems and rules is a real pain.	3.59
17	You normally don't rest until the job is fully completed.	2.24
18	You normally enjoy being involved in professional organisations.	2.11
19	You sometimes believe you are too much of a stickler for checking and double-checking that everything has been carried out satisfactorily.	3.30
20	When the pressure is on you sometimes become cross and short with others.	2.83
21	You generally choose conclusions from experience rather than from hunches when they are in conflict.	2.06
22	You are inclined to let employees/colleagues do it their way.	2.66
23	You not only speak your mind and ask questions at professional meetings, but also enjoy the involvement.	2.18
24	It is very important to stick to management principles no matter what the pressure to do otherwise.	2.51
25	You are much happier if everything is planned well ahead of time.	1.94

The average scores do not reflect good or bad views, simply the average response to the truth of the statement. Thus, for example, most people believe strongly in the statement ‘you are much happier if everything is planned well ahead of time’. In contrast there is not a lot of support for ‘having to make changes to well established management systems and rules is a real pain’. It should also be noted that the means are statistically significantly different ($F = 79.30$) indicating there is not just a random variation in the figures. Thus, the figures serve to characterise the average respondent.

Furthermore, comparing sub groups according to production interest (Sheep & other animals, Dairying, and cropping/horticulture), self rated intelligence, and age showed the managerial style did not largely differ, suggesting people of certain interests, intelligence and age did not differ in their outlook and attitude.

Of more analytical interest is a factor analysis of the results – this serves to indicate the basic characteristics of respondents’ management styles and consequently enables classifying people. Table 16 contains the question contribution to a five factor model. Statement 14 was removed from the analysis as it proved to be unreliable according to the appropriate statistical tests.

Table 16

Factor Analysis of Managerial Style Components Using a Five Factor Model *

(see the questionnaire in Appendix A, or Table 15, for a list of the statements)

Statement Number	Factor				
	1	2	3	4	5
5	.73				
10	.70				
13	.55				
20	.50				
1	.45				
8		.68			
25		.62			
24		.57			
12		.47			
9		.41			
21		.39			
4			.71		
3			.64		
15			.50		
18			.45	.40	
7			.34		
11					
6				-.68	
22				-.58	
19				.52	
2					.76
17					.49
23					.40
16					-.38

* Note – only components greater than 0.3 are presented.

This solution explains 42% of the variance and is highly significant ($\chi^2 = 974$). If a nine factor model is used (factors with eigenvalues greater than one), 60% of the variance is explained. However, the increase in the variance explanation leads to an unhelpfully complex model. Of more importance is likely to be improving the question set to remove some ambiguities.

Factor one is made up of anxiety (statement 5), sleeplessness due to worry (statement 10), worry about what others think (statement 13), shortness under pressure (statement 20), and well considered decision making (statement 1). This factor explains 11% of the variance and, therefore, is an important factor, and might be labelled “anxious responsibility”. Personality researchers usually find this characteristic to be a strong trait in its various forms. This does not mean that all respondents score this highly but that it is a very distinctive factor. The average standard deviation of the constituent statements is 1.2 meaning 95% of all the answers probably lie within the range mean \pm 2.35. On a 1-5 scale this clearly covers the full range. (The mean of the constituent means was 2.9).

Factor two is formed by a belief in the importance of record keeping (statement 8), a belief in planning (statement 25) and using management principles (statement 24), calculating and recording (statement 12), a belief in financial logic (statement 9), and the use of experience (statement 21). Thus this factor could be called “careful logician”.

Factor three has confirmatory discussions (statement 4), advice seeking (statement 3), discussion stimulation (statement 15), active involvement in professional organisations (statement 18), and sharing outcomes with colleagues (statement 7) as the significant components. Thus, the factor might be called ‘consultative’.

Factor four consists of intolerance of mistakes (negative of statement 6), a strong requirement that people do as they are instructed (negative of statement 22), and a belief in being somewhat excessively cautious (statement 19). This factor might be termed “obsessive professionalism”, or at least ‘determined professionalism’, particularly as a less important part of the factor is an enjoyment of professional organisations (statement 18).

Finally, the main component of factor five is being comfortable approaching strangers for information (statement 2). Also contributing is a determination to complete a job (statement 17) and a willingness to speak out at professional meetings (statement 23). Furthermore, part of this factor is not minding changing operational systems if necessary (negative of statement 16). A mixture of ideas comprises this fifth factor, but it is dominated by statement 2. Thus, it could usefully be called ‘lively professionalism’.

Summarizing, the basic characteristics of the respondents’ managerial style can be divided into five classifying components – ‘anxious responsibility’, ‘careful logician’, ‘consultative’, ‘determined professionalism’, and ‘lively professionalism’. High, or low, levels of these characteristics are neither good nor bad, simply people inherently have a value for each characteristic which covers the full range of possibilities.

These characteristics can be used to group people to see if there are correlations between managerial style and views on what are the important management competencies, amongst other things such as tailored training programmes. As noted earlier, the respondents were ‘clustered’ into like groups, and each groups’ rating of the various competencies compared. There were few significant differences thus strengthening and simplifying the conclusions on the important skills.

9. FARMERS OBJECTIVES

Objectives should drive actions. It is of interest, therefore, to know whether the respondents' views on farmers' objectives complies with the farmers' own views of their objectives. Thus, the respondents were asked to rank nine possible objectives based on their understanding of what they thought their clients rating would be. Table 17 contains the average rankings.

Table 17

Respondents View of the Ranking Farmers Would Place on Ten Possible Objectives
(Average Ranking based on a 1 (least important) to 10 (most important) *)

<u>Objective</u>	<u>Ave. Rank</u>
Planning for the maximum possible sustainable annual cash return	7.9
Producing products and using farming systems that the farmer really enjoys being involved with	6.7
Planning for the maximum possible average annual increase in the net value of total assets	6.69
Selecting farming systems that minimise risk	6.15
Steadily increasing the total business turnover year by year	5.67
The respondent added tenth objective *	5.59
Managing production to enable having significant leisure time	4.89
Using farming systems that minimise pollution and improve the environment	4.69
Setting aside resources for the children to become established in their chosen career	4.29
Putting time and resources into making the farm look good	3.23

* Note – the respondents were asked to add a tenth objective which they felt was not covered by the list, and to rank this.

For the tenth objective the main additions included:

1. Increasing production levels.
2. Community involvement/helping others.
3. Personal safety and health, low stress.
4. To obtain recognition as the 'best' in the district.
5. Creating employment for family/involving family.
6. Ensuring an adequate retirement income.

These are all valid, particularly 2, 3 and 4. The others could be part of those listed as they revolve round income and net asset values.

An analysis of variance indicated the mean rankings (Table 17) were significantly different ($F = 72.74$). Most would regard the ordered list as logical, though it is interesting to note the low rank on leisure and resources for children. The comparison with the farmers' own views will be interesting.

When the respondents were divided into production interest, age and self-assessed intelligence groups, the objective ranking between the two sub-groups was not, largely, significantly different.

10. RESPONDENTS' VIEWS ON FARMERS' COMPUTER USE

As one of the most cost efficient ways of reaching producers for management training is through computer systems, it is important to understand producers' current computer practices. Past surveys have shown there is an increasing use with probably more than half of the managers of primary production using business computers (Nuthall, 1998). Table 18 lists the respondents' views on farmers' hours of computer use on various tasks.

Table 18
Respondents' Belief in Farmers' Computer Use

<u>Type of Use</u>	<u>Ave. Hours per Month</u>
Recording financial transaction information	5.5
Doing forecast budgets/cashflows	3.2
Keeping animal records	2.7
Keeping paddock/product records	2.2
Word processing	2.7
Searching the web (internet) for information	2.9
Sending emails	2.8
Entertainment/education	3.2
Internet banking	1.6
Internet purchasing	1.1
OTHER	1.2
TOTAL	<hr/> 29.7

Previous farmer surveys (e.g., Nuthall, 1998), have similarly shown the financial recording and budgeting areas absorb most of the time. The internet use (www, and emails) is clearly growing. If, in fact, farmers are using computers for approximately seven hours per week they will have the skills to use them for management training packages.

11. MANAGERIAL TRAINING

The primary objective of the research of which this report forms the first component is to develop management skill testing tools and training programmes. It was therefore appropriate to ask respondents their views on farmers' potential use of such programmes and their method of delivery. Table 19 contains this data.

Table 19
Views on the Delivery of Farmers' Management Skill Training
(ave rank on a 1 (most preferred) to 3 (least preferred) scale)

Computerised self-training	1.96
Tutored system based locally	1.14
Book based self training	2.54

The preferences are clear and as might be expected. Cost, however, must negate against the preferred, and probably most beneficial, system. Of the respondents, 4.3% believed farmers' would not make use of programmes if available in their area, 80% believed they would use them occasionally, and the remainder (15.7%) would use them a lot. At least there is a clear belief that by far the majority would make some use of training.

When the various sub-group (farm type, age, intelligence) responses were analysed there were no significant differences – that is, the importance ratings are invariant to sub-groups. When asked to note down the areas the respondents believed farmers would like training, the following list represents the most common topics.

- Computer skills
- Retirement/estate planning
- Budgeting, financial planning and optimisation systems
- Human relationship skills (labour, negotiating, delegation)
- Time management, setting priorities, goal setting
- Marketing
- Personal development, self analysis, entrepreneurial skills, motivation, communication
- Feed planning/budgeting
- Technical expertise, laws and regulations
- Economic principles
- Record keeping
- Seeking information
- Risk management

12. CONCLUSIONS

The primary objective of the survey was to find out the important competencies that professionals working in primary production believe farmers should be skilled in to achieve managerial success. The various ranking lists have achieved this. It is clear most respondents believe a wide mixture of competencies are important in that only a few of the listed competencies were given low scores. This wide range might have been expected given the initial screening allowed only the most likely important factors to be included. The factor analysis isolated out groups of competencies that were considered forming a correlated package. A next stage must be to consider whether each of the highly scored factors have some basic skills, suitable as core training factors, that will improve the skill level in a large proportion of the component competencies. This does not appear to be a simple process as, for example, factor one in the combined factor analysis contains many skills from effective observation, understanding management and analytical principles and production, people skills, and visualisation skills. Perhaps these should form basic teaching modules.

The consistency of the results across all sub-groups (production interest, age, education...) was an important observation. This suggests the basic competencies truly form a core set applicable in all situations.

The next important step will be to compare the results reported here with the producers' responses for the same set of questions. If the results are largely the same it will be possible to have considerable confidence in concluding on the important areas for training.

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APPENDIX A: THE QUESTIONNAIRE



**MANAGEMENT SYSTEMS RESEARCH UNIT
AMAC Division**

NATIONAL SURVEY ON MANAGERIAL FACTORS

Please complete and return this questionnaire using the enclosed postage paid envelope.
All information provided will be kept in strictest confidence to the researchers involved.

A. GENERAL

A1. **Property Interest.** Please tick ONE box representing the MAJOR enterprise you are interested in.

intensive sheep	<input type="checkbox"/>	extensive sheep	<input type="checkbox"/>	deer	<input type="checkbox"/>	cattle	<input type="checkbox"/>
dairying	<input type="checkbox"/>	other animal	<input type="checkbox"/>	fruit	<input type="checkbox"/>	cash crop	<input type="checkbox"/>
ornamental/flowers	<input type="checkbox"/>	vegetable	<input type="checkbox"/>	Other	<input type="checkbox"/>		

A2. If you are a practising professional please give the number of properties you have contact with at least once a year. Possible value: whole number >0

B. IMPORTANCE OF MANAGERIAL ATTRIBUTES

With respect to primary production managers' skills, please rate the importance of each of the managerial attributes listed below. Use a score range of 7 (VERY important) to 1 (NOT AT ALL important) with 4 representing MODERATELY important and the other numbers for in-between degrees of importance.

possible values: 1-7 only

B1.	Ability to identify the key factors in a problem and discard the irrelevant.	<input type="text"/>
B2.	Quickly analysing and sorting out situations that have never been faced before.	<input type="text"/>
B3.	Having a clear understanding of the family's objectives, values and goals, thus making assessing the value of alternative actions easy.	<input type="text"/>
B4.	Being able to predict local weather better than the official forecaster.	<input type="text"/>
B5.	Understanding the local political scene as it might impact on rules affecting what can be done.	<input type="text"/>
B6.	Developing and maintaining a support network of colleagues and professionals.	<input type="text"/>
B7.	Being able to efficiently organise and carry out quite complex operations (e.g., get a new packing shed operational on time)	<input type="text"/>
B8.	Developing appropriate and detailed plans for both short and longer term horizons.	<input type="text"/>
B9.	Making requirements clearly understood (effective communication).	<input type="text"/>
B10.	Understanding the basis on which to choose between alternatives (e.g., knowing how to cost unpriced labour, knowing how to do gross margins, understanding diversification principles).	<input type="text"/>
B11.	Being up-to-date with the current condition of the property in its totality (bank balances, animal condition, crop growth, soil moisture, feed levels, machinery repair)	<input type="text"/>
B12.	Picturing (understanding) the consequences of a decision over the many (or few) months/ years it might impact over (e.g., planting an area in forestry, subdividing a paddock).	<input type="text"/>

(Score each on a 7 (VERY important) to 1 (NOT AT ALL important) scale.)

- B13. Skill at keeping, interpreting and using recorded data about the property and associated factors (e.g., market trends).
- B14. The ability to predict product prices into the foreseeable future, or at least understanding the factors that determine the prices, and understand market requirements.
- B15. Assessing job priorities.
- B16. OTHER - If you think an important managerial component has been left off the list, please write it below and give it a score.
- (i) _____
- (ii) _____

C. IMPORTANCE OF ENTREPRENEURIAL SKILLS

With respect to primary production managers, please rate the importance of each of the entrepreneurial skills listed below. Use a score range of 7 (VERY important) to 1 (NOT AT ALL important) with 4 representing MODERATELY important and the other numbers for in-between degrees of importance.

possible values: 1-7 only

- C1. Being able to seek out, identify, and clarify new opportunities (production, products, marketing).
- C2. An ability and determination to look/ask/seek out information thought to be necessary for making decisions.
- C3. Ability in learning new skills.
- C4. An intuition that gives early warning signs when something is not right, or, in contrast, when something positive needs exploiting.
- C5. Skills in finding the very best market (price, quantity) for all output.
- C6. Understanding deadlines and being able to 'act in time' (e.g., spray before insect damage, fertiliser applied in good time).
- C7. The skill to negotiate the best possible deal (price, arrangement).
- C8. A belief in being able to control a lot of what happens around the property in contrast to a belief that not much is really controllable due to the weather, markets, government action...
- C9. When faced with opportunities, ensuring ALL alternatives are sought out, considered and evaluated.
- C10. The skill and intuition to forecast well into the future likely opportunities in products and production systems.....
- C11. An ability to look ahead and anticipate likely problems, needs, and opportunities.....
- C12. Understanding sources of risk and what can be done to reduce its impact.....
- C13. OTHER - If you think an important entrepreneurial component has been left off the list, please write it below and give it a score.
- (i) _____
- (ii) _____

D. MANAGERIAL STYLE

With respect to your own consultancy practice, business or profession, for each of the following statements indicate how true it is with respect to your management style. Each question has five boxes beside it – tick only the ONE that best records the degree of truth in the statement.

Code 1 2 3 4 5

- D1. You tend to mull over decisions before acting. TRUE NOT TRUE
- D2. You find it easy to ring up strangers to find out technical information. TRUE NOT TRUE
- D3. For most things you seek the views of many people before making changes to your operations. TRUE NOT TRUE
- D4. You usually find discussing everything with members of your family and/or colleagues very helpful. TRUE NOT TRUE
- D5. Where there are too many jobs for the time available you sometimes become quite anxious. TRUE NOT TRUE
- D6. You tend to tolerate mistakes and accidents that occur with employees and/or contractors. TRUE NOT TRUE
- D7. You share your successes and failures with neighbours. TRUE NOT TRUE
- D8. Keeping records on just about everything is very important. TRUE NOT TRUE
- D9. You admire farming/grower colleagues who are financially logical and don't let emotions colour their decisions. TRUE NOT TRUE
- D10. You sometimes don't sleep at night worrying about decisions made. TRUE NOT TRUE
- D11. You find investigating new farming/growing methods exhilarating and challenging. TRUE NOT TRUE
- D12. You tend to write down options and calculate monetary consequences before deciding. TRUE NOT TRUE
- D13. You tend to worry about what others think of your methods. TRUE NOT TRUE
- D14. You are happy to make do with what materials you have to hand. TRUE NOT TRUE
- D15. You find talking to others about farming/growing ideas stimulates and excites you as well as increasing your enthusiasm for new ideas. TRUE NOT TRUE
- D16. Having to make changes to well established management systems and rules is a real pain. TRUE NOT TRUE
- D17. You normally don't rest until the job is fully completed. TRUE NOT TRUE

- D18. You normally enjoy being involved in farmer/grower organisations.
TRUE NOT TRUE
- D19. You sometimes believe you are too much of a stickler for checking and double-checking that everything has been carried out satisfactorily.
TRUE NOT TRUE
- D20. When the pressure is on you sometimes become cross and short with others.
TRUE NOT TRUE
- D21. You generally choose conclusions from experience rather than from hunches when they are in conflict.
TRUE NOT TRUE
- D22. You are inclined to let employees/contractors do it their way.
TRUE NOT TRUE
- D23. You not only speak your mind and ask questions at farmer/grower meetings, but also enjoy the involvement.
TRUE NOT TRUE
- D24. It is very important to stick to management principles no matter what the pressure to do otherwise.
TRUE NOT TRUE
- D25. You are much happier if everything is planned well ahead of time.
TRUE NOT TRUE

E. OBJECTIVES

With respect to your view of property managers' objectives, rank the following objectives in ORDER OF IMPORTANCE by putting a number between 10 and 1 beside each one. Put 10 beside the MOST IMPORTANT objective, and 1 beside the LEAST IMPORTANT, and ONE of the numbers 9 to 2 beside each of the others. Do NOT use a particular number more than once. (Suggestion – read them all before answering.).

	Rank 1-10
E1. Planning for the maximum possible sustainable annual cash return	<input type="text"/>
E2. Setting aside resources for the children to become established in their chosen career	<input type="text"/>
E3. Selecting farming systems that minimise risk (i.e., reducing net income variability)	<input type="text"/>
E4. Planning for the maximum possible average annual increase in the net value of total assets	<input type="text"/>
E5. Producing products and using farming systems that the farmer really enjoys being involved with.....	<input type="text"/>
E6. Steadily increasing the total business turnover year by year	<input type="text"/>
E7. Using farming systems that minimise pollution and improve the environment	<input type="text"/>
E8. Managing production to enable having significant leisure time	<input type="text"/>
E9. Putting time and resources into making the farm look good	<input type="text"/>
E10. OTHER – Write in, and rank, ONE other objective you think is not already covered.	<input type="text"/>

F. COMPUTER USE

With respect to property managers you deal with, if they use a computer for business, give the average HOURS PER MONTH you believe they use it, on average, for the following (otherwise go to the next question)

possible value: whole – 2 dec

F1.	Recording financial transaction information	<input type="text"/>
F2.	Doing forecast budgets/cashflows	<input type="text"/>
F3.	Keeping animal records	<input type="text"/>
F4.	Keeping paddock/product records	<input type="text"/>
F5.	Word processing	<input type="text"/>
F6.	Searching the web for information	<input type="text"/>
F7.	Sending emails	<input type="text"/>
F8.	Entertainment/education	<input type="text"/>
F9.	Internet banking	<input type="text"/>
F10.	Internet purchasing.....	<input type="text"/>
F11.	OTHER.....	<input type="text"/>

G. IMPORTANCE OF PERSONAL ATTRIBUTES

With respect to primary production managers’ skills, please rate the importance of each of the personal attributes listed below. Use a score range of 7 (VERY important) to 1 (NOT AT ALL important) with 4 representing MODERATELY important and the other numbers for in-between degrees of importance.

Possible values: 1-7 only

G1.	Early observation of important indicators around the property (e.g., lambs are scouring, wheat is infected, cows losing weight, pasture growth has increased.....)	<input type="text"/>
G2.	Keeping a cool head and putting aside any tendency to panic when faced with stressful situations.	<input type="text"/>
G3.	Having the confidence to draw conclusions and act quickly and decisively.	<input type="text"/>
G4.	An excellent knowledge of facts, figures, procedures and methods, with respect to soils, plants, animals, machines, buildings.....	<input type="text"/>
G5.	Being prepared to give it a go and take risks in changing production systems and/or starting new ventures.	<input type="text"/>
G6.	High motivation in constantly seeking better ways and implementing them; in contrast to being happy with current systems.	<input type="text"/>
G7.	Accepting the good and the bad and not letting it affect management and decision making.	<input type="text"/>
G8.	Ability to learn from experience, mistakes, and failures.	<input type="text"/>
G9.	The determination to keep working all hours until the high priority jobs are completed.	<input type="text"/>
G10.	Developing a 'good moral character' involving openness, integrity, reliability, trustworthiness	<input type="text"/>
G11.	Developing a strong personality so that others 'sit up, notice, respect, and act' on what is said.	<input type="text"/>

(Score each on a 7 (VERY important) to 1 (NOT AT ALL important) scale.)

- G12. Understanding the inter-relationships between all the components of the property (e.g., rainfall - soil moisture - plant growth - animal grazing i.e., what affects what?).
- G13. Obtaining employees and/or contractors co-operation and understanding leading to harmonious and productive relationships.
- G14. Tertiary education in areas related to primary production (agriculture, horticulture, biology, marketing).....
- G15. Having above average intelligence and school grades.....
- G16. Successfully judging personality and selecting suitable employees.
- G17. Successfully resolving conflicts on, and off, the property (e.g., dispute between employees).....
- G18. Maintaining good relationships with outside people - bankers, accountants, suppliers
- G19. OTHER - If you think an important personal attribute has been left off the list, please write it below and give it a score.
- (i) _____
- (ii) _____

H. PERSONAL FEATURES

- H1. Which age group do you fall into? (tick ONE box)
- | | | | | | |
|--------------------|--------------------------|-------------|--------------------------|-----------------|--------------------------|
| less than 25 years | <input type="checkbox"/> | 26-35 years | <input type="checkbox"/> | 36-45 years | <input type="checkbox"/> |
| 46-55 years | <input type="checkbox"/> | 56-65 years | <input type="checkbox"/> | greater than 65 | <input type="checkbox"/> |
- years
- H2. What was the level at which you stopped your formal education? (tick ONE box)
- | | | | |
|--------------------------------------|--------------------------|------------------------------------|--------------------------|
| Primary school | <input type="checkbox"/> | Secondary school - up to 3 years | <input type="checkbox"/> |
| Secondary school - 4 or more years | <input type="checkbox"/> | Tertiary education - up to 2 years | <input type="checkbox"/> |
| Tertiary education - 3 or more years | <input type="checkbox"/> | | |
- H3. Please indicate your gender by putting **F**(emale) or **M**(ale) in the box.
- H4. Please rate yourself in general intelligence - tick ONE box. (If you are uncomfortable answering this question, leave blank.)
- | | | | | | |
|---------------------|--------------------------|------------------------|--------------------------|----------------------|--------------------------|
| Highly intelligent | <input type="checkbox"/> | Reasonably intelligent | <input type="checkbox"/> | Average intelligence | <input type="checkbox"/> |
| A bit below average | <input type="checkbox"/> | Other | <input type="checkbox"/> | | |

I. MANAGERIAL TRAINING

I1. To what degree do you think the property managers you deal with would you use a managerial skill training programme, if available in your area? (tick ONE box)

Not at all Occasionally A lot

I2. Assuming training was available for property managers, please rank the following method of delivery in order of preference (1 for most preferred, 2 for the second preferred).

I21 Computerised self-training I22 Book-based self-training Rank 1-3/4
I23 Tutored system based locally
I24 OTHER (please specify) _____

I3. On what topics/skills do you think farmers/managers would like training? MULTI-RESPONSE

(1) _____
(2) _____
(3) _____

LINCOLN UNIVERSITY BUDGET/TECHNICAL MANUALS

If you use the manuals, please indicate whether you would use internet-based versions (Y/N). If you don't use them, leave the box blank.

THANK YOU VERY MUCH FOR TAKING THE TIME AND THOUGHT TO COMPLETETHIS QUESTIONNAIRE.

The results will be used to help develop training methods. They will also be published.

Please return the completed questionnaire using the enclosed envelope.
A stamp is NOT required.
