Farm Business Management: The Fundamentals of Good Practice

Each section below introduces extra scenarios/exercises/problems taken from the source books, which students may find useful in learning the material. Each has a chapter and page listed to allow identification and location.

Budgeting Practicalities (Chapter 5, p. 51)

Here is a scenario to consider with respect to decisiveness:

It is midwinter. You have a hill country farm of 400 ha with an average cover of 1500 kg dry matter (DM)/ha. The whole farm has improved pasture, and it will grow at 12 kg DM/ha/day over the rest of the winter period. After early spring, feed is not usually a problem.

You have 3000 ewes averaging 50 kg live weight. They are due to lamb in the first week of spring. Past lambings have produced 115% survival to sale (on average). You have on hand 1500 25-kg bales of poor to average quality lucerne hay. Your experience indicates 20% of the hay fed out gets lost, and 40% of pasture gets eaten. You also reckon you cannot sensibly graze below 1000 kg/ha. You also know that a ewe requires 1.3 kg/day at this time of year.

What should you do? Buy, or not buy, extra feed? Do your sums on a scrap of paper, then look at the answer below.

Calculations

Requirement

Midwinter to early spring = 50 days

$50\,\text{days} \times 3000\,\text{ewes} \times 1.3\,\text{kg/day} = 95{,}000\,\text{kg DM}$

Supply

Hay 1500×25 @ 80% utilization $= 30{,}000\,\text{kg DM}$

Pasture $400 \times (1500 - 1000)$ @ 40% utilization $= 80{,}000\,\text{kg DM}$

Growth $400 \times 12 \times 50\,\text{days}$ @ 40% utilization $= 96{,}000\,\text{kg DM}$

TOTAL $= 206{,}000\,\text{kg DM}$

Conclusion

There is no need to buy, because you have sufficient feed.

Farmer's Risk Attitude (Chapter 6, p. 67)

A question set to describe your likely risk attitude

To check a manager's attitude to risk, the person should answer the questions that are given below and then analyse the answers. Before answering the questions, a farmer might like to spend time thinking about how he approaches risk and come to a conclusion on his attitude to risky situations. This conclusion can then be compared with the answer from the test.

The questions ask the respondent to jot down a value that reflects what are called 'certainty equivalents': this refers to a sum of money that, for the respondent, is equivalent in value to a risky choice that is offered. For example, if I'm offered a chance of entering a lottery in which the prize is $50,000 if heads turns up on the toss of a coin, or $10,000 if tails turns up, would I enter this lottery relative to being offered $28,000 with certainty, i.e. enter the lottery or take the $28,000? I suspect I would definitely take the $28,000 rather than take the 50% chance of getting $50,000 and the associated 50% chance of getting $10,000. However, if I was offered $25,000 with certainty or the gamble, I might be uncertain as to which one to select. If this was the case, we say that the $25,000 is the certainty equivalent of the 50/50 gamble, i.e. I am indifferent as to which option to take.

The questions below ask the respondent to give their certainty equivalent to a series of 50/50 gambles. The certainty equivalents (or 'indifference' sums) are then used to assess the attitude to risk.

You might note that in real life you do not get such offers in which there is a certain pay-off. However, extensive worldwide research has shown that putting the questions in this way enables people to clearly understand the choices that reflect their attitude.

Exercise: certainty equivalent questions

For each of the 50/50 lottery questions listed below, jot down the sum ($) that you feel is your certainty equivalent to the chance of getting the first $ sum with a 50% chance, and the second similarly with a 50% chance. That is, give the sum that would make you indifferent to entering the lottery, or accepting the sum you enter which is assumed to be offered with certainty.

What is your indifference $ sum to a 50/50 chance of:

(a) $120,000/$0

(b) $60,000/$0

(c) $120,000/$60,000

(d) $50,000/$30,000

(e) $30,000/$0

(f) $90,000/$60,000?

To assess your risk attitude, calculate the following:

1. Take the value you gave for (a) and subtract 60,000. Jot down the answer.
2. Take the value you gave for (b) and subtract 30,000. Jot down the answer.
3. Take the value you gave for (c) and subtract 90,000. Jot down the answer.
4. Take the value you gave for (d) and subtract 40,000. Jot down the answer.
5. Take the value you gave for (e) and subtract 15,000. Jot down the answer.
6. Take the value you gave for (f) and subtract 75,000. Jot down the answer.
7. Add up the total of the answers to 1 to 6: this number might be negative or positive.

Compare this figure with the ranges below. Depending where the number falls, this will tell you your attitude to risk. If the number is:

- Less than –70,000: you tend to be very risk averse and probably make every effort to avoid and/or diminish the risk experienced on the farm.
- –69,999 to –30,000: you are probably a mild, or slightly stronger, risk averter. You are, no doubt, slightly wary of risky investments and make efforts to reduce risk using risk-ameliorating techniques.
- –29,999 to +30,000: you are somewhat neutral to risky situations. You probably make decisions based on the expected return and do not take special efforts to use risk-ameliorating techniques.
- +30,001 to 70,000: you tend towards preferring risky investments and farming methods. This does not mean you seek risk, but rather you are quite happy to farm using techniques and investments that some might regard as slightly risky.
- 70,000: you could be called a strong risk preferrer, in that you are quite happy to get involved in quite risky ventures and you do not tend to use what might be regarded as safe farming techniques. You probably enjoy taking on ventures where the gains could be substantial, but equally they might turn out rather poorly.

Clearly, the risk attitude given depended on the answers, but remember that there are cut-off points in moving from one category to another, although these are arbitrary. There is in fact a continuum. But at least the comments will give the respondent some idea of how they approach risky situations. It must be stressed that there is no ideal classification, there is nothing right or wrong about any particular score, though clearly sometimes it pays not to be a strong risk taker when heavily indebted, because a failed investment could result in bankruptcy.

Methods of Reducing Risk (Chapter 6, p. 70)

Check out your knowledge through the quiz below. You need to choose one of the options provided, *or* note that *none* of the options is correct, *or* that *all* of the options are correct. Write your answers on paper and then compare with the answers given after the quiz.

1. Technological advance uncertainty refers to:
(a) The difficulty in understanding how to use a technological advance (e.g. fetus scanning).
(b) The doubt about whether a new technique will get financial support.
(c) The lack of knowledge on the impact and likely outcomes of using the advance.

2. Managers face human uncertainty. This is likely to impact on:
(a) The speed at which a new employee gets the job done.
(b) The quality of the jobs carried out by a new employee.
(c) The number of 'sick days' a new employee might need.

3. Brigid, having just recently taken over the farm, was facing a high debt situation. She was worried that a bad year could force her off the farm. Brigid wondered about introducing beef on to the currently all-sheep property. Her consultant suggested it was her decision, knowing that beef would not be quite as profitable as sheep in her situation. The correlation coefficient between sheep and beef profit was, however, 0.7. Should Brigid concentrate on:
(a) Diversifying into beef quite significantly.
(b) Not diversifying at all.
(c) Re-financing.

4. Jack has considerable cash reserves. Despite this, he believes he should insure against low hay yields. Jack's whole system depends on coping with the critical late winter. Only a few insurance companies will take this on.The best quote was $6500 in which the company would pay Jack sufficient to make up his hay to 500 bales if he harvested less. Should Jack take the risk himself, or insure? On average Jack makes 500 bales, and on average the 'barns' are empty by the end of the year. The situation can be summarized by noting there is a 25% chance of 200 bales and a 25% chance of 350 bales. There is a 50% chance of making 500, or more, bales. In a poor year hay costs $70/bale. Currently the barns are empty. Should he:
(a) Take the risk himself this year.
(b) Insure this year.
(c) Insure next year.

5. A wool buyer has a contract with an English spinner. The buyer has offered to take your wool if you will sign up to sell him all your fleece wool at $3.80/kg. Your analysis for the next season's open market suggests you might well get $3.95, but even as high as $4.10 is possible.However, uncertainty in the Chinese market means that if they pull out the price could plummet to $3.40. You reckon there is a 30% chance of this, but equally a 30% chance of obtaining $4.10. Should you take the contract knowing you are quite averse to risk and will sleep much easier if you know the price is fixed. Should you:
(a) Take the contract.
(b) Sell on the open market.
(c) Half and half.

6. You do not know whether to change your production system in the interests of reducing your year-to-year cash surplus variability. You are happy to drop your average income if the variability is reduced, but within reason. You have decided you must choose between: (a) carrying on with your mixed-age sheep flock for which you breed your own replacements; (b) shifting to a 2-year flying flock (i.e. replace half each year); or (c) moving into a bull beef system. Your calculations show that for the last 7 years the gross margin per hectare would have been (in dollars, after adjusting for inflation):

Mixed-age flock: 480, 320, 510, 490, 360, 570, 430

Flying flock: 560, 450, 570, 550, 495, 610, 550

Bull beef: 640, 600, 350, 360, 900, 620, 950

Should you:

(a) Stick with the mixed-age flock.
(b) Change to a flying flock.
(c) Move into bull beef.

7. Amanda was keen to set herself up to enable coping with the ups and downs of sheep farming. Which option would most likely meet her requirements and still give a reasonable income?

(a) Invest in a wide range of specialist machinery to enable coping with any demands that might occur; e.g. a big enough range and size of hay-making equipment to enable rapid hay making to cover all situations.
(b) Maintain a reasonable level of readily saleable assets (shares, deposits, etc.) so that funds are available to cope with the not-so-good seasons.
(c) Use a stocking rate somewhat below what the worst season could cope with so that the high levels of per animal production are maintained.

8. In trying to reduce profit variability, is there any point in running breeding cows so that the progeny might be sold at a range of ages/weights depending on the feed situation that unfolds and the expected prices?

(a) Yes.
(b) No.
(c) It mainly depends on the quality of the labour.

9. Jack reckoned that a study of what affected his situation was worth the time and cost. He spent some $600/year on obtaining international publications and reports on the worldwide meat and wool market, and factors affecting it (such as national incomes). Might this reduce his income variability?

(a) Probably yes, depending on his skill.
(b) Definitely a waste of money, because the real information is seldom published.
(c) It would only be good luck if it did.

Special note

One method that was mentioned for risk reduction was the use of the tax system. You may be aware that in many countries it is possible to use the tax system to smooth out income, and this sometimes also improves the average profit if it means lowering the total tax taken. An accountant will help here, but a farmer must be sure he does not make choices to reduce the tax bill just for its own sake if it leaves his net profit worse off on average. If a farmer is paying a large amount of tax he must, in general, be making a large amount of profit. That is an objective for many people.

While the effective use of the tax system might slightly increase the average profit, do not forget a bird in the hand is worth two in the bush: i.e. having money now instead of in a year or two's time means it can be used (invested perhaps) *now*. The benefit from this might be more than the extra cash next year obtained from using a tax system smoothing scheme, so sometimes it pays to pay the tax!

Answers

1. (c); **2.** All of the options are correct; **3.** (b); **4.** (b); **5.** (a); **6.** (b); **7.** (b); **8.** (a); **9.** (a).

Risk Assessment: Use of Contracts (Chapter 6, p. 73)

One of the local meat companies is trying to develop a chilled lamb cut trade in Europe and requires a regular supply of lamb. They are offering contracts for the supply of specific numbers of finished lambs within specified weight ranges in specified months. They are prepared to negotiate both price and quantity because they appreciate each farm is in a different situation and, once combined with other farms, they should be able to meet European quantity requirements.

Given the background information below, what price would you require to take out a contract?

Current production system: 3000 ewes, lambing mid-August (April) @ 115% survival to sale. Start drafting end of November (July). All (3450 lambs) gone mid-January (September). Replacements purchased.

Contract requirements:

Timescale	No. of lambs
By end of October (June)	800
By end of November (July)	800
By end of December (August)	800
By end of January (September)	800
Total	3200

For non-supply: cost of $25/lamb

Lambing percentage variable – survival to sale: last 10 years' lambing percentages: 120, 109, 117, 112, 107, 122, 119, 108, 117, 119. Average 115% (production system has not changed)

Lamb price ($/head, inflation adjusted): 23.78, 37.64, 36.52, 28.39, 32.59, 39.68, 37.23, 40.95, 47.38, 59.94, 71.20

The lamb prices are expected to be similar next season to the most recent past, though exchange rate volatility will affect the final outcome.

To have any possibility of supplying the lambs it will clearly be necessary to alter the lambing date for at least some of the ewes. You estimate you will need to lamb 750 ewes mid-July (mid-March) to get 800 lambs by the end of October (June), and another 750 planned for early August (April) with the remainder mid-August. You expect the lambing percentage of the mid-July (March) ewes will be down 5% on average, and it will be necessary to ensure a greater area of autumn-saved pasture for the early lambing ewes. You plan to achieve this by purchasing extra hay compared with current practices, with 1200 bales being necessary at $5.50 per bale on contract. (While wool production, or rather quality, could be affected, we will assume for this example exercise that wool income does not change.)

Having worked out a few sums using pencil, paper and calculator, do you agree with this analysis and conclusion?

Suggested calculations and answer

Current gross income

Lambing percentage: 3000 ewes @ 115% = 3450

Lambing percentage ranges:

< 112: 109 112 107 108 (average 109)

113 – 117: 117

> 117: 120 122 119 119 (average 120)

While the average is 115%, clearly it does vary quite a lot. You might represent this by noting that there is a significant chance of a lower rate of, for example, 109%, and similarly a higher rate of 119%. Your sums might use the expected value of 115%, but also use 110% and 120% with chances of, for example, 40% (so the 'expected' value has a chance of 100 – 40 – 40 = 20%). Thus:

20% chance of 3000@115% = 3450

40% chance of 3000@110% = 3300

40% chance of 3000 @ 120% = 3600

(Note: you might have taken a different view and used slightly different figures, and these might well be more appropriate. There is no right and wrong set of figures when dealing with changing biological situations. The important thing is to explore possibilities that could occur.)

Prices

The average price received over the last 10 years (inflation adjusted, i.e. the earlier prices have been increased by the inflation rate so they have the same purchasing power as today's dollar) has been (adding up all the prices and dividing by 10, this being the number of years) $43.15/lamb. But, the trend over the last 4 years is one of rising prices, and you have not observed anything to suggest next year will be any different. Thus, you might forecast on, say, $68/head average, but with a possibility that it could well be $73.00/head or even $63. Given the rising trend, the chance of $73 might be 30%, and of it being $63, 30%.

Therefore the *expected* gross income is:

3000 ewes @ 115% @ $68/head = $234,600

but it might also be:

	Gross income	Chance
110% lambing @ $68/head = 3000 × 1.1 × 68 =	224,400	0.16
115% lambing @ $68/head = 3000 × 1.15 × 68 =	234,600	0.08
120% lambing @ $68/head = 3000 × 1.2 × 68 =	244,800	0.16
110% lambing @ $63/head = 3000 × 1.1 × 63 =	207,900	0.12
115% lambing @ $63/head = 3000 × 1.15 × 63 =	217,350	0.06
120% lambing @ $63/head = 3000 × 1.2 × 63 =	226,800	0.12
110% lambing @ $73/head = 3000 × 1.1 × 73 =	240,900	0.12
115% lambing @ $73/head = 3000 × 1.15 × 73 =	251,850	0.06
120% lambing @ $73/head = 3000 × 1.2 × 73 =	262,800	0.12
Total chance		1.00

Note: (i) it is assumed that there is *no* relationship between lambing percentage and lamb price – each combination is possible (i.e. local season does not affect the European price) and (ii) to get the chance of each possible lambing percentage price combination, seeing the two events are independent, you multiply the individual chances.

Therefore, what contract price should you ask for as a break-even figure? To meet the contract the gross income should increase to at least cover the cost of the purchased feed necessary. Thus, the gross income must be $234,600 (the average non-contract income) + $6600 (the 1200 bales @ $5.50) = $241,200.

Lamb numbers on average:

750 ewes @ 110% = 825

2250 ewes @115% = 2587

Total = 3412

Of these, 3200 go on contract and the remainder, 212, on the free market: on average, the 212 will get \$68 = \$14,416. Thus, to break even the rest of the lambs must give \$241,200 – \$14,416 = \$226,784. Thus, the per head price must be 226,784/3200 = \$70.87. To make it worthwhile, perhaps your base asking figure should be \$71.00.

But, remember that if you don't meet the quantity numbers there is a potential penalty (which in many cases probably would not be invoked). What is the likelihood of this?

If the early ewes lambed at 105% and the remainder at 110%, what lambs would be supplied (also, of course, a very poor season might mean the lambs took longer to finish and thus the October (June) numbers could not be supplied)?

750 @105% = 787

2250 @ 110% = 2475

Total = 3262

Comments on the situation

Overall, the contract could be filled, but with a minor shortfall in the October (June) number (13 lambs @ \$25 = \$325). Thus, perhaps you should contract a bit more to cover this possibility, say \$71.50. While this is an extra \$1600, compared with \$325, the extra would allow for the chance that a poor growth season would mean the shortfall in October (June), and possibly November (July), could be considerably more than 13 lambs.

We worked out the likely gross lamb income range for the existing system, so what is the likely range given we take a contract at \$71.50? The price is fixed for the 3200, but not the remainder.

Possible lamb numbers:

750 @ 105% and 2250 @ 110% = 3262 chance 40%

750 @ 110% and 2250 @ 115% = 3412 chance 20%

750 @ 115% and 2250 @ 120% = 3562 chance 40%

The possible income situations are as follows.

Situation 1

3200 @ \$71.50 plus 62 @ \$63 or \$68 or \$73

i.e. \$228,800 plus \$3906 or \$4216 or \$4526

i.e. \$232,706 or \$233,016 or \$233,326 with chances 30%, 40% and 30%

However, the chance of the low lambing percentage is 40%, therefore the overall chances of both a low lambing percentage and the different prices are:

$0.3 \times 0.4 = 0.12$

$0.4 \times 0.4 = 0.16$

$0.3 \times 0.4 = 0.12$

Situation 2

3200 @ $71.50 plus 212 @ $63 or $68 or $73

i.e. $228,800 plus $13,356 or $14,416 or $15,476

i.e. $242,156 or $243,216 or $244,276 with chances 30%, 40% and 30%

The chance of the moderate lambing percentage is 40%, therefore the overall chances of both a moderate lambing percentage and the different prices are:

$0.3 \times 0.2 = 0.06$

$0.4 \times 0.2 = 0.08$

$0.3 \times 0.2 = 0.06$

Situation 3

3200 @ $71.50 plus 362 @ $63 or $68 or $73

i.e. $228,800 plus $22,806 or $24,616 or $26,426

i.e. $251,606 or $253,416 or $255,226 with chances 30%, 40% and 30%

The chance of the high lambing percentage is 40%, therefore the overall chances of both a high lambing percentage and the different prices are:

$0.3 \times 0.4 = 0.12$

$0.4 \times 0.4 = 0.16$

$0.3 \times 0.4 = 0.12$

Possible outcomes

The possible outcomes are:

	Gross lamb income ($)	Chance
110% @ $63 for ex contract lamb	232,706	0.12
110% @ $68 for ex contract lamb	233,016	0.16
110% @ $73 for ex contract lamb	233,326	0.12
115% @ $63 for ex contract lamb	242,156	0.06
115% @ $68 for ex contract lamb	243,216	0.08
115% @ $73 for ex contract lamb	244,276	0.12
120% @ $68 for ex contract lamb	253,416	0.16
120% @ $73 for ex contract lamb	255,226	0.12
Total chance		1.00

Therefore, the expectedgross income is the various incomes multiplied by their chance:

$(232,706 \times 0.12) + (233,016 \times 0.16) + \ldots (255,226 \times 0.12) = \$243,216$

Summary

Lambing %[a]	Free market price ($/head)	Chance	Gross lamb income ($)	
			No contract	Contract
110	63	0.12	207,900	232,706
110	68	0.16	224,400	233,016
110	73	0.12	240,900	233,326
115	63	0.06	217,350	242,156
115	68	0.08	234,600	243,216
115	73	0.06	251,850	244,276
120	63	0.12	226,800	251,606
120	68	0.16	244,800	253,416
120	73	0.12	262,800	255,226
Total expected			234,600	243,216

[a]For the July (March) lambing ewes the percentage is decreased by 5 %.

Therefore, with the contract set at $71.50, it pays to accept the contract. In six out of the nine possible conditions, contract income will be greater than the non-contract situation, but in the other three possible scenarios the situation is reversed. The chance of the latter is 30% (0.3). Of course, this is at a contract price of $71.50. If it is lower, the contract choice will be less attractive.

Comments

The example shows a proper analysis involves a lot of thought and calculating. Doing some of the basic sums helps think about the problem and provides a more informed decision even though the analysis may have made some simplifying assumptions (in this case, effects on wool were ignored – the contract option probably decreases wool income).

The example only considers buying extra feed to allow early lambing, although another possibility is to decrease ewe numbers. Would this have been a better option?

Risk Analysis: Keeping Feed Reserves (Chapter 6, p. 74)

What should the farmer, whose situation is described below, do?

Ewes: 3000 mixed age

Replacements: purchased two-tooths

Land: light, stony; 25% in lucerne–mixed age stands, 400 ha

Winter feed: hay (4500 × 20-kg bales) and small area of turnips (helps lucerne/pasture renewal)

Difficult periods: winter, early spring, late summer

Normal year: animals are adequately fed and produce 115% survival to sale lambing and 5 kg/head wool

In a good year (it does depend on which parts of the year are 'good' weather-wise), generally the lambing percentage goes up about 3%, wool production by about 0.25 kg/head and hay production by 75% (largely all surplus because there is a limit to what the stock can eat). In reality each year is different and the increased production is always slightly different.

In a bad year, hay production drops 50% and the lambing percentage decreases by 5%, with wool down to 4.5 kg/head.

Looking at the rainfall records, and from talking to some of the local retired farmers, the farmer reckons the chances of each year category are:

Good 20%, Normal 50%, Bad 30%

Of course, the farmer knows that each year is in fact slightly different from any in the past, but these data represent the ranges.

What happens to feed reserves depends a bit on the sequence of years: a few bad years in sequence causes havoc, and does happen from time to time.

In a 10-year sequence, the farmer might imagine getting 5 'normal' years, 3 bad years and 2 good years. Let us imagine the sequence is:

N N G B N B G N N B

What happens to feed reserves assuming, for example, the farmer starts with a 2000-bale carryover? Assuming in a normal year production equals use, the running balance for each year would be:

2000; 2000; 2000 + 3375 = 5375; 5375 − 2250 = 3125; 3125; 3125 − 2250 = 1750;
1750 + 3375 = 5125; 5125; 5125; 5125 − 2250 = 2875

That is, after this 10-year sequence the farmer ends up slightly better than all square with regard to hay reserves.

If the bad year occurred at the beginning, the situation would be different. For example:

B N B G N N B N G N

Then the reserves would be (assuming the deficit is purchased to meet the demand, though in reality the farmer might not buy it all depending on price and thus accept even lower production):

2000 − 2250 = −250; 0; −2250; 3375; 3375; 3375; 3375 − 2250 = 1125; 1125;
1125 + 3375 = 4500; 4500

Thus, 1 year's supply is carried over towards the end, which means, before feeding out, 2 years' supply was on hand. In this sequence, 2500 bales had to be bought (250 year 1, and 2250 year 3), remembering that 2000 were on hand at the beginning.

But, on average, over many years, the hay situation will be (deficit in a bad year × the chance of a bad year) + (the surplus in a good year) × (the chance of a good year):

$$(-2250 \times 0.3) + (3375 \times 0.2) = 0$$

because in a normal year supply equals demand. Thus, given a starting surplus of 2000 bales, it will remain at this over a long sequence of years, but sometimes will increase to over 2 years' reserve, and sometimes extra will need to be purchased.

The question

Like most decision problems, the question is whether to alter the existing situation. The main two alternatives are to increase or decrease stock numbers. Increasing will clearly mean the farmer must build up hay reserves, and therefore will have to sell stock from time to time, and/or increase productivity.

What would you do?

Write down on a piece of paper the ewe number change: use a plus sign in front of the number for an increase, a negative sign in front of a number for a decrease. Use '0' for no change.

What would an 'expert' do?

First, some calculations after working out the basic parameters:

- If stock numbers are decreased, the farmer is, effectively, increasing the number of good years, and the surplus feed in some years will be even greater, and production per ewe will be greater on average.
- If stock numbers are increased the reverse will be true, and more feed will need to be purchased, and/or production per head decreased.

Impact of a decrease

Reflection and discussion indicates decreasing stock numbers by 200 ewes changes the chances on the seasons to:

Normal 55%, Bad 20%, Good 25%

Thus, on average (over many years), the hay reserves will be growing by:

$$(-2250 \times 0.2) + (3375 \times 0.25) = 394 \text{ bales/year}$$

These can be sold. In fact the increase will be greater, because with 200 fewer ewes, which were getting on average 1.5 bales each, there will be a surplus of 200 × 1.5 = 300 making a total of 694 bales/year. However, lamb and wool production will change. Production, on average, was:

Normal year: 115% lambing survival to sale and 5 kg wool

Bad year: 110% lambing survival to sale and 4.5 kg wool

Good year: 118% lambing survival to sale and 5.25 kg wool

With 200 fewer ewes, production will be down:

Normal year: 230 lambs and 1000 kg wool

Bad year: 220 lambs and 900 kg wool

Good year: 236 lambs and 1050 kg wool

Thus the expected decrease:

Lambs: $(0.55 \times 230) + (0.2 \times 220) + (0.25 \times 236) = 230$ lambs

Wool: $(0.55 \times 1000) + (0.2 \times 900) + (0.25 \times 1050) = 993$ kg

Compared with an increase of 694 bales.

Thus, if hay is worth \$5/bale, lambs \$65/head and wool \$3.80/kg greasy, the net effect is:

$(694 \times 5) - (230 \times 65) - (993 \times 3.8) = -\$15,253$

However, there are also some savings with fewer ewes: replacement cost down (40 × \$80) + health costs down (200 × \$2) + shearing costs down (200 × \$4) = \$4400.

NET CHANGE = −\$10,850

Impact of an increase

Careful thought suggests that an increase of 200 ewes will change the pressure on 'seasons' so that the chances are:

Normal 45%, Bad 40%, Good 15%

Thus, on average (over many years), the hay reserves will be 'growing' by:

$(-2250 \times 0.4) + (3375 \times 0.15) = -394$ (i.e. actually decreasing)

With 200 extra ewes you also need an extra:

200×1.5 bales/year = 300

This is a total average deficit of 694 bales/year.

However, with the extra ewes production will be up. The farmer could let the per ewe production decline by not buying the extra feed, or buy the feed and assume production/head stays the same (in reality, it would drop a bit because there are more mouths in the spring, which still has the same production, though perhaps there is less wastage with the more mouths). For 'simplicity', assume production is maintained.

With 200 more ewes, production will be up:

Normal year (115% lambing and 5 kg wool) : 230 lambs and 1000 kg wool.

Bad year (110% lambing and 4.5 kg wool) : 220 lambs and 900 kg wool.

Good year (118% lambing and 5.25 kg wool) : 236 lambs and 1050 kg wool.

Expected increases:

Lambs: $(230 \times 0.45) + (220 \times 0.4) + (236 \times 0.15) = 227$

Wool: $(1000 \times 0.45) + (900 \times 0.4) + (1050 \times 0.15) = 967$ kg

Compared with purchase need of 694 bales.

Thus, if lambs are $65/head, wool $3.80/kg greasy and hay $7/bale, the *net effect* is (note that in poor years hay prices will be more, thus the $7 landed cost):

$(227 \times 65) + (967 \times 3.8) - (694 \times 7) = \$13{,}571$

The increased ewes require: replacements (40 × $80) + increased health and shearing (200 × $6) = –$4400.

NET CHANGE = +$9171

Analysis

The results show that dropping numbers by 200 ewes loses $10,850, whereas increasing by 200 ewes gains $9171.

Remember, it is necessary to invest in the extra 200 ewes costing, say, $70 at 6% interest ($840 total interest), but there is a saving if 200 fewer ewes are carried, so this changes the average figures to a loss of $10,010 for 200 fewer ewes, and a gain of $8330 for 200 more ewes, on *average*.

Clearly, there are some simplifying assumptions in the calculations above; increasing the number of ewes probably costs more than suggested here when extra costs such as fence repairs, some more fertilizer, etc. are included. The tendency in this case is to raise profit, but there is a limit in that if the increase in ewe numbers goes high enough production per head will eventually decline so total production declines; the estimates of the declines are a key factor.

Variability has gone up with the higher stock numbers: the chance of 'bad' years has increased and, in reality, some of the bad years will be worse than portrayed here. This is where a farmer must subjectively assess feelings about the variability and the consequence of bad years. This could be allowed for in the calculation, but would need many more hours with a calculator.

Summary

The feed reserve question boils down to a question of stock numbers, unless you wish to consider a regular policy of buying hay in good years to hold as a reserve.This is another alternative that could be costed out.

In this case study, compared with the current policy that leads to as much as 2 years' hay supply being on hand, depending on the sequence of years that pan out, increasing stock numbers by 200 means more feed would have to be purchased, but the return *increases*, on average, by about $8300, whereas decreasing stock numbers *decreases* the average profit by about $10,000. While the decreased numbers will give less variability year to year, it is a big drop compared with the current 3000 ewe policy. And, increasing to 3200 does increase the existing average by about $8300, so while the chance of bad years is much higher, this increased income can compensate for a lot of variability. A farmer who is very keen on playing it safe might, then, decrease numbers, but those prepared to push their luck a bit could well increase numbers with reasonable safety. Even in the worst year, income is still reasonable. However, if you increase stock numbers too far, the chance of disaster increases.

Risk Analysis: Debt and Risk (Chapter 6, p. 75)

With casual help, Farmer Pete runs 4000 Romney ewes on rolling hill country. He works hard. Farmer Pete comes in several 'versions', each version has used past cash surpluses on different levels of debt reduction relative to keeping the family content, enjoying winter holidays to the sun and surf, renovating the house and so on. When first taking over the farm from his father-in-law, the debt level was very high. Now that the parents-in-law are elderly and require the income, they are no longer in a position to defer any repayments; indeed, their major trustee and lawyer is quite hard-hearted about sticking to the letter of the law.

Spending time looking up Year Books, Statistics Department records, consulting the Economic Service records as well as the farm's accountant who still has copies of the accounts for the last 45 years, information on price and output variability (lambing percentage, wool yields, rainfall records and pasture yields) was obtained. The not-so-distant research station, now closed, also published useful records relating to older cultivars and sheep genetics, though certainly with GATT (free trade agreement), world markets have changed, but the records do give a basis for predicting likely cash returns for the next, say, 5 years.

Assuming for the moment that the soil fertility is relatively stable after many years of development, and that it is not planned to change stock numbers nor improve the subdivision (i.e. the basic production set up is relatively stable), Farmer Pete reckons the cash surplus *before* paying debt, tax and living expenses could be as high as $130,000, but could go as low as $70,000 in any of the next 5 years. Beyond that, it is hard to estimate.

The basic figures

Pete summarizes the situation with:

Possible cash surplus ($)	Chance (%)
130,000	10
115,000	20
100,000	40
85,000	20
70,000	10
	Total = 100

This gives an expected cash surplus of:

$$(130{,}000 \times 0.1) + (115{,}000 \times 0.2) + (100{,}000 \times 0.4) + (85{,}000 \times 0.2) + (70{,}000 \times 0.1) = \$100{,}000$$

Now consider the different Petes and their debt levels:

- Pete 1 has a debt of $350,000 @ 7.00% interest flat-rate mortgage. Interest payment = $24,500/year.
- Pete 2 has a debt of $250,000 @ 6.8% interest flat-rate mortgage. Interest payment = $17,000/year.
- Pete 3 has a debt of $100,000 @ 6.5% interest flat-rate mortgage. Interest payment = $6,500/year.
- Pete 4 has no mortgage. Interest payment = 0.

Principal repayments

In the past, the four Petes have had different approaches to principal repayment. Clearly, some have put a greater emphasis on repayment. For ease of demonstration, assume no more repayments occur over the next 5 years (this simplifies interest and tax calculations).

Basic family living expenses are relatively stable at $30,000/year now that the children are older. Depreciation covers the loss in value of the assets. For the exercise assume $15,000/year has had to be spent on various asset replacements and this will continue as a non-tax-deductible cash expense. In addition, the tractor has had

to be replaced. An interest-free deal has been organized requiring capital payments of $15,000/year over the next 5 years. Thus, $30,000 must be spent each year on capital items.

Tax rates are:

$1–38,000 19.5%; $38,001–60,000 33%; > $60,000 39%.

Depreciation works out at near enough to $15,000 each year. Assume tax gets paid in the year it accrues (which is not strictly true of course, thus confusing the situation even further).

Tax deductions, living expenses and the cash surplus

	Pete 1	Pete 2	Pete 3	Pete 4
Interest	24,000	17,000	6,500	0
Depreciation	15,000	15,000	15,000	15,000
Tax deductions	39,500	21,500	21,500	15,000

Taxable income

Cash surplus				
130,000	90,500	98,000	108,500	115,000
115,000	75,500	83,000	93,500	100,000
100,000	60,500	68,000	78,500	85,000
85,000	43,300	53,000	63,500	70,000
70,000	30,300	38,000	48,500	55,000

Tax payable

Cash surplus	Pete 1	Pete 2	Pete 3	Pete 4
130,000	26,565	29,490	33,585	36,120
115,000	20,715	23,640	27,735	30,270
100,000	14,865	17,790	21,885	20,520
83,000	9,885	12,360	16,035	18,570
70,000	5,947	7,410	10,875	13,020

Cash income less interest less living expenses less tax less capital replacement

Cash surplus				
130,000	18,935	23,510	29,915	33,880
115,000	9,785	14,360	20,765	24,730
100,000	365	5,210	11,615	19,480
85,000	-9,385	-4,360	2,465	6,430
70,000	-20,447	-14,410	-7,375	-3,020

Expected (i.e. sum of each surplus × probability) cash surplus each year for each Pete:

Pete 1	Pete 2	Pete 3	Pete 4
+ 75	4,994	11,546	17,110

Clearly, on average, all farms make ends meet, but what about a particular sequence of seasons.

Possible outcomes

Given chance, one possible 5-year sequence for case surplus (in $) could be:

115,000; 70,000; 100,000; 85,000; 100,000

Given this sequence, what would have happened to each farmer assuming, for example, a starting bank balance of zero?

Cumulative bank balance

	Year 1	Year 2	Year 3	Year 4	Year 5
Pete1	9,785	-10,662	-10,027	-19,412	-18,777
Pete2	14,360	-50	5,160	800	6,010
Pete3	20,765	13,390	25,005	27,470	39,085
Pete4	24,730	21,710	41,190	47,620	67,100

Of course, the negatives would be worse than shown for Pete 1 because, presumably, he increased his overdraft and had to pay interest (which would have accumulated), though the interest would have been tax deductible so damping the effect just a little. Equally, for Petes 3 and 4 in particular, the surpluses would be greater because they could have been invested and earned extra profit.

This is one example of a sequence of years. A wide range is possible. At worst a sequence of less than normal years might occur, at best the opposite. If, for example, the sequence for the cash surplus (in $) was:

85,000; 70,000; 100,000; 70,000; 115,000

the outcomes would be:

Cumulative bank balance

	Year 1	Year 2	Year 3	Year 4	Year 5
Pete1	-9,385	-29,832	-29,197	-49,644	-39,859
Pete2	-4,360	-18,770	-13,560	-27,970	-13,610
Pete3	2,465	-4,910	6,705	-670	20,095
Pete4	6,430	3,410	22,890	19,870	44,160

Besides using an overdraft facility, if perhaps Petes 1 and 2 had bought some shares, or taken out some fixed deposits, a number of years ago when, through good luck, they had a series of good years, the answer might have been different. How else could they stay in business given some, now, bad luck? On average of course, they all break even, or do better, but can Pete 1 always be assured of getting a normal sequence of years? And what about Pete 5, whose data are not given here, who might well have had even higher debt?

Each farmer has to consider the debt level she/he is prepared to accept and the associated risks. If the borrowing is for development, and is highly profitable, hopefully the investor will eventually break through to be in a position to withstand a sequence of bad years. But each person, knowing the ups and downs that can occur, must assess how far to go in the debt stakes.

Risk Assessments: Maintaining Liquid Assets (Chapter 6, p. 75)

Ben Clever has always maintained it was better to be conservative in the sense of keeping some readily available assets up his sleeve. This does not mean he was conservative in his farming – indeed, he maintained reasonably high stock numbers. To support this, he always kept good records and subjectively assessed his profit prospects as making $30,000 cash surplus after all expenses with a probability of 0.4 (40%), and possibly $60,000 with a probability of 0.25 (25%), but of losing $20,000 as the third summary possibility (probability?). In the good years Ben purchased gilt-edged securities, and had built up $60,000, paying 4% post tax.

On the other hand, Ben Smart put his money into buying and selling extra stock when it looked as though he had extra feed. This approach sometimes faltered because he could be left with too little feed and a stock market slump. In some years there was a handsome payoff. Ben Smart also kept good records. He calculated that his expected cash surplus after *all* expenses, other than overdraft interest, was $26,000. This was made up of $80,000 in a good year, and a loss of $30,000 in a poor year. Overdraft interest was currently 15%. Ben Smart had *not* built up liquid assets. His chance estimates of the seasons were the same as Ben Clever's.

Would you choose to be: (a) Ben Clever; (b) Ben Smart; or (c) don't know?

Solution: Maintaining liquid assets as a risk hedge: Ben Smart had the right idea, i.e. choose (b).

Ben Clever's outcomes: given his investment, he earns $60,000 @ 4% = $2400.

Thus:

$60,000 + $2400 = $62,400 with probability 0.25 = $15,600

$30,000 + $2400 = $32,400 with probability 0.4 = $12,960

−$20,000 + $1600 = −$18,400 with probability 0.35 = −$6,440

Expected value = $22,120

Note that in the loss year it is assumed that $20,000 of the reserves are used. Hopefully this will be made up next year.

Ben Smart's outcomes: you will note that a sum is necessary to calculate the typical season cash surplus. Thus, knowing the expected value and the two other values:

$$\text{Unknown} = (26{,}000 - [(80{,}000 \times 0.25) - (30{,}000 \times 0.35)]) / 0.4 = \$41{,}250$$

Thus:

$80,000 with probability 0.25 = $20,000

$41,250 with probability 0.4 = $16,500

−$30,000 − $4500[a] with probability 0.35 = −$12,075

Expected value = $24,425

(Note:[a] overdraft interest)

In the poor years Ben uses his overdraft to make up the deficit. This must be paid back in the good years. Thus, in 35% of the good and typical years the cash surplus will be less.

Conclusion

Possibly Ben Smart is better off than Ben Clever because in most years he will have a greater cash surplus, and similarly on average, *but* in 35% of the years his outcome is worse. Of course, a key factor is the relative interest rates – what might you receive for investments compared with paying overdraft rates when the money is needed?

Risk Reduction: Using Income Smoothing (Chapter 6, p. 77)

Example: the use of an income equalization scheme

Usually a farmer can nominate the amount to be lodged in his account with the tax department in any one year up to several months after the balance date (check the provisions). The minimum period of deposit is usually 1 year, but can be up to 5 years (check the legislation). Normally a farmer cannot both deposit and withdraw in any one year. As an example, consider the following taxable income sequence:

Pre-deposit taxable income	Amount of deposit/ withdrawal	Balance tax income	Post-deposit	Tax payable	
				With IE	Without IE
120,000	60,000	60,000	60,000	14,670	38,070
41,000	-19,000	42,800	60,000	14,670	8,400
26,000	-34,000	10,084	60,000	14,670	5,070
130,000	70,000	80,386	60,000	14,670	41,970
19,000	-41,000	41,798	60,000	14,670	3,705
23,000	-36,000	7,048	60,000	14,670	4,485
52,952	-7,048	0	60,000	14,670	12,344
Totals				102,690	114,044

Notes: all values are $. IE, income equalization. The calculations assume tax is 19.5% for $1–38,000 taxable income, 33% for $38,001–60,000, and 39% for > $60,000.

In this calculation, 3% interest has been added to the accumulating income equalizationaccount to represent what the tax people pay in this case. You will note that the final balance taxable income has been calculated to give a zero balance for the sake of rounding off the exercise. Note that the scheme has reduced total tax paid by some $12,000. But if you had paid the tax in the year it was incurred, and invested any surpluses at, say, 8%, the figures would have been, where it is assumed drawings (living expenses) were $45,330 ($60,000 less tax of $14,670):

Income	Tax	After tax and drawings	Balance
120,000	38,070	36,600	38,386
41,000	8,400	-12,730	25,656
26,000	5,070	-24,400	1,256
130,000	41,970	18,300	44,017
19,000	3,705	-30,735	16,917
23,000	4,485	-26,815	-9,898
52,952	12,344	-4,722	-14,620

Note: all values are $.

In producing this series, tax is paid on the 8% interest, which then leads to the yearly balance allowing for the net investment income. It is clear that this particular sequence leaves the farmer worse off compared with using the equalization scheme. This assumes the drawings are the same each year. If these can be varied to suit the cash available, the situation will alter again.

It is clear that each case needs to be considered on its merits. The difficulty is in forecasting the possible ups and downs in income.

Results of Survey on the Views of Farmers and Consultants on the Skills Required (Chapter 9, p. 132)

Importance of managerial attributes Mean scores on a 1 (not important) to 7 (very important) scale			
	Farmers	**Consultants**	**(order)**
1. 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, etc.)	6.23	6.07	(3)
2. Ability to identify the key factors in a problem and discard the irrelevant	6.16	6.29	(1)
3. Making requirements clearly understood (effective communication)	6.13	6.28	(2)
4. Assessing job priorities	5.93	6.00	(4)
5. Quickly analysing and sorting out situations that have never been faced before	5.68	5.26	(12)
6. Having a clear understanding of the family's objectives, values and goals, thus making assessing the value of alternative actions easy	5.67	5.79	(5)
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)	5.63	5.71	(7)
8. Being able to efficiently organize and carry out quite complex operations (e.g. get a new packing shed operational on time, etc.)	5.61	5.52	(8)
9. Developing appropriate and detailed plans for both short and longer term horizons.	5.47	5.71	(6)
10. 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)	5.31	5.32	(11)
11. Skill at keeping, interpreting and using recorded data about the property and associated factors (e.g. market trends)	5.17	5.42	(10)
12. The ability to predict product prices into the foreseeable future, or at least understanding the factors that determine the prices, and understand market requirements	5.16	4.96	(13)
13. Developing and maintaining a support network of colleagues and professionals	4.89	5.44	(9)
14. Being able to predict local weather better than the official forecaster	4.23	3.07	(15)
15. Understanding the local political scene becauseit might impact on rules affecting what can be done	3.88	3.40	(14)

Importance of entrepreneurial skills			
Mean scores on a 1 (not important) to 7 (very important) scale			
	Farmers	**Consultants**	**(order)**
1. Understanding deadlines and being able to 'act in time' (e.g. spray before insect damage, fertilizer applied in good time, etc.)	6.16	6.38	(1)
2=. An ability and determination to look/ask/seek out information thought to be necessary for making decisions	5.78	5.99	(2)
2=. The skill to negotiate the best possible deal (price, arrangement, etc.)	5.78	5.34	(9)
4=. Understanding sources of risk and what can be done to reduce its impact	5.75	5.70	(4)
4=. An intuition that gives early warning signs when something is not right, or, in contrast, when something positive needs exploiting	5.75	5.65	(6)
6. Ability in learning new skills	5.58	5.71	(3)
7. An ability to look ahead and anticipate likely problems, needs and opportunities	5.70	5.61	(7)
8. When faced with opportunities, ensuring ALL alternatives are sought out, considered and evaluated	5.65	5.35	(8)
9. 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, etc.	5.55	5.69	(5)
10. Skills in finding the very best market (price, quantity, etc.) for all output	5.34	5.03	(11)
11. Being able to seek out, identify and clarify new opportunities (production, products, marketing, etc.)	5.21	5.25	(10)
12. The skill and intuition to forecast well into the future likely opportunities in products and production systems	4.90	4.68	(12)

Importance of personal attributes			
Mean scores on a 1 (not important) to 7 (very important) scale			
	Farmers	**Consultants**	**(order)**
1. Early observation of important indicators around the property (e.g. lambs are scouring, wheat is infected, cows losing weight, pasture growth has increased, etc.)	6.65	6.72	(1)
2=. Ability to learn from experience, mistakes and failures	6.35	6.28	(2)
2=. Developing a 'good moral character' involving openness, integrity, reliability, trustworthiness, etc.	6.35	6.10	(3)
4=. Maintaining good relationships with outside people: bankers, accountants, suppliers	6.19	5.87	(6)

Continued

Continued

Importance of personal attributes Mean scores on a 1 (not important) to 7 (very important) scale			
	Farmers	**Consultants**	**(order)**
4=. Keeping a cool head and putting aside any tendency to panic when faced with stressful situations	6.19	5.79	(7)
6. Having the confidence to draw conclusions and act quickly and decisively	6.18	5.95	(4)
7. Obtaining employees' and/or contractors' cooperation and understanding leading to harmonious and productive relationships	6.08	5.91	(5)
8. Understanding the inter-relationships between all the components of the property (e.g. rainfall – soil moisture – plant growth – animal grazing: what affects what?).	5.99	5.77	(8)
9. Successfully resolving conflicts on, and off, the property (e.g. dispute between employees)	5.78	5.57	(10)
10. Successfully judging personality and selecting suitable employees	5.74	5.53	(11)
11. An excellent knowledge of facts, figures, procedures and methods, with respect to soils, plants, animals, machines, buildings	5.58	4.99	(12)
12. Accepting the good and the bad and not letting it affect management and decision making	5.53	4.93	(13)
13. High motivation in constantly seeking better ways and implementing them; in contrast to being happy with current systems	5.28	5.75	(9)
14. The determination to keep working all hours until the high-priority jobs are completed	5.24	4.48	(15)
15. Being prepared to give it a go and take risks in changing production systems and/or starting new ventures	5.14	4.84	(14)
16. Developing a strong personality so that others 'sit up, notice, respect and act on' what is said	4.96	4.27	(17)
17. Tertiary education in areas related to primary production (agriculture, horticulture, biology, marketing, etc.)	4.61	4.33	(16)
18. Having above average intelligence and school grades	4.46	4.19	(18)

Observation Exercise 1 (Chapter 10, p. 148)

Consider the photograph below and reflect on the questions.

Do you agree that the important factors are:

- The soil is dry given all the dust (or has lime/fertilizer just been spread?).
- It is not raining!
- The growth on the strip being cultivated relative to the rest of the field would suggest that irrigation has been used at some time.
- The farm could be a horticultural property, or one that is growing specialist seed crops, because there seem to be strips in the field that have had different crops on them.
- The tractor is small and is an older model with a safety bar. This would go along with the idea of a horticultural unit that does not have large areas to cultivate, with the tractors lasting well and not needing high-powered machines.
- The background has a well-established tree area, perhaps suggesting that the area has been farmed for many years. Possibly the area is not used for widespread intensive production, otherwise the tree area would be reduced to make better use of the valuable land.

Did you notice anything else? Getting it right is critical to good decision making.

Observation Exercise 2 (Chapter 10, p. 148)

Consider the 'scene' below: what does it tell you? What do you notice?

Shut your eyes: can you still see it? It would be interesting to know if tomorrow morning you still have the picture in your mind. In the meantime, see if you can recall the important components of the scene after covering the picture with a piece of paper.

Did you use a visual approach through keeping the picture in your mind's eye? And did you recall two women discussing corn (maize)/seed samples?

To improve your skills it is important to have a process to follow. This involves scanning, interpretation, re-examination, review and repeat, snapshot storage, conclusion.

Try Your Hand at this 'Recite and Review' Exercise (Chapter 10, p. 150)

Read the excerpt below using your newfound skills (skim, goals, *read*) and then *recite* and *review* so that you can answer the questions from memory.

> The wool handler prepares the fleece by removing shorter or discoloured parts from the fleece as it is being shorn (e.g. crutchings, top knots, sock etc.) and then when it is thrown on the table (e.g. first pieces, necks, seedy backs etc.). They are also responsible for transporting the fleece from the board to the table. During shearing the belly wool is removed first and is collected separately. Shorter, discoloured crutch wools, second cuts and pieces from the legs and head, as well as stains and dags, are separated as they come off the sheep and swept clear, leaving the main fleece clear of inferior wools. The fleece is then thrown on a slatted table where it is skirted to remove faults (clotted portions, vegetable matter, shed stain, etc.) and permanently discoloured or very much shorter wools. During this operation, loose pieces and second cuts still adhering to the fleece are shaken free and fall through the slats to the floor from where they are collected and packed with the shearing board sweepings.

What is the main point you got from this reading?

1. Wool handlers have a simple task.
2. Quality wool is important.
3. Separating wool into like groups is important.

The reading has many sub-topics about the various wool components the handler must watch out for and separate out, so clearly the task is not simple: judgement is required about each type, and when selecting out the various pieces. And certainly quality wool is important, but that is not what the reading is about. Thus, the central point is number 3, you must create bundles of similar product.

Sorting Out Goals and Aims (Chapter 10, p. 152)

Consider the following example of Mary and John, and how they came to a resolution. As you read about what they did, you should think about your situation.

John and Mary are partners in a rolling hill country sheep farm that adequately supports them and their family (two children aged 5 and 7). The pastures are reasonable, but the buildings date from soldier resettlement after the Second World War. Some of the fences date from this era, but over the years many fences have been replaced, especially after amalgamation with the neighbouring property when the settler couldn't manage the farm for a reasonable return.

John and Mary borrowed quite heavily, with family support, when buying into the property some 10 years ago. At first, survival was a major struggle with high interest rates, but now their 'heads are above water'. With the increased value of the property and good access to local schools (attended by both children,who are doing well and showing great promise), John and Mary feel it is time to take stock and consider the future.

Mary helps John on the farm and does all the books, including the tax returns, using a financial package acquired with the second-hand computer. They have taught their ageing parents (who have now moved to a warmer climate) to use e-mail and regularly communicate with them. Over the years, they have worked hard and have only ever taken a few days' holiday, though the children have enjoyed camping at the local stream while farm work continued.

John and Mary decided they would each write down their feelings about what was important in life and then swap lists before discussing how they felt.

Mary's list

After some reflection Mary decided she wanted to:

1. Provide for the children: clothes, holidays, experiences and sport, but above all, access to an excellent education through to university if the children wish to study further.
2. Have spare time and cash for following other off-farm interests to provide a balanced life, including contact with friends, neighbours and the community.
3. Develop the house and garden to make it a more comfortable place to live, and to reduce the time involved in household chores. She also wanted to ensure it is a place the children can bring their friends.
4. Develop a profession to provide an interesting and challenging life after the children left home. Becoming a teacher had always been at the back of her mind.
5. Be free from major financial worry as much as possible in the future.

John's list

John didn't need to think much more: he already had his thoughts sorted. John had previously used the set of statements on general objectives to explore the nature of his beliefs. He rated them as follows:

Statement	Score (1 'true' to 5 'not true')
1. Passing property to family members	3
2. Community respect	3
3. Comfortable living	1
4. Low debt	2
5. Holidays and leisure time	1
6. Attending farmer meetings	2
7. Low-risk systems	2

Continued

Continued

Statement	Score (1 'true' to 5 'not true')
8. Facilities for good working conditions	3
9. Ensuring employee contentment	1
10. Ensuring only pleasant jobs	3
11. Minimizing pollution	2
12. Trying new things	1
13. Project retirement planning	3
14. Increasing net asset value	1
15. Expanding net size of business	1
16. Maximizing net cash returns	1
17. Community presence	2
18. Improving property condition	3
19. Transferring assets to children for education and their establishment	1

John found he did not disagree with any of the statements, though he believed some were not a priority at this stage. Retirement planning, for example, he thought could be put aside for another 10 years or so, particularly as improving their net asset situation went hand in hand with retirement.

Transferring assets to the family, however, might need some action now, because asset gifting without gift tax is important. Aspects such as community involvement and respect and attending farmer meetings are all important to John, and, he believed, were all possible in moderation without sacrificing more important objectives.

And certainly he believed minimizing pollution was common sense and he minimized chemical use while ensuring, for example, clean pastures whenever possible. He was also fencing off waterways with inexpensive electric fencing.

In the end he believed the conflict points were putting money into increasing cash returns and net assets, expanding the size of the business (important with the cost–price squeeze) relative to ensuring sufficient family time, leisure and holidays, and lowering risk. John also felt working with both his casual staff and the occasional contractor to ensure they enjoyed their jobs was crucial, but something he could do in the normal course of events.

One other conflict point was balancing his enthusiasm to try new technologies (grazing systems, new cultivars, cross breeding, computer packages, etc.) with the need to maintain cash income without excessive risk.

The give and take of reaching a conclusion both could work with

John and Mary compared notes and concluded they were not too far apart. Thus, they sat down to think of the next 12 months. John wanted to pay off some debt with the anticipated cash surplus as well as subdivide three largish paddocks. Paying off debt, he thought, was giving a buffer and moving towards increasing net assets – the question was, how much?

He agreed that increasing their net assets would be helpful to the children's education because potential borrowing would be greater in the future. Mary accepted this. But what about the kitchen? It really was a difficult

place to work. And also, who was going to do the fencing? If John took it on it would mean longer days and weekend work. In the end a compromisewas struck:

- A new kitchen was to become definite.
- A contractor would be used to do half the fencing work.
- A family holiday to visit relatives in the north would be organized, given the new express class air fares.
- Mary would start a trial correspondence course, meaning they would have to employ 2–3 weeks' extra casual labour. Any surplus would then be used to pay off debt.

John's budgeting suggested $20,000 of debt might just be paid off, but it depended on the seasonal and price outcomes; this would be after the agreed expenditure as well as maintaining the farm's assets properly. Mary reckoned she might just fit in a few extra days of casual help to develop a new part of the garden for summer barbeques. Next year, it could just be the tennis court.

All farmers have many ideas about what they would like to do around the farm to improve its productivity, ease of management and appearance. For a case farm with which you are familiar, write out a list in priority order together with a cost estimate.For example, what house, garden and other developments does the family have in mind? Most farms are a team effort in many respects, with the farm also being the centre of family living. What developments would the team like to see occur in the not-too-distant future? Put the estimated cost after each one. What about the leisure and holiday plans? Besides enjoying the farm as a place to produce and live, one of the aims of work is for it to be a means to provide leisure and holiday activities. What are the family plans and activities in this area, and the costs?

Typical Answers for the Goals and Aims Question Set (Chapter 10, p. 152 discusses goals and aims; question set listed in Appendix A4)

(Question set listed in Appendix A4)

Mean score and standard deviation for a range of objectives (1 = true to 5 = not true)				
Results from two random surveys				
	Survey one		Survey two	
	Mean score	Standard deviation	Mean score	Standard deviation
1. It is very important to pass on the property to family members	3.15	1.45	2.73	1.46
2. It is important to earn the respect of farmers/growers in the local community	2.66	1.30	2.51	1.25
3. Making a comfortable living is important	1.47	0.74	1.45	0.69
4. It is very necessary to keep debt as low as possible	2.26	1.35	2.26	1.38
5. It is essential to plan for reasonable holidays and plenty of leisure time	2.24	1.20	2.35	1.27
6. Attending field days and farmer/growers meetings is vital	2.84	1.27	2.89	1.30
7. It is very important to reduce risk using techniques like diversification, farming conservatively, keeping cash reserves, etc.	2.44	1.89	2.38	1.18
8. Developing facilities and systems that give good working conditions is crucial	1.71	0.81	1.66	0.78
9. It is very important to ensure employees enjoy their jobs	1.57	0.75	1.47	0.78
10. Doing jobs that I enjoy is a very important part of the operation	1.83	1.01	1.78	0.98
11. Minimizing pollution is very important	1.67	0.86	1.69	0.90
12. I enjoy experimenting with new products and production systems	2.53	1.13	2.51	1.16
13. Proper retirement planning is a major consideration	2.28	1.20	2.25	1.25
14. You must always be striving to increase the total value of assets	2.18	1.12	2.20	1.18
15. Constantly expanding the size of the business is absolutely necessary	3.38	1.31	3.39	1.29
16. Aiming for maximum sustainable net cash returns is very important	1.92	1.01	2.00	1.07
17. Maintaining a presence in local community activities is important	2.79	1.24	2.54	1.23
18. It is very important to improve the condition of the property (fertility, facilities, etc.)	1.52	0.73	1.48	0.71
19. Giving assets to the children so they can pay for education and/or set up businesses is very important	2.60	1.22	2.47	1.26

Memory (Chapter 10, p. 154)

How good are your current memory skills? Can you remember both important and trivial items? Try answering the following:

1. At what pressure do you keep your car tyres? (a) Less than 20 psi; (b) 21–40 psi; (c) higher than 40 psi
2. What dose should a farmer give when orally drenching ewes for internal parasites? (a) Less than 5 cc; (b) 5–7 cc; (c) morethan 7 cc
3. At what rate should a farmer sow or top dress clover seed? (a) More than 12 kg/ha; (b) 12–2 kg/ha; (c) less than 2 kg/ha
4. What interest rate is normal for overdrafts? (a) Less than 6%; (b) 6–10%; (c) higherthan 10%
5. What happened to your country's balance of payments last year? (a) Deficit; (b) neutral; (c) surplus
6. What was the national rate of inflation last year? (a) Higher than 4%; (b) between 1.5 and 4%; (c) less than 1.5%

Compare your answers with your colleagues!

Retrieval of information on demand may need help

Books on memory often talk about dreaming up associations of some kind: perhaps a rhyme using the first letters. These little ditties seem to be easier to remember. For example, you want to remember the sequence of summer production of ryegrass cultivars. Some simple local plot trials suggest for your area the following sequence (unfortunately the trial did not include all available cultivars, nor were there replicates so it is not totally sure that the order is correct):

> Bronsyn, Aries, Dobson, Marathon, Vedette, Meridian, Embassy, Ruanui

How can you remember the sequence? What about the sentence:

> BAD Marathon runner Vedette crossed the Meridian near the Embassy on Ruanui street!

Or maybe you can think up something better? Of course, the process of thinking up the rhyme, sentence, or whatever, helps to imprint the sequence.

Exercise

Can you think up something to help remember the nitrogen content of urea (46%), CAN (27%), sulphate of ammonia (21%) and DAP (18%)? Jot down what you come up with. How does it compare with this ditty?

> THE ODE TO NITROGEN
>
> When I was young, DAPper and 18, I 'moaned' at the thought of 21, and positively CANned the idea of 18 plus half as much again, but a doubling plus a decade was in the pits!

Picture-prompted memory

How well does visualization enhance your memory? Examine the image below for a minute or two, then answer the questions posed about it. See if you can keep the picture in your mind as you do this, and jot down the notable features (writing helps fix items in long-term memory).

Cover the picture with a piece of paper and then answer these questions.

1. How many cattle were standing up?
(a) Two; (b) three; (c) four

2. What distinguishing features did the animals have?
(a) Horns; (b) very low body score; (c) red face markings

3. Did the animals have ear tags or marks?
(a) No; (b) yes; (c) couldn't see

4. Was there plenty of good quality feed?
(a) No; (b) yes; (c) couldn't tell

Answers: **1** (b); **2** none of these; **3** (b); **4** (b).

Practise enhancement of your pictorial memory on a daily basis. When you have a spare moment, capture a picture of your surroundings in memory. Then, last thing at night, see if you can recall it and list its notable points.

Listening Skills (Chapter 10, p. 158)

Do you agree that the way the conversation listed below went is appropriate: were the responses correct, or would you have put them another way?

> Jim, the neighbour, has always been interested in new ryegrass cultivars. After attending a company field day he was keen to share the ideas.
>
> **Jim**: I enjoyed seeing the plot trials of the new ryegrasses. I reckon they'll make a big difference to my spring feed bottleneck with huge production increases. I was most impressed with the differences in the cultivar compared with the older grasses. Without a doubt, spring growth is up 30% – that's something!
>
> **Response**: What you saw really impressed you, especially this year when it is so dry.
>
> **Jim**: You are right – I'm really keen to try the new ryegrass if I can get my hands on some seed.
>
> **Response**: I wonder if the company representative had some trial plot cutting measurements for you that I could see?
>
> **Jim**: He didn't seem to have the exact figure for several springs and total year figures, but the latest cutting data was impressive: it must have been at least 30% better, and it certainly looked great.
>
> **Response**: Sounds just great. So you did some sums on the data?
>
> **Jim**: Well, not exactly, as we only had the kg DM for the last cut and only for the new cultivars, not for the old one we have always used. The company rep said they were going to get this data from some other trials.
>
> **Response**: Well, we'll look forward to seeing the full picture all in good time.

You will note some active supporting comments, which reiterate what was said – supporting, but at the same time checking you have got the message. For example: 'what you saw really impressed you' and 'sounds just great'.

But there were also suggestions about positive action in contrast to a direct criticism of the enthusiasm. For example: 'I wonder if the company representative had some trial plot cutting data measurements for you that I could see?' and 'Well, we'll look forward to seeing the full picture all in good time.'

Self-evaluation

Answer the questions below to get a rating. For each question write 1, 2 or 3, depending on the degree of truth. Enter 3 for complete 'truth', and 1 for little concurrence.

Do you concentrate on the person's words despite disagreeing or being disinterested?
Do you summarize back what was said to check understanding?
Do you check word meanings if you do not understand (ask or look up later)?
Do younot daydream when bored or disinterested (i.e. mind wanders)?
Do you plan what you want to say and the best time to say it?
Do you try to get the real meaning despite possible word misinterpretation?
Do you not think about a countering argument when still getting an explanation?
Do you worry about how the other person might react to what you say?
Do you try to understand the background and perspective of the other person?
Do you use pencil and paper to be sure you don't forget the main points?
Do you take time to form an opinion on their views (good? bad?) and do not comment so?

Now, add up your score. If you scored 25 or above you are a great listener!

Observation and Interpretation Skills Assessment: Expected Wool Price (Chapter 10, p. 162)

You are a high country/rangeland sheep and cattle farmer. Clearly the price of fine wool is critical to your financial success. Your scanning of various sources in recent times has located the material reproduced below.

In calculating your fleece wool income from your Merino flock (which produces very fine garment wool) for the next season:

1. What price will you use per kg clean fleece weight? Write the answer down and compare it later with the suggested answer given below. Your conclusion should be based on the information supplied, not on any other information you might have seen.
2. Why will you use that price? Be sure to base your reasons on the information provided. Write your reasons down and then consider the comments made below with regard to the suggested answer.

(Hints: the wool price depends on the demand and the exchange rate, because most wool is being purchased for use in a range of countries. What is happening to demand relative to current prices, and how will the exchange rate affect your forecast price?)

Note: the information provided is not current. However, make your judgement based on what is provided: this will evaluate your observation and interpretation skills, not your current knowledge. Do not make current actual decisions based on the information provided.

Information provided

Commodity market report

	This week	1 month ago	1 year ago
Lamb 15 kg ($/head)	69.74	69.14	51.84
Steer 280 kg ($/kg)	3.83	3.75	3.19
Stag 60 kg ($/kg)	8.55	7.91	6.01
Wool 35 µm ($/kg clean)	4.59	4.56	4.40
Butter ($/kg FOB)	3.30	3.27	2.50
Wheat 11% ($/t)	353	378	306
Pine logs (K grade: $/t)	53	51	66
Rural mortgage rate (%)	7.5	7.5	8.9

Great price: read on.

Updated 30 June

Both the Australian rural press and the Australian Financial Review reported this week the sale of the world's finest bale of Merino wool to Italian spinner LoroPiana.

The bale is reported to have averaged 12.5 micron on an OFDA (Optical Fibre Diameter Analyser) test and 12.9 micron on laser scan. The purchase price was disclosed as $136,000 (about $854/kg!). The bale came from the ultrafine operation of John and Helen Brown in Nerrawak, Casterton, Victoria.

(Source: The Woolmark Company)

WStock to be wound up

24 April

WoolStock Australia shareholders voted to place the Company into a voluntary liquidation and to appoint liquidators at the final Annual General Meeting held on Wednesday 24 April in Melbourne. The liquidators of WoolStock, Mr Simon Wallace-Smith and Mr Andrew Beck, are Partners in the chartered accounting firm Deloitte Touche Tohmatsu. In concluding the final AGM, Mr Donald McGauchie, outgoing Chairman of WoolStock, said that WoolStock had completed the task of selling the stockpile and it was pleasing to have the overwhelming support of shareholders to voluntarily wind up the Company.

WoolStock was formed on 1 July 1999. Since that date, the Company had commercially sold 1.058 million bales of stockpile wool, paid off $217 million in debt, and distributed $478 million to security holders. Now that liquidators have been appointed, WoolStock security holders who have not cashed their cheques from previous distributions are urged to do so as soon as possible. Unpresented cheques will be cancelled and any unclaimed amounts remitted by the liquidators to Unclaimed Monies, said Mr McGauchie.

'In just over two and a half years we have sold the stockpile and achieved the final distribution to all security holders registered on 28 February.'

(Source: WoolStock Australia media release, The Woolmark Company)

Exchange rates and wool prices (updated 8 June)

Exchange rate:	Last week	1 month	3 months	1 year
US$	0.492	0.453	0.431	0.423
Euro	0.519	0.498	0.489	0.495
Wool prices ($/kg clean):				
21 µm	10.73	11.61	12.20	8.20
25 µm	9.50	10.25	11.35	7.10
27 µm	8.90	9.55	9.70	6.78
29 µm	8.50	9.10	9.20	6.56
35 µm	5.25	5.32	5.23	4.56
37 µm	4.70	5.00	5.10	4.26
39 µm	4.58	4.82	5.02	4.18
2nd shear				
37 (75 mm)	4.24	4.50	4.55	4.28
Lamb				
31(75 mm)	5.25	5.55	5.35	4.18

Chinese wool quota

Woolgrowers to benefit from increases in Chinese wool quota – 13 February

Woolgrowers will benefit from a 5% increase in China's wool import quota allocation, the Trade Minister said.

While welcoming the quota announcement by Chinese authorities, the Minister said the Government would continue to raise with China its concern about the split in quota between wool for domestic use and wool for processing and re-export.

The Chinese State Development Planning Commission has announced a quota allocation of 337,000 t for 20XX – an increase of 17,000 t last year. The total amount of the raw wool tariff quota is 264,500 t, of which 94,500 t is for the processing trade. The total amount of the wool top tariff rate quota is 72,500 t, of which 20,000 t is for the processing trade.

'The 5% increase in the level of quota allocation is good news for Australian woolgrowers,' the Minister said. 'China is Australia's largest wool customer. Total wool exports reached the historically high level of AUS$1.28 billion…, accounting for 36% of Australia's wool exports.'

'A very positive development is that a first-come, first-served system will be adopted experimentally on wool and wool tops in 20XX. This means that Australian exporters with valid supply contracts to China will, for the first time, automatically get a share of the quota set.'

The Minister said 'improved access for wool into China has been and will continue to be one of the top priorities in the Chinese market for the Australian Government'.

(Source: Australian Minister for Trade, Media Release, The Woolmark Company)

Segment indicator report

Month	Fine	Medium	Strong
January		5.76	3.52
February	9.19	5.54	3.37
March		5.57	3.57
April		5.39	3.49
May	8.48	5.46	3.80
June	8.47	5.52	4.09
July			3.57
August	8.04	4.90	3.59
September	7.40	4.66	3.67
October	6.74	4.53	3.69
November	7.33	4.69	3.71
December	7.24	4.63	3.83
January	6.98	4.51	3.65
February	7.17	4.21	3.53
March	7.76	4.25	3.64
April	7.88	4.31	3.64
May	7.73	4.19	3.62
June	7.77	4.10	3.57
July			3.57
August	9.05	4.37	3.63
September	8.93	4.12	3.61
October	8.98	4.02	3.71

Continued

Continued

Month	Fine	Medium	Strong
November	9.47	4.28	3.76
December	9.14	4.25	3.68
January	10.13	4.51	3.62
February	10.20	4.42	3.78
March		4.37	3.71
April	10.94	4.36	3.71
May	11.56	5.12	4.07
June	10.20	5.05	4.05
July			4.02
August	15.05	5.37	4.24
September	16.97	5.85	4.46
October	17.01	5.82	4.40
November	15.85	5.28	4.10
December	15.38	5.38	3.88
January	16.19	5.21	3.79
February	16.52	5.43	4.03
March	16.43	5.59	4.02
April	16.96	6.06	4.22

Note: values are $/kg

Answers

1. The price for budgeting should be somewhere close to $14/kg.
2. The reasons for concluding on the price expected should include some of the following key words: top range; favourable reports; quota; trend; exchange rate; price; demand increasing; lower exchange rate; improving.

Anticipation: Beef Prices (Chapter 11, p. 171)

Whether to keep or to sell? The answer depends in part on price expectations.

Anticipating the price of bull beef

Introduction

The price paid locally for bull beef depends on many factors, most of which are beyond your control. It is not possible to turn bull beef production off and on at the drop of a hat, so it is very important for bull beef producers to be constantly monitoring the price expected and subsequently making plans to increase or decrease production within the bounds of what is possible. In unison, the alternatives that might similarly be decreased/increased need considering.

Determining factors

One of the factors impinging on the price is the exchange rate between the producing and purchasing countries. In New Zealand, the MW Economic Service believes a US$0.01 increase in the New Zealand dollar reduces the price by $0.073/kg. A US$0.01/lb increase in US imported prices should lift prices $0.027/kg.

Other factors are the supply of beef in North America, and the world in general, particularly in countries that can export to the USA (some countries cannot, e.g. because of their disease status). Supply depends on many factors, including the type of season experienced in the producing areas in the USA and other countries. Similar comments apply to grain and bean prices, which impact on the cost of feed for the feedlots, and fuel too.

Also relevant is the change in the disposable cash consumers have to spend on food, especially for certain sections of the community. For high-quality beef cuts, increases in spending power increase demand.

On top of these factors comes import quota restrictions and the world trade negotiations. For many years there have been discussions on freeing up trade, and slowly, but ever so slowly, the restrictions are being lifted. It is believed that the liberalization will improve meat prices.

The current scenario

If you were told the current bull beef price to the typical farmer was $2.50/kg, should a farmer plan on increasing production at the expense of lamb and wool? Given the lag in output, you would of course examine whether the bull beef outlook will give a rising, falling or 'just sitting' price.

Consider the following fictitious scenario in the case of New Zealand farmers:

Current exchange rate : NZ$1 = US$0.58

Exchange rate trend:

1 year ago = US$0.51

6 months ago = US$0.55

3 months ago = US$0.58

One-year forward contracts for the US dollar currently sit at NZ$1.65. In the last year, US gross domestic product has increased 2.3% and the Federal Reserve rate has been lifted 0.5%. There has been a run of bad seasons in North America for both grain and stock producers, and similarly in South America. Stocks of both live and dead resources are currently low. Recently, in a landmark decision, the US authorities have agreed to be party to the World Trade Agreement on free trade.

Having studied this scenario, what do you think will happen to the bull beef price in 2 years' time relative to the current price? Jot down your answer, then study the comments below.

Comments on the outlook for bull beef

It is not possible to be precise in a forecast, because the details provided are just trends, and between now and 2 years'time there are un-forecastable factors (such as disease outbreaks and political decisions on the biofuel situation in the USA).

But looking at each of the factors there is likely to be a firming of the beef price. Thus, if you can make money with the currently assumed beef price, then it would pay to plan on at least holding production if not increasing it, assumingthe profitability of alternatives is not changing.

The reasoning for the firming conclusion is that while the New Zealand dollar is likely to increase in value, especially as New Zealand interest rates are likely to increase, and therefore decrease the beef price paid here, this must be offset against the low stocks and poor production conditions in other producing countries. Further, the demand is likely to firm, given the growth in US gross domestic product, and of course, slowly, freer trade will have an impact.

This is of course the kind of anticipation activity farmers must constantly take part in: get it right and they will be able to position their farm to make the most of the ever-changing situation.

Imagination and Creativity (Chapter 11, p. 175)

Consider the truth of each of the following statements. A discussion on possible answers follows.

1. John reckons it is crucial to be thinking ahead about the actions of the national road maintenance committees. What they might do will impact on future wool prices, not to mention meat prices.
2. Felicity has been involved in a correspondence course on financial management for small businesses becauseshe thought that one day she might set up business in the local town. Felicity did not believe what she had learned would be much use in planning for longer term farm financing because, after all, shares, equities, ratios, derivatives, exchange hedging were all things that were the stock and trade of the urban businessman.
3. John spent some time explaining to Kendall the importance of studying the 'drivers of change'. He emphasized that the drivers were under the control of the local government and it was important to give them your views if they were to stop making ineffectual decisions.
4. Jill always reckoned emotional blocks were important and should be developed by anyone interested in becoming a good manager. Armed with emotional blocks, you could stop being influenced by irrelevant trivia.
5. Tom was great at his creative pauses. When talking to others he made a special effort to leave silent moments so the others would have a chance to speak.
6. The local farm consultant made special efforts to encourage his clients to be creative in coming up with ideas to solve problems and 'grow their businesses', to use one of the modern phrases. For people who were somewhat tardy in coming up with ideas, he used the random input idea to stimulate discussion. He always explained that this involved getting an 'idea seed' from an agricultural magazine.
7. It is often said you should 'never set a decision in concrete' until it is finally necessary to act (put the decision into effect). This acknowledges that farmers operate in a dynamic environment and that, while it is important to think well ahead, situations might change, so wait until the last moment before acting in case you have to change the decision to suit the current situation and conditions…but do not be too late!
8. Environmental scanning from the futures approach is a requirement now that so much emphasis is on the environment, particularly with respect to the Resource Management Act (which controls changes that can be made to the natural environment).
9. My neighbours have recently spent some time getting their affairs in order. They believe that flexibility and control issues are much more important than taxation matters when it comes to succession and retirement planning.

Explanations

1. It is doubtful whether roads will have much impact on prices, except for the farms that currently have very poor access. Thus the actions of the road committees are probably not an area that requires much forward-looking consideration or thought. Concentrate on the matters listed in the chapter.
2. Felicity was wrong. Farms are becoming quite major businesses and need to show a reasonable return on capital, so all financial tools are important resources and options for progressive farm managers interested in keeping the cost of capital to a minimum, ensuring money is available at least cost for efficient operation. Thus the world of financing is one area where forward thinking must be concentrated.
3. While some 'drivers' (the root causes of any changes that might in any way impact on a farm's outcomes) are determined by local politicians, most of the crucial factors will be determined by other bodies and will relate to issues such as overseas markets and the broader rules under which a farmer operates, such as tax rates and rules. Thus, a farmer needs to think widely when considering the factors ('drivers') that determine the environment affecting his prosperity.
4. Emotional blocks refer to a manager's feelings and biases that prevent a rational view of the future and, therefore, get in the way of making sensible common-sense predictions of what the future will hold. They also impact on whether the manager takes a forward-looking approach at all.

5. Creative pauses are, of course, for Tom himself, and not for anyone he might be talking to. A 'creative pause' is where you take a moment to divest your mind of the 'here and now', and think of something new that might help you in the future. Not that talking to others about new ideas is not a very good idea.
6. That is exactly what the idea is, and it can indeed help people who are not that good at using their imagination. You should stick to 'noun' words that refer to a physical object (e.g. post, fertilizer, vaccine, track, water, etc.).
7. Could not agree more. The explanation is given in the statement: why decide what to do and stick to this decision in advance of the action time? Thinking well ahead is critical, but you do not want to do something immediately that might turn out to be wrong, in the sense that if you had waited you would have got it right without incurring any downsides. But, of course, if there are other things that hinge onyour decision, you may need to make it 'early', but this is not really early, becausethe action time is still as late as possible without being too late for effect.
8. 'Environmental scanning' might well involve the Resource Management Act, but in this case it refers to a much wider concept: that of searching out information on all the trends and factors that might impinge on the general environment (markets, rules, regulations, knowledge of biology, electronic developments, etc.) under which a farmer will operate over the 'middle' future.
9. Many people would agree with your neighbours. Taxation rules can so easily be changed by successive governments, and that indeed is one reason why some flexibility is important. It would be unusual for any one ownership set-up to have significant tax advantages without a government changing this to a more even playing field.

Visualization (Chapter 11, p. 182)

A farmer can check out his visualization skills by going through the list of farm components below. For each one, indicate how well it was visualized by entering a number from a scale of 1 (did not visualize) to 5 (complete success in visualizing). A student might follow through with this exercise for a case farm. The component set is for a sheep farm, so equivalent versions need to be used for cattle and/or crops.

The numerals that equal the net balance in all bank accounts
The numerals that equal the balance of all mortgages
The numerals that equal the total saleable value of assets
The boundary fence at the back of the property
The pasture (crop) kg in the area at the middle of the back fence
The water trough in the paddock closest to the centre of the farm
The quantity and types of weeds in the same paddock
The number of scouring ewes in your smallest mob of ewes
The number of ewes that are one of twins
The condition of the piles under the wool (grain) shed
The amount of tread on the main tractor's front wheels
The soil moisture level in the driest soil
The level of the fuel in the farm tank
The quality and kg of pasture in the block that the ewes will next graze
The rams that are to be culled at the next culling
The average condition of the teeth of the oldest ewe group
The quantity of useable drench (for internal parasites) stored in the sheds

Add up all the scores. What was the total visualization score? Seventy or more?

Are there any gaps? Most managers do not take time to rectify their images of the total scene; it requires attention to notice items and a conscious effort to store them as necessary. Thus, using spare moments, a farmer should constantly practise mental visits to each part of the farm; gaps will become clear so that a visit next time it is convenient can be made to rectify the situation. Clearly, a good picture of everything enables work planning for the immediate future, and creating longer term plans.

For more practice, take a look at these lambs:

Remembering that lambs perform poorly for a number of reasons, including bad management, visualize and list out the features of a farm that might well have produced the worst lamb. In thinking of these features, compare it with the farm that produced the best lamb.

Time Management (Chapter 11, p. 193)

What priority would you give to buying feed in this situation?

Your 3000 ewes are losing weight and the rams are due out in 3 weeks. You could buy some barley, use some of your high-quality lucerne (alfalfa) hay, sell off some of the older ewes or do nothing (although other alternatives are possible).

You estimate you will need to feed 1 kg/day/head of the best hay to get a slight increase in body weight. Using the hay now means you may have to buy some later. You reckon this will be the case, but you can get away with lower quality hay at $0.25/kg. Alternatively, barley at 0.7 kg/head/day could be used, bought in at $220/t. Without hay the ewes are getting the equivalent of 0.6 kg hay/day from grazing. Lambing percentage is expected to drop by 10% if nothing is done, 5% if the ewe live weight is just increased slightly compared with normal.

You reckon it is probable that you will need to feed for 4 weeks. To save this amount of feed you will need to sell off two-thirds of the flock; this is not tenable, because when the rain eventually arrives this winter, feeding then should be sufficient. It might be possible to sell off as many as 500 and replace in late autumn.The net cost for this optionis estimated to be $6 per ewe including transport, but the quality will not be as good – perhaps a 5% drop in lambing percentage. Given the time of year, wool production will only be marginally affected over the time period, though there is some doubt whether the quality will be affected. This is hard to value, so at this stage ignore this effect but remember this might be a factor to consider if the calculations suggest the alternatives turn out to be similar on the feed costing basis.

Assume a lamb is worth $60 net. For each lamb 'not on hand', you make an extra two bales of hay at a net value $4.

What would you do? Clearly a quick decision is required if any action is warranted (see below for answer).

The sums

First, list the options:

1. Sell off 500 ewes and replace later, and buy some extra hay.
2. Buy extra hay.
3. Buy grain.
4. Sell off 500 ewes and replace later, and buy some grain.
5. Do nothing.

Then list out the impacts of each option:

1. Cost $6 net for each ewe sold/replaced. Remaining ewes get higher ration, but you still need to buy extra feed. Lambing is down 5%, extra spring feed gives some return from extra hay made.
2. Lambing is down 5%, costs increased by hay cost, extra hay/grain made in the spring.
3. Lambing is down 5%, costs increased by grain, extra hay made in the spring.
4. Cost $6 net for each ewe sold/replaced. Remaining ewes get higher ration, but you still need to buy extra feed. Lambing is down 5%, extra spring feed gives some return from extra hay/grain made.
5. Lose 10% of lambs, but gain extra hay in spring.

Note that in all cases lambing is down 5%, except for option 5, where it is down 10%. Thus, only in option 5 does the extra lamb loss need to be considered.

Costings

1. Ewe net replacement 500 × $6	3,000
Hay purchased	
2500 ewes @ 28 days @ 1 kg @ $0.25	17,500
Less feed saving from 500 ewes sold	
e.g. 40 days @ 0.6 × $0.25	-3,000
Lower lamb numbers 500 @ 5% @ $60	1,500
Less savings from extra hay made in the spring	
25 @ 2 @ $4	-200
NET	$18,800
2. Hay purchased	
3,000 ewes @ 28 days @ 1 kg @ $0.25	$21,000
3. Grain purchased	
3000 ewes @ 28 @ 0.7 @ $0.22	$12,936
4. Same as **1** except purchased feed cost is different, thus:	
Ewe replacement	3,000
Grain purchased	
2500 @ 28 days @ 0.7 @ $0.22	10,780
Feed saving from 500 fewer ewes	
40 days @ 0.6 × $0.25	-3,000
Lower lamb numbers from 500 fewer ewes	
-500 @ 5% @ $60 net	1,500
Less saving from extra hay made through lower lamb numbers	
-500 @ 5%	25
25 × 2 × $4	-200
NET	$12,080
5. Net loss of 5% of lambs compared to other options	
3000 × 5% × $60 net	9,000
Less extra hay made from fewer lambs	
3000 × 5%	150
150 × 2 × $4	-1,200
NET	$7,800

Conclusion

It pays to do nothing, but, if necessary for extreme conditions, buy some grain. However, the price might have risen markedly, so keep reviewing.

Would you have followed the results of this calculation? Did you agree with this conclusion and action?

Questions to encourage time management reflection:

For each question, jot down a 1, 2 or 3 depending on the degree of truth: enter 3 for a strong 'yes', and 1 for a strong 'no'.

For recent tasks you have been involved with did you:

Set a very high standard and so fear failure/incompletion?
Get bored with some tasks, finding other things more interesting?
Lack time for proper completion (a common reason for untimeliness!)?
Sometimes not know how to do the task?
Not really believe the task was worth doing?
Find other tasks/problems kept emerging and distracted completion?
Find the enormity of the task daunting and not know where to start?

Consider the statements you answered a firm 'yes' to in the questions. What can be done about removing this block? Is the block rational/logical?

Typical Learning Style Tests (Chapter 13, p. 244)

There are many learning style tests available. Most involve answering a set of questions that are then scored, leading to a conclusion using results from many uses of the tests. Two examples of the kinds of questions are given below (a search on the Internet will provide a reader with many tests. Before use, their validity should be checked through the literature. The examples provided were picked at random).

For these example questions, each is scored on a 1 to 4 scale of correctness:

- I feel the best way to remember something is to picture it in my head.
- I follow oral directions better than written ones.
- I often would rather listen to a lecture than read the material in a text book.
- I am constantly fidgeting, e.g. tapping pen, playing with keys in my pocket(see http://www.ldpride.net/learningstyles.MI.htm for the full test).

And another set of examples is:

- I understand something better after I: (i) try it out; (ii) think it through.
- I would rather be considered: (i) realistic; (ii) innovative.
- When I think about what I did yesterday, I am most likely to get:(i) a picture; (ii) words (see https://www.engr.ncsu.edu/learningstyles/ilsweb.html for the full test).

Clearly the scoring system for each of these examples is different. Thus the interpretation will depend on the scores obtained relative to a standard set.