

2020 Farming – Checklist for Change

SUMMARY

Change is a risky business, but to do nothing is to risk everything.

Farmers need to make their farm business a little bit better each year, to keep up with the rest of the world. If they do not, then the farm will become unviable. Change needs to be managed or it will manage the farm.

It is important to analyse the benefits and risks of change. Weather and markets are important, but are not the only risks. Big risks to the family farm business include divorce, failure to achieve lifestyle objectives and environmental sustainability.

The first step in managing change is to determine where you are now. Two important measures of your current position are *Return on Capital* and *Equity*. These are measures of how profitable the business is and how comfortable is the debt level.

Good management involves ongoing monitoring, which checks on performance and identifies which parts of the business are good and those which require improvement.

An important process of management is *fine tuning*, which looks for improvements and makes small changes in all aspects of the business:

1. Enterprise and cropping mix.
2. Productivity
3. Costs
4. Marketing
5. Climate Risk Management
6. Timeliness and control

But fine tuning may not be enough to keep the farm business profitable over time. There can be conflict between gradual improvement and the need to be truly innovative when major changes are needed to survive and prosper. *Reinvention*, in the form of new enterprises or capital structure may be needed to remain viable.

Farmers need to examine trends in farming and in their business and look for opportunities to reinvent the business. Possibilities for reinvention include:

1. Are there more profitable farming enterprises or options?
2. Should the business be expanded?
3. Is there better use of capital by using contractors, or other means?
4. People management - can we encourage staff to be more reliant and productive?
5. The environment - are there ways to improve soil health and sustainability?

The starting point in analysing options for land, machinery and business ownership is to determine the profitability and cash flow implications for each option. This can be done by using tools from the *Risk Analysis Toolbox*. Once the profit outcomes and risk analysis has been completed, a plan of implementation is required, with attention to detail and ways to make change as risk free as possible.

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Managing Change and Assessing Risks

1. FARMS NEED TO CHANGE!

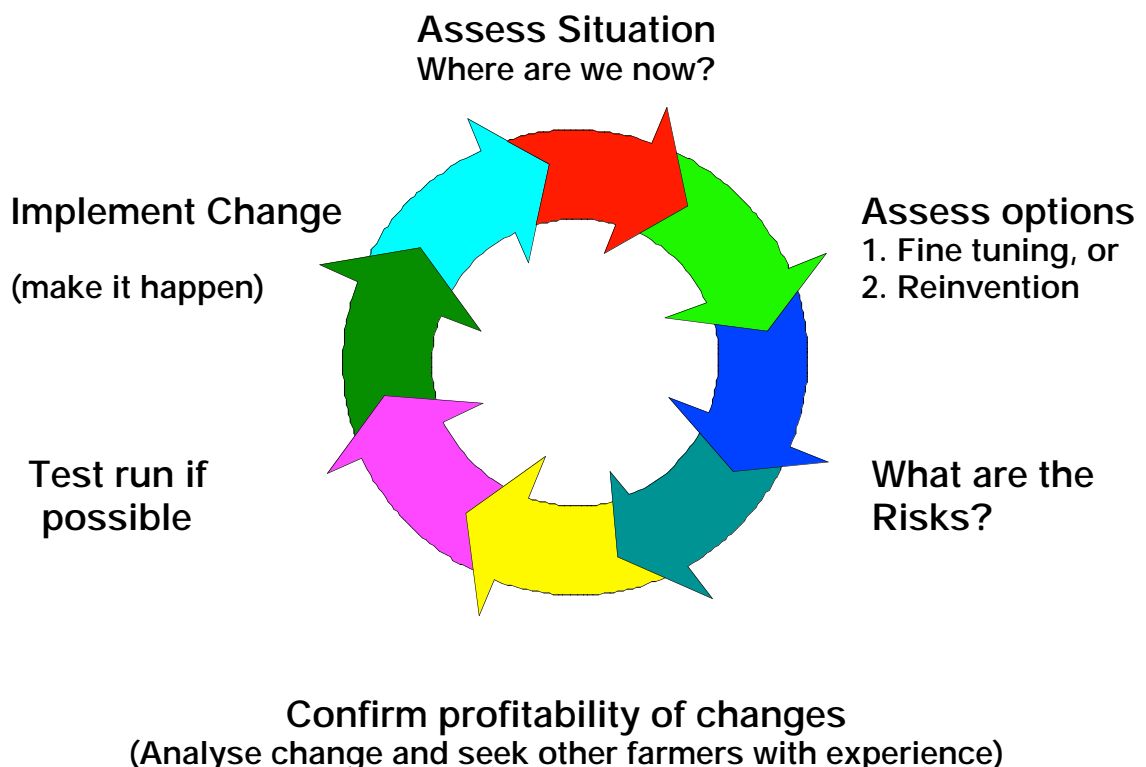
Change is a risky business, but to do nothing is to risk everything.

Staying put, without change is not an option for farmers. The business will soon become unprofitable. Farmer's terms of trade have declined by 60% over the past 30 years. To keep up with the rest of the world, farmers need to make their farm business a bit better each year, to improve by around 2%.

An important problem on Australian farms is that too many farmers do the same thing as they did last year.

Like it or not, change is a part of modern farming. Farmers need to assess their current situation. Where they are now? Where they want to be in 5-10 years time and what changes need to be implemented to get there? **Change** needs to be built into the *management process*.

Figure 1: The Process of Managing Change



Fine Tuning

An important part of the management process is *fine tuning* which makes small changes each year to all aspects of the farm business, which include:

1. Enterprise/cropping mix
2. Productivity
3. Costs
4. Marketing
5. Climate risk management
6. Implementation and timeliness

Annual reviews, benchmarking or a business health check will show where there is a potential to make improvements. A good review will provide evidence on where changes are needed and an indication of how much money could be made if improvements are made.

General Production Risks

Every season there are risks associated with production and marketing:

1. Effect of dry seasons of production
2. Excess rainfall can sometimes be as bad as a drought
3. Other weather risks, such as frost, hail and harvest rainfall
4. Price risk – variation in crop prices

An important part of the fine-tuning process is to examine ways in which it is possible to manage some of these risks.

Some of the options for managing production risks are discussed under fine-tuning later in this booklet. In many situations, it is not a matter of implementing one practice, but a package of measures to reduce the possibility of loss.

In other situations, it can be a process of balancing some loss of potential income against the risk of loss. Planting wheat late to avoid frost damage is an example of such a balancing act.

Reinvention

Fine tuning is an essential part of business management and making small changes each year carries with it only a small amount of risk. But fine-tuning may not be enough to keep the farm business profitable over time.

Think back over the last twenty years about the changes which have gone on in farming. Twenty years ago, crops such as chickpea and canola were just coming onto the scene. Burning of stubble was common and Roundup was \$15/litre. Farms are now larger and farmers now grow different crops, with different tillage systems.

Major changes in the form of new enterprises or capital structure may help the farm to remain viable. Reinvention of the farm business is needed on a regular basis.

Some of the ways in which reinvention may take place are:

1. Change to more profitable farming options
2. Expansion by purchase or leasing more land
3. Better use of capital by using contractors, sharing equipment, or other means
4. People management - encouraging staff to be more reliant and productive
5. Environment - improving soil health and sustainability

Risks associated with major change

All change involves some risk and it is important to analyse the benefits and risks associated with any changes which are being considered. A financial benefit is important for change and the more obvious the benefits, the more incentive there is to make a change.

If we can quantify the uncertainties and assess the risks it will help to make the decision whether to change or not and reduce the chance of things going wrong when making changes.

Bear in mind the weather is not the only risk in farming. There are price risks and potential changes in interest rates over time. But some of the big risks to the family farm business are to do with people:

1. Failing to change and becoming unviable
2. Divorce in one or more of the farm families
3. Family happiness and failing to achieve lifestyle objectives
4. Environmental degradation

A big picture vision is needed

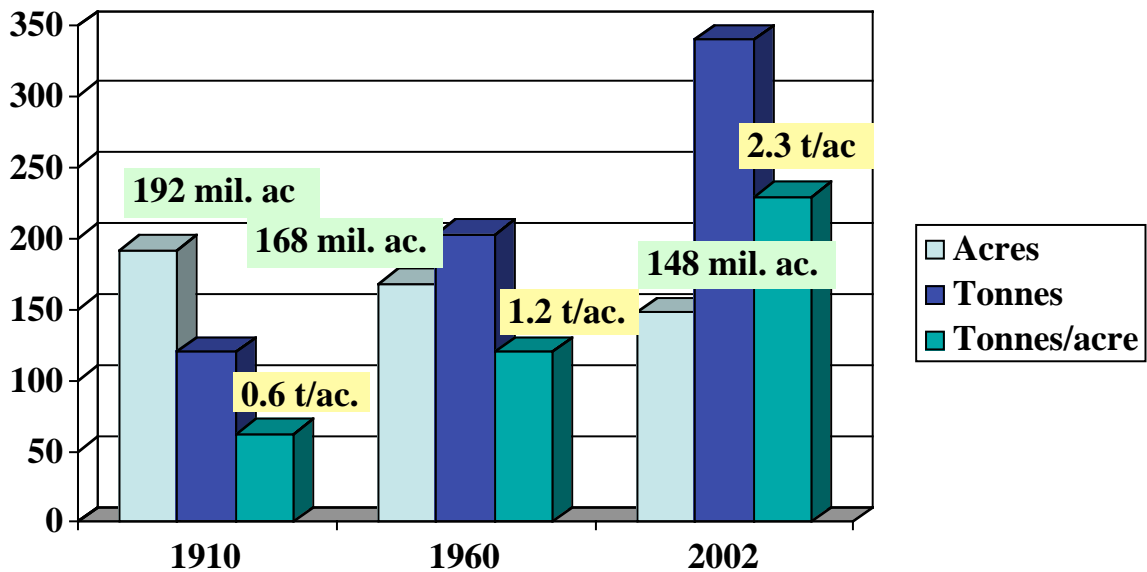
We need to keep in mind the big picture. We are farming in a changing world where there is competition between farmers in all countries which are exporters of agricultural products. Australia is a relatively small producer of grain and grain yields have not improved as much as they have in our major competitor, the United States.

The United States is the big powerhouse of agriculture, where improvements in production, increase the supply of grain by around 7 million tonnes a year. This is one of the reasons for the declining terms of trade and why farmers have been able to survive continuing increases in costs without much of an increase in commodity prices.

In figure 2, statistics show a massive improvement in yield and total production of grain in USA. Yields doubled between 1960 and again between 1960 and 2002. The annual improvement in grain yield in the USA, adds up to about 7 million tonnes of grain, which is around 25% of the total production of grain in Australia.

To keep up with farmers in the USA, we need to keep improving yields by around 2% a year.

Figure 2: Grain production and yields in the USA



To stay viable it is important not to slip backwards due to land degradation. Soil erosion, soil structural decline, fertility decline, acidification and salinity all have the potential to reduce the productive potential of land and offset any improvements in productivity.

Profit is important, but it is not the be all and end all of the family farm business.

The most important things in life cannot be measured, quantified, packaged, boxed, or tied down. Our most meaningful experiences are mostly about our relationships with others and are not quantifiable or even tangible.

We cannot put calipers on relationships, on a dream, on happiness or on excitement from achievement. The essence of life is the experience, not standing outside measuring it.

We need measurement for fine-tuning and understanding the business, but also we need to search for other indicators that also answer the question, Why? What is our vision? What makes us happy? How can we make those around us happy?

Can we achieve the seemingly impossible, the triple bottom line, where objectives relating to *people*, *profit* and the *environment* are all satisfied.

This **Checklist for Change** provides an outline for you to manage change and analyse the risk relating to making changes on the farm. It is designed to be used in conjunction with a *Risk Analysis Toolbox*, which provides spreadsheet tools to evaluate various options for change to the farm business.

2. WHERE ARE YOU NOW?

The first step in managing change on your farm is to ask these questions:

- Where are we now?
- Where do we want to be in 5-10 years time?
- Is the business profitable?
- Where will we end up if we do not make changes?

The starting point is sound profitability. The most important buffer for risk is profit. A major natural disaster can send farms to the wall, but usually only when they have been trading badly for a number of years. Good profitability can provide cash reserves and a buffer to repay interest and loans and to keep the business going.

Two important measures of your current viability are Equity and Return on Capital

Equity

This measures your level of indebtedness. If your equity (your net assets divided by total assets) is strong (above 75%) then you have the potential to borrow money against assets. If the equity is below 60%, then bank managers may not advance any more money and may consider the farm business a high lending risk.

These figures will vary however for different farm situations and depend also on profitability and other considerations, such as the reliability of income. The readiness of a farmer to extend his borrowings to the limits, will also depend upon his stage in life and the need to get ahead.

Work out your assets (land, livestock, machinery etc) and your liabilities and calculate the equity of your farming business in the attached worksheets.

Return on Capital

Return on capital (ROC) is a good measure of profitability because it allows comparisons of the profitability of your farming business with other farms which may be different in size and investments such as bank interest or managed share funds.

It can be calculated by determining farm profit before interest and tax, less drawings divided by total farm assets.

Top farmers achieve a return on capital of more than 10%.

A return of more than 7% p.a. is still good, especially if we consider there is some additional return by way of capital gain on land holdings over time. See the attached worksheets for more detail

If there is a *good return on capital* you have a good program, but it also means there is a good surplus to enable change to more profitable options in the medium to long term. A *low return on capital* (below 5%) suggests a major tune-up is needed or you may need to reinvent the whole business and consider new directions.

Annual monitoring

Equity and return on capital are a good starting point to determine the current state of health of the farming business. There are other business health checks which can provide insights on various parts of the business - see box.

But what is needed for good management is to develop an ongoing monitoring system, which reviews the farm business performance each year and provides pointers as to which parts of the business are going well and those with potential for improvement.

The most important reason for annual monitoring or a business review is to search for improvements.

This is the foundation of the fine-tuning process. We need to know where to start.

This process is much enhanced if the farm performance can be compared with other farms. The data then provides an indication of costs or returns or measurements of productivity, which are high or low, compared with other farms.

This can save a lot of time for managers, whereby they examine only those areas which show need for improvement. This process of ***fine-tuning*** is discussed further in section 4.

A second important reason for monitoring is to understand the business.

How much does it cost to produce a tonne of grain or a kilogram of beef? What is the relative importance of various costs? What is the effect of an extra \$20 per tonne in price? We need to know these answers to be effective managers and marketers of grain.

Most farmers who work with farm management consultants are involved with some kind of **Annual Profit Review** or **Benchmarking** to do this.

The advantage of this process is not only finding out what the best farms are doing, but there is an independent observer who is able to discuss the farm situation and turn the benchmarking figures into a plan of action for improving the business.

Farmers need to **measure** the performance of the business to be able to **manage** it, but even more important is taking the step to make changes according to the interpretation of the measurements.

Benchmarking is not the important step, it is the action which results from it!

Business health indicators can be developed from annual farm profit and loss data, but will still benefit from comparison between farms and some good interpretation. The following table shows some business health indicators for a group of farms in Queensland.

Most consultants will go much further than the profit and loss figures in helping a farmer to analyse his business performance each year. It is necessary to look at the production performance and to prepare calculations of yield and water use efficiency.

To compare the returns from crops, both on the farm and between farms, it is necessary to look at the costs and returns from each paddock or similar paddocks. This becomes a little more complicated, because it will usually cross financial year boundaries and require additional recording of information not used in the annual tax statement.

Table 1: Business Health Indicators

For a group of 12 Queensland farms over 7 years: 1994-2001

	Group average	Top 25 %
1. Return on farm capital - %	7.8%	10.8%
2. Return on assets managed - %	7.7%	11.2%
3. Farm gross income per labour unit	289,321	309,800
4. Farm surplus per labour unit	\$56,422	\$68,955
5. Gross income/ha/100mm	107	113
6. Costs/farm gross income - %	79%	75%
7. Farm surplus/ha	116	138
8. Interest/farm gross income - %	6%	6%
9. Machinery value/farm income - %	92%	66%
10. Land value per labour unit	966,311	855,527

3. WHERE DO YOU WANT TO BE?

Good profit is important, but there may be other important objectives, both short and long term.

Profit is important, but it is not the be all and end all of the family farm business.

Prevailing wisdom in the business world is that if you cannot measure it, it is not important.

But family farms and businesses are different. Some of the most important things in life cannot be measured, quantified or tied down. The essence of some of our most meaningful experiences is to do with our relationships with our family and with others.

We cannot measure the value to us of a dream, on excitement from achieving, on time with the family or on happiness.

We can measure money, but it is an indicator rather than a goal in itself. Money is invariably important in achieving other goals, but is only part of life's journey

Consider developing specific objectives on the following lines and whether they apply to your future:

1. Our target is a business profit representing a return on capital of more than 7% .
2. Capital gain is likely to provide an additional 3% return on investment.
3. Family drawings of \$50,000 are needed to provide a good lifestyle and some leisure activities.
4. A workload should average less than 50 hours per week, also for a good lifestyle
5. The business will expand and double in size every 12-15 years
6. Our aim is to make the farm more sustainable.
7. Planning will include a retirement fund and for family succession

It is important to consider objectives such as lifestyle improvements which may require tradeoffs with profitability.

Working less may not as negative on profits as you think. In some cases it is possible to use more contractors, hire more labour, or encourage the farm workforce to be more self-reliant and improve *both* profit and lifestyle.

Profitable farms expand. A ROC of 7% will double the size of the business in 10 years!

If a profit which represents 7% ROC is reinvested each year, the compound growth will result in the business doubling in size every 10 years. In practice, this will usually take longer after allowing for some slippage due to income tax payments.

Expansion is usually profitable, because the administration, machinery and labour costs are diluted over a larger area. But think carefully about where you want to be before making changes like buying another farm. Once the farm is a reasonable size, it may be that off-farm investments could be a better alternative, which does not increase the workload.

See the attached worksheet for a review of your satisfaction and lifestyle objectives.

Another important part of planning for the future is succession. Who is going to take over the family farm?

This is not something that should be left until retirement age. The younger generation need to know what the future holds. The succession plan may also indicate a need to expand or to build up off-farm assets to fund retirement.

Good family communication and early planning is the key to a smooth succession, where the farm is handed over to the next generation.

During the planning process, advice should be sought on ownership structures, taxation and wills. But the most important questions are ones that need to be answered by the family and in particular by the parents, about who gets what and when, and the form in which their retirement income is provided.

Planning for the future of the farm needs to start early - at the time children are deciding on their career path and what subjects to take at high school. An objective assessment of how many the farms might support and who might take it over, needs to be made at this point.

Critical questions that need answers in succession planning include:

1. Who is likely to take over the farm(s)?
2. Is the farm to stay in one unit or to split up?
3. When should there be a change in management?
4. When should there be a transfer of assets:
5. What is a fair apportionment of assets for families (children) farming and not farming?
6. How much money is needed for retirement?
7. How is this best accumulated in a tax effective manner?
8. What are the best ownership structures for asset purchase, bearing in mind asset protection and succession?
9. Are the retirement assets and income secure?
10. Is everyone in the family conversant with plans for the future and reasonably happy with them?

4. FINE-TUNING - MANAGING CHANGE GRADUALLY

If small changes are made each year, then change is managed gradually without large risks. An important task of the farm manager in the process of keeping the farm profitable is to regularly spend time fine-tuning various aspects of the business.

Farmers' terms of trade (the ratio between prices received and farm costs) have declined by 60% over the last 30 years. This means it is necessary to find an extra 2% a year of improved productivity or lower costs to keep ahead of declining terms of trade. Fine-tuning should be a continuous process, which aims to find this extra 2% improvement each year.

Fine-tuning should be done across the whole business, in the following areas:

1. Enterprise and cropping mix
2. Yields and productivity
3. Managing costs
4. Marketing
5. Risk management
6. Scheduling and timeliness

There is often too much emphasis put on improving yields. Whilst yields are important, there can be many weak links in the process of making a profit in the other five areas listed here.

4.1 Fine-tuning enterprise and cropping mix.

To fine-tune the farm business we first identify which enterprises and/or crops are making the profit and which enterprises are not doing as well.

This fine-tuning needs to be done before each planting season to reconsider crop prices and gross margins and the optimum mix of crops in accordance with other objectives for productivity and low costs, such as having well planned rotations to reduce weeds and disease.

In some cases fine-tuning could mean killing some 'sacred cows', but change is part of the business of farming.

A good example of this concept is in the Maranoa district of southern Queensland. Farming systems in this area over the past ten years have moved from a wheat monoculture with some grazing oats to more sustainable and profitable rotations including chickpea, sorghum and mungbean.

Breeding cows and grazing oats have given way to more steer fattening and supplementary feeding. Farm profits have nearly doubled as a result of these changes.

It is important to review the enterprise mix on your farm regularly. See the worksheet for more details

4.2 Fine-tuning yields and productivity

Yields are important for profit, and it is appropriate for farmers to spend a lot of time with their advisers fine-tuning the various aspects of varieties, fertilisers, weed control and other agronomic issues.

Crop yields need to be examined in relation to the broader issues, such as crop frequency (in summer rainfall areas) and the overall rotation and mix of crops.

Crop rotation may optimise crop production and maximise profit by reducing costs as well as optimising yields.

In the summer rainfall areas, opportunity cropping may increase crop frequency in some years and suggest less crop and more long fallow in others. Crop yields from a higher crop frequency in use by opportunity cropping may be less than where long fallows are used, but more profitable and kinder to the soil environment.

In these areas, where fallow moisture is important, minimum and zero tillage are generally involved in not only improve yields but reduce costs as well.

A good indicator of productivity is water use efficiency.

Water use efficiency (WUE) is calculated a little differently across Australia. In southern Australia it is generally calculated by dividing yield in kilograms per hectare by the growing season rainfall less 100 mm, which is a general estimate of the water lost through evaporation. Good yields of winter cereals are generally represented by water use efficiency figures of 15 to 20 kg/ha/mm.

In summer rainfall areas, WUE is generally calculated by dividing yield by water available to the crop. This is arrived at by adding a measurement or estimate of the soil moisture at planting time to in-crop rainfall. Using such measures, it is common to achieve WUE figures of 12 to 15 kg/ha/mm for good crop yields.

Some agronomists in northern grain areas have calculated WUE with 100 mm subtracted from the total water, as for the southern regions, to represent evaporation losses.

This will distort the results when there is a dry season. In some years, in-crop rainfall is less than 100mm and so it is not valid to deduct 100 mm for evaporation.

However, WUE will vary from region to region, and local comparisons should be used. It is significantly affected by planting time. In general, WUE will decline in seasons and situations where there is less rain and more heat. For example, 10kg/ha/mm is a good result from a wheat crop, planted somewhat late in mid-June, in the drier areas of the Western Downs and northern NSW.

As mentioned earlier, yields of crops are important, but crop frequency and costs may be important in influencing the overall profitability.

For example, a dryland cotton program in northern NSW or Queensland, which involves long fallows with wheat, there may only be two crops in three years which is a crop frequency of 0.66. Compared to an opportunity cropping program, involving mung bean and chickpea in rotation with wheat and sorghum, which may have a crop frequency of 1.2 crops per year, the profit from each crop needs to be around twice as high.

It is the overall farming system which is important. Higher yields and lower costs may come from good crop selection and good rotations in a farming program which might include legumes to reduce the cost of nitrogen fertiliser and zero-tillage to reduce costs such as machinery and labour.

Some of the 'systems' components, which may be important to consider, are:

1. Crop rotation – weed & disease breaks improve yields and lower costs.
2. Opportunity cropping in summer rainfall areas may adjust crop frequency and take advantage of above-average rainfall years.
3. Legumes to reduce nitrogen fertiliser costs.
4. Pasture leys to provide disease break, improve structure and boost nitrogen.
5. Minimum and zero tillage can improve yields and reduce costs.
6. Controlled traffic may improve yields through reduced compaction.

An important aspect of comparing systems is to consider the risks associated with different crops and farm practices. Some programs (such as crop rotation and less tillage) make the farm *less* prone to risk.

4.3 Fine-tuning costs

The costs of fuel, repairs, seed and fertiliser are generally unavoidable and some farms need to spend more on these 'productive' inputs rather than reduce them.

Apart from maximising the benefits of rotation to reduce costs associated with weed and disease control and using legumes wherever possible to reduce nitrogen fertiliser costs, there is not much that can be done to reduce farm costs.

Good farmers focus on production and profit, rather than trying to save money.

But overhead costs of administration, machinery depreciation and labour can be just as important as input costs.

Generally, farms have more scope to reduce overhead costs than input costs, by increasing output or the scale of production through leasing land or using machinery for contracting.

The table below shows, for a group of farms at Dalby, input costs at 41% of income, was less than the total for overhead costs, which were 45% of income. The top 25% of farmers in the group had higher input costs, but lower overhead costs.

	Average of 12 farms		Top 25% of Farms	
<i>Crop Income \$/ha</i>	680		935	
<i>Input costs</i>				
Fuel, repairs	72	10%	82	9%
Fertiliser	51	8%	62	7%
Weed sprays	49	7%	64	7%
Insecticides	45	7%	72	8%
Contract, misc.	64	9%	117	13%
<i>Total Input costs</i>	281	41%	397	42%
<i>Overhead Costs</i>				
Administration	78	12%	58	6%
Machinery	74	11%	73	8%
Labour	111	16%	104	11%
Sharefarm, lease	42	6%	64	7%
<i>Total Overheads</i>	305	45%	299	32%
<i>Total costs/ha crop</i>	586	86%	696	74%
<i>Profit per ha crop</i>	94	14%	239	26%

4.4 Fine-tuning marketing

A deregulated grain market has meant farmers need to spend more time on marketing and in some cases, acquire new skills. Top farmers reduce risk and enhance profits by intervention in marketing. But this does not necessarily mean using a lot of forward selling, futures or fancy tools.

Farmers need to develop their own marketing strategy and information sources which can:

1. Help them to understand markets and price fluctuations.
2. Be aware of harvest time price trends, here and the rest of the world
3. Suggest opportunities to take advantage of price fluctuations - averaging up prices?
4. Decide what market options can we use to lock in a good price?
5. Decide whether storage (or deferred selling) is a good bet in any particular season?

The more attractive the price, the more incentive there is to use marketing tools to 'lock' it in.

It is easy to market grain when prices are good and even if prices improve further, then a good price is still achieved.

The 'do nothing' option may be preferred at times of low prices. Storing a portion of the crop for later sale may help in these years, but the cost of storage, both direct and in terms of the opportunity cost of interest foregone on money, which could have been in the bank, needs to be considered. It can cost between \$1 and \$2 per tonne per month to store grain on farm.

Good risk management may involve setting a floor in the price for the season. This is done by forward selling some of the crop at reasonable prices. The price given up in years when prices rise is the 'insurance' paid to shore up the price for the times when prices go down.

Further discussion on marketing is to be found in the attached workbook.

4.5 Fine-tuning climate risk management

The big drought events, rain at harvest and losses which occur in wet seasons cause major setbacks to farm profitability. A succession of these may contribute to farm business failure.

The opportunities to manage risk should be examined and developed into a plan. Some changes to the farm program, such as growing more legumes, may appear risky.

But before rejecting such options, ways to manage specific risks should be examined and weighed up with the potential improvement in profit.

What are the main losses from climate risk?

It is important to put the risks of climate into perspective. Sometimes too much emphasis is given to a specific risk, which may result in income lost trying to avoid it. For example, planting late to avoid frost may result in more yield loss than from the frost.

Table 3 provides an example of how to assess the risks of loss from climate risk. This risk analysis was produced at a workshop with farmers in Goondiwindi in 1999.

Improved management practices and farming systems

Each climate risk needs to be reviewed for each farm, with the best mix of practices or a 'package' put in place to manage them. Before deciding on a package, the options to manage each risk need to be considered at a whole farm level in terms of the tradeoffs or synergies which will result in the best overall system.

Table 3: Assessment of loss from Climate Risks at Goondiwindi				
Risk of Crop loss	Years Affected %	Area % of farm	Loss of Income %	Total loss %
Drought	20	80	50	8
Rain at harvest	35	75	20	5
No planting rain	5	80	100	4
Frost	20	60	30	3.6
Waterlogging/flood	20	25	70	3.5
Disease (wet years)	10	60	30	1.8
Hail	75	5	40	1.5
Heatwaves	20	20	30	1.2
Untimely operations	20	50	10	1
Risk is assessed for a crop rotations at Goondiwindi which has 75% winter (wheat, barley, chickpea), and 25% summer (sorghum, dryland cotton, mung beans)				

For example, planting over an extended period or planting varieties of different maturity to the spread flowering window and harvest time, may lose a little yield, but will reduce risk from frost damage and rain at harvest.

The aim should be to develop robust farming systems more resilient to climate. These are likely to involve diversification and crop rotation. For example, timeliness of operations is improved with a mix of crops or enterprises, in a good rotation program which also controls the major disease problems.

The icing on the cake is a healthy soil (with good structure, earthworms and organic matter) which is likely to cope better with weather and yield well in both wet and dry seasons.

Harvest risk management.

Harvest management is an example of managing climate risk, which involves considering all the management options (listed below) and putting together in a package to minimise the risk of weather damage at harvest.

This is particularly important in northern Australia, but even in southern Australia, a significant amount of yield and quality loss can be avoided, when rain disrupts harvest once every 3 or 4 years. Consider for example, the loss of quality premiums amounting to \$40 per tonne and 5% of yield on half of a wheat crop yielding 3 t/ha on 400 hectares. This loss is \$30,000. If it was only one year in 3, then the loss per year might seem small at \$10,000, but it could be as much as 20% of profit!

A sense of urgency combined with a good package of harvest management practices, might save much of this loss.

Strategies for harvest risk management

1. Diversification of crops. Growing less wheat and more barley or sorghum will reduce the impact of a wet harvest.
2. A spread of flowering and harvest time will reduce exposure of the crop to rain at harvest time. Planting different crops, varieties of different maturity and spreading planting over several weeks reduces risk.
3. Starting the harvest early and using aerated storages and grain drying will assist timely harvest. At times it is possible to blend moist and dry grain.
4. Good planning and harvest management will help get the crop off quickly. In some cases this requires extra labour.
5. Bringing in extra contract harvesters. One of the benefits of contract harvesting is that it does not cost any more to have two or three headers than it does to have one!
6. Weed-free crops can assist timely harvest.
7. Low soil phosphate level can affect evenness of maturity, which holds up harvest, while ripe grain in large areas of the paddock awaits the last green patches to ripen.
8. Harvest management techniques, such as header modifications and desiccation of weeds can help get the crop off before rainfall damage occurs.
9. Desiccation of some crops can allow earlier harvest.

5. REINVENTING THE FARM!

Good managers make good profits, despite rising costs and low commodity prices, by continually fine-tuning programs, the mix of most profitable enterprises, and their marketing strategies.

Continual fine-tuning is a sound concept, but there can be conflict between gradual improvement and the need to be truly innovative when major changes are needed to survive and prosper.

According to management guru Tom Peters; " If you're expending all your management energy making 'it' a bit better today than yesterday, you are not spending enough time on reinventing it."

Farmers need to sit down every now and again and examine trends in farming and in their business and consider whether there are major opportunities being missed or whether major changes are needed to survive and prosper.

Some areas to examine to reinvent the business include:

- Are there more profitable options?
- Should the business be expanded?
- Is there better use of capital by using contractors instead of owning machinery, sharing equipment, or other means?
- People management - can we encourage staff to be more reliant and productive?
- The environment - are there ways to improve soil health and sustainability?

During the process of Reinvention, the farm family should be consulted to see whether everyone is happy with the direction of the business and the family lifestyle. Retirement and succession planning need to be considered or updated.

5.1 Change, which involves capital

Significant changes to farm practices or expansion by buying another farm require extra capital and involve extra risk. The starting point in analysing options for land, machinery and business ownership is to determine the profitability and cash flow implications for each option. This can be done by using the *Risk Analysis Toolbox*.

As part of this analysis, risk can be considered by examining the sensitivity of profit and cash flow to unfavourable outcomes, such as reductions in yield and price.

Expansion or new ventures should have a considerable margin for error, to allow for unforeseen events or unfavourable seasons.

A desirable risk margin will vary for each farm depending upon the variability of production and the perception of risk by the farmer.

Ways to reduce risk associated with expansion include:

1. Sharefarm or lease land instead of purchase
2. Use contractors instead of purchasing extra machinery
3. Syndication or joint ventures, with other farmers or a business partner.
4. Finance loans on an interest only basis
5. Fix interest rates (if favourable)
6. Diversify enterprises when expanding
7. Diversify off-farm instead of expanding

Sharefarming and leasing land are less risky than borrowing to purchase land, because if things turn unfavourable they can usually be relinquished without any problems or penalties.

Sharefarming can reduce risk because the payments made to the landowner in a poor year will fall in proportion to crop production. Cashflow is better with sharefarming, because no payments are made until crop proceeds are available. However, a lower risk factor does not necessarily mean sharefarming or leasing is a better option.

If interest rates are in the vicinity of 6%, then the cost of purchase may not be much greater than sharefarming or leasing.

The two big advantages of owning is that the farmer receives the benefit of any capital gain and he is free to make improvements to the land and optimise the long term production and aesthetics of the property (for example plant some trees).

Syndication of machinery or joint ventures in farming is opportunities to reduce cost, but they are risky in terms of the 'people' issues. Good cooperation and communication is needed when people come together in business.

Diversification is one form of risk management. It is important for off-farm investments as well as farm activities. For example, investing in shares may be considered risky, but a managed share trust may have less risk because it invests in a large number of shares.

A feature of borrowing is the risk of rising interest rates. There are possibilities to lock in interest rates or minimise risk. The interest only finance may be less risky than fixed repayments for farmers with fluctuating incomes.

5.2 Change, which involves people

Some of the biggest risks in farming involve the people side of the business. Failure of partnerships in marriage or with sons or daughters in running the farm can be of greater significance than losing money on a new venture.

Some of the *People Issues* to consider are:

1. Health and safety issues
2. Divorce within members of the family,
3. Failure of father-son or daughter partnerships
4. Productivity and turnover from farm labour.
5. Stress from managing farm labour and other sources
6. Failure to achieve lifestyle objectives.

Farm succession planning is another important aspect of the business.

One of the reasons for a high failure rate in father-son partnerships is that there is no clear direction about the future of the farm.

Family relationships can often be improved with better communication, particularly about future intentions.

The farming lifestyle seems to be getting worse with farmers spending long hours in the paddock and then a lot of time in the office marketing produce or managing the business. This all adds up to longer hours, which if combined with financial stress can put pressure on family relationships.

The key to a better lifestyle is to employ labour, which is trained to be self reliant and can get on with the work while the owner is doing other things or away from the farm. Many farmers need to spend time learning more about managing labour better, so they are more productive and self reliant.

Other people issues include having a regularly updated succession program and will, considering lifestyle and family harmony and planning for retirement.

5.3 Change that involves the Environment and Sustainability

It is important for ongoing viability, not to be losing productivity – taking three steps forward and then moving two backwards due to problems such as soil erosion or salinity.

Sustainability implies continuing production which has:

1. Profitability
2. Healthy soils which are stable
3. Environment and food safety
4. Obligations to the community at large

It is possible there are changes that can be made to manage environmental problems, which also improve productivity.

The first thing we should do in natural resource management is to examine all the options that can help to manage environmental problems and at the same time improve farm production and profit.

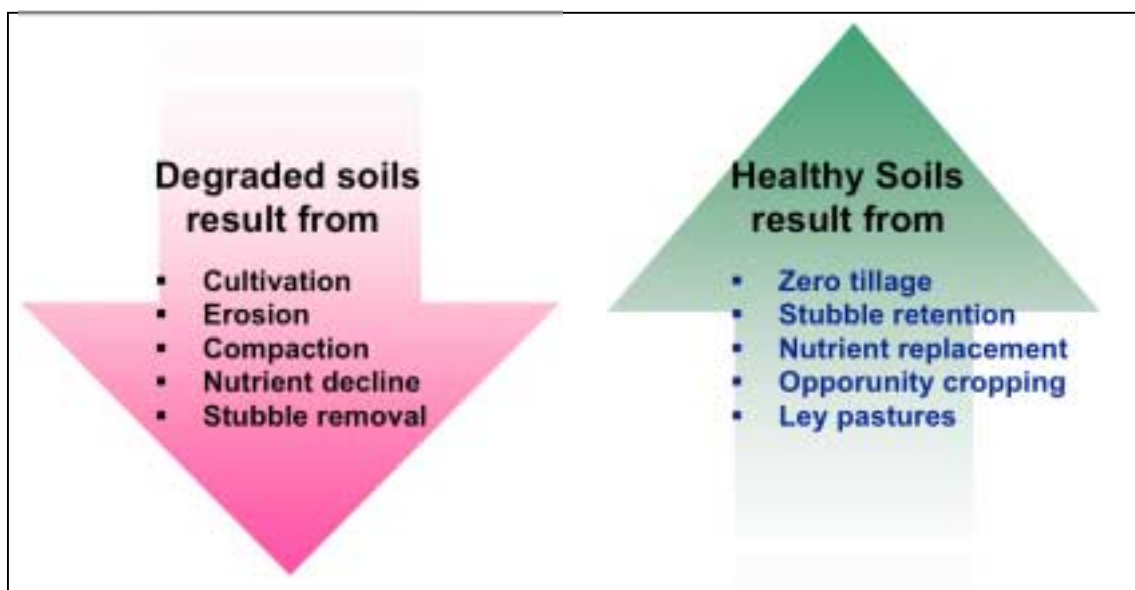
For example a program involving zero tillage, crop rotation, opportunity cropping and controlled traffic can improve the environment. This package will minimise soil erosion, soil structural decline and salinity while improving profit. At the same time it involves less labour and improves farm lifestyle.

Also, zero tillage is the main way we can improve the quality of water in our rivers and streams. Zero-tillage will produce cleaner runoff water leaving the farm, with less silt and less nutrients ending in the river systems.

Yet we still have many farmers and advisers making excuses about not using zero-tillage. Some are concerned about herbicides use, despite evidence that earthworms and soil organisms increase when we eliminate tillage. There are concerns with crop pests and diseases, but with good crop rotation programs this is not a problem.

Biodiversity is an aspect of environmental planning to be considered. It does not always cost money to retain or replant native vegetation. There are advantages from shelter and less problems with pests when birds and other predators are encouraged by providing more suitable habitats.

Other positive benefits from a good environmental plan are to enhance the appeal and value of the property and to be ready to take advantage of markets which demand good environmental practices or monitoring.



6. IMPLEMENTING CHANGE

Implementing change is risky but as we have said at the start: "To do nothing is to risk everything!"

New practices or changes to the farm business should be thoroughly researched and where possible the experience of other farmers used to indicate the pitfalls or potential mistakes.

Fine-tuning tends to minimise risk, whereby a number of small changes are made each year on the basis of evidence from an annual review of the business and comparisons with other farms.

If yields are low or costs high, then these are the areas that should be looked at. There are farm management consultants in all grain growing areas of Australia who can assist with annual reviews, benchmarking with other farms and with fine tuning the business.

Reinvention of the farm business is more risky and requires more thorough research and evaluation before implementation. This careful consideration should not only look at the new idea or enterprise, it should consider the family's goals and objectives and where everyone wants to be in ten or fifteen years time.

Profit Projections

The *Risk Analysis Toolbox* provides a number of formats to evaluate various aspects of the business and changes which can be made to improve profit.

1. Enterprise options - gross margins
2. Profit targets – provide a one page snapshot of income and costs
3. Farm Options Analyser – can be used for whole farm budgets and comparing options, such as a property purchase or different crop rotation.
4. Cash flow

Enterprise options - gross margins

A quick analysis of crop gross margins should be made before each planting time, adjusting the margins for yield and price expectations for the particular paddock and/or season.

Gross margins have limitations in that they may not take into account rotational benefits or risk management.

For example, the gross margin may show wheat to be the most profitable crop, but barley might still be included in the program because it can be planted and harvested early.

In summer rainfall areas, gross margins fail to take into account crop frequency, where both long fallows and double cropping may be used at times to make the most of wet and dry seasons.

A more thorough evaluation of rotations should be undertaken using the *Farm Options Analyser* provided in the Risk Analysis Toolbox. Once the gross margins are set up, it can be an easy task to modify them in response to a change in price for a crop or crop inputs and to adjust the proportion of each crop in response to a change in rotation.

Rotation budgets should allow for different fallow lengths and for benefits to a subsequent crop, such as a requirement for less nitrogen fertiliser or higher yield due to a disease break.

Whole farm budgets or profit targets

The Farm Options Analyser can be used for whole farm budgets and comparing various scenarios, such as expansion through the purchase of extra land or complex changes or alternative scenarios in the mix of cropping and livestock.

A simpler form of comparison can be done using one-page profit targets provided in the *Toolbox*. These can be very useful to look at the whole farm implications of changes, such as a small expansion in area farmed. It is possible to set up an 'as is' profit target and to copy this and compare the effect of changes, such as the purchase or lease of extra land.

Cash flow

Lending managers generally requires cash flows, but they are also useful for management to show cash requirement and cash surpluses during the year.

When there is a significant change being contemplated, it may be necessary to prepare cash flows over two or three years – until a steady income state is achieved, or some short-term debt payback is achieved.

The one page cash flow format used in the *Toolbox* provides a simple but effective cash flow analysis of the business.

An important part of a cash flow is the estimates of area, yield and price projections made. These can be updated easily in response to changes.

A less important part of the cash flow is to record individual payment items, such as vehicle insurance or telephone bills. Our advice is to have one or two cash flow items for administration expenses and to allocate these evenly over twelve months. If this is also done for items, such as fuel and repairs, it saves an enormous amount of time in preparing a cash flow and is usually just as accurate.

Risk Analysis

Analysis of risk can be conducted during these evaluations by:

1. Seeking as much information as possible from advisers and other farmers on the potential problems of new practices or enterprises.
2. Evaluation of profitability and the 'risk margin' for new ventures.
3. Sensitivity analysis for rotations and whole farm budgets
4. Consideration of risk management strategies to minimise risk

Information on change

Before any change is made, information should be sought on the success of research trials and/or the experience of other farmers. An important part of this information gathering is to look for bad experiences and where the new crop or new venture can go wrong.

Some of the questions which might be asked include:

1. Are there major weather or weather related disease risks?
2. Does the venture depend upon fickle operations, such as the establishment of pasture?
3. What is the possible downside for prices?
4. What is the fertility and crop history of land to be purchased?
5. What are the future projections for currency and interest rates?

Evaluation of profitability and the 'risk margin' for new ventures.

The most important buffer against risk is profitability. If there is a healthy profit margin, there is more room for things to go wrong and the venture to still break even.

Look at the possible range of outcomes, not only for income but profit. A new crop for example may look to have a much greater income, but have higher costs and a higher variability in yield. A small reduction in income may quickly eliminate profit.

Sensitivity analysis for rotations and whole farm budgets

Sensitivity analysis involves looking at the effects of a small change in important variables, like price and yield. The Farm Options Analyser and the Profit targets provide information on the effects of a 10% increase and a 10% decrease in price or yield.

Consideration of these figures, along with an assessment of the likelihood of these changes should be made in assessing the risk of various farm scenarios or changes to be made.

Consideration of management strategies to minimise risk

Some options are inherently more risky than others. But there are always options for managing risk. An example is to fix interest rates for five years when borrowing money to purchase additional land. If waterlogging is a major risk, then consideration of raised bed farming might be an option to manage or minimise the risk.

Implementation of risk management

Once the profit outcomes and risk analysis has been completed, a plan of implementation is required, with attention to detail and ways to make change as risk free as possible.

Some strategies to minimise risk may include:

1. Gradual implementation, with trial of a new idea or enterprise over several years.
2. Paying for advice from an experienced farmer or adviser (e.g. about a new crop).
3. Engaging an experienced farmer or other person as a contractor. (e.g. to implement a new practice, such as zero tillage).
4. Hiring an experienced staff person to run a new enterprise (such as cotton or feedlotting or aquaculture).
5. Seek more training or work to gain experience on another farm. A son or workman may be interested in a new venture and go to work for someone else for a time to gain experience.
6. Consideration of weather risk and ways to minimise it as outlined in section 4.5.
7. Consideration of marketing risks and possible options to lock in a profitable price.
8. If borrowing is considerable, then examination of interest rates on fixed interest loans may help decide whether to lock in the interest rate to avoid unfavourable movements.
9. For a large new enterprise, it may be possible to involve someone else in a joint venture to 'halve' the risk.

Appendix:

Checklist for Change - Workbook

WHERE ARE YOU NOW?

Two important measures of your position are **Equity** and **Return on Capital**

Equity can be calculated as follows:

1 Your assets (land, livestock, machinery etc) _____

2. Your liabilities _____

3. **Equity** = assets-liabilities as a % of assets _____

- >85% Very strong – possible to consider options for growth or diversification.
- 70-85% Sound – should profits be used to pay off debt or invest off-farm?
- 60-70% Vulnerable – Debt reduction may be a priority. If you haven't got a plan to achieve this, get one.
- <60% Weak – Some decisive action is required to protect your equity level.

Note that this is a general guide only. Profitable farms can run comfortably at lower equity levels, while some farms with no debt can barely make a living for the owner. Young farmers will often borrow more than older farmers who are more comfortable.

Return on Capital

Return on capital (ROC) is calculated as follows: farm profit before interest and tax, less drawings divided by total farm assets. ROC is a key benchmark because it allows comparisons of the performance of your farming business with other investments. If your farm is big enough to be efficient, is investing off-farm a better alternative to expansion?

What has been the average ROC for your farming business over the last 3-5 years?

- >10% Dynamic – You are paying off debt, improving the farm or investing off farm. Every bank in town wants your business
- 6-10% Profitable and growing – What is your next move, expansion, diversification, off farm investment?
- 2-6% Surviving – The farm can carry a small debt load and meet living costs, but there may not be enough profit for replacing machinery or superannuation.
- <2% Sliding backwards – The business won't survive in the long term. Major changes are required or sell to protect equity.

If there is a *good return on capital* you have a good program, but it also means there is a good surplus to enable change to more profitable options. A *low return on capital* suggests a *major tune-up is needed* or you may need to reinvent the whole business.

WHERE DO YOU WANT TO BE?

Profit is not everything and many farmers are considering lifestyle improvements and where they want to be in five or ten years time.

The common problem is long hours, spent not only in the paddock, but in the office. In some cases it is possible to use more contractors, hire more labour, or encourage the farm workforce to be more self-reliant and improve *both* profit and lifestyle.

Think about *your indicators of success* and where you want to be in 10 years time.

Are you and your family happy with your:

	Very happy	Most of the time	Moderately happy	Not really	Not at all
Farm profit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family (disposable) income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outlook for the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plans for succession Or retirement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall lifestyle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Spend some time thinking about any areas to the right of moderately happy!

What SATISFIES you the most

What DISSATISFIES you the most

Are we achieving what we would like in life?

What goals and strategies would I like to change to see this achieved?

FINE TUNING THE BUSINESS

To fine tune the farm business we first identify which enterprises and/or crops are making the profit and which enterprises are a drain on the system. What is the current enterprise mix on your farm? Is there a more profitable mix of livestock, crops and other enterprises?

1. Enterprise Mix - *What is your current enterprise mix?*

Enterprise	Profit/ha	Pros	Cons

- Which are the most profitable options?
- Which crops or enterprises are performing the best?
- What about riskiness?
- Labour requirements?
- Rotation benefits?

List some of these in the pros and cons table above to think more about them.

- What about other enterprises, not currently on the farm?
- Think outside the square.
- For example you might be able to use irrigation water to produce fish before it goes on a crop for irrigation.

Optimum Enterprise Mix

The most profitable enterprise mix on your farm is likely to involve crop or pasture rotation. Use the Toolbox rotation calculator to compare different rotation programs.

These may change from time to time, depending on the relative prices for grains, pulses, oilseeds, wool and cattle. Examine the effects of changes in prices.

2. Productivity

- Are yields comparable to other farms? Can you compare them?
- One way to analyse yield performance is to consider water use efficiency.
- Check on the performance of your crops compared to the following table.

Yield targets – water use efficiency for some crops and locations				
	Winter rainfall areas of southern Australia		Summer rainfall areas of northern Australia	
	High yielding areas*	Low rainfall – low yield areas*	High yielding areas*	Low rainfall – low yield areas*
Wheat	20 kg/ha/mm	18 kg/ha/mm	15 kg/ha/mm	10 kg/ha/mm
Chickpea	12	10	9	6
Sorghum			15	10
	Calculated by dividing yield in kg/ha by growing season rainfall minus 100mm		Calculated by dividing yield in kg/ha by soil moisture at planting (estimated) + in-crop rainfall (mm)	
<ul style="list-style-type: none"> • Low yielding areas, with yields less than 2 t/ha on average, are less efficient, because water is often used up producing leaf and tillers which do not contribute to final yield. • High yielding areas are generally more efficient, except in wet years when there is more runoff and potential yield loss through waterlogging and disease. 				

What are the major limitations to yields?

Limitation Eg. Weeds, disease, water	Possible improvements	Rotation considerations/action

3. Finetuning Farm Costs

Savings on Input Costs

In many situations there is a need to spend more on productive inputs rather than less. Look for synergies and improvements that save money and improve yield.

Input costs	Possible savings	Action
Weed control	Rotations	
Nitrogen fertiliser	More legumes?	
Fungicides	Rotations	
Fuel	Zero-tillage	
Repairs	Update machinery?	
Seed	Keep own seed	

Improving Overhead Cost efficiency

Generally this can be achieved by increasing output through more production, or by leasing or buying more land. The overall aim is to reduce overhead costs per tonne of grain produced.

However, there may be other ways, such as developing a sideline business, or contracting to utilise labour and equipment more fully throughout the year.

Overhead costs	Possible savings	Action
Administration – eg phone, power, insurance, accountant	Lease or buy more land to spread costs over more output	
Labour		
Machinery replacement costs	Use more contractors instead of owning.	
	Joint ownership/syndication	

4. Marketing

Developing a *Market Risk Strategy*

Good marketing involves discipline and developing a market strategy. It involves being acquainted with all the marketing techniques which, even if you choose not to use them. Setting rules will avoid reacting to price movements with greed or fear.

Consider marketing tools you are comfortable with: (Check the following boxes with an a, b or c)

- a) I understand and am likely to use?
- b) I understand these but prefer not to use.
- c) These I do not understand and need to learn more about

Forward contracts - selling for cash locks in a price, free of currency fluctuation. This is useful for tonnage to be delivered at harvest. The disadvantage is the production risk of producing a set tonnage. If forward sales are made for half the crop and it turns dry, the price might improve, but if the yield is half, all the crop may be needed to fill contracts.

Multigrade contracts are forward contracts for wheat to overcome the uncertainty of quality at harvest. Expect a discount of \$5-10/tonne for multigrade versus fixed grade.

The AWB basis pool allows growers (with more than 1000 t) to defer the selling price over the coming year, by purchasing futures contracts for March (4), July (2) and Dec (2).

Put options can lock in a minimum price, and insure against falls in futures prices. However, basis and currency might affect relativities between USA and Australia. Put options do not have to make money. Farmers should look forward to put options expiring worthless, because this means the price of the whole harvest has gone up.

Call options will improve the grain price if the price rises. Call options can be combined with deferred grain sales to try and improve on a low price. They can be cheaper than storing, with less risk which remains the cost of the call options.

Grower Optional Pricing (GOP) or similar contracts allow the fixing of currency, basis and futures independently. Pricing grain or cotton 12 months ahead, using futures and currency components of a GOP contract avoids the need to deliver produce. The basis can be locked in once the crop is planted. Some facilities (Bank Swaps) allow farmers to lock in futures and currency, but not basis. This can be used to lock in a price before planting has actually occurred.

Grain and currency futures in the farmer's account is a way to manage forward pricing. Bank swaps manage both with less paper work and the need for margin calls.

Storage may be useful to shift some sales out of harvest time lows or to take advantage of any rallies on grain markets. However the cost of storage is \$1-2 per tonne per month.

Pools are an easy option for wheat growers. The performance of the AWB pools will generally be better than the cash price at harvest if wheat prices rise after our harvest. If the world price of wheat declines after our harvest, the pool price will generally suffer.

Grain prices at which I will consider using some of my preferred methods are:

5. Managing Climate Risk

Assessing potential loss from Climate Risks				
Risk of Crop loss	Years Affected %	Area (% of crop)	Loss of Income %	Total % #
Drought				
Rain at harvest				
No planting rain				
Frost				
Waterlogging/flood				
Disease (wet years)				
Hail				
Heatwaves				
Untimely operations				
Other				
Risk should be assessed for a 'normal' crop rotation which might involve winter (wheat, barley, chickpea), and summer crop (sorghum, dryland cotton, mung beans)				
# multiply the results from columns 2, 3 and 4 after dividing each by 100				

Ways I can manage the top climate risks

Risk 1 _____

Risk 2 _____

Risk 3 _____

SOIL HEALTH AND SUSTAINABILITY

Major issues of farm sustainability

Have you lost income in recent years due to soil or water issues ?
 Which are the most likely to reduce income over the next 20 years?
 Try ranking them from 0 (nil) – 3 (small expected loss) to 5 (considerable loss)

- Soil erosion (wind) _____
- Soil erosion (water) _____
- Soil structural degradation _____
- Soil fertility decline _____
- Salinity _____
- Soil acidification _____
- Pesticide runoff or food contamination _____
- Runoff water quality – nutrients & turbidity _____
- Vegetation and biodiversity _____
- _____
- _____

Important Solutions and Strategies

- Zero-tillage for erosion, structure, biota
- Opportunity cropping for erosion, organic matter, salinity
- Legumes and fertilisers for fertility, OM, biota
- Crop rotations for disease, risk, salinity
- Pasture rotations for soil structure, fertility
- for _____
- for _____
- for _____
- for _____