

Trends and costs in production

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SUMMARY

Over the 1990's the most profitable farming system for each region was determined by losses in poor years rather than the profits in good years. Businesses with high costs associated with intensive cropping and high inputs, were impacted more by losses than businesses with moderate adoption of new crop types and moderate inputs.

Profitability is linked to the selection of the most appropriate farming system, which in turn depends on:

- Number of profitable crop types
- Seasonal yield differences for each crop type
- Impact of income variation on business equity

Management of the financial risks associated with the move towards more intensive cropping is as important for successful adoption, as the management of technical and agronomic aspects.

1 PRODUCTION

Profitability of the entire business depends on the performance of each enterprise. Enterprise performance can be measured in 3 ways:

- Income per hectare
- Costs of production
- Annual income variation from average

1.1 INCOME PER HECTARE

Enterprise gross margins summarise income and cost of production. However income variability is difficult to determine, and is often overlooked. Contributors to income variability are:

- Regional ie: soil type and climate
- Crop type ie: cereal, grain legume, oilseed
- Paddock preparation ie: fallow and weeds

Table 1. – *Gross Income per hectare, 9 year averages for 1993-2001*

\$/ha	Wimmera	Northern Wimmera	Southern Mallee	Mallee
Wheat	434	296	341	311
Barley	441	286	304	270
Canola	498	345	395	268
Lentils	711	469	526	175
Faba Beans	413	-	202	-
Peas	301	200	217	150

INCOME VARIABILITY

The impact of seasons on wheat, canola and lentils is detailed in figures 1, 2 and 3 as follows:

Figure 1 – Wheat

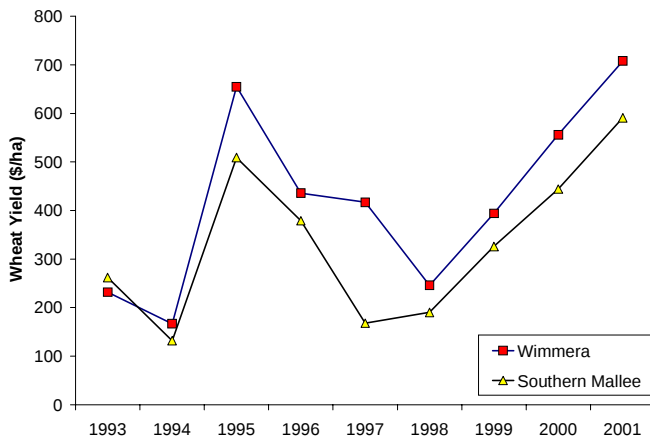


Figure 2 – Canola

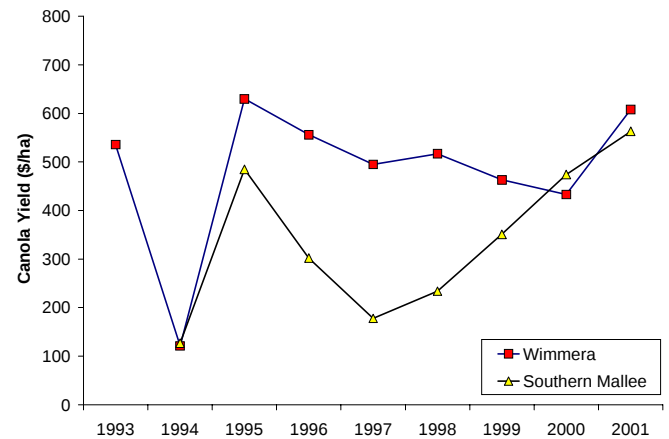
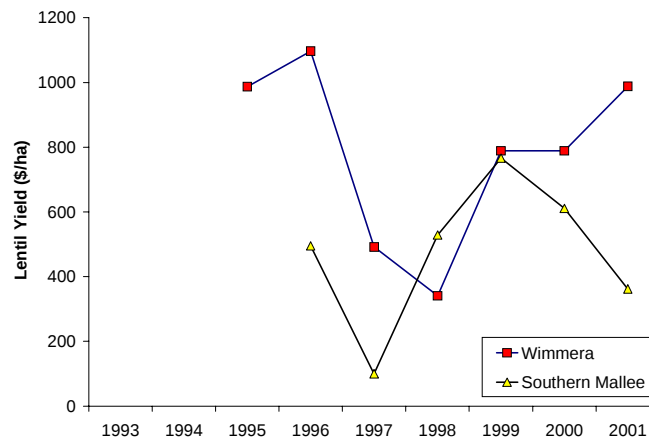


Figure 3 - Lentils



1.3 CROP SELECTION

Average crop income and seasonal variability of crop income provides guidelines for crop selection as follows:

- Wheat and barley show good income and have the lowest income variability. They remain important crops for longer-term profitability.
- Canola has higher gross income per hectare than cereals, however needs adjusting for higher input costs of typically \$70 per hectare. Canola's average profits after extra costs are less than cereals, however canola provides a good alternative in crop rotations and is recommended where appropriate.
- Lentil's average income is very good, however income variability is large.
 - **Wimmera** lentils are above cereal returns in most years, hence lentils in the Wimmera should be maximised, and are limited only by suitable paddocks.
 - **Southern Mallee** lentils income has been lower than cereals for 1 in 3 years, and shows wider variation than the Wimmera. Lentils provide a legume in rotation, however should be limited to 15-20% of total area in the Southern Mallee.

- Northern Wimmera has heavier soil types than the Southern Mallee. Dry seasons and frost limit crop selection to cereals and canola. Grain legumes show high income variability so that pasture legumes or fallow provide better risk management.
- Mallee has lower rainfall, however lighter soils do provide some crop options. Cereals on fallow have been the most reliable crops and should continue as 40-50% of total area. Grain legumes and canola can increase total crop area to 60% if crop rotations and soil types are suitable.

2 FINANCIAL RISK

Figures 1, 2 and 3 show actual crop incomes per hectare since 1993. Climate and price are the main factors resulting in the variations between seasons.

Business losses in low income years will vary according to the percentage of crops that have:

- High income variability
- Full dependence on growing season rainfall ie: crops on stubble.
- Low average profitability
- High input costs

Financial risk can be monitored by comparing the entire business income to total costs. If income is below costs, then losses occur and result in debt. Conversely when income is higher than costs, then equity growth can occur in the form of machinery purchases, investment into cash buffers, debt reduction or lifestyle.

The 1990's have demonstrated that farming systems with high crop intensity and high crop inputs have incurred larger debts than less intensive systems, and need at least two 'good' seasons to recover the losses of one 'poor' season.

The financial risk of 'poor' seasons is demonstrated by two case studies as follows:

Case Study	Crop intensity %	Average Income Whole Business \$/ha	Average Costs Whole Business \$/ha
Farm A	65	290	220
Farm B	90	490	400

Background on case studies:

Farm A:

At 65% crop intensity grows mainly cereals with some canola and some grain legumes. Up to one half the crop area is grown on fallow or green manure fallow.

Farm B

At 90% crop intensity grows the full mix of crops including lentils with good returns. Until 1999 was continuous cropping, however now has 10-15% to vetch green manure for weed control and moisture conservation.

Farms A & B are similar in size, rainfall and location. Whole of Business Annual Income for each farm is illustrated in figures 4 and 5 as follows:

Figure 4 Farm A
Whole business Income per Hectare

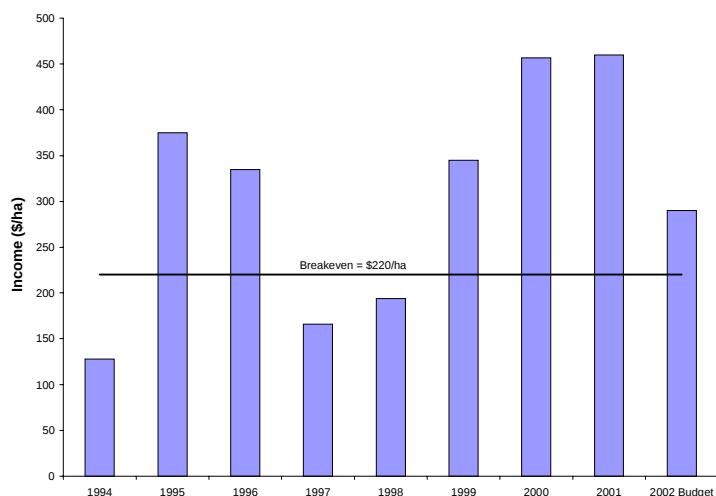
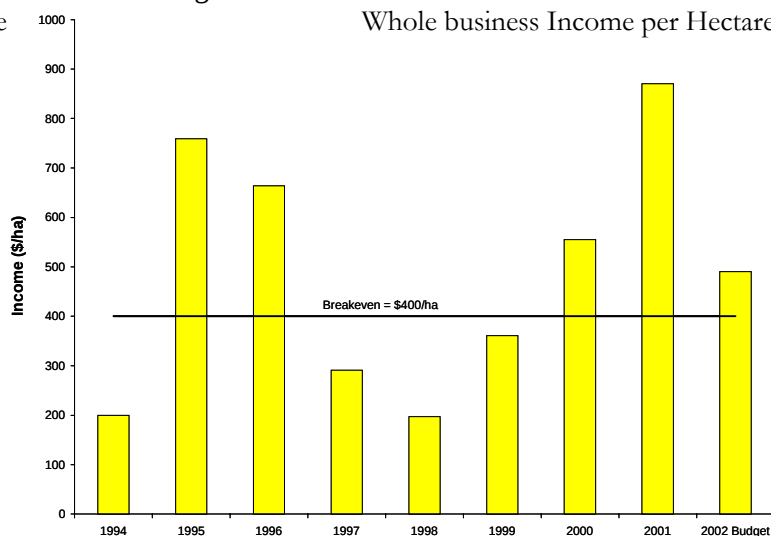


Figure 5 Farm B
Whole business Income per Hectare



Trading profits and losses for each farm are summarised as follows:

	Farm A	Farm B
Trading losses		
1994	150,000	320,000
1997	95,000	200,000
1998	45,000	365,000
1999	-	70,000
COMBINED TRADING LOSSES	\$290,000	\$955,000
Trading Profits		
1995	110,000	250,000
1996	80,000	180,000
1999	90,000	-
2000	170,000	110,000
2001	170,000	330,000
2002	50,000	60,000
COMBINED TRADING PROFITS	\$670,000	\$930,000
NET CHANGE	+\$380,000	-\$25,000

Comments:

Intensive Farming Systems as illustrated by Farm B:

- Have years with larger profits and other years with larger losses. Since 1994 profits cover losses only.
- Have higher total costs due to extra crop area, and a requirement for higher inputs (ie: fertiliser and sprays).
- Need strong financial buffers or strong equity to carry the lows.

Moderate Farming Systems as illustrated by Farm A:

- Have lower profits in good years and lower losses in poor years. Since 1994 the profits have offset losses and achieved strong business equity growth.

- Have lower costs so that crop yields can be lower to achieve breakeven.
- Have smaller fluctuations in profits so that financing the highs and lows is easier. Financial buffers are still to be encouraged.

3 APPLICATION TO YOUR FARM

Each farm has a unique combination of variables contributing to profits. The enclosed analysis summarises the general finding of research conducted on behalf of O'Callaghan Rural Management clients for their individual planning and business development. Knowledge of your own business performance, and contributors to profit variability, will assist when interpreting the enclosed information for application to your business.