

FARM FINANCIAL TOOL: CROP GROSS MARGIN BUDGET FACT SHEET

SOUTHERN REGION

DO YOU KNOW THE RELATIVE PROFITABILITY OF YOUR FARM'S ENTERPRISES?

Many Australian farmers are involved in 'multiple enterprise' farming systems, which means the profits from each enterprise should be known. It is important to understand gross margin budgets and their role in farm financial analysis.

KEY POINTS

- Understand gross margin budgets for cropping.
- Uses and benefits of gross margin budgets.
- Limitations of gross margin budgets.

Key Management Concepts

When managing any business, it is good to have both of the following concepts in mind:

- 1. Liquidity** – This refers to cash flow which should be managed to ensure more cash comes into the business than goes out.
- 2. Efficiency** – This addresses the issue of whether the farm business is getting the best return on the capital being managed, and is measured through both a profit and loss and a balance sheet budget.

By managing both of these concepts (see Figure 1), the farm business will have a greater ability to be sustainable.



PHOTO: P2PAGRI

What is included in crop enterprise income?

Enterprise income includes all the income received for a particular enterprise and must take account of all future payments for each crop.

Table 1 Crop enterprise variable costs

Land preparation

- All machinery operations
- Other procedures or requirements undertaken before a crop is planted

Pest, disease & weed control

- All insecticide, fungicide and herbicide applications
- Costs of spraying (ground or aerial)
- Casual labour

Planting

- Seed
- Machinery running costs
- Casual labour
- Fertiliser

Irrigation

- Water charges
- Pumping and application costs
- Electricity and maintenance costs
- Licence fees

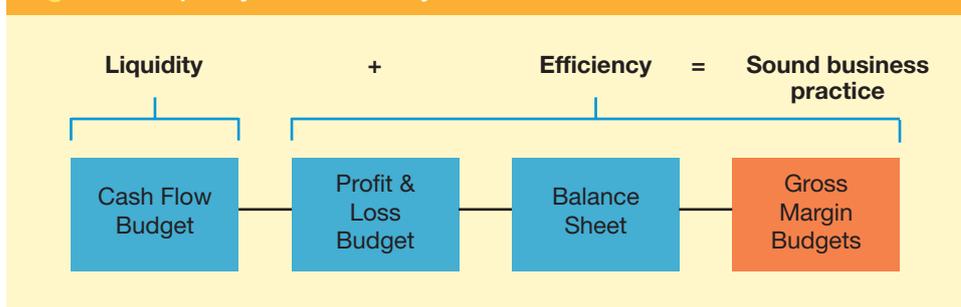
Harvest, storage and freight

- Casual labour
- Pest protection
- Freight costs

What is a gross margin budget?

A farm gross margin budget is a simple budget that calculates the gross margin (also called gross profit margin or gross profit rate) for an enterprise. Enterprise gross margin is defined as the total income derived from an enterprise minus the variable costs incurred in producing that enterprise.

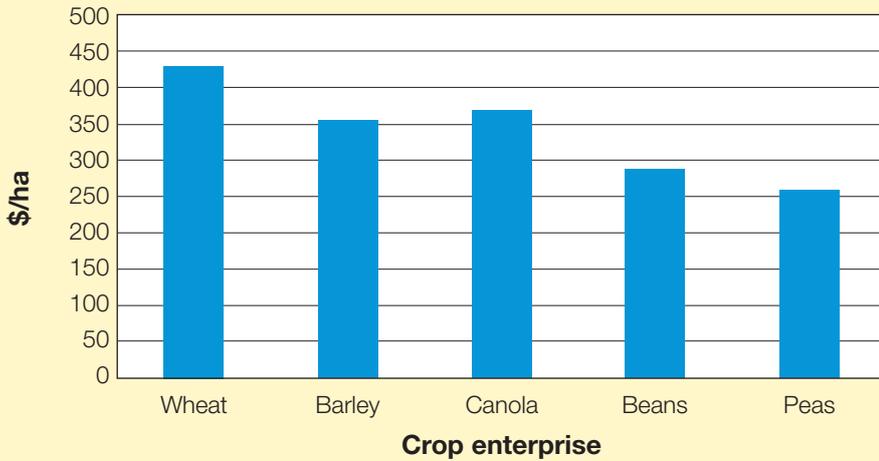
Figure 1 Liquidity and efficiency



Source: P2PAGRI Pty Ltd

Source: Chris Tuckwell, Rural Industry Developments

Figure 2 Crop Gross Margins



Source: Mike Krause, P2PAgri

What are crop enterprise variable costs?

Enterprise variable costs include all expenses (inputs) directly incurred in the production of the saleable enterprise output. Typical costs that should be considered for crop type enterprises, but are not limited to, are shown in Table 1.

What costs are not included in gross margin budgets?

Some costs cannot be easily charged to particular activities because they are spread across all activities on the farm and cannot be readily apportioned between them.

They are fixed or overhead costs that will be incurred irrespective of which enterprise mix is chosen, and include:

- Permanent labour
- Depreciation
- Accountancy fees
- Rates and taxes
- Interest payments
- General insurance
- Rent
- Family drawings

How are gross margins budgets best used?

Gross margin budgets are useful for:

- Comparing relative costs and returns for similar farm activities - e.g. wheat versus barley (refer to Figure 2: Crop Gross Margins).

- Comparing the historic performance of activities, or to predict the performance of potential alternative activities.
- Helping to plan farm enterprise mix.
- Estimating the impact of changes in expected yields, prices and costs. Gross margins are most often done on a per-hectare basis, but can be a paddock, flock/herd or whole farm assessment.

Gross margin budgets are most useful when they express the enterprise gross margin in terms of the most limiting resource. For example, if capital is the most limiting resource, a gross margin expressed as \$GM per dollar invested may be appropriate, but where land is the most limiting resource, \$GM per hectare may be more appropriate.

Figure 2 indicates the relative profitability between cropping enterprises on a farm. In this example, wheat is the most profitable and peas the least, and it would be in the farmer's interest to grow as much wheat as agronomically possible. It is important that these cropping gross margins be calculated for your business as these results will vary between farms and between seasons. Your gross margin calculations should reflect the management levels, soil capability, rainfall expectation and pest and weed issues of your own farm.

Sensitivity Tables

It is also important to produce several gross margin budgets for an enterprise using different assumptions and different yield, price, and cost scenarios.

Based on assumptions used, sensitivity tables can be used to test the impact of a good or bad year by comparing the impact of different yields and prices on overall gross margins received from growing the particular crop. They allow comparison of 'average', 'best case', and 'worst case' outcomes for an enterprise.

Limitations of gross margin budgets

Gross margin budgets have some limitations and should not be the sole determinant of a farm enterprise mix, as they:

- exclude overhead costs, so they do not supply enough information if a cost of production is required;
- do not take account of the need for rotations to control disease, weed and pest risks;
- take no account of risk management related to factors such as market prices, crop failure and input cost volatility;
- do not allocate permanent labour costs to enterprises;
- do not easily take into account dual enterprise benefits - e.g. stubble grazing value of crops;
- do not consider future benefits and interactions, as they are a single season analysis.

How to calculate a gross margin?

Broad steps for calculating a crop gross margin budget are:

1. Calculate all annual production costs and income of a particular crop on a per-hectare basis.
2. Enterprise GROSS RECEIPTS minus enterprise VARIABLE COSTS = enterprise GROSS MARGIN.
3. Multiply these by the number of hectares of crop planted to produce an enterprise total.
4. Allow for fuel, oil, repairs and maintenance, and related casual labour.
5. Remember to include the costs of small items such as replacement nozzles for spray equipment and replacement batteries for power equipment etc.

Table 2 Crop Gross Margin Budget Template

Crop: _____	Total Area: _____	ha	Year: _____		
GROSS INCOME (A):					\$/ha
Yield income	<input type="text"/>	tonnes	x	<input type="text"/>	\$/tonne = <input type="text"/> (A)
VARIABLE COSTS (B):					
Seed					\$/ha
Seed	<input type="text"/>	kg/ha	x	<input type="text"/>	\$/kg = <input type="text"/>
Seed Treatment	<input type="text"/>	kg/ha	x	<input type="text"/>	\$/kg = <input type="text"/>
Levies					
GDC Levies	<input type="text"/>	%	x	<input type="text"/>	\$ Gross = <input type="text"/>
EPR & State Levies	<input type="text"/>	tonnes sold	x	<input type="text"/>	\$/tonnes = <input type="text"/>
Fertiliser (Bulk)					
18:20:00	<input type="text"/>	kg/ha ÷1000	x	<input type="text"/>	\$/tonne = <input type="text"/>
Urea	<input type="text"/>	kg/ha ÷1000	x	<input type="text"/>	\$/tonne = <input type="text"/>
Chemicals: Herbicides					
Summer weed control	<input type="text"/>	litres/ha	x	<input type="text"/>	\$/litre = <input type="text"/>
	<input type="text"/>	gm/ha	x	<input type="text"/>	\$/_____ = <input type="text"/>
Pre-Emergents	<input type="text"/>	litres/ha	x	<input type="text"/>	\$/litre = <input type="text"/>
	<input type="text"/>	gm/ha	x	<input type="text"/>	\$/_____ = <input type="text"/>
Post-Emergents	<input type="text"/>	litres/ha	x	<input type="text"/>	\$/litre = <input type="text"/>
	<input type="text"/>	gm/ha	x	<input type="text"/>	\$/litre = <input type="text"/>
Chemicals: Fungicides					
	<input type="text"/>	litres/ha	x	<input type="text"/>	\$/litre = <input type="text"/>
	<input type="text"/>	gm/ha	x	<input type="text"/>	\$/_____ = <input type="text"/>
Freight					
Grain/t	<input type="text"/>	tonnes	x	<input type="text"/>	\$/tonne = <input type="text"/>
Fertiliser/t	<input type="text"/>	tonnes	x	<input type="text"/>	\$/tonne = <input type="text"/>
Operations					
Fuel & Oil	<input type="text"/>	x	<input type="text"/>	% crop area	÷ <input type="text"/> ha = <input type="text"/>
Repairs & maintenance	<input type="text"/>	x	<input type="text"/>	% crop area	÷ <input type="text"/> ha = <input type="text"/>
Contract Work					
Aerial spraying					= <input type="text"/>
Urea spreading					= <input type="text"/>
Crop insurance					= <input type="text"/>
Casual labour					= <input type="text"/>
Other	<input type="text"/>		x	<input type="text"/>	= <input type="text"/>
VARIABLE COSTS/ha					= <input type="text"/> (B)
GROSS MARGIN \$/ ha (C):					
	<input type="text"/>	(A)	-	<input type="text"/>	(B) = <input type="text"/> \$/ha (C)
ENTERPRISE GROSS MARGIN:					
	<input type="text"/>	Total ha	x	<input type="text"/>	\$/ha (C) = <input type="text"/> \$ TOTAL \$

Assumptions and probabilities

Like all budgeting techniques, gross margins are based on assumptions. It is important to understand the assumptions behind the calculations in order to correctly interpret a crop gross margin budget.

However, it is very difficult to account for every possible potential cost item, even if it has a low probability of occurring.

Assumptions used in gross margin budgets must be realistic. If there is doubt about a cost or event that may influence an outcome, create an additional budget to see what impact a change to a particular cost will have on the enterprise gross margin.

For example, fungal infection of cereal crops may be a problem but not in every year. If fungal spraying is included in the gross margin budget, the budgeted outcome will be conservative as a cost is included for an event that is unlikely to occur every year. To account for such a situation, allow for an appropriate proportion of the cost of spraying (e.g. 33%) to show a need to spray every third year.

FAQs

What are gross margin budgets best used for?

Gross margin budgets are essential if you wish to see where the most profits are being made in the farming business. So, if a business isn't going well, they are one of the best budgets to diagnose what is, and what is not working well in the business.

Can I use gross margin budgets to assess the cost of production?

NO, gross margins should never be used as the sole information to assess the cost of production! Gross margins only take into account the variable costs (i.e. direct costs of the enterprise) so do NOT cover the full production costs. Overhead costs, financing costs and permanent labour costs also need to be taken into account when assessing the cost of production.

My agronomist has a program that calculates my crop gross margins. Is this useful to me?

There are a number of computer programs available to farmers and agronomists to calculate gross margins. If this is your only form of gross margin calculation, then use them. However, it is also important to accurately reflect the cost structure of the farming business. Many of these agronomist-based gross margin calculators assume contract rates for fertiliser, chemical and harvesting operations. If you do not use contractors for these operations, it is important to use the actual costs incurred to your farm from these operations in order to ensure that the results are accurate.

How are gross margin budgets misused?

The two areas where gross margins are misused are: (1) when they are used to calculate the cost of production; and (2) when the sensitivity analysis of price and yield is used to indicate enterprise profitability. As gross margins do not cover all the costs needed to support the enterprise, they should not be used for either of the areas mentioned above. Gross margins are best used to indicate 'relative' profitability between the enterprises in the farm business.

Why are gross margin budgets the most misused budgets in farm business management?

Gross margins tend to be the most misused budgets because they focus on only one enterprise in the business and are therefore easily calculated.

However, other components of the business, such as debt and overheads, need to be taken into account when considering 'whole farm business' issues, and these costs are not readily shared by farm business owners.

Why don't accountants tell us what our gross margin budgets are?

Unless asked by the farmer, most accountants will only do the task the Australian Taxation Office (ATO) wants them to do, and that is to assess what tax the business is liable to pay. If you want your

accountant's help with gross margins, you may need to search one out that is familiar with developing gross margin budgets.

USEFUL RESOURCES

Crop Gross Margin Budget Template:

Download from:
www.grdc.com.au/GRDC-FS-FFT-CropGrossMarginBudget

Farm Gross Margin and Enterprise Planning Guide, 2012.

Produced by Rural Solutions SA.

Related GRDC Fact Sheets

Other fact sheets in this Farm Business Management series provide further detail on farm financial tools: Farm Business Overview (Order Code: GRDC909), Cash Flow Budget (Order Code: GRDC913), Profit and Loss Budget (Order Code: GRDC916), Balance Sheet (Order Code: GRDC917) and Livestock Gross Margin Budget (Order Code: GRDC915).

Copies of all the above fact sheets are FREE plus P&H and available from:

Ground Cover Direct Freephone: 1800 11 00 44 or email: ground-cover-direct@canprint.com.au

These can also be downloaded from www.GRDC.com.au/fbm

Plan to Profit (P2P), a whole-farm financial management program that can help calculate a farm's financial budgets: www.P2PAgri.com.au

MORE INFORMATION

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