

# Cotton Economics & Marketing

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The information in this chapter has been prepared for general circulation and does not have regard to the particular circumstances or needs of any specific business or person. For financial advice see your accountant or agribusiness manager.

This chapter covers some of the key business aspects of growing cotton, including: budgeting, marketing, finance

## Gross margin budgets

A gross margin represents the difference between gross income and the variable costs of producing the crop. Gross margin budgets provide a guide to the relative profitability and an indication of the management operations involved in different enterprises.

Gross margins do not take into account risk, overhead costs or farm profit:

### Risk

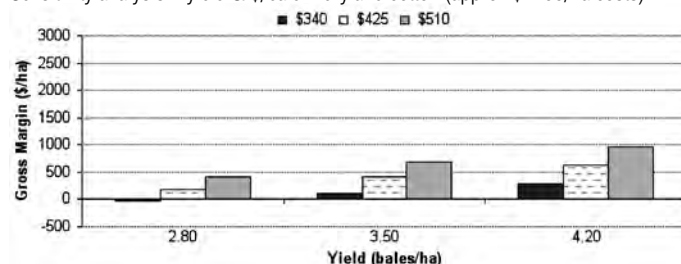
Gross margins can show the proportion of costs in relation to income, but don't consider price and yield risk. The following sensitivity charts help to illustrate the effect that changes in yield and cotton lint prices have on gross margins.

These sensitivity charts reflect the resulting changes to crop gross margins from a 20% change in both typical yields and long term average prices. **The charts emphasise that the profitability of a cotton crop is highly sensitive to both changes in yield and the cotton lint price, highlighting the importance of using achievable figures in the budgeting process.** The range of potential yields and prices is much wider than depicted, however it is the relationship between yield, price and the effect they have on gross margins which is

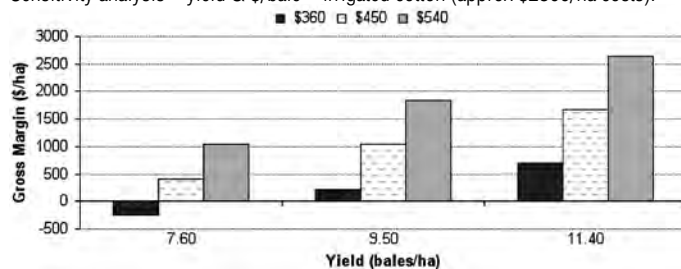
## BEST PRACTICE

- Prepare a gross margin budget using published budgets as a guide only.
- Seek advice from a reputable cotton merchant to understand your marketing options for both cotton lint and seed
- Take the time to consider risk and insurance options. Seek insurance advice from reputable insurance providers/specialist and talk to established cotton growers about their past insurance experiences.

**FIGURE 1:** Sensitivity analysis – yield & \$/bale – dryland cotton (approx \$1200/ha costs).



**FIGURE 2:** Sensitivity analysis – yield & \$/bale – irrigated cotton (approx \$2800/ha costs).



important.

Gross margin budgets do not show gross farm profit because they do not include fixed or overhead expenses such as depreciation on machinery and buildings, interest or insurance payments, rates, taxes or permanent labour which have to be met regardless of crop type. The amount of fixed costs per hectare varies considerably between properties, making it difficult to provide useful representative estimates of such costs.

You can use published budgets as a guide when initially developing your own gross margin budgets, altering costs and operations as necessary. The Department of Primary Industries NSW develop gross margin budgets for crops, vegetables and livestock annually at <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets>

Individual budgets are provided in Portable Document Format (PDF). To read these files you need to have Adobe Acrobat Reader installed on your computer. These budgets are calculated using crop yields for the region that are consistent with the operations given, current commodity and input prices and technical information provided by agronomists and cotton industry development officers.

The degree to which these budgets reflect actual crop returns will be influenced not only by general factors common to all farms, such as prices and season conditions, but also by the individual farm characteristics such as soil type, crop rotation, and management.

Consequently, it is strongly recommended that published gross margin budgets be used as a GUIDE ONLY and should be changed to take account of movements in crop prices, changes in seasonal conditions and individual farm characteristics.

Refer to the NSW Primary Industries website (<http://www.dpi.nsw.gov.au/agriculture/farm-business/>)



budgets Download: 'Farm forms – crop') for downloadable specialised cotton budget forms in Excel format.

Gross margins need to be used carefully when using them as a guide to deciding on the farms overall enterprise mix. Because overhead costs are excluded, it is advisable to only make comparisons of gross margins between enterprises which use similar resources (i.e labour).

**TABLE 1:**

Example summary gross margin @ \$450/bale. Use this Gross Margin budget as a guide to create your own budget reflecting your operations, yield estimates and current pricing.

<b>IRRIGATED COTTON (Roundup Ready Flex™ Bollgard II)</b>	
<b>Income</b>	<b>\$/ha</b>
9 bales/ha @ \$450/bale	\$4050
2.61 t/ha seed @ \$130/tonne	\$339
<b>TOTAL INCOME (A)</b>	<b>\$4389</b>
<b>Variable Costs</b>	
Cultivation/Farming	\$ 98
Seed and sowing	\$ 113
Fertilisers & Application	\$ 499
Herbicides & Application (incl defoliation)	\$ 217
Insecticides & Application	\$ 114
Irrigation 7ML (C)	\$ 311
Insurance	\$ 55
Consultant	\$ 60
Licence fees	\$ 390
Contract harvesting	\$ 317
Module lifting & Cartage	\$ 106
Ginning	\$ 495
Levies	\$ 41
Refuge (Pigeon Pea 5% of costs below)	\$ 23
<b>TOTAL VARIABLE COSTS (B)</b>	<b>\$2837</b>
<b>GROSS MARGIN/HA (=A-B)</b>	<b>\$1552</b>
<b>GROSS MARGIN/ML (=A-B)/C)</b>	<b>\$222</b>
<b>Pigeon Pea Refuge Crop (assumed costs)</b>	
Seed & Sowing	\$ 76
Herbicides & Application	\$ 160
Irrigation	\$ 112
Slashing	\$ 12
Cultivation	\$ 107
Cultivation	\$107.00
<b>Variable Costs per ha of pigeon pea</b>	<b>\$467.00</b>

If major changes are being considered, more comprehensive budgeting techniques (that include overhead costs) are required to indicate the real profitability situation.

Some assumptions used for the NSW Primary Industries gross margins include:

- Average cotton yields from the previous season.
- An average to high number of insecticide applications using a soft approach to maintain predators (Listing of brand or chemical names in the budgets does not imply a recommendation of those brands/ chemicals).
- Selection of pesticide varies markedly depending on pest species and season. Rotation of insecticides should be followed as per industry strategy, which changes each year due to changes in insect resistance to chemicals (see pest management guide for details).
- Source of water is from the river using a diesel pump.
- 7ML of irrigation water is the volume applied to the crop in field (system losses & tail water not accounted for).
- Machinery costs refer to the variable costs of fuel, oil, repairs and maintenance for both the tractor and the implement. For details on variable and overhead cost calculations refer to NSW Primary Industries Guide to machinery and water costs at <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets> and the 'Guide to machinery costs and contract rates' (Primefact 913) on the same site.

All prices are those estimated in the August prior to planting.

Table 1 is an example of a simple gross margin. The budget lists income sources, cost items and totals, with gross margin calculated as the total income less total costs. These figures are an indication only, and may not reflect your business. For more detailed cotton budgets, see the following websites;

**Department of Primary Industries NSW:**

**PDF Summer Gross Margins:** <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets/summer-crops>

**Downloadable Gross Margin template:** [http://www.dpi.nsw.gov.au/\\_\\_data/assets/file/0008/195641/FF-crop2009.xls](http://www.dpi.nsw.gov.au/__data/assets/file/0008/195641/FF-crop2009.xls)

**Cotton Seed Distributors:**

**Gross Margin Analysis:** <http://www.csd.net.au/page/show/21113/>

**Dryland cotton overview (including gross margin comparisons for various row configurations)**

<http://www.csd.net.au/asset/send/2283/inline/original/>

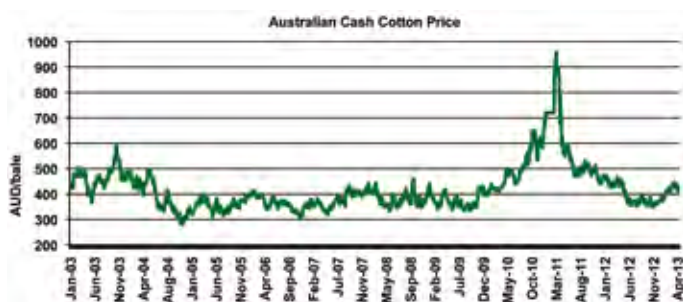
## Marketing

**Acknowledgements: Namoi Cotton Cooperative**

The aim of this section is to give a general overview of the cotton pricing components and marketing alternatives available to Australian cotton growers. It is strongly recommended that growers seek advice from a reputable merchant about the alternatives suitable for their specific situation.

Variability in the Australian cotton price is caused by fluctuations in the underlying futures prices, currency rates and basis levels. This variability can create major

FIGURE 3:



uncertainties (or risk) for cotton growers when deciding if to plant cotton and when to sell. It is important that growers understand the components of the cotton price, associated risks and available marketing options before they begin marketing their crop.

The ability to 'lock in' a commodity price for some or all of a crop before harvest can be a major advantage for cotton growers. However, fixing prices before harvest can be risky, due to uncertain production levels. To understand the different marketing alternatives it is necessary to understand the risks.

### Risk

A definition of risk: *Effect of uncertainty on objectives*. In this case returning a profit from the cotton crop is the objective and the primary areas of uncertainty (or risk) include; production (quality and quantity of the cotton produced) and price (the movement of prices before they are set i.e adverse movements include an increase in input costs and decrease in commodity prices). These risks are complex and vary between growers and over time, however marketing is one method for managing these risks.

**Production risk** is separated into quantity (yield and area) and quality. With the ability to enter into forward contracts before the crop is planted, there is uncertainty with both the area to be planted (due to seasonal conditions) and the yield that will be achieved. Yield risk also exists when a contract is entered into after planting, but before harvest. Variable yields may result in a grower under or over producing against contracted commitments. If production exceeds commitments made and the contract price is higher than the spot or market cotton price, then the grower has an opportunity loss. If the grower under produced a fixed bale contract, then the grower may be obligated to fill the contract at market rates, which could result in a financial loss to the grower.

Varying quality is managed by merchants with all forward contracts priced on 'base grade'. Once the cotton is ginned and classed, the final price paid to the grower is adjusted with a premium when the grade is higher than 'base', or a discount in price when the grade is inferior. These pricing adjustments can be found on a merchants corresponding premium & discount sheet (for more information about quality see chapters: ginning, classing, quality).

**Price risk**, in relation to a cotton grower, is when all or a

portion of the crop is not priced and the value is reduced due to decreases in the cotton price. Price variability is due to fluctuations in the three components of the Australian dollar cash price: ICE cotton futures, basis and the AUD/USD exchange rate.

Cotton is internationally traded and priced in USD, using the Intercontinental exchange (ICE) Cotton No2 contract (previously managed by the New York Board of Trade).

Basis can be broadly defined as the difference in value (or price) between a physical bale and the futures contract price. Basis accounts for location, grade and local supply and demand conditions.

Australian growers generally receive their income in Australian dollars, so the USD price is converted into local currency using the AUD/USD exchange rate. This may not be the spot exchange rate, rather the relevant forward rate for any forward contracts.

All three price elements can and do change on a daily basis. The price of cotton in Australian dollar terms is therefore subject to daily volatility. The major merchants in Australia publish their daily prices on-line or communicate their prices via fax, e-mail and text message. To be kept up to date with pricing movements contact the merchants and ask to be added to their daily price lists.

### Marketing options

Australian cotton growers are well serviced by several cotton merchants who buy cotton from growers to sell in the international market. Due to the relatively small size of the Australian cotton market, it is often the cotton merchants approaching growers to buy cotton, thus creating a price competitive market.

Merchants involved in the cotton market tend to build robust relationships with clients and may contract cotton with these growers up to 4 years into the future, using forward contracts. A forward cotton contract is a customised agreement between two parties to deliver cotton on an agreed future date for an agreed price. Price will be determined in reference to the other terms of the contract — quality, quantity, and the time and place of delivery or the buyer may require a guarantee of a specific grade or quality of the commodity from the seller. From a growers perspective this may mean selling the cotton before it has been harvested or even planted.

The most commonly utilised forward marketing options are:

- **AUD Fixed cash price** – Generally known as the 'cash' price, this is a forward contract for delivery after ginning of the season specified (i.e 2013-14). Growers accept a certain fixed price and a fixed number of bales are agreed upon in the contract; thus, there is a fixed commitment to deliver.
- **Fixed bale pool** – a commitment to deliver a specified number of bales to a 'pool' of bales with a particular marketing organisation. Both price risk and yield risk are borne by the grower, but the price risk is managed



by the marketing organisation. Most pools have an indicative price attached and often once that price is no longer achievable, the pool will be closed. As with all pools, payment is spread over a period of time as delivery of cotton from growers, and sales to mills proceed.

- **Other pools** may be offered by merchants with varying conditions. Some characteristics of a pool (or other customised contract) may include;
- **Hectare contract** where the grower commits a particular acreage, all cotton produced from that area is covered by the contract. The contract may have a maximum yield deliverable to it (i.e up to 10 bales/ha). Downside yield risk is managed by the merchant.
- Some pool contracts may have a **guaranteed minimum price (GMP)**, with potential (but limited) upside. For these contracts the grower bears production risk and some price risk. Due to the hedging requirements for the merchant to guarantee a certain minimum return, these contracts usually come at a discount to the cash market.
- **Balance of crop (BOC)** is a contract where the grower commits their remaining unpriced bales. These contracts are generally available towards the end of the season when the grower can make a reasonable estimate of their yield.
- **Force majeure (FM)** – ‘compelling force, unavoidable circumstances’. When an FM clause is attached to a cotton contract it generally means that a production shortfall in the nominated bales set out in the contract need not be delivered. This variation is borne by the merchant.

### Cotton seed

The value of cotton seed can be a significant component of the income from a cotton crop. Cotton seed is priced through the ginning company which may not be the same merchant the cotton is sold through. Cotton seed is usually priced in bales (based on the amount of seed that is produced in the ginning process of one bale, this is approximately 290kg of seed). The price of cotton seed is strongly correlated with feed grains and fluctuates with supply and demand. Cotton seed has been worth up to \$120/bale, and as little as \$30/bale (which is not enough to cover ginning costs), however a price closer to \$60/bale has been more common. The ginning organisation may quote the seed price as ‘ginning plus seed’ (i.e \$60/bale, may be quoted ‘ginning plus \$5/bale’, indicating that the seed price covers the ginning price of \$55/bale, with \$5 paid back to the grower). Talk to your preferred ginning organisation about current cotton seed pricing. For further information on marketing your cotton, talk to a merchant or you can find comprehensive marketing notes on the following websites:

**Australian Cotton Shippers Association:**

[http://www.austcottonshippers.com.au/downloads/Grower\\_Marketing\\_Risk\\_Handbook.pdf](http://www.austcottonshippers.com.au/downloads/Grower_Marketing_Risk_Handbook.pdf)

### Finance

Financing the crop is a major consideration. As well as the traditional banking finance options, credit and loans may be available through some of the agribusinesses you deal with.

Crop credit is available through some agricultural resellers (i.e chemical resellers) and allows growers the option of deferring costs until after picking. Interest is charged at current short term money market rates, e.g bank bill rates.

At picking pre-ginning loans (module advances) are available from most ginners and merchants. Details can be discussed with your merchant.

Timing of payment for cotton lint depends on the type of contract. Cash contracts are generally paid within 14 days of ginning, whilst ‘Pool’ contracts may pay up to 75 percent in July (after ginning) with further payments in September and December. Confirm with your accountant and merchant about the best payment structure for your business prior to entering into any contracts.

Most cotton growers have debt. Whether it is a seasonal overdraft or a long-term loan, it is important to understand the capability of your business to repay the loaned amount.

There are many ways to assess the financial sustainability of a business. The five indicators below are a good place to start, as these are some of the indicators that a financial institution will assess in a loan application.

- Debt levels;
- Ability to service interest;
- Net operating expenses;
- Interest expense; and,
- Equity.

Looking at one indicator on its own may give a false impression of a business’s financial health. To get the whole picture, it is important to consider all financial aspects of the business, if you are unsure on how to calculate any of these five financial measurements or have any other questions, it is recommended that you speak to a financial advisor for more information and advice on how these measurements impact your individual businesses financial assessment.