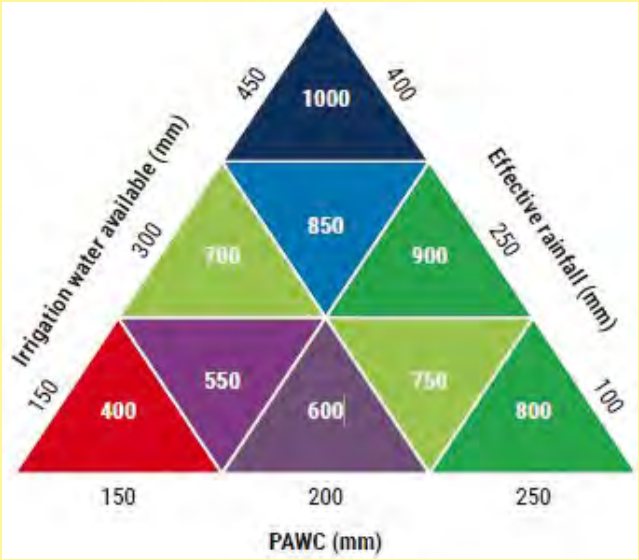
FIGURE 2: The semi irrigated cotton decision matrix



years or reducing their area to what they have sufficient water for. While most growers have a good understanding of changing soil types across fields from previous crop experiences, using EM surveys is an excellent way of identifying soil types and variability across a farm – data which is invaluable for prioritising fields during water limited times.

Your soil physical properties – how far can plant roots explore?

If the roots can't get out into the skip row areas, you don't get the benefit of accessing this moisture. Reasons for this can include severe compaction, sodicity or hard-setting soils. These fields should be treated the same as those with low PAWC – avoid them in water-short years or reduce their area to what there is sufficient water for.

Your soil moisture level – how full is bucket?

This can be best determined by a combination of methods including decision support programs such as 'Soil Water App' which estimate soil moisture levels from on-site rainfall and evaporation data. This can be ground-truthed by push probes, spades and soil cores.

The greater the amount of moisture in the profile, the longer the crop will have before it will require irrigation or rainfall. In situations of higher soil moisture, and higher rainfall probabilities narrower row spacings may be considered.

Available irrigation water – and where it is

In limited water years, you will want to avoid moving water long distances on-farm to minimise transmission losses – whether this is from the delivery point (e.g. river, bore) or an on-farm storage.

Quantity of in-crop rainfall – your district averages, weather forecasts and your attitude towards them

Skip row configurations lose a lot of their value without in-crop rainfall, so much so that in some cases growers may be better off planting smaller areas of solid planted cotton to match available moisture.

While predicting summer rainfall is difficult, the best information we have available is long-term rainfall records and long range weather forecasting tools such as Southern Oscillation Index.

Each individual's attitude towards these tools and averages will play a big role in which configuration to choose.

Evapo-transpiration

In very hot conditions, plants will use a lot of water just to keep the canopy cool – this is water that is not actively contributing to yield. There is a significant difference in summer temperatures between Australia's cotton growing regions. In regions with inherently higher summer temperatures, this needs to be taken into account, possibly resulting in the use of wider skips. Understand that the cotton plant will require access to 800 to 850 mm of evapo-transpiration or water throughout its life to reach its full yield potential. The choice of row configuration is then based on combining the various sources to achieve in excess of 800 mm over the life of the crop:

In-crop ground cover in skip

Stubble cover will significantly improve a field's ability to capture rainfall in the fallow and in-crop. This is particularly useful during early summer when a lot of in-crop rainfall can come via short, intense storm events. Stubble cover will also lead to more uniform distribution of moisture across the field and the seed bed because there will be less run-off.

Variety

It is important to select an appropriate variety – this may not be the highest yielding variety in fully irrigated scenarios.

Variety selection in skip-row irrigation situations should use similar principles as for dryland – select a variety with good yield potential to capitalise on the moisture you have available, and good inherent fibre quality so that penalties can be minimised in tough conditions.

But ideal characteristics of a semi irrigated cotton variety are:

- Indeterminacy;
- Reliable yield potential; and,
- Inherently good fibre quality characteristics

Each season CSD conducts a series of semi-irrigated trials as part of its large-scale, replicated variety trial program. The trials cover a range of regions, season, configurations and growing conditions. Analysis of the data from these trials will give you a good indication on the best varieties for skip-row irrigation. This data is available from:

- The annual CSD Variety Trial Results Book.
- The CSD Variety Performance Comparison Tool (*www.csd.net.au/vpc*).

This allows you to compare varieties from a range of regions and seasons.

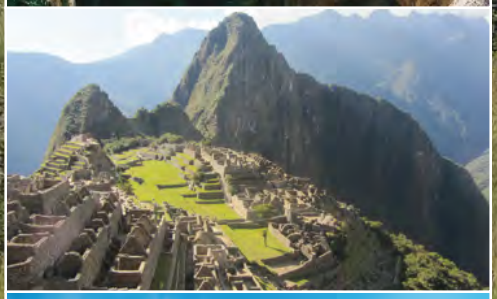
If you have any questions relating to selecting the right variety, please contact any of the CSD extension and development team.

For further information in relation to any of the topics mentioned in this article, please contact your local CSD Extension and Development Agronomist or visit the CSD website.

GREENMOUNT TRAVEL

Looking for great travel opportunities in 2020?

See our 2020 Farm Tours...



- ✶ Scandinavia & Iceland
- ✶ Eastern Africa
- ✶ Western Europe
- ✶ South America
- ✶ Western Canada & the American Heartland

Express your interest in the above study tours but be quick – tours begin in early July. For more detailed information visit

www.greenmounttravel.com.au

Contact details:
Lloyd (0428 724 615) or
David (0437 000 234)
Email: travel@greenmountpress.com.au
Or visit: *www.greenmounttravel.com.au* for updates

AUSTRALIAN GRAIN

The Australian cottongrower

AUSTRALIAN Sugarcane

GREENMOUNT TRAVEL

Licence No. TAG 1608

ABN 57085 828011
IATA 96-804831

Ph: 07 4659 3555
www.greenmounttravel.com.au
E: travel@greenmountpress.com.au
Fax: 07 4638 4520
120 Herries St, Toowoomba Q 4350

Supply chain knowledge important

SAVVY farmers and business people alike are naturally inquisitive about what happens further upstream or downstream in the product supply chain.

A supply chain can be described as "a system of organisations, people, technology, activities, information and resources involved in moving a product or service from supplier to retailer."

The cotton supply chain is very complex and involves input providers of fertiliser, chemical, seed, machinery, and technology, researchers, growers, transport companies, contractors, ginners, warehouses, marketers, shippers, spinners, weavers, garment manufacturers, fashion designers, wholesalers, retailers and consumers to name a few.

Should cotton farmers be getting more involved in areas of the supply chain further upstream or downstream of the farm?

A farmer could be forgiven for putting the blinkers on and just growing the stuff, as that's what they do best and the rest of the supply chain is specialised in what they do so why would a farmer want to get involved in other parts of the supply chain either upstream or downstream from the farm?

The answer on the surface is simple – more money!

But look closely and there's a bit more to it.

There are plenty of other ways a farmer could potentially make more money – from share investments to expanding and gaining economies of scale or just by concentrating on growing higher yields or reducing costs. Then, he or she must consider that the costs to expand vertically can often be prohibitive if you don't quite understand exactly what you are getting yourself into.

A better answer to why the farmer would get more involved in other areas of the supply chain is simply more control. More control of your own destiny should ultimately lead to more profitability.

The truth is that many farmers are already vertically integrated (involved in more than one area of the supply chain). For example: many farmers do their own picking, have their own trucks and/or ownership in chemical and/or fertiliser businesses – or have partnership in gins.

While many producers have a handle on the advantages (and disadvantages) of carting their own produce, or owning a picker rather than using a contractor, not many delve too far into the world of marketing other than perhaps contracting a broker or advisor to help them with selling decisions.

Rain Agribusiness (Rain Ag) is educating farmers about the supply chain (downstream from the farm gate) and helping them to leverage opportunities that they may not know existed.

"We want to make it easy for farmers to better understand the cotton supply chain beyond the farm gate without adding any up-front costs," said Narrabri-based director Tim Whan.

Rain Ag started a cotton warehousing business which has now been running successfully for the past three growing seasons under the brand Raw Cotton Australia. Their unique and efficient system is allowing farmers to sell their physical cotton after it is ginned on a free-in-store (FIS) basis from warehouses in Brisbane, Sydney and Melbourne.

Raw Cotton Australia manages and fully funds the movement and sale of cotton post-ginning and gives farmers a real insight into the value of various grades.

"For a long time farmers have simply accepted that the value of their cotton was in-line with a predetermined Premium and Discount (P&D) schedule," said Tim.

"By giving the farmer the opportunity to clearly see (for themselves) much further along the supply chain – we are giving them more control and creating new opportunities."

It's been Rain Ag's core philosophy since inception six years ago to give more options to their customers by assisting them to move downstream.

Tim said that supply chain visibility is not only important to farmers but also to end-users.

''With modern technology and advanced communication channels we are subsequently seeing more and more end-users working their way upstream, to access more reliable information on provenance, and to develop relationships closer to the farm gate.

Downstream supply chain operations

Rain Ag says a great example is Boolah Partnership – a (predominately) grain-growing operation in northern NSW.

''Boolah has developed further operations downstream in the supply chain and by doing so have also bolstered their ability to supply the needs of end users of grain.

''The partnership owns and manages a series of independent grain packing facilities which enables them to export their own grain and that of other farmers with full control over quality and a sound knowledge of the finer details of the grain such as provenance.

''This integration downstream by Boolah came about due to continued enquiry from end-users wanting more transparency around where the grain was coming from plus a simple wish to speak directly with the 'farm gate.'

Stuart Tighe from Boolah Partnership says the majority of Australia's grain supply chain is owned by grain traders and therefore there can be a conflict.

"It's difficult to break through the system that everyone accepts is normal. But, similarly to the Rain Ag example in cotton; once farmers get the opportunity to see more clearly further downstream it becomes a lot less daunting and creates a whole new suite of opportunities." Stuart said.

Tim said that technology will play a key role in what our Agricultural supply chains will look like in the future.

"There's no doubt in my mind that technology will provide the links that will see the end user eventually having a clear line of sight to the producer. It's up to businesses like ours to keep working closely with current supply chain participants to transition to the future of Australian Commodity marketing."