



riverina
agriconsultants

**BUSINESS AND TECHNOLOGY FORUM
IRRIGATING INTO THE FUTURE
28/06/18**



riverina
agriconsultants

WATER PRODUCTS WHICH ONE TO CHOOSE?

Michael Ryan

PRESENTATION OVERVIEW

- ❑ What are the key water products?
- ❑ Comparison of these products
- ❑ How to analyse the choices
- ❑ Grower examples

WATER SOURCES (PRODUCTS)

- Entitlement
 - High Security
 - General Security
 - Supplementary
 - Groundwater
 - Lease
- Allocation
 - Carry over
 - Temporary Transfer
 - Forward water
- Rainfall 400mm = 4ML/ha

ENTITLEMENTS

Water Source	Total Entitlements	Entitlement Cost \$/ML	Allocation Reliability	Capital Invested (\$) per allocated ML
High Security	360,297	5,000	95%	5,263
General Security	1,891,895	2,200	60%	3,667
Supplementary	198,780	600	40%	1,500
Groundwater (Lower Murrumbidgee Zone 3)	267,500	2,475	100%	2,475

CARRY OVER

- Attached to an entitlement
- General Security 30%
 - Can buy carry over space
- Groundwater (Lower Murrumbidgee) 200%
- Not available for High Security
- Low allocation risk (dam spill)

TEMPORARY PURCHASES

- Current year and forward water
- Market is volatile
- Supply and demand

Water Source	Pros	Cons
High Security	Reliable allocation Capital growth	High capital cost No carry over Fixed Costs
General Security	Lower capital cost per allocated ML Capital growth	Capital cost Variable allocations Fixed Costs
Supplementary	Lower capital cost	Episodic events Timing cannot be controlled, often announced when demand is low Need on-farm storage to best utilise
Groundwater	Reliable allocation Capital growth Can pump and/or carry over 200% in any year	Expensive infrastructure High energy costs Infrastructure is a depreciating asset Extraction limits (annual and daily) Limited suitable bore locations
Lease	No capital investment Operational expense	No capital gain Allocation risk Value subject to allocation
Temporary Purchase and Forward Water	No capital investment Buying deliverable water Operational expense	No capital gain Volatile market

COMPARING OPTIONS - ENTITLEMENTS



- ❑ General Security @ \$2,200/ML
 - Interest cost @ 40% allocation = \$275/ML
 - Interest cost @ 50% allocation = \$220/ML
 - Interest cost @ 60% allocation = \$183/ML
- ❑ High Security @ \$5,000/ML
 - Interest cost @ 95% allocation = \$263/ML
- ❑ Groundwater @ \$2,475/ML
 - Interest cost @ 100% allocation = \$124/ML
- ❑ Lease at 5% of capital value

GROUNDWATER

- ❑ Reliable allocation
- ❑ Can pump and carry over up to 200%
- ❑ Expensive, depreciating infrastructure
- ❑ Extraction limits and new bore locations
- ❑ High energy cost
- ❑ Pumping cost \$100/ML
 - including energy, R&M and capital renewal
 - plus interest (\$124/ML) = \$224/ML

BUYING ENTITLEMENTS

- Capital gain and return on capital
- Requires finance (debt)
- Increasing debt equals increasing business risk

WHICH TO CHOOSE?

- Consider
 - Balance sheet
 - Cashflow
 - Risk

TEMPORARY PURCHASES

- ❑ Understand market volatility
- ❑ Understand your yield and price assumptions which will determine your cut-off price, e.g.
 - Rice @ \$400/tonne - \$125/ML
 - Cotton @ \$500/bale - \$150/ML
 - Cotton @ \$600/bale - \$200/ML
 - What are your margins?
- ❑ Have capital available to capture market dips

IDENTIFY YOUR BUSINESS GOALS

- What are you trying to achieve?
- Return on assets/EBIT yield
- Balance sheet growth
- What other goals must be addressed.

Think and act long/strategically

WHAT CAN I AFFORD TO PAY FOR WATER?



- ❑ Gross margins – simple and works where no capex required. Short term only
- ❑ Whole farm profit and loss analysis captures full cost of production, but only a short period of time, such as one crop cycle
- ❑ Preferred method is detailed 4 – 5 year cashflow budget with opening and closing balance sheets

ASSUMPTIONS

- ❑ Prices
- ❑ Yields
- ❑ Costs
 - Water
 - Crop
 - Operations
 - Finance
 - Energy
 - Labour
 - Overheads
- ❑ Always state assumptions up front and substantiate them

PRINCIPLES

- ❑ Do not starve your business of cash
- ❑ Always consider opening and closing balance sheets
- ❑ Do not hide undermining balance sheet behind a strong cashflow

SENSITIVITY ANALYSIS

- ❑ Always test the rigour of your budgets
- ❑ Different scenarios with varying assumptions such as allocations, yields and prices
- ❑ Identify the tipping points

SUMMARY

Simple analysis may be sufficient but:

- Identify your goals
- Think and act long
- Make decisions about what is best for your business

INVESTORS PERSPECTIVE

Return on temporary sales

Allocation	95%	30%	40%	50%	60%
Price \$/ML	High	General Security			
125	2.4%	1.7%	2.3%	2.7%	3.4%
150	2.9%	2.0%	2.7%	3.4%	4.1%
175	3.3%	2.4%	3.2%	4.0%	4.8%
200	3.8%	2.7%	3.6%	4.5%	5.5%
225	4.3%	3.1%	4.1%	5.1%	6.1%
250	4.8%	3.4%	4.5%	5.7%	6.8%

Assumptions: High Security \$/ML 5,000
 General Security \$/ML 2,200

GROWER EXAMPLES

Grower	General Security	High Security	Groundwater	Carry Over	Supplementary	Storage	Temporary Transfer/Forward Water
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Planned	<input checked="" type="checkbox"/>
6			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>

COMMON FEATURES

- Own entitlements (more than one type)
- Utilise carry over
- Utilise temporary transfers/forward water

- ❑ Thanks for the opportunity to present
- ❑ Questions?