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Your Levy at Work

Mount Gambier- Smarter Irrigation for Profit

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Smarter Irrigation for Profit

Partnership between the major irrigation industries of

- cotton,
- dairy,
- rice and
- sugar.

It will target 3000 irrigators to improve their individual enterprise profit by $20,000-40,000 per annum focusing on water, energy and labour savings

The project has

- 10 key activities,
- four industries,
- 16 R&D partners, and
- 19 farmer managed learning sites across five states.

Smarter Irrigation for Profit - SA

3 Irrigation sites, can profit be improved by focusing on water, energy and labour savings?

What is the business case for VRI?

Can profit be improved by focusing on water, energy and labour savings?

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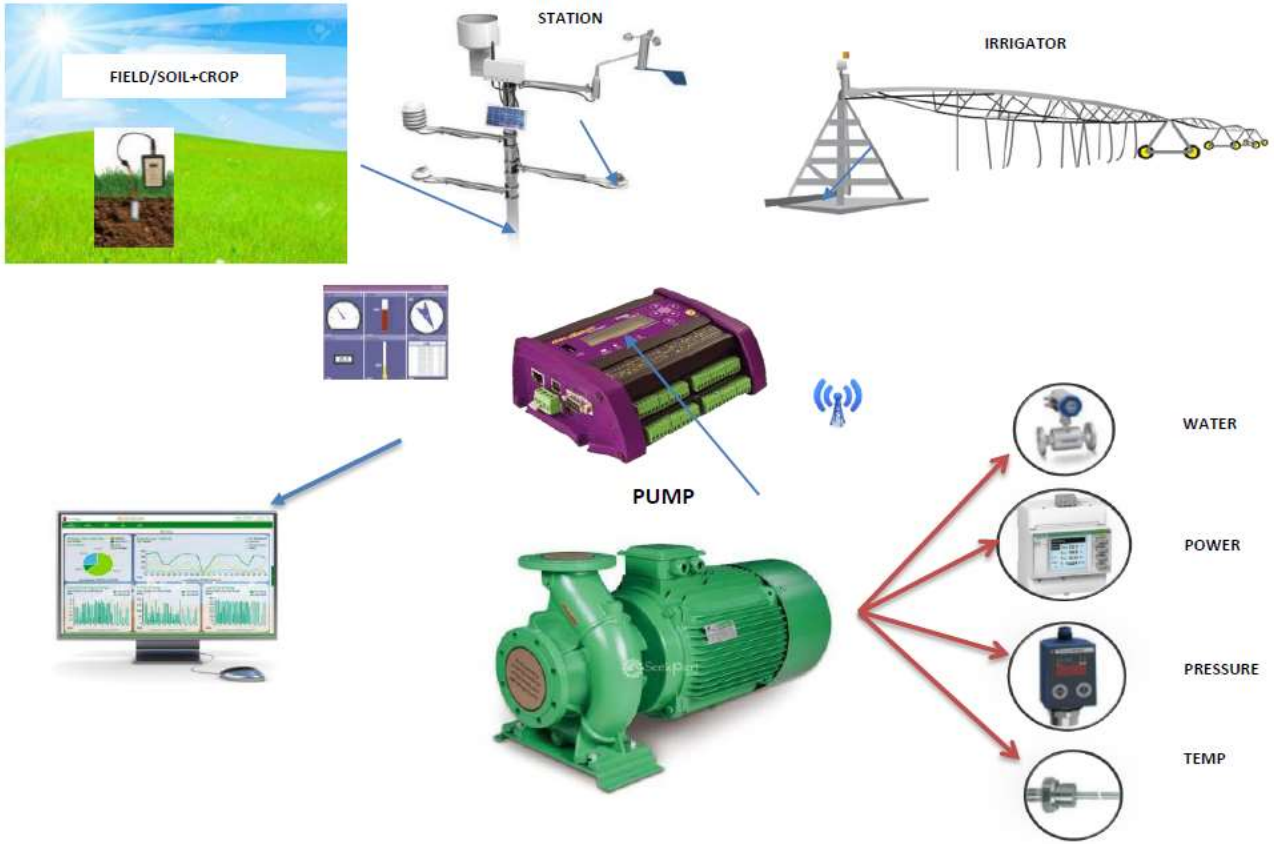
Yes, but it means going back to basics
& collecting and analysing data.

- Pre or post season system checks.
- Catch can test (suggested every 7 years)
- Energy audits

- Monitor, record and analyse water, energy and pasture/crop productivity throughout the irrigation season

The power of data



Benchmarks & Targets – What should you aim to achieve?

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DU% coefficient of Uniformity **CU%** = 90%

(**t DM/ML)**. Industry target has been increased from 1 to 2t DM/ML of irrigation water.
Tasmanian productivity monitoring demonstrated that productivity could be doubled when irrigation scheduling met plant requirement – can you afford to lose 50% of your pasture potential?

running/energy costs **kWh/ML 150-300**
kWh/ML/m = 4-8
$/ML $30-70 (Daley & Callow 2014)

Did the project sites meet the benchmarks?

Pre or post season system checks help to reduce breakdowns at the start of the season reducing the risk of pasture losses. There is a potential reduction of pasture utilisation of approximately 105kg/DM/ha per day of delay. (50ha 5 day delay reduction of 26t DM utilisation)

John Hunts catch can test identified a potential pasture loss valued at $16 000 (40ha pivot)

Scheduling – pasture productivity? *Tasmania "the green drought" opportunity cost of 40kg/DM/ha/day 420t over 117ha for 3months $200t $84 000.*

Energy audits identified:
$ 600 - $ 2,400 / year if pivot pressure can be reduced
$ 300 - $ 1,500 / year if pump efficiency improved (NSW $8000)
$ 350 - $ 1,350/ year if high efficiency motors were installed
$4500 from changing tariff (off peak times).
Electricity tariffs also varied across the group ranging from 18 – 24.2 cents/ kWhr average (2016).

What about Labour?

Does all of this measuring and monitoring mean more work?

Are the productivity gains worth it?

Where can savings be made to give you more time in the office?

The VRI Business case

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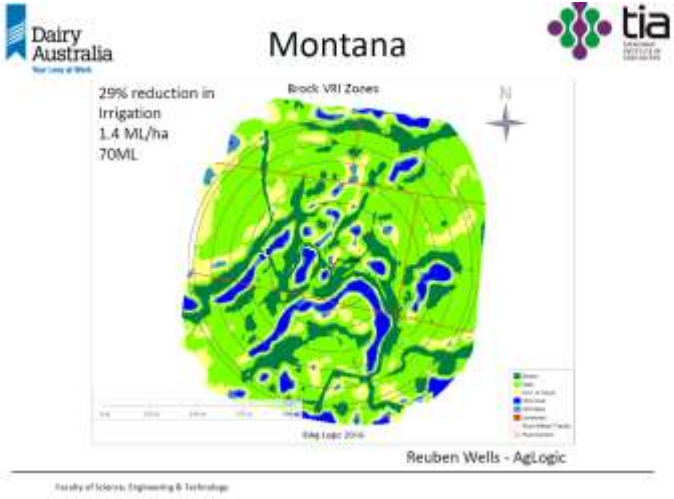
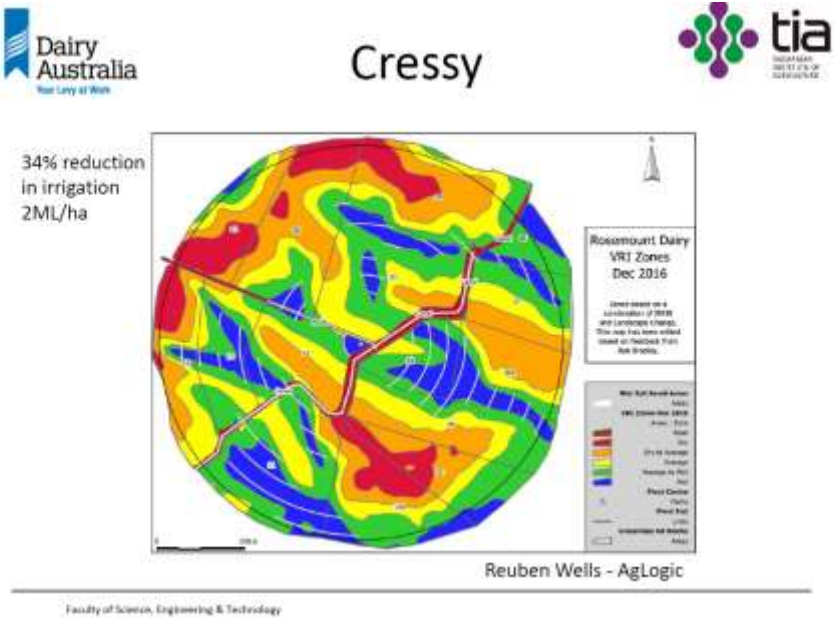
To manage variability due to management and infrastructure

- Laneways
- Locking up paddocks for hay or silage
- Different crops under 1 pivot

Climate and temporal change

Soils and topography





Before investing in VRI

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Checklist before choosing a VRI system

1. Understand Variability
2. Undertake a RAW assessment
3. Consider non-watering areas
4. Match plant requirement through the season

VRI payback (need more data)

Details	Water saving	Improved production	both
Pivot (ha)	55	55	55
Extra production consumed tDM/ha	0	1	1
Value of extra feed $/tDM	250	250	250
Water saving ML/ha	1.4	0	1.4
Value irrigation water saved $/ML	100	100	100
Capital costs $	47225	47225	47225
Years to pay back	9	3	Less than 2

Tasmanian findings

- VRI can save water
- Need to ground truth variability maps
- Zone management changes throughout the season
- VRI payback depends on growing more crop.