

**Presentation to the
Wairarapa Water Summit**

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Land Use Change Under Irrigation
the Possibilities, the Challenges,
and GMP

Irrigation = Change



Dryland

>>>

Irrigated

- Minimise Costs
 - Generally Cautious
 - Low Debt
 - Survival
 - Fewer Options
- Maximise Income
 - More Aggressive
 - High Debt
 - Maximise Potential
 - More Options

Change

- Existing irrigators – will have experienced this change process.
- Farmers contemplating irrigation development need to change the way they think about their farming business.
- Irrigation also changes communities – many positive changes but also some negatives.

The decision to irrigate...

- Four key questions that irrigators want answered by scheme proponents -
 - When will water supply start?
 - How reliable will it be?
 - How much will it cost?
 - Will I be able intensify my farming operations?

Who's in Charge?

- Without “customers” irrigation schemes don't happen!
- This is true whether the scheme structure is cooperative in nature or follows a more corporate/investment model.
- Farmers within a region decide.

Scheme “Supporters”

- Not just dry land farmers.
- Existing irrigators should be interested in scheme developments in their region.
- Schemes might provide an attractive alternative to current supply
 - Higher reliability.
 - Greater security of tenure.
 - Lower cost.
 - Collective approach to managing within limits.

Some Insights

- Irrigation development has never been “cheap”.
- “Once an irrigator always an irrigator” – I have yet to see a farmer who developed irrigation return the farm to dry land.
- Farmers risk profile changes – e.g. reduced drought impact but greater interest rate risk.
- Asset values increase to reflect the value of irrigation.
- Banks are very keen to lend to irrigation.
- Making irrigation pay has always been a challenge but most farmers who attempt to do so, succeed.
- Irrigation revives rural communities and rural economies – initially the community benefits far outweigh the returns to individual irrigators.

Cost Challenge

- Capital costs (\$/ha)
 - Scheme (off farm) - \$5,000-\$12,000
 - On-farm irrigation - \$4,000-\$10,000
 - On-farm development - ?

- Water Charges (\$/ha)
 - Interest & Principal - \$700-\$1,700
 - Scheme operating costs - \$100-\$500
 - Total - \$800-\$2,200/ha

Making Irrigation Pay?

- As a minimum a farmer developing with relatively low cost irrigation will have to generate additional gross profit of approximately \$1,000/hectare

Making Irrigation Pay? Cont.

- Adding water alone is unlikely to be economic.
- As a minimum – need to intensify the existing farming system.
 - Higher stocking rate
 - Higher crop yields
 - Store => Finishing
- Irrigation developments now characterised by more rapid changes in land ownership and farming systems: -
 - Livestock => intensive cropping
 - Livestock => dairy farming
 - Mixed cropping => viticulture or horticulture

What's Possible with Irrigation?

- Pasture dry matter
 - Yields - 6-8tDM/ha => 15-20tDM/ha
 - Consistent production from October-April
- Crop Yields
 - Feed wheat 4-6t/ha => 8-10tDM/ha
 - Improved quality
- Forage Crop Yields
 - Kale 6-8t/ha => 10-16tDM/ha
- Other Crop Options
 - Small seeds, high value seed crops
 - Process vegetables
 - Horticultural options

Making Irrigation Pay? – The Dairy Option

- Dairy farming – the “face” of irrigation expansion in the SI.
- Capital intensive: -
 - Farm development - \$8,000-\$15,000/ha
 - Livestock - \$6,000-\$10,000/ha
 - Dairy Co Shares - \$7,000-\$10,000/ha
 - Total capex - \$21,000-\$35,000.
- Milksolids Output
 - System 3 – moderate feed inputs, milking platform.
 - Producing +1,500kgMS/ha consistently (>400kgMS/cow)

Making Irrigation Pay? – The Dairy Option

- Financial Performance (\$/kgMS)

- Income

- Milk - \$6.30
- Livestock sales - \$0.25
- Dividend/Rebates - \$0.30
- \$6.85

- Less operating Exp. \$4.25 (incl. Irrigation operating costs)

- Less Interest \$1.50

- Trading Surplus \$1.10/kgMS

- 200 eff. ha farm = \$220,000.



Other Irrigation Options

- Irrigating a small area of a much larger property to support the existing farming system can be very profitable.
- Irrigating and developing smaller land areas e.g. Viticulture and horticulture options.
- Scheme water supply to provide reliability to existing ground and surface water supplies for existing irrigators.

Will I be able to intensify?

- For a new irrigation scheme to proceed or for an existing scheme to expand it will need to answer this question.
- Not sure what the answer is in Wairarapa but processes are in place to provide the answer various catchments.
- Irrigators (and ultimately all landowners/farmers) will need to demonstrate that they are operating to a standard – industry are calling this standard Good Management Practice or GMP.
- Demonstration likely to be via auditable Farm Environmental Plans or FEP.

Will I be able to intensify?

- FEP for an irrigated farm likely to include a module that addresses irrigation and water use.
- It is likely to include: -
 - On-farm irrigation design & build to certified industry standards.
 - Regular assessment of system to ensure efficient operation.
 - Soil moisture monitoring.
 - Irrigation management plan.
 - Monitoring actual water use.
 - Use of technology – variable rate irrigation.

Take Home Messages

- Irrigation = Change
- The development of a community based irrigation scheme is ultimately in farmers hands.
- The cost to make irrigation pay is a challenge and always has been.
- An additional hurdle now is the ability to be able to intensify farm systems.
- Irrigation sector developing tools to enable very efficient irrigation and reduce potential impacts.

Irrigation NZ Inc.

Want to know more: -

www.irrigationnz.co.nz

