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LIMITED
MCWSG Feasibility Study
MCWSG Meeting
12th June 2014

Project to date

- 5 sites have now been chosen for their varying characteristics. These include: Altitude, rainfall, soil profile and watering ability.
  - Upper Manuherikia – 1) Mawhinney road. 2) Omakau
  - Lower Manuherikia Chatto Creek
  - Hawkburn- Idaburn
  - Dunston Downs

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Cost of water

- Preliminary cost of water model developed based on pre-feasibility reports
- Preliminary economic assessment model for the entire catchment has been developed
- Current model based on 50% equity funding by water users, 50% debt funded by the scheme
- 35 year evaluation period (IAF) Guidelines)

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Cost of water – Next Steps

- Agree economic assessment model assumptions with Golders & MCWSG
- Update economic assessment model with ACTUAL cost estimates, irrigated area and farm economics assumptions taking overseer nutrient feedback into account

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Water costs under pre-feasibility assessment

- Current models based on 27m dam option.
- Based on Pre-feasibility cost, this presents the lowest capital cost for users.
- **For an existing user** on the Main Manuherikia main race: at 5m lift falls dam capital costs are $1,248/ha and $168 annual charge. This cost remains the same irrespective of which scheme is supported.
- **For a new water user** in Upper Manuherikia. A 27m falls dam capital costs at $2,734/ha and $288. - 15m falls dam $3,436 and $364 annual charge
- Many permutations around water cost on scheme size which will require further modelling.

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Pasture modelling: Assumptions

- Pasture production: Aqualinc data used in the pre-feasibility crossed reference with farmax model for the region.
- Beef and lamb data also analysed as further cross reference
- Modelling of Omakau dairy production with actual data from existing farm in the area.

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4 models per site completed for both dryland and Irrigated

- Sheep breeding to Breeding/finishing
- Dairy support
- Mixed Cropping
- Dairy conversion
- One off dryland to Partly Irrigated larger property

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Financial outcomes: Omakau main race

OMAKAU MAIN RACE FINANCIAL SUMMARY							
	Existing			Improved			
	Mixed Arable	Sheep and Beef	Dairy Support	Dairy	Mixed Arable	Sheep & Breeding Finishing	Dairy Support
Total Revenue	$1,726	$1,001	$1,289	$9,009	$3,531	$2,530	$2,960
Farm expenses	$1,142	$584	$654	$5,724	$2,055	$1,219	$1,378
FE as % TR	*66%*	*58%*	*51%*	*64%*	*58%*	*48%*	*47%*
On farm Irrigation Expense	110	110	110	$200	$200	$200	$200
Farm Surplus (Cash)	**$474**	**$307**	**$525**	**$3,085**	**$1,276**	**$1,110**	**$1,382**
Manuherikia Irrigation				$1,248	$1,248	$1,248	$1,248
On-Farm Capital				$18,949	$6,578	$6,810	$6,600
Total Capital	$0	$0	$0	$20,197	$7,826	$8,058	$7,848
Interest at 7%				*$1,414*	*$548*	*$564*	*$549*
Net Income (Cash)	**$474**	**$307**	**$525**	**$1,671**	**$728**	**$546**	**$833**
Converting to Spray Irrigation from Flood Irrigation Farming Systems							
Do Minimum Option (5m)							
Off Farm Capital Cost				1248	1248	1248	1248
Off Farm Irrigation Annual Cost				168	168	168	168
Marginal Return ($/ha)				$2,610	$634	$636	$690
Marginal Capital ($/ha)				$20,197	$7,826	$8,058	$7,848
Return on Marginal Capital				**12.9%**	**8.1%**	**7.9%**	**8.8%**

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Cost versus other schemes

- NOIC stage one $1800 per ha capital costs and $760 per ha annual charge
- NOIC stage two $3800 per ha capital costs and $760 per ha annual charge
- TWL $1873 per ha capital costs and $446 per ha annual charge
- Proposed Canterbury schemes in excess of $800/ ha annual charge

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Key concerns for farmers

- Affordability: both capital cost and ongoing water charges!
- A sense that a complete change in farming system is required under irrigation!
- Dairy is the only option to make irrigation pay!

- Reality is this isn't the case!

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What are the other options

- Partial land sale to fund irrigation capital cost for residual
- Joint ventures to secure management expertise
- What other opportunities does Irrigation provide?

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Balance sheet scenario – Partial Sale

- Example
  - Landowner has 600ha of which 200ha is dryland 400 flood irrigated
  - Existing land value with flood irrigation $16,000 per ha and dryland $8,000
  - 400 ha is converted to spray irrigation and 200 sold post water scheme go ahead
  - Existing debt 10% of asset values

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Joint Venture Economics

Partial Sale Assumptions - Sheep	
Initial Land Area	600ha
Initial Land Value with unreliable water	$16,000/ha
Initial Land Value with no water	$8,000/ha
Initial Debt Level	10%
Interest Rate	7%
Land Area Sold	200ha
Land Value with reliable water	$20,000/ha
Land Retained	400ha
Value of Land Retained	$8,000,000
Conversion Cost per ha to sheep	$6,810
Water Cost per ha - 5m	$1,248

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Joint Venture Economics

- Assumptions

Results	
Capital from Sale of Land	$4,000,000
Conversion cost of 400ha	$2,724,000
Water scheme cost	$499,265
Net surplus post sale	$776,735
less Existing Debt	$800,000
Debt	-$23,265

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Joint Venture Economics

- Assumptions

Financial Results	New System	Existing System
Land Assets	$11,223,265	$8,000,000
Liabilities	$23,265	$800,000
Equity	$11,200,000	$7,200,000
Cash Surplus	$375,412	$100,179
Equity %	99.8%	90.0%

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Balance sheet scenario –JV

- Example
  - Landowner has 600ha of which 200ha is dryland 400 flood irrigated
  - Existing land value with flood irrigation $16,000 per ha and dryland $8,000
  - Land value post irrigation scheme $20,000 per ha
  - 400 ha is converted to spray irrigation and 200 sold post water rights into a joint venture dairy conversion
  - Existing debt 10% of **the above** asset values

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Balance sheet scenario – Joint Venture

- Sell land into a Joint venture farm syndicate.
- Difference is that you do get exposure to capital gains on that investment (tax free for now!)
- Other benefits include grazing of young stock for you own business, interest/ exposure to the dairy industry etc. All while maintaining an interest in your land.

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Balance sheet scenario – Joint Venture

Dairy JV Assumptions

- 200ha dairy platform
- 640 cows producing 1315 kg milk solids per ha
- Milk pay-out $6.50/kg
- Farm expenses $4.50/kgMS, Irrigation 22c/kgMS ($288/ha)
- 60% Equity, 40% borrowing

Land Sales	200	20000	$4,000,000
less 50% share in Dairy Farm			$2,634,785
Net amount debt reduction			$1,365,215

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Balance sheet scenario – Joint Venture

Financial Results	400ha model	Dairy JV	Combined Business	Existing System
Land Assets	$10,839,265	$7,011,897		
Stock & Plant	$1,080,800	$1,770,720		
Total assets	$11,920,065	$8,782,617	**$16,311,373**	**$8,000,000**
Liabilities	$2,742,250	$3,513,047	$4,498,773	$800,000
Equity	$9,177,815	$5,269,570	**$11,812,600**	**$7,200,000**
Cash Surplus	$165,083	$283,458	**$306,812**	**$100,179**
Equity %	84.7%	60.0%	76.1%	90.0%

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Economic Conclusion

- On farm returns will improve under adequate management by adapting to increased pasture production. Returns include increased cash surplus and a positive return on capital invested.
- Irrigation will provide land owner options for business recapitalisation and growth.
- A financially sustainable business supports business succession.

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