Just add water – returns from irrigation

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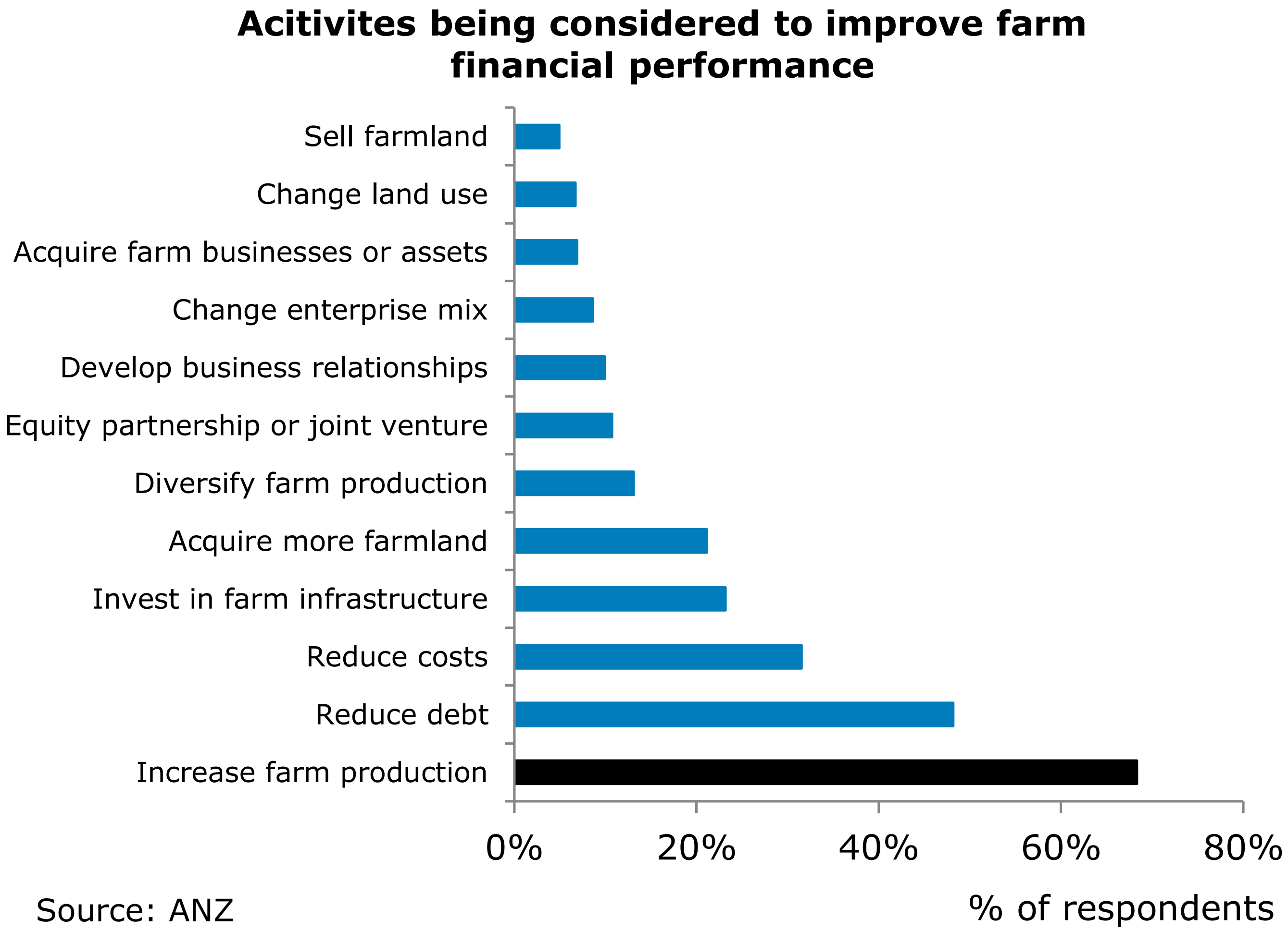
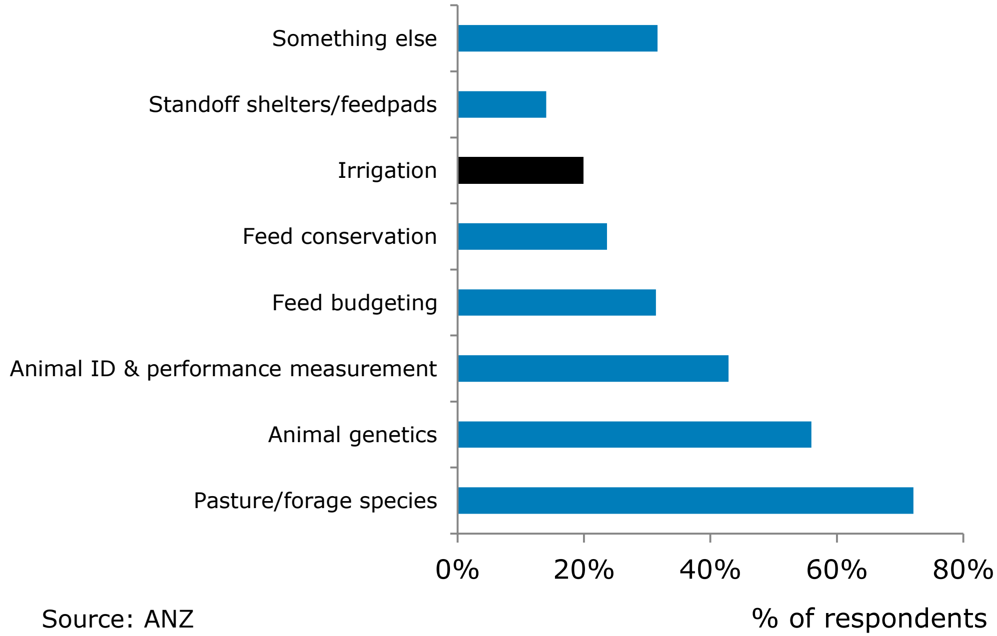
What's view on the street to improving farm financial performance



Source: ANZ

Irrigation down the pecking order though

Methods being considered to increase farm production



Source: ANZ

Our view:

Many challenges to bring it all together, but they are not insurmountable.

Key ingredients are:

- Top farm management;
- Moderate-to-average existing debt levels (or outside equity);
- Setting up farm to maximise production and revenue each year;
- Reasonable prices;
- Successful execution of changeover.

Under irrigation a farm needs to be set up to maximise production and revenue every year, rather than just mitigating the risks of a dry period.

The decision tree

There are many factors to consider when investing in irrigation:

In most cases financial returns and the starting point for equity within a farm are probably the two most important.

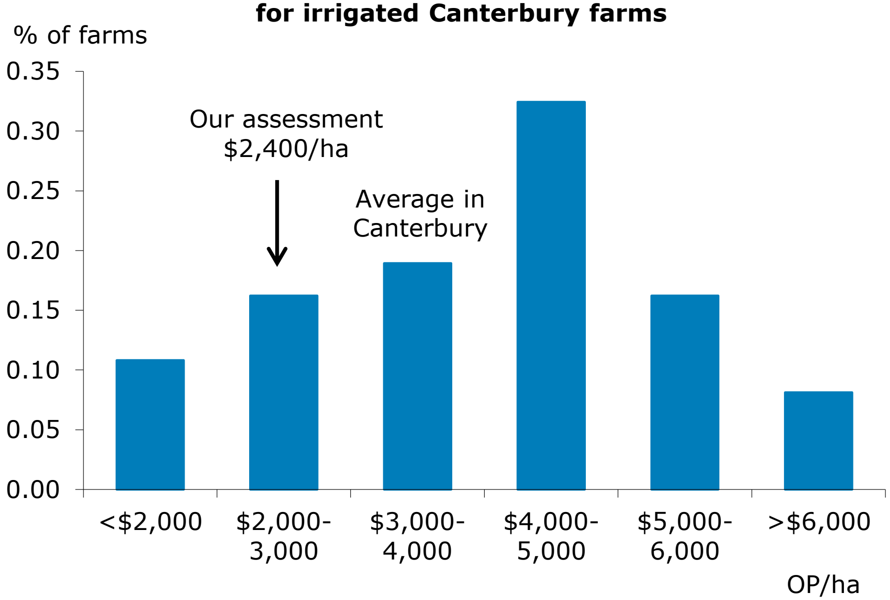
- Obviously returns are influenced by a myriad of factors, but a change of land use, or at least farm policy, will be required when converting to irrigation.
- The physical and environmental aspects of a piece of land will determine potential options.
- An individual’s appetite to change will be important.
  - This will be influenced by attitude to risk, existing debt levels, availability and sources of capital, age, experience in different fields, and family circumstances.
- Influences outside the farm-gate need to be considered.
  - These include things such as environmental regulation, farm-gate prices and other budget parameter expectations, surrounding industry infrastructure, and the fine print (cost, reliability and terms and conditions) of the irrigation scheme, or water take.

It’s a big decision.

- It requires a coherent financial assessment of the options and risks around each.
- Needs additional expertise outside the realm of normal sources.

Key takeout's for dairy

Operating Profit per ha for irrigated Canterbury farms



Sources: ANZ, Dairy NZ

DAIRY DEBT CARRYING CAPACITY PER HECTARE

		Milk Payout $ per MS for 100% share backed				
		$5.13	$5.77	$6.42	$7.06	$7.70
Production MS per hectare	1,000	-50	7,300	14,600	21,950	29,300
	1,250	-60	9,100	18,250	27,450	36,600
	1,500	-70	10,850	21,950	32,950	43,900
	1,750	-85	12,750	25,600	38,400	51,250
	2,000	-100	14,550	29,250	43,900	58,550

Average conversion cost is probably $26,000-$30,000/ha. Implies need reasonable payout, good productivity and moderate-to-average existing debt levels.

Key takeout's for red meat and dairy support

- Part irrigation of a larger livestock farm that improves farm policy flexibility and helps mitigate against dry conditions generally lowers risk and provides higher per hectare returns compared with a fully irrigated property.
- Over time, as skills and confidence grow, the irrigated area on a livestock property tends to gravitate toward the most profitable enterprise depending on market conditions.
- Solely dedicated livestock finishing operations didn’t tend to fare well. One of the main reasons was the high water requirements, which increased irrigation charges.
- In some cases the rates of return for individual livestock farm policies were lower than without irrigation. This highlighted the productivity boost in a normal year wasn’t always sufficient to compensate for increased costs and additional capital invested.
- Farmer productivity around production parameters was key. Reducing farm production to average levels often cut the return on marginal capital invested to convert to irrigation to a level below the cost of capital i.e. rural term loan rates.

Key Parameters $ per ha	1: CPW part irrigated	2: Hawkes Bay fully irrigated	3: Hawkes Bay part irrigated	4: B+LNZ Class 6 South Island
Farm Profit before tax	903	96	695	341
Debt service capacity @ 1.25 interest cover ratio and 7% interest rate	$8,250/ha	$800/ha	$7,250/ha	$1,404/ha total current liabilities for irrigated. $1,111/ha for non-irrigated farms.
Conversion costs	$5,970/ha from dry land	$3,800/ha from dry land	$5,500/ha from dry land, but only part irrigation of 200ha. Over total area $1,224/ha	$19,460/ha current total assets of irrigated Class 6 farms

Key takeout's for crops (arable and horticultural)

- Like livestock farming, there are many different crops that can be grown depending on market signals, expertise, and the physical and environmental aspects of a property.
- In the horticultural space there was a limited amount of analysis on the different options for the scheme's we analysed. Generally many of the main horticultural enterprises are adaptable to a range of soil types. But climate variables such as the prevailing wind, the risk of frost, growing degree days, and rainfall during certain times of the year are often the more important factors for whether a particular crop or variety may be suitable for a specific area and the expected returns.
- The main benefit arable farms receive from irrigation is that reliable water enables farmers to move from commodity crops to specialist, higher risk, but higher EBIT crops.

Key Parameters $ per ha	1: CPW arable and processed crops	2: Hawke's Bay arable and processed vegetables	3: B+LNZ Class 8 South Island irrigated	4: B+LNZ Class 8 South Island non-irrigated
Farm Profit before tax	2,091	2,053	851	587
Debt service capacity @ 1.25 interest cover ratio and 7% interest rate	$17,857/ha	$17,571/ha	$7,824/ha total current liabilities	$5,842/ha total current liabilities
Conversion costs	$11,800/ha from dry land	$6,167/ha from part irrigation of 50 hectares already	$29,943/ha current total assets	$23,500/ha current total assets

Conclusions

Key ingredients are:

- Top farm management;
- Moderate-to-average existing debt levels (or outside equity);
- Reasonable prices;
- Setting up farm to maximise production and revenue each year;
- Successful execution of changeover.

Productivity drivers on newly irrigated farms is driven by:

- Younger farmers taking over management through family succession, or change of ownership;
- Top performers buying more land and expanding;
- High debt levels sharpening performance;
- Leveraging new technology;
- Reliability and increased confidence allows the system to be run to its maximum and avoids conservatism;
- Partial irrigation often lifts the productivity of the non-irrigated part of the farm.

There is no "one size fits all" solution.
For any farmer considering their own particular situation it pays to invest in good advice to work out the viable options.

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