

# Leadership in the Hinterland

## A Brief Economic Overview of the Rural Canterbury Economy

20 August 2014

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This paper deals with each of the following propositions:

- Canterbury as a whole is growing rapidly
- The Canterbury hinterland is growing steadily
- Employment has increased in the agricultural hinterland
- Employment growth has largely come from dairy farming
- Off-farm employment in dairying is gradually growing
- A greater number of skilled workers in dairying will be required over the next 10 years
- Primary sector job growth in Canterbury will require more personnel in key occupations
- There are strong growth drivers in the rural Canterbury economy looking forward
- There are strong prospects of further growth from irrigation
- Even conservative irrigation projections indicate a strong future growth in the hinterland
- Many significant irrigation projects are still in the pipeline
- There is also significant growth in irrigation resulting from on-farm modernisation
- There are also barriers to rural growth
- Farmer skills are seen by some as barriers to growth
- In overview there are some trends that require attention
- A big picture view is required
- A “common space” view of rural Canterbury is required

This document is intended as a discussion starter for a conversation between ECan and the rural mayors of Canterbury on the question of how to create the foundation for the robust development of the Canterbury hinterland, in all of its dimensions, over the coming 5-15 years.

## Canterbury as a whole is growing rapidly:

- From 2007-13 Canterbury's GDP increased 33.5%
- Per capita GDP is \$49,447pa compared to \$47,532pa for NZ
- By 2013 Canterbury's GDP equalled Auckland
- Earthquake construction is a major driver, but so also is agriculture
- In 2013 employment grew by 5.9% and unemployment fell to 3.8% - the lowest in NZ. NZ average 6.1%. (Source: MBIE)

### Canterbury Water Management Strategy economic targets

- No decline in the contribution water makes to the Canterbury economy
- Gradual increase in the value added per unit of water

*The CWMS did not specify the projected growth in value added.*

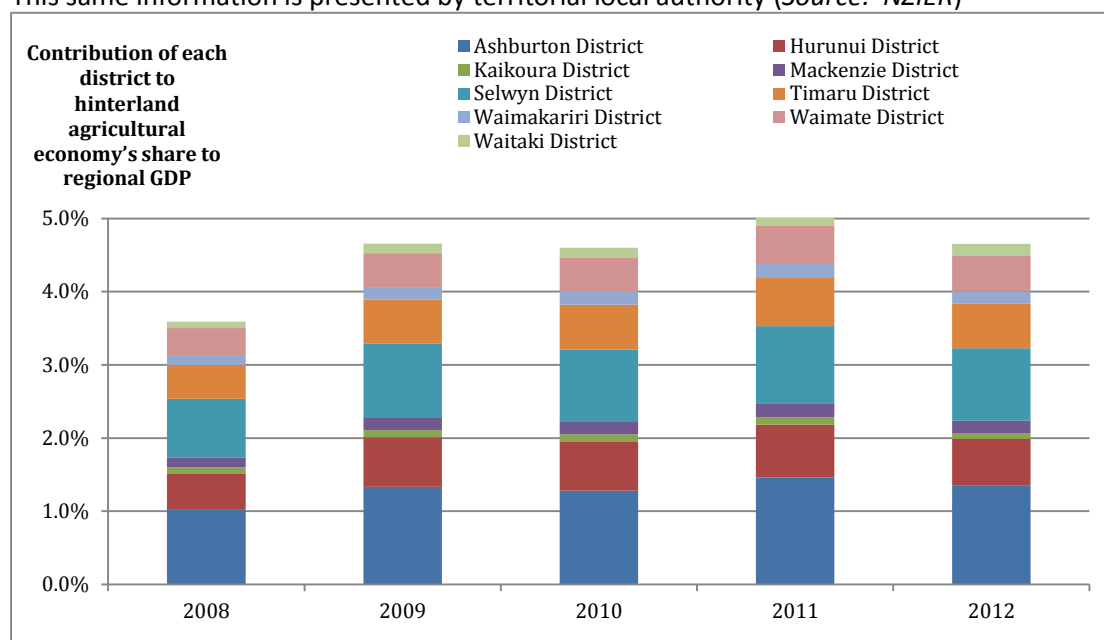
## The Canterbury hinterland is growing steadily (all Canterbury excluding Christchurch):

- The hinterland agriculture economy accounts for just under \$1 billion GDP
- Between 2008 and 2012 the hinterland agricultural economy's real GDP grew by 30% (from \$758 to \$983 million). It can be safely assumed that this pattern has continued into 2013/14
- Between 2008 and 2012 the hinterland agricultural economy's expansion was driven by increased contributions from Ashburton, Selwyn, Hurunui, Timaru and Waimate districts where dairy growth is strong. (Source: NZIER)

Hinterland agricultural economy's contribution to the regional GDP (Source: NZIER):



This same information is presented by territorial local authority (*Source: NZIER*)



- Dairy production is hugely important for the hinterland (and regional) economy
- In districts such as Ashburton (\$764.82m – 2012), and Selwyn (\$367.64m – 2012) the value of dairy production relative to the total size of the economy is significant (*Source: DairyNZ*)
- Dairy volume expansion over the decade to 2010 was worth \$590 per person in the Canterbury region (by comparison \$270m in Waikato).
- The “milking platform” in Canterbury has increased from 89,000ha in 2000/01 to close to 250,000ha in 2013/14 – a growth rate of 8.2% (*Source: DairyNZ*)
- A high growth rate could see 399,918ha by 2025/26, a lower and more modest rate would still reach 334,918 (*Source: DairyNZ*) with continuing growth in average kgs of milksolids per hectare, and average herd size reaching 939.
- Of the 10.4 billion of dairy products exported in 2009 (all NZ) 72% went to the farmer and 14% to labour and rate of return – i.e. 86% stayed in the district (*Source: DairyNZ*).

### Employment has increased in the agricultural hinterland:

- From 10,300 in 2008
- To 10,700 in 2012

This modest growth in employment illustrates a common rural (and regional) experience that strong growth in GDP is not reflected in quite such strong growth in employment as revenue is turned to paying debt or purchasing capital assets. It also needs to be remembered that this growth period coincided with the global financial crisis during which time many businesses, including agriculture, were attempting to manage debt levels conservatively. The rate of demand for employment is expected to increase over the coming 10 years.

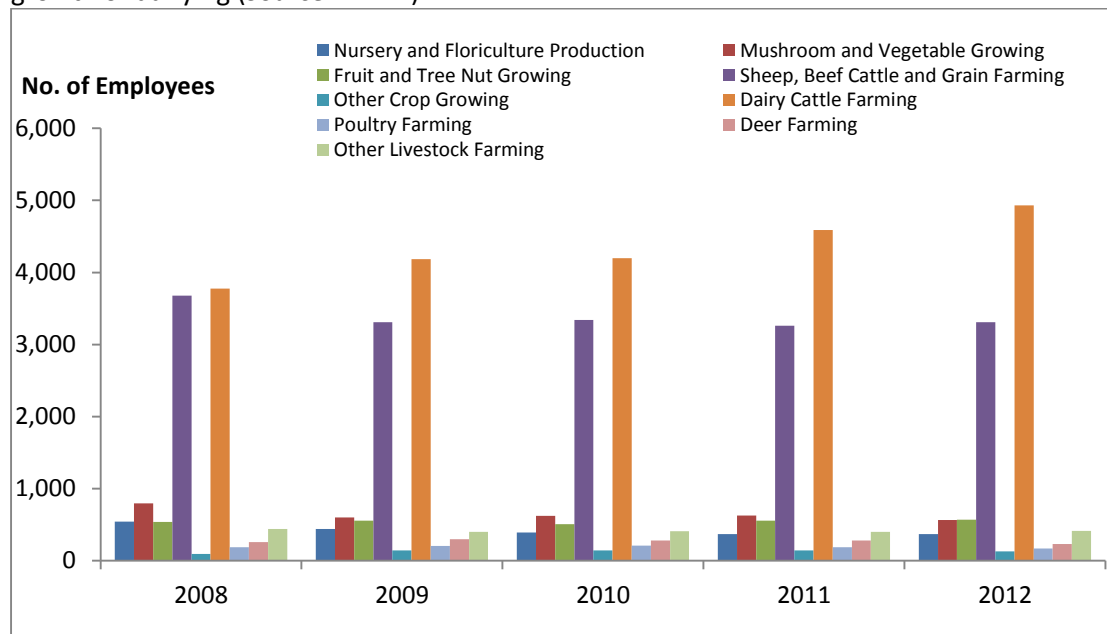
### Employment growth has largely come from dairy farming:

- decreased in
  - Nursery and floriculture production (32 percent)

- Mushroom and vegetable growing (29 percent)
- Poultry farming (11 percent)
- Deer farming (11 percent)
- Sheep, beef cattle and grain farming (10 percent)
- increased in
  - Other crop growing (40 percent, but starting from a small base)
  - Dairy cattle farming (31 percent)
  - Fruit and tree nut growing (6 percent)

The reduction in percentage of employment in some sectors does not necessarily mean an overall drop in employment but a drop in percentage share caused by the increase in dairy's share.

This same information is presented over the period 2008 to 2012 and illustrates the steady growth of dairying (*Source: NZIER*)



### Off-farm employment in dairying is gradually growing:

- Off-farm employment varies from sub-region to sub-region based on the location of processing facilities
- This largely refers to dairy processing such as milk and cream, ice cream, cheese processing and does not refer to other agri-services such as farm advisory and support
- Major processing is evident in Timaru and Selwyn districts, less so in Ashburton, Waimate, Hurunui and Waimakariri
- It is expected that off-farm job numbers of this nature will continue to expand, but gradually

**A greater number of skilled workers in dairying will be required over the next 10 years:**

- These needs will be strongly reflected in Canterbury which is a high dairy growth area
- MPI estimates suggest dairying nationally will need (*Source: MPI*):
  - A net increase of 2,300 workers
  - 8,300 more workers with qualifications
  - 6,000 fewer workers without post-school qualifications (through training and natural attrition)
  - To train an additional 25,700 to replace the natural attrition of workers within the industry
- New dairy workers will primarily:
  - Be on-farm, transport, sales and marketing, factory worker and management occupations
  - Have trained in agriculture business and engineering fields of study
- MPI's estimates highlight dairying as the key area of growth of employment in Canterbury

### Primary sector job growth in Canterbury will require more personnel in key occupations:

- Support and sales workers
- Management skills
- Freight drivers
- Farmers, farm managers and farm workers
- Business, human resource and marketing professionals

### There are strong growth drivers in the rural Canterbury economy:

- The rural economy is growing rapidly, as instanced by the data presented above, even without the added impetus of large irrigation projects
- Despite that, there has been incremental growth of irrigation over a 10 year period
- The estimated net farm gate contribution of irrigation to Canterbury's GDP increased from \$335 million in 2003 to \$1,394 million in 2012
- This increase was driven by expansion in areas with access to irrigation (from 287,000 to 444,777 hectares)
- It was also driven by the increase in gross margins per hectare (from \$1,167 to \$3,134) as a result of the high prices (dairy) and the productivity gains associated with access to irrigation

### There are strong prospects of further growth from irrigation:

- Irrigation growth in Canterbury has been incremental
- No major schemes have yet been confirmed (with the possible exception of the first stage of CPW) although extensive feasibility work is being undertaken in association with the Irrigation Acceleration Fund of MPI on many proposals
- There are varying estimates of the impact of irrigation as illustrated below

Estimates of farm gate value of irrigation (*Source: NZIER*)

Year	Irrigated area	Average gross	Farm gate
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		(in hectares)	Margin per hectare	value of irrigation (in \$NZ)
<b>Ministry of Agriculture and Forestry</b>	2002/03	287,000	\$1,167	\$335 million
<b>Canterbury Water Management Strategy</b>	2008/09	500,000	\$1,600	\$800 million
<b>AgFirst consultants</b>	2011/12	444,777	\$3,134	\$1,394 million

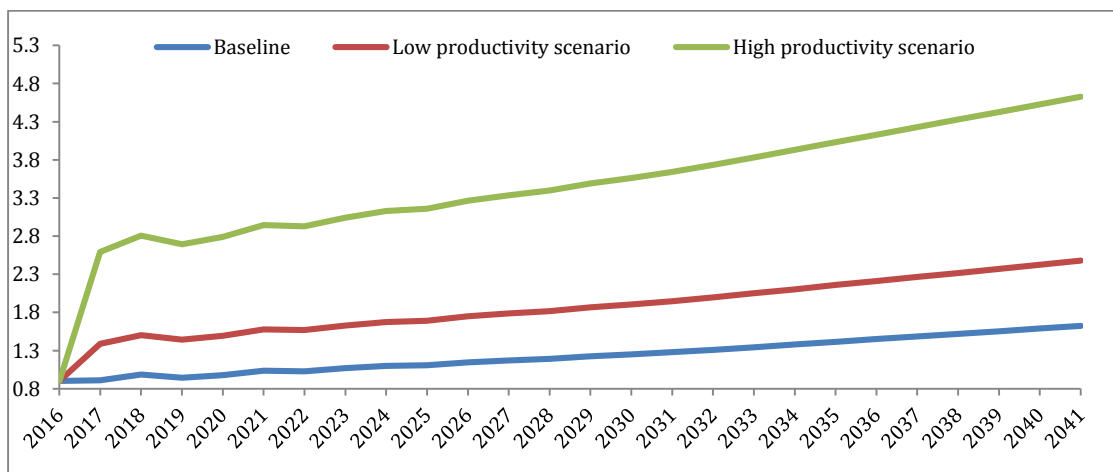
The information contained in the table above illustrates variable estimates of growth, but growth nevertheless. The importance of the average gross margin per hectare is illustrated.

**Even conservative irrigation projections indicate strong future growth in the hinterland:**

- NZIER has modeled growth from 2016 to 2041 based on NZIER’s Quarterly Projections data
- In a low productivity scenario NZIER assume no new irrigation schemes and agricultural GDP would grow by 2.1% per year as a result of marginal efficiencies associated with better soil and water management practices. That is, existing irrigation is used more efficiently, but no new water resources are unlocked
- NZIER assume 7.6% growth per year in a high productivity scenario. This reflects the highest productivity growth recorded in New Zealand during the years 1990-1997 and complements Canterbury’s irrigation target of 850,000ha by 2040 (Source: CWMS 2009)
- This shows that the Canterbury hinterland agricultural GDP would increase by \$0.83 billion in the low productivity scenario and \$2.9 billion in the high productivity scenario
- The \$2.9 billion increase in GDP translates to an additional gross margin of \$3,500 per hectare of irrigated land by 2040. The \$2.9 billion increase in GDP is also in line with NZIER (2010) which used a sophisticated economic model to assess the economic impacts of increased irrigation in New Zealand.

Projection of Canterbury’s hinterland agricultural GDP (2016-2041)

(In billions, \$NZ) (Source: NZIER)



## Many significant irrigation projects are still in the pipeline:

- A conservative estimate of 88,000 additional hectares of irrigation is to come on stream in the next 10 years (over page)
- This includes a portion of Central Plains Water and of other projects
- There are potentially larger projects on the horizon out beyond 10 years which are not included in these estimates
- This indicates a point somewhat below the mid-point on the projections contained above which involves an almost doubling of current revenue
- The experience of the last few years indicates that the complexity of irrigation development results in gradual rather than immediate realisation of projects and their benefits.

*Projected additional hectares under irrigation in the next 10 years:*

<i>Waihao Downs</i>	<i>3,000ha</i>
<i>OOPs</i>	<i>10,000ha</i>
<i>Ashburton</i>	<i>10,000ha</i>
<i>CPW</i>	<i>30,000ha</i>
<i>Eryrewell</i>	<i>7,000ha</i>
<i>Raindrop</i>	<i>8,000ha</i>
<i>South Hurunui</i>	<i>10,000ha</i>
<i>North Hurunui</i>	<i>10,000ha</i>

***Total*** ***88,000ha***  
***(Source: ECan)***

## There is also significant growth in irrigation resulting from on-farm modernisation:

- The move to the use of pivots is unprecedented
- This includes not only new installations but replacement of less efficient irrigation systems such as border dyke and roto rainers
- This is achieving more productivity from the same amount of water
- There is evidence that the dairy farmer tends to be younger on average than other types of farmers and somewhat more willing to innovate

## There are also barriers to rural growth:

- DairyNZ in its submissions to the Local Government and Environment Select Committee on 17 April 2014 made the following points:
  - Limit-setting processes need to be sped up. “Where limits are yet to be set, no one knows what the constraints or opportunities might be, so investment is risky.”
  - Dairy farmers are becoming more efficient nitrogen users. Over 22 years nitrogen efficiency has improved by 30%
  - Despite that in Canterbury the limit-setting process has already resulted in some ‘no-grow’ areas
- The consensus seems to be that most growth is directly or indirectly related to dairying. This is seen by some commentators as a double-edged sword. On the one hand the returns are strong, on the other hands the risks of dependency are also great
- Commentators expressed a view that dairy farmers and dairy leaders have recently become more conservative in their approach to dairy growth. This was illustrated by caution around conversions in over-allocated or near allocated areas and particularly on-farm gearing as a result of conversion, uptake of irrigation or simply modernization of irrigation methods

## Farmer skills are seen by some as a barrier to growth:

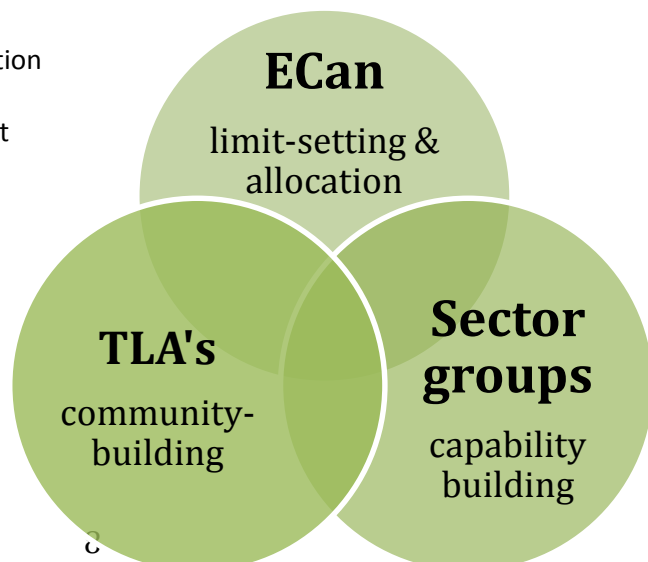
- Some commentators expressed the view that farmer skills are a potential handbrake on development. It was proposed that there is a high level of variability of ability to manage within limits amongst farmers and that uptake of new skills would take time. The point was made that the returns are very tempting and farmers with substandard skills (particularly skills related to farming within limits) may still enter or expand into the dairy industry (and possibly get into trouble)
- Commentators made the observation that the availability service personnel could be well below what was required. The area of irrigation design and installation was particularly noted (on-farm and to-farm services). The causes of this problem were identified as:
  - The pull of high rewards from the city rebuild over the next 3-5 years
  - Less willingness of professionals to come out of the cities into the rural areas whatever the rewards
  - Controls on immigration precluding off shore recruitment of specialist skills.

**In overview there are some trends that require attention:**

- **Mitigation may trump irrigation in the short term**  
Nitrogen management investments may become important for a period as farmers attempt to operate within limits whilst maintaining productivity levels. This will vary with location in terms of current nitrogen loadings. Mitigation strategies could involve significant investments such as:
  - Housed cow systems (cut and carry strategies)
  - Feed and loafing pads
  - Expanded effluent systems
  - Natural nitrogen absorption strategies such as riparian and wetland development
- **Capital investment may favour assets rather than jobs at least in the short term**  
Irrigation hardware without major infrastructure development may be more of a focus in the short term rather than major developments. This would include:
  - Upgrading from obsolete equipment to pivots
  - Modest extensions to irrigation coverage with existing allocations
- **Skill deficits in precision agriculture may build till they become a problem**  
Particularly at the higher skill end of the market
  - Technical, data, systems skills
  - Farm management
  - Technical implementation
 Also services such as:
  - Trucking and transport
  - Trades support
  - Retail and advisory

**A big picture view is required:**

There are three areas of concern that affect the key players across the rural economy.





They are represented by three intersecting Circles (across):

**Role of ECan:**

- To provide the regulatory framework
- To set limits
- To resolve allocation issues
- To support mitigation
- *Overall:* to create clarity and certainty

**Role of sector groups:**

- To review capability
- To lift capability
- To provide support
- *Overall:* to raise performance

**Role of the TLAs**

- To create readiness (e.g. effective consenting environment)
- To facilitate communities that attract and retain talented and capable people – keep them in the rural towns rather than the metropolitan cities
- To facilitate community services such as libraries, recreation facilities that create social cohesion
- *Overall:* to maximize the rural living and working experience to retain talent on location

**A “common space” view of rural Canterbury is required**

The common space, the overlapping space of the three circles and across the three areas of responsibility is perhaps the most important. This is the area of collaborative and cooperative action. It is the leadership zone that paints the big picture, gives direction and leadership. It was the original strength and genesis of the CWMS.

Commentators noted the intent for collaboration but not sufficient concrete action. At present each of the parties, because of the substantial demands on them, is more concerned about the content of their own “circle” rather than the joined-up portion of all three. ECan, for example, is responsible under the RMA for both integrated management of issues and providing infrastructure of regional significance. Increasingly they are moving away from being solely environmentally focused to being concerned about all the wellbeings.

Equally TLAs need to think in regional and spatial terms recognising that populations move. Wealth is created across zones wider than TLA boundaries. Higher cost community services and facilities may need to operate across TLAs rather than separately to achieve best result.

Finally, sector groups have been focused on resolving scientific and technical barriers to growth. Increasingly the commercial performance of the farm business has required more concentrated resource and connectivity. This is now emerging but has some way to go.

If coordination is left to chance then the result is uncertain. To not leave it to chance we need clear leadership, a clear set of priorities and an agreed multi-faceted growth strategy. If each party plays its role and collaborates, then the outcome of maximizing local prosperity and social cohesion will be achieved. Is this Part II of the CWMS?

Geoff Henley  
20 August 2014