


## Sustainable Dairying In Canterbury

Rural Sustainability


Kerry Stainton Herbert | October 2006



## Processing Sites

- Tip Top
  - 80 staff
  - 15 million litres of ice-cream for local and export markets
- Plains
  - 15 staff
  - 350,000 litres per day average processed


Milk also supplied to independents: e.g. MeadowFresh, Karikass.



## Dairying In Canterbury


2005-06 Season

- Farm Numbers
  - Clandeboye Collection area 787
  - Canterbury Regional Council Area 668
- Total Cow numbers Approx. 480,000
  - Average herd size 609
- Total Production 179 million kgMS
- Hectares approx. 143,000
- \$ into community via suppliers \$733 million




## Growth in Canterbury

- Largest dairy growth area over the last 20 years with Southland
- Sustained growth expected from both existing and new suppliers within limitations imposed by water availability



## Processing Sites

- Clandeboye
  - 850 staff on site
  - 11.1 million litres per day
  - 2 cheese plants
  - 3 milk powder plants
  - Protein products (WPC & Lactose) plants
  - Cream Products (Butter & AMF) plants
  - Products go to local market, Australia, North Asia, Middle East, Europe, North America, South East Asia, South America, Russia, North Africa.



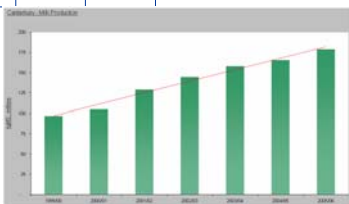

## Milk Supply - Growth

Although there is still growth in the dairy industry, annual growth rate in milksolids is declining with the forecasted growth for the next 5 years below historical growth rates:

Average Seasonal growth rates	Total Fonterra	North Island	South Island
10 Year Avg	5%	2%	14%
5 Year Avg	3%	1%	9%

Why is growth slowing?

- North Island
  - alternative land uses
- South Island
  - best land already in dairying
  - water limitations

## Milk Supply – Farm Conversions

- Despite the decline in the average annual growth rate, it's encouraging that there is still momentum in conversions to dairy
- This season there were a record number of conversions of almost 100 new suppliers, supplying 12million kg's of milksolids



- Significantly, 30% of new conversions this season represent farms coming back into dairying



## Sustainability Initiatives - Land

### Fertiliser Use

- Fertiliser Code of Practice
- Nutrient Budgeting
- Nitrification Inhibitors

### Soils

- Contour/Direct Drill Cultivation
- Standoff Pads
- Herdhomes

### Shelter

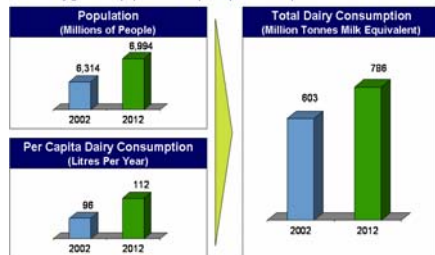
- Plant natural shelterbelts



## Why Growth?

Global dairy consumption is expected to grow at a rate of 2-3% per year...

...driven by growth in population and per capita consumption over the medium term



Source: FAO; USDA; FAPRI; Population Reference Bureau; team analysis



## Sustainability Progress - Water

### Clean Streams Accord

- On track for 2012 target for total stock exclusion from streams and waterways, rivers, lakes and their banks. **Currently: National 64%, Canterbury 66% with no access issues.**

- On track for 2012 target for all water crossings to have culverts or bridges. **Currently National 93%, Canterbury 96%**

- Nutrient Budgets: **Currently National 33% Canterbury 52% 05/06 season.**

- Effluent Management: **81% of Canterbury suppliers are compliant. More effort needed around day to day management systems of the 19% that are recognised as non compliant**

- Access to regionally significant wetlands not an issue in Canterbury. Council working with farmers to identify and protect these.



## The Issues- Total Farm Systems Approach to Sustainable Dairying.

### Land

- Erosion
- Fertiliser Management
- Soil Structural Damage

### Water

- Effluent Runoff
- Allocation
- Leachate
- Sediment & Effluent

### Atmosphere

- Burning
- Greenhouse gas

### Energy

- Power consumption for shed and irrigation
- Fuel use

### Capability

- Attracting and retaining people to the industry



## Sustainability Initiatives - Water

### Water Purity

- Clean Streams Accord
- Riparian Planting, trapping sediment and nutrients
- Research - Dairy Industry Strategy for Sustainable Environmental Management.
- Nitrification inhibitors

### Water Availability

- Fonterra supports investigation into sustainable irrigation schemes.
- Water use efficiency, soil moisture monitors, accurate water placement.



## Sustainability progress - Air

- There are a number of projects in aid of recycling of silage/balage wraps, tyres and plastic containers.
- **Greenhouse Gas Consortium Research. Understanding how the rumen works and reducing the 43% of methane that contributes to greenhouse gas emissions**



## Sustainable Communities

### Growth in dairying in an area brings:

- More people employed on dairy farm than sheep/beef,
  - Support local retailers
  - Support local organisations
- Younger families with children
  - Increase school rolls

Thankyou



## Sustainability Initiatives - Energy

- **Heat recovery technologies**
  - Use spent hot wash waters to preheat water entering the hot water cylinder/boiler
  - Use heat released from milk cooling process to preheat water
- **Variable speed drives**
  - Vacuum pump
  - Water pumps under variable load
- **Insulation**
  - Hot water cylinder
  - Milk vat



## Future Directions

- Bio fuels
- On-farm energy generation
- Herd Homes and Dairy Yards
- Water reuse options
- Precision Agriculture and water use efficiency (WUE) monitoring of irrigation systems with soil moisture meters. Eg Tensiometers, TDR and Aquaflex

