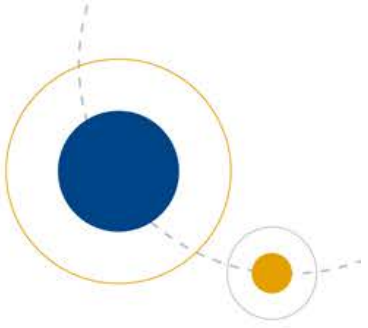


# **Farming without Subsidies – The New Zealand Experience and what we can learn**

**Professor Nicola Shadbolt, Massey University  
Riseholme Campus, University of Lincoln  
July 14<sup>th</sup>, 2017**



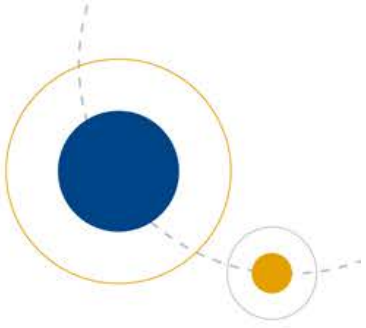


# INTRODUCTION

- **Background**
- **Uncertainties**
- **Resilient Businesses**
- **Risk Management Strategies**

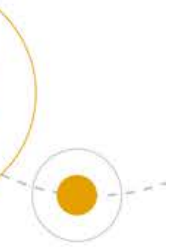


*This research was funded by the Transforming the Dairy Value Chain Primary Growth Partnership programme*

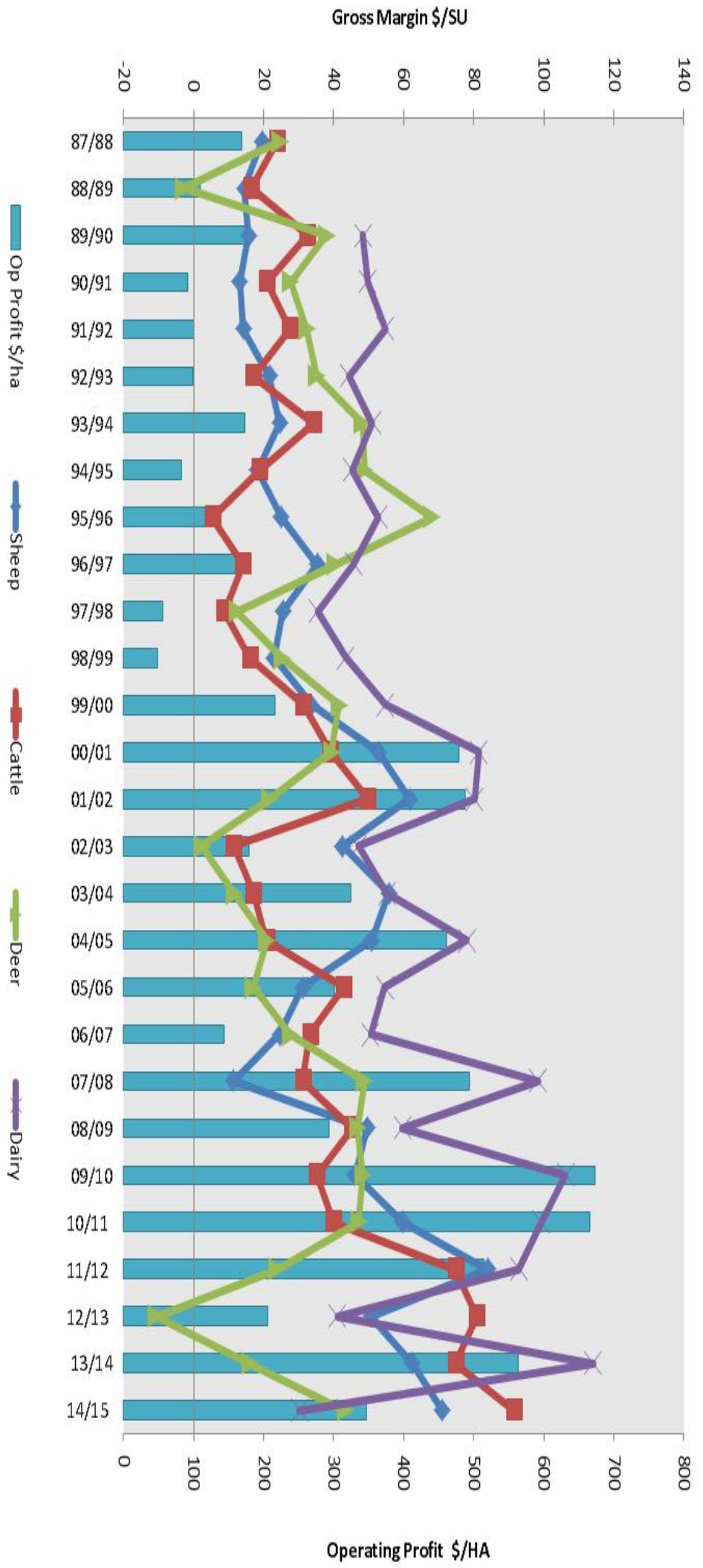


# Westview Farming Partnership



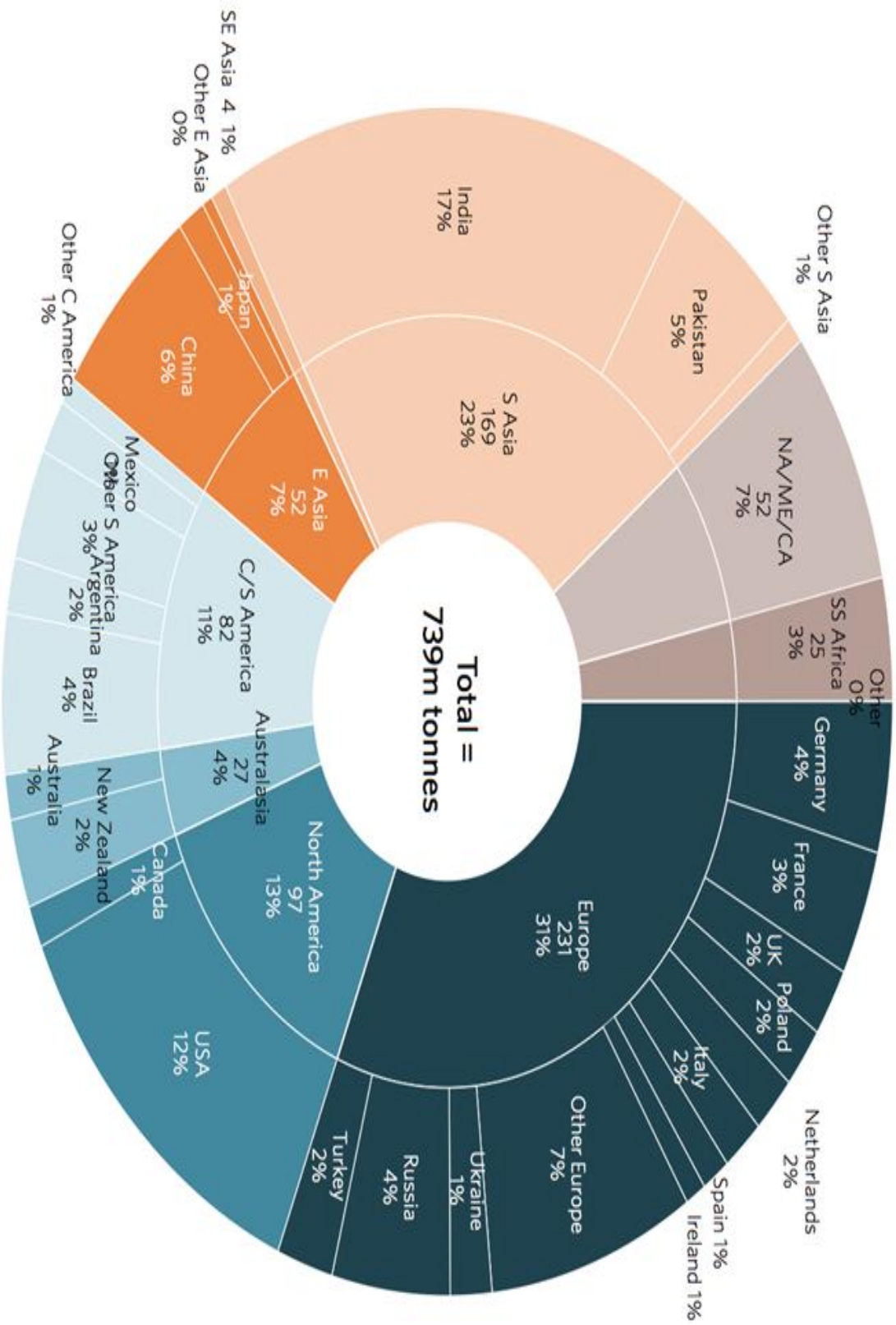


# Gross Margins \$/su per enterprise and Operating Profit \$/ha by Year



# GLOBAL MILK PRODUCTION BY KEY COUNTRIES & REGION

Tonnes: million, 2011

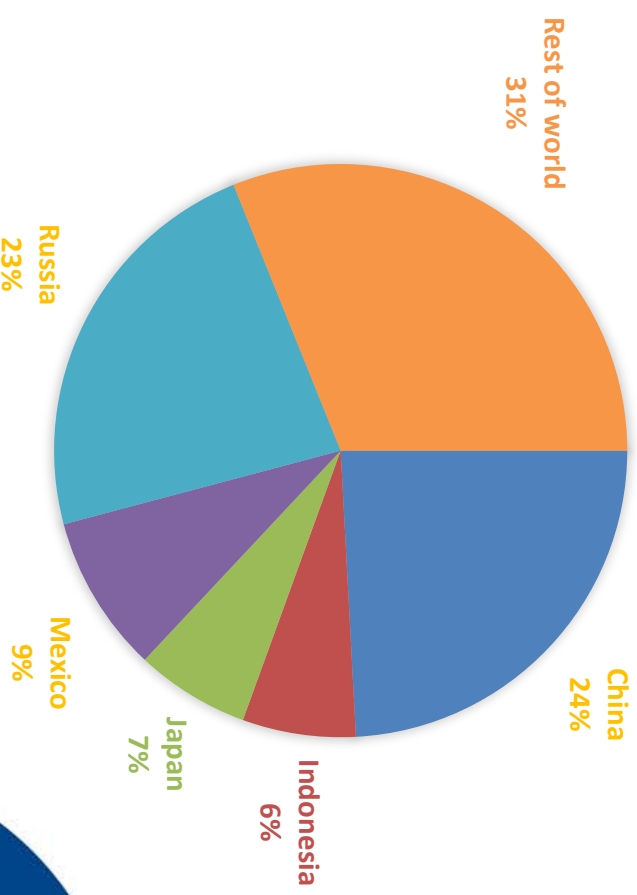


# Global Context

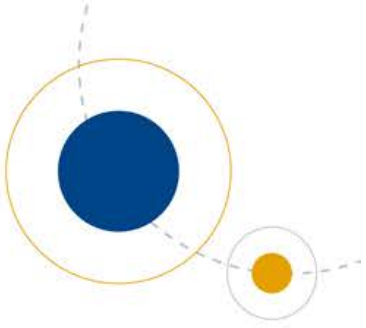
## -imports by major importing countries-

### SHARE OF TOTAL WORLD IMPORTS 2013

- Major importing countries:
1. China –1,039,000 MT
  2. Russia –991,000 MT
  3. Mexico –382,000 MT
  4. Japan –277,000 MT
  5. Indonesia –275,000 MT
  6. Algeria
  7. Philippines
  8. European Union
  9. United States
  10. Brazil



Source: <http://apps.fas.usda.gov/psdonline/psdQuery.aspx>

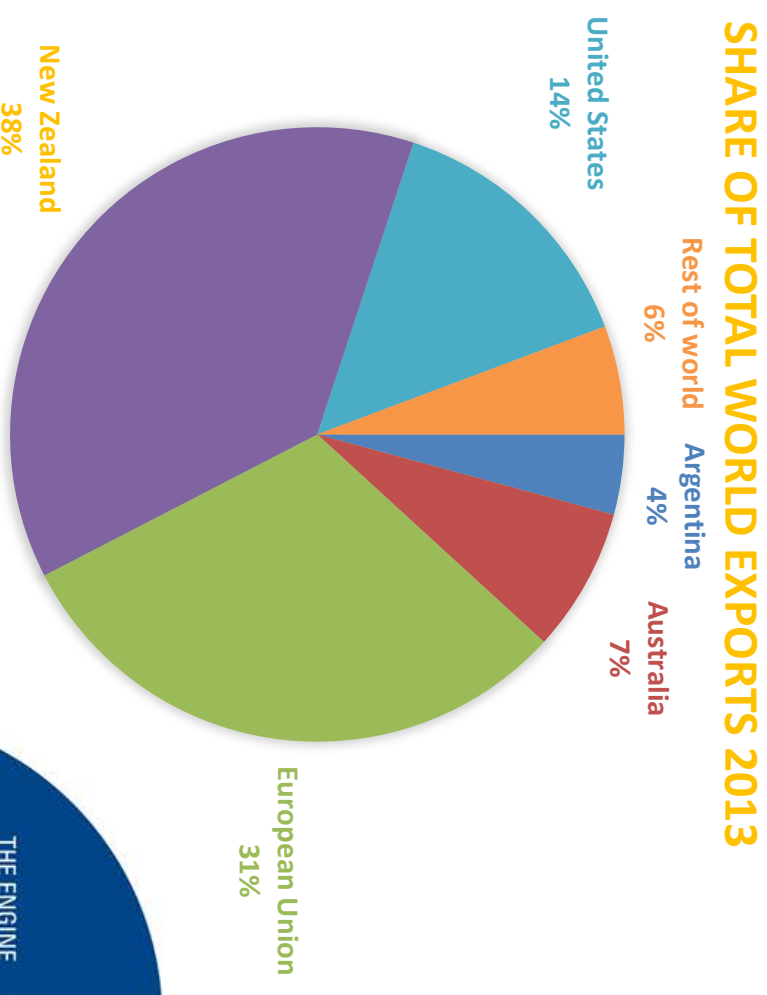


## Global Context

### -exports by major exporting countries-

Major exporting countries:

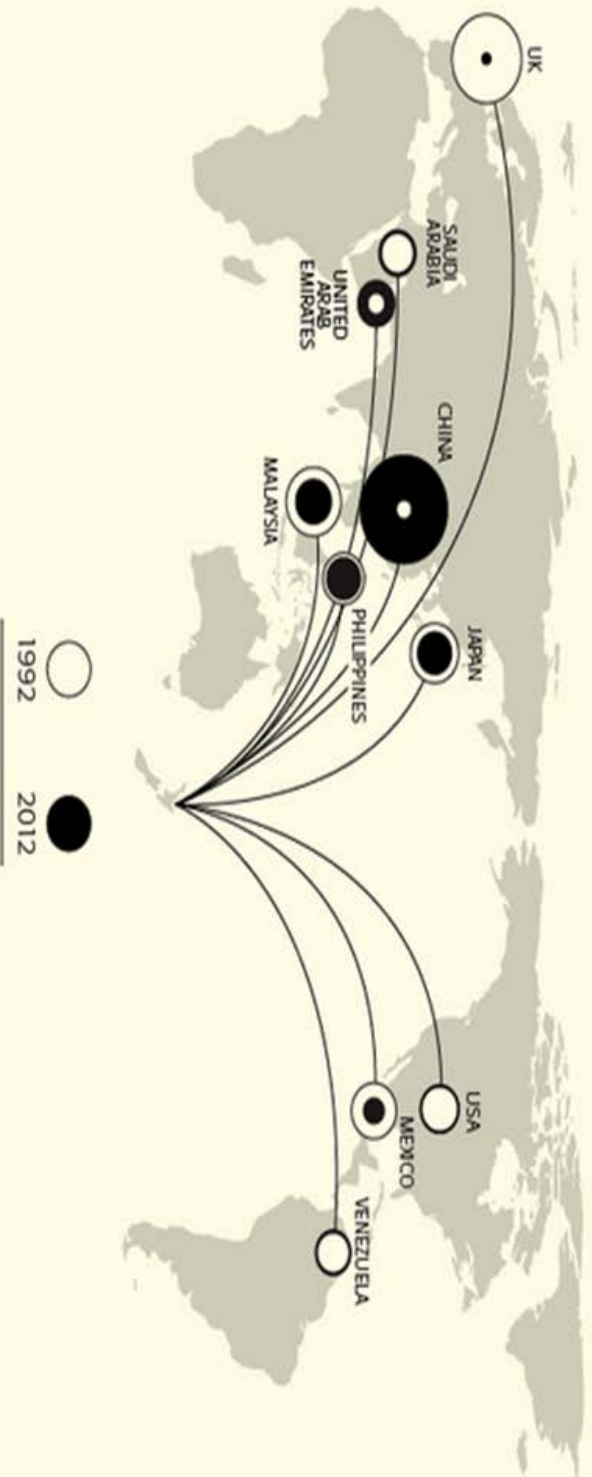
1. New Zealand –2,596,000 MT
2. European Union –2,110,000 MT
3. United States –979,000 MT
4. Australia –523,000 MT
5. Argentina –290,000 MT
6. India
7. Russia
8. Canada
9. China
10. Mexico



Source: <http://apps.fas.usda.gov/psdonline/psdQuery.aspx>

# Share of NZ dairy exports to selected countries

by \$ value



**COUNTRY (1992)**

United Kingdom	14.5%
Malaysia	9.1%
Japan	7.1%
Mexico	6.0%
Philippines	5.4%
United States of America	3.7%
Saudi Arabia	2.7%
Venezuela	2.7%
United Arab Emirates	0.7%
People's Republic of China	0.5%

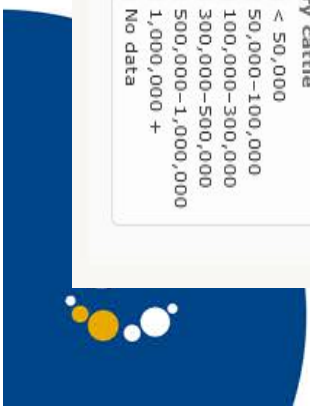
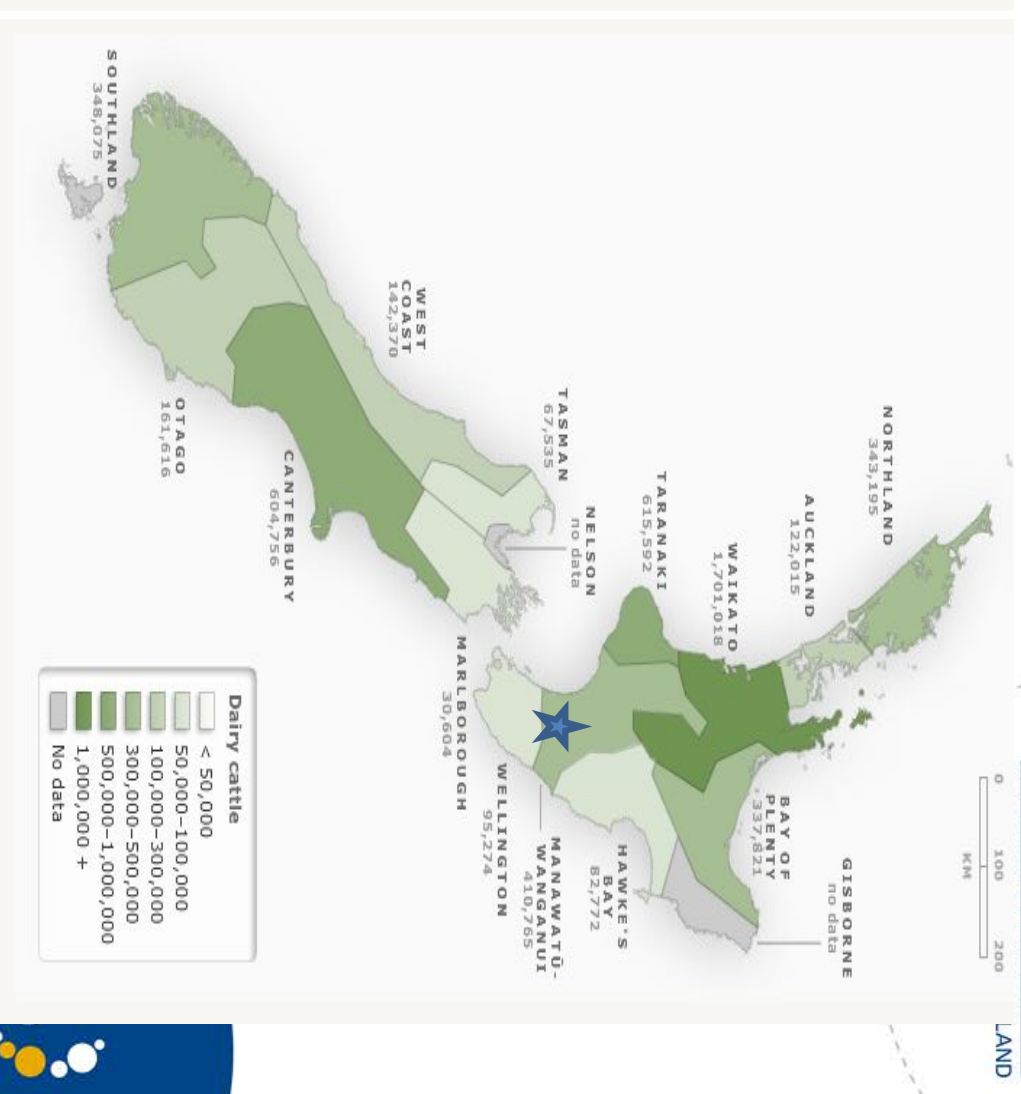
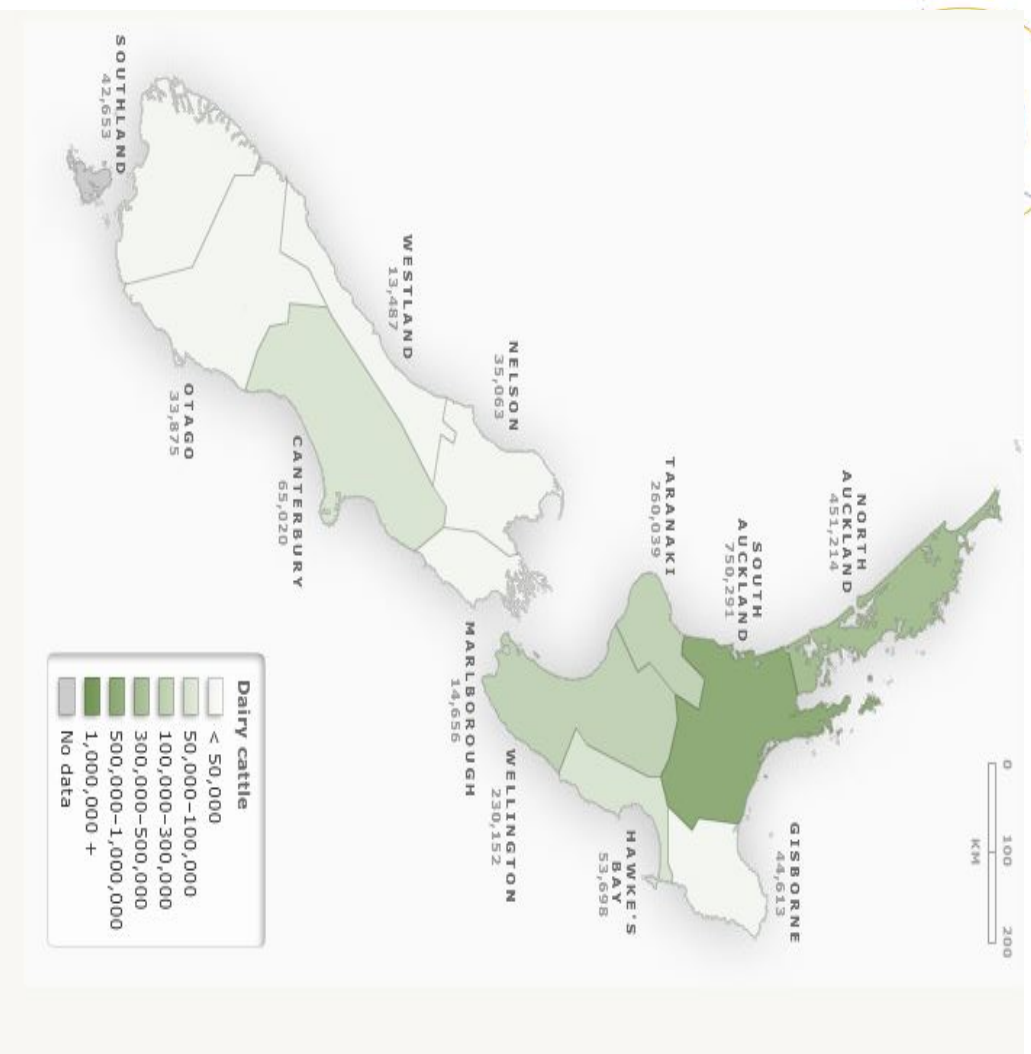
**COUNTRY (2012)**

People's Republic of China	22.4%
United States of America	4.5%
Saudi Arabia	4.1%
United Arab Emirates	4.1%
Venezuela	4.0%
Malaysia	3.9%
Philippines	3.8%
Mexico	3.3%
United Kingdom	1.4%
People's Republic of China	0.3%

Source: Statista, New Zealand



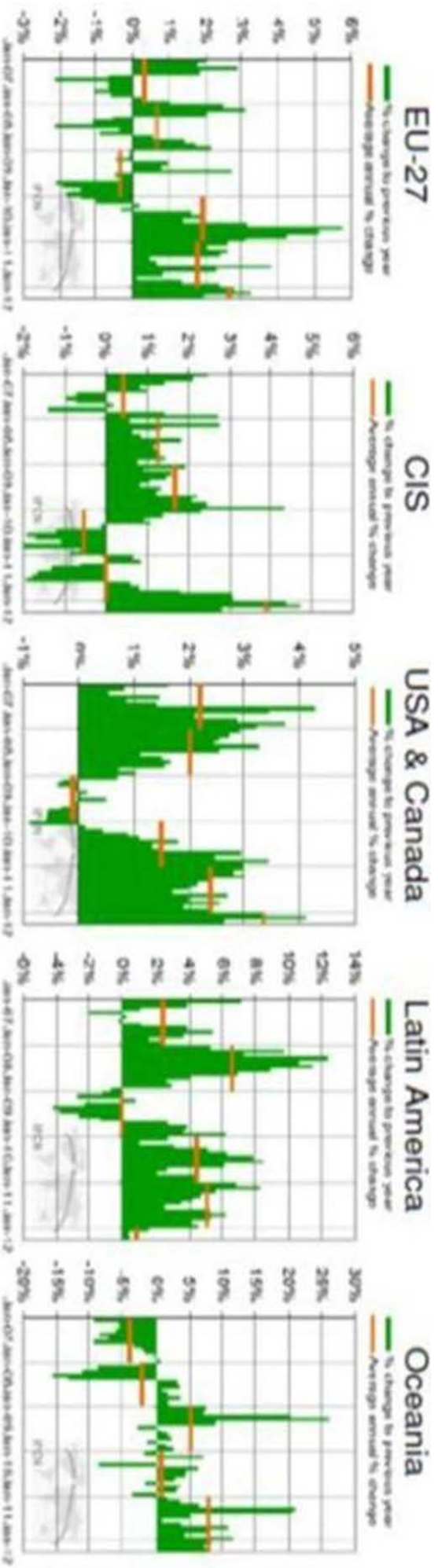
# Production regions: 1955 vs. 2005



# Volatility, uncertainty, complexity, ambiguity

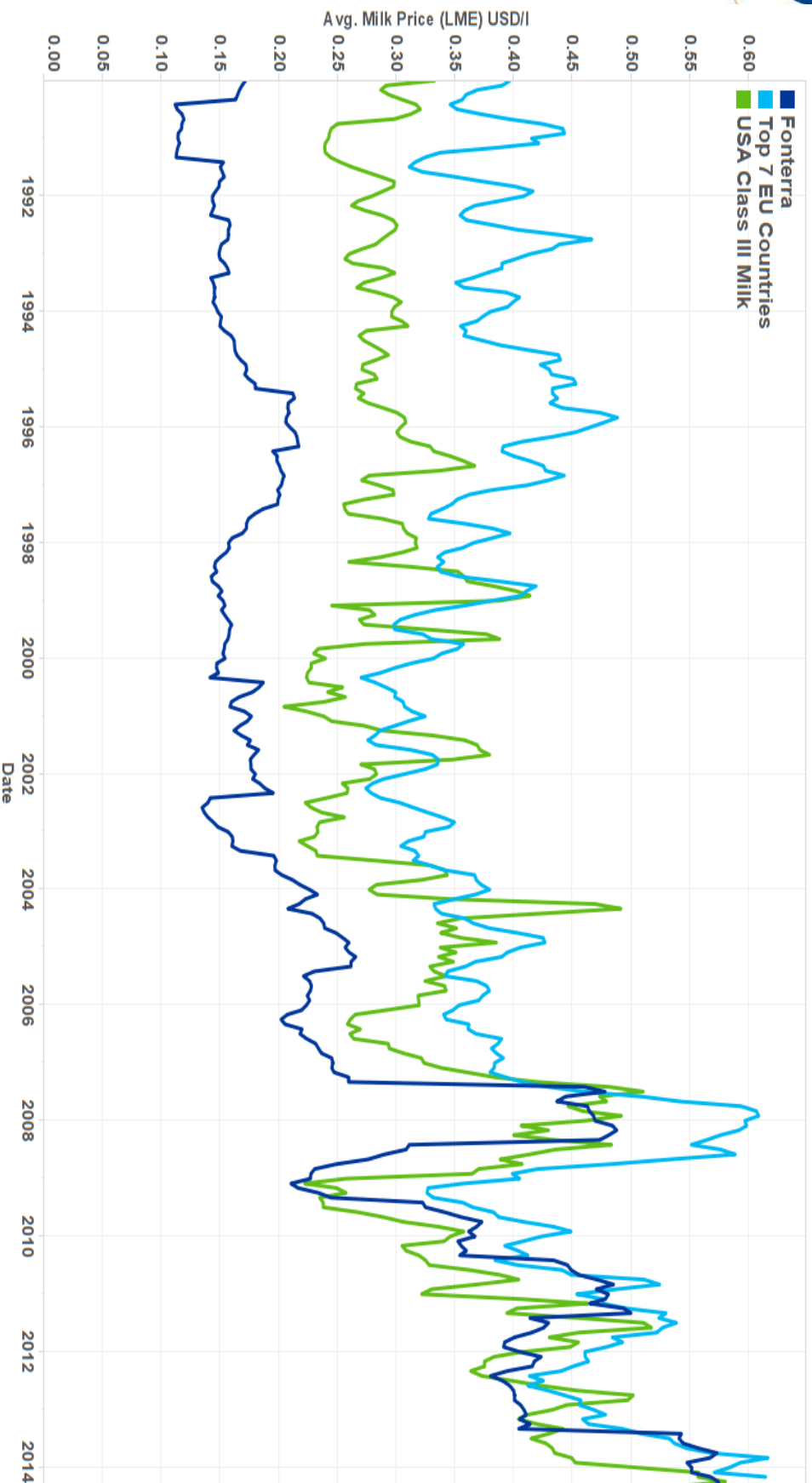
NZ land/climate is really only suited to growing grass/forages.

For most farmers in the world it is the cropping conundrum that is their greatest challenge - creates or exacerbates market volatility - delicate supply:demand balance – vulnerable to shocks – where will the milk come from?






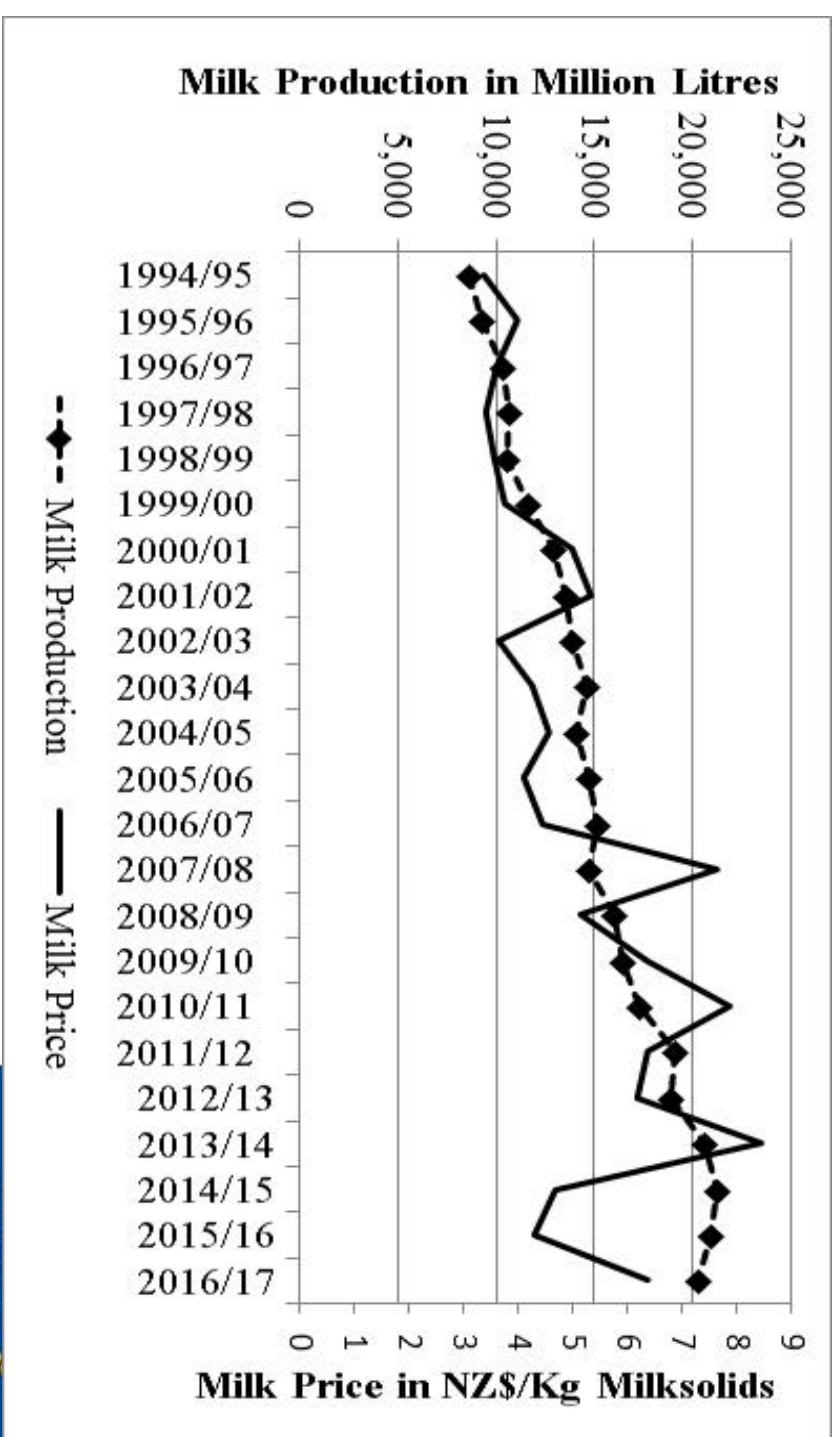
# Convergence of pricing – NZ v EU and US

EU USA NZ Milk Price

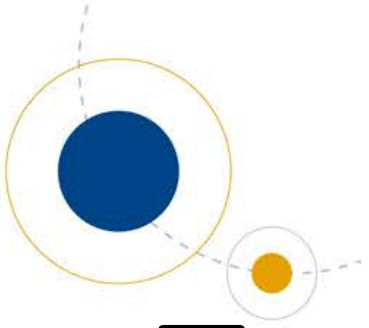
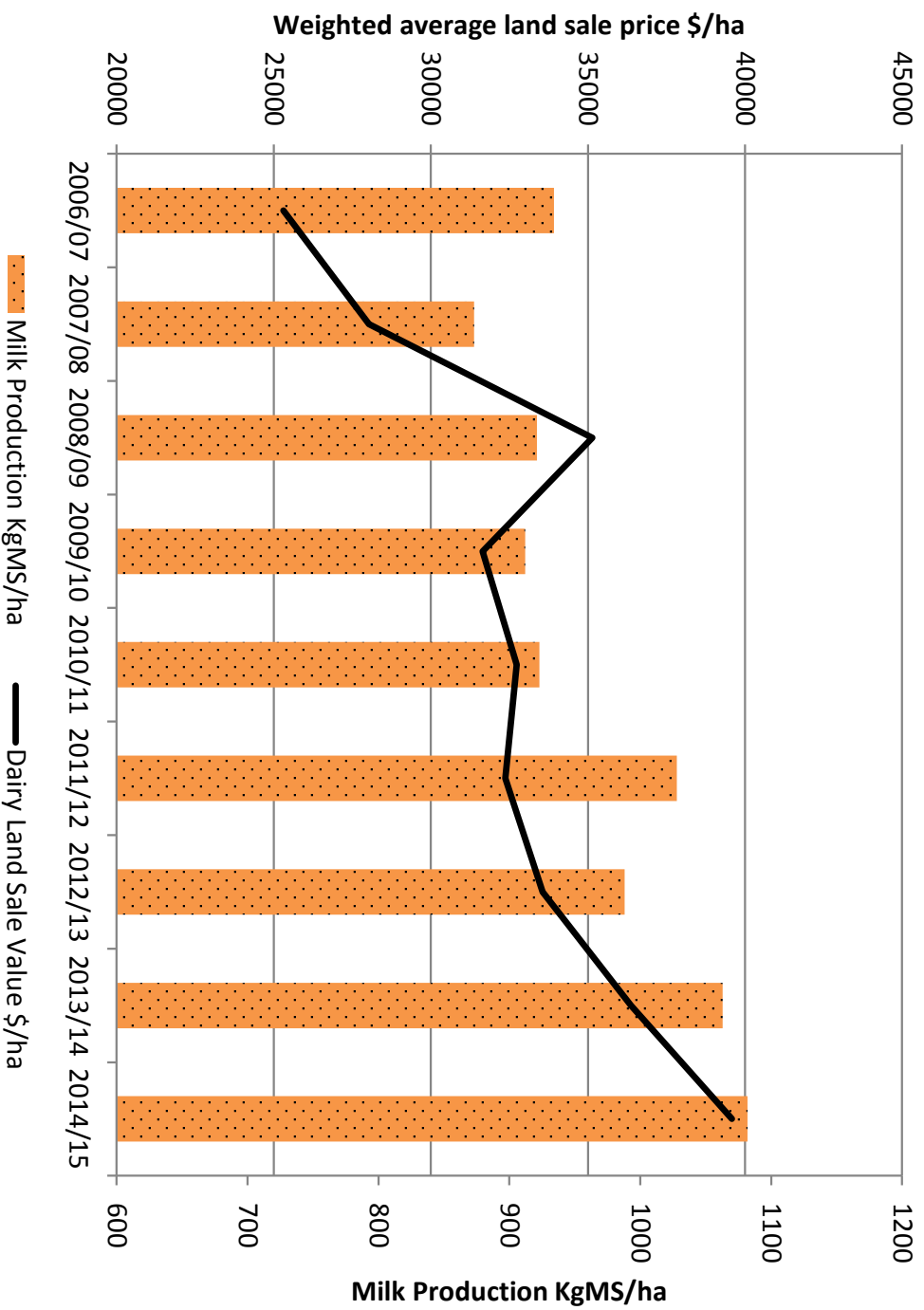


# MILK PRICE & PRODUCTION

- 70%  price
- 150%  price volatility
- 4.7% pa  milk production

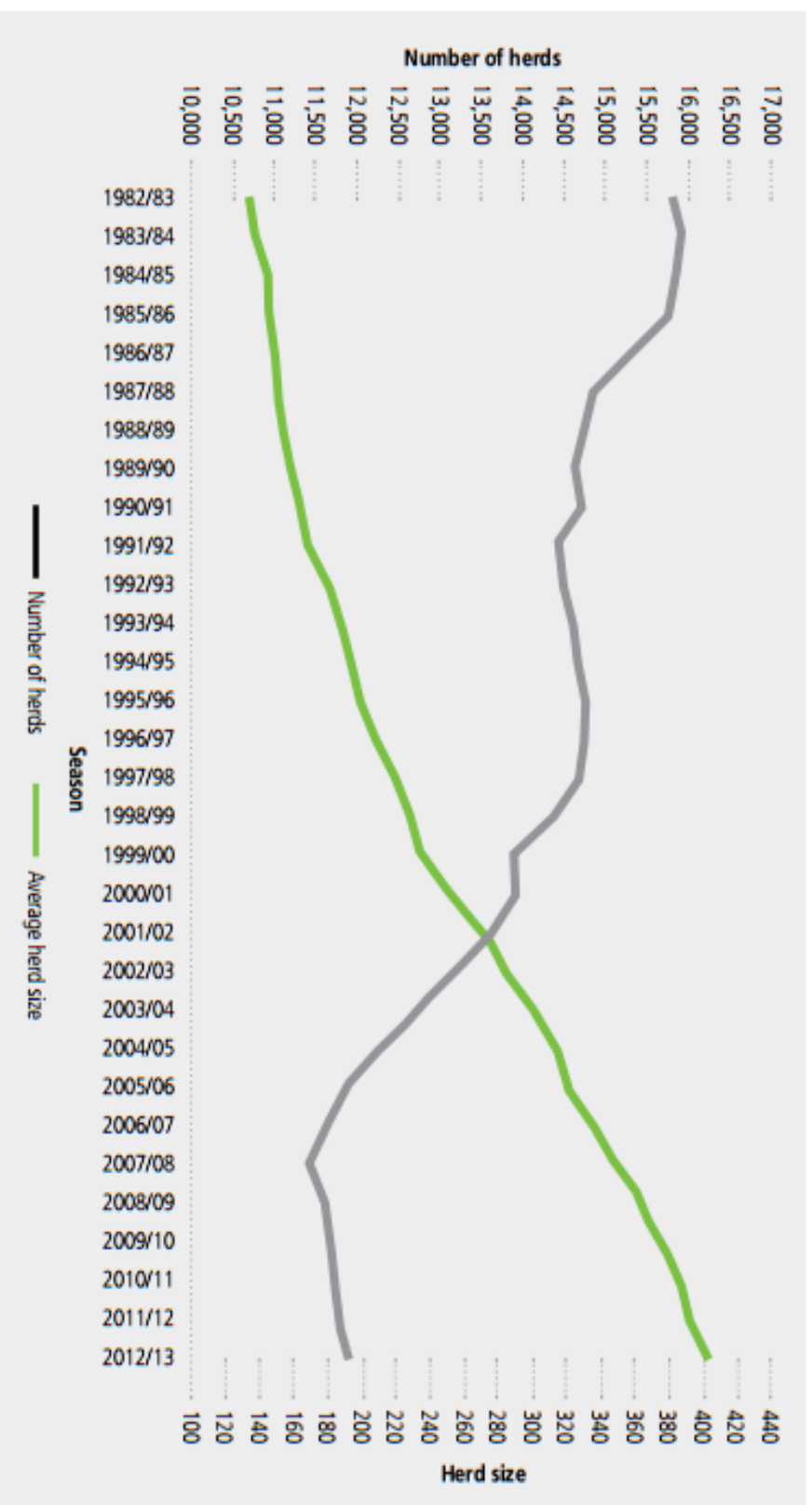


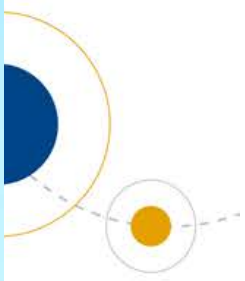
# DAIRY FARMLAND PRICES



# Evolution of herd size and number

Graph 2.1: Trend in the number of herds and average herd size for the last 30 seasons





# PASTORAL SYSTEMS

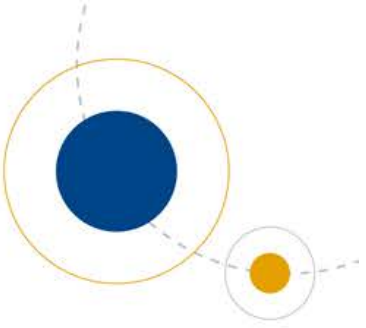


## Imported Feed

- 1 – none**
- 2 – 4-14%**
- 3 – 10-20%**
- 4 – 20-30%**
- 5 – 30%+**



# INTENSIFICATION



Higher stocking rate

Cows/ha

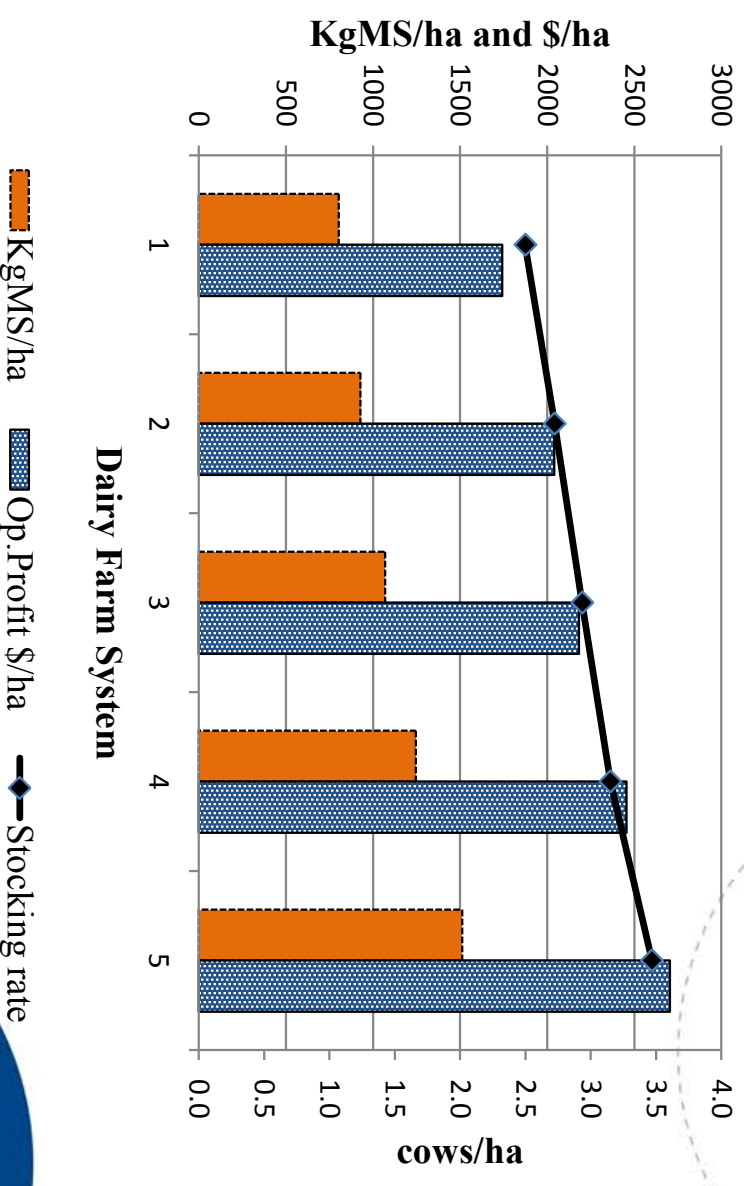
More milk per hectare

kgMS/ha

Higher operating

profit per hectare

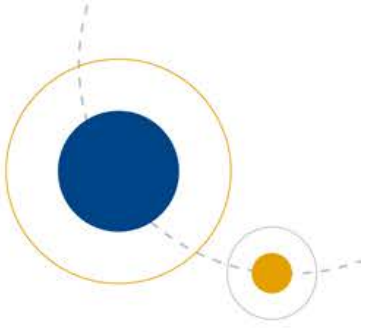
\$/ha



*Ranking & selecting on and targeting for operating profit/ha champions intensification*



# METRIC CHOICE CRITICAL

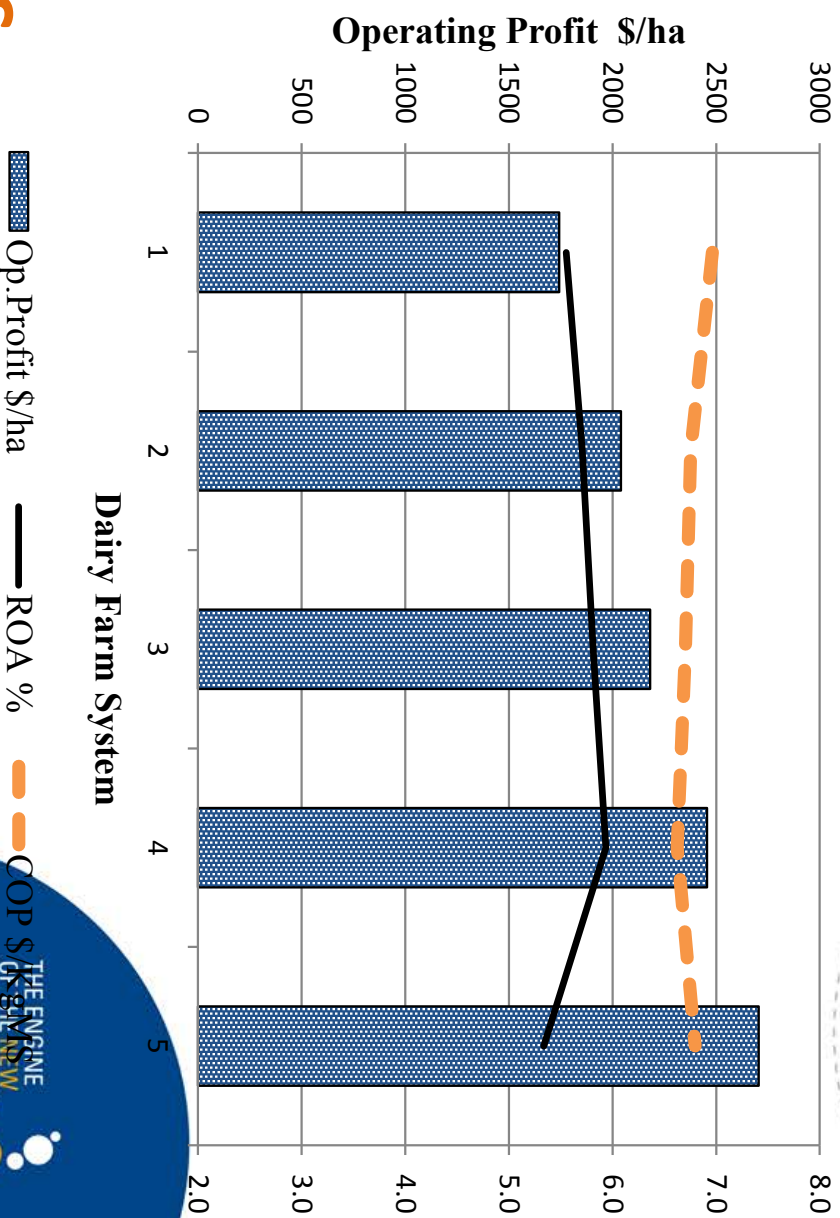


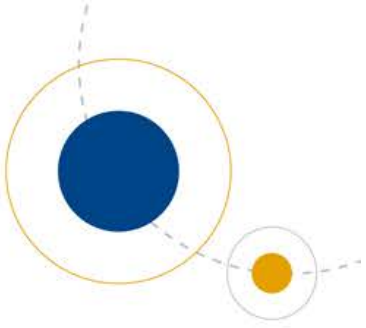
Allow for differing resource use in each system - more cows, machinery, infrastructure

No statistical difference between systems –

Return on Assets %

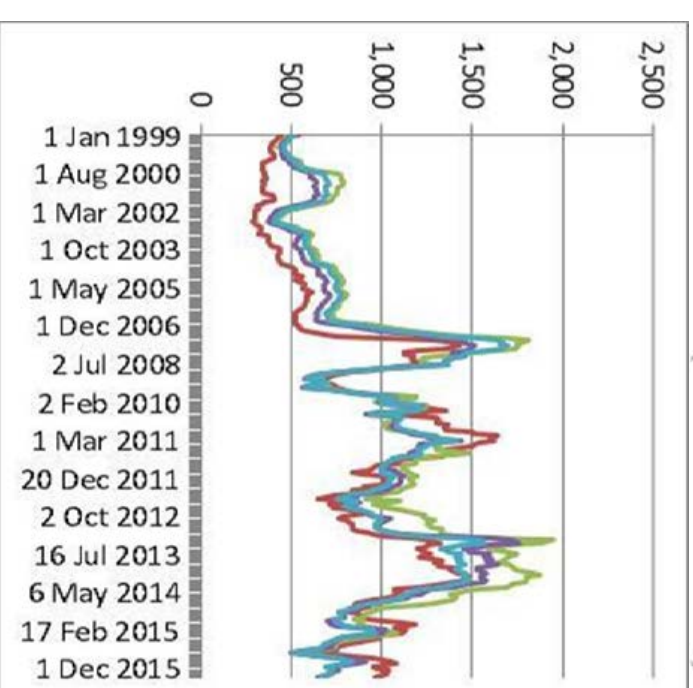
Cost of Production \$/kgMS





# UNCERTAINTIES

- The only certainty in life is uncertainty
- It generates both opportunities and threats
- Your perception of, and attitude to, risk will determine which you see
- it is your capacity as manager to interpret and respond to external (and internal) information that determines the extent of the advantage or disadvantage that is eventually realised



# PERCEPTIONS OF THREATS

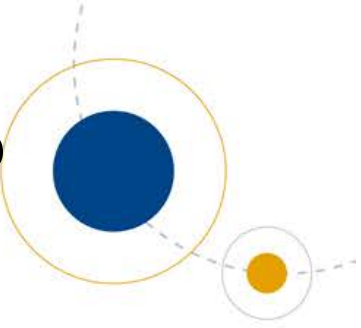


- Input prices & availability
- Local body laws and regulations
- Global Economic & Political Situation
- Government Laws & Policies
- Interest Rates
- Product prices
- Climate variation
- Competitors

# PERCEPTIONS OF OPPORTUNITIES



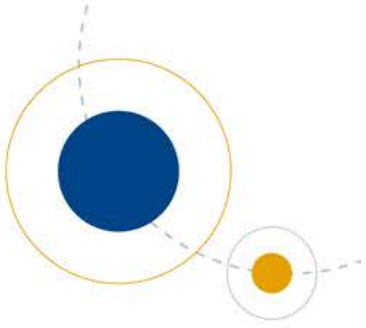
- Global supply & Demand
- Product prices
- Technology
- Skills & knowledge of those associated with business
- Reputation & Image
- Pasture/crop/animal health
- Land values
- Global Economic & Political Situation
- Dairy industry structure
- Business relationships



# STRATEGIC UNCERTAINTY

*Strategic uncertainty is the sensitivity of the company's value to inappropriate strategic choices, ineffective strategy implementation, or uncertainties in the business climate (Boehlje, 2007)*



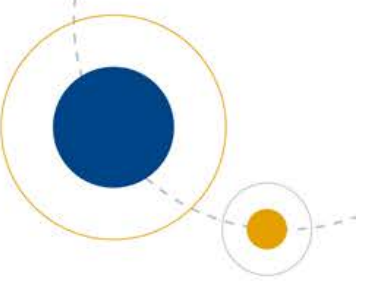


# UNCERTAINTIES

- **Cognitive biases** – confirmation, hindsight, anchoring, tunnel vision - prevent us from seeing the future
- **Scenario analysis** – a proven method that breaks down biases

*“... is not to predict the future but to enable policymakers to make well informed and better decisions involving the future as a result of having a deeper grasp of key drivers and uncertainties.*

***Scenarios provide lenses that help us to see future prospects more clearly, make richer judgments and be more sensitive to uncertainties”** (Shell, 2013)*



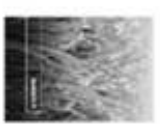
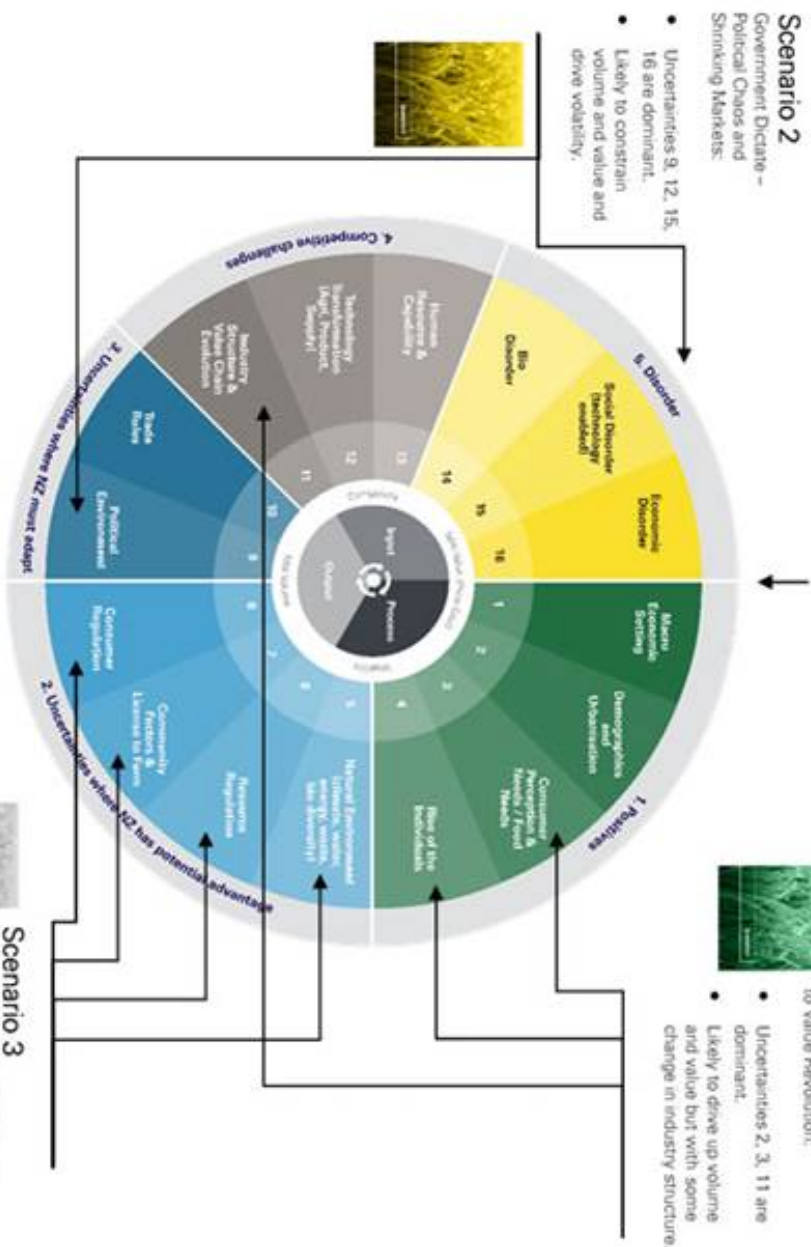
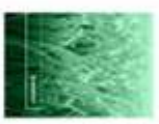
**Base scenario**  
Growth but with increased complexity, competition and volatility.

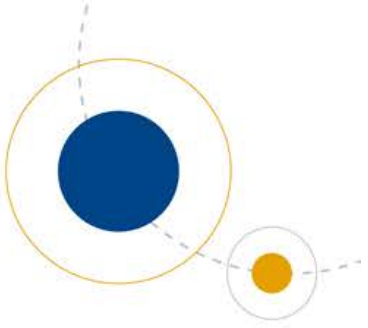
- Uncertainties 1-4 drive growth, but:
- Uncertainties 3-10 drive complexity, and:
- Uncertainties 4-8 enable NZ competitiveness, while:
- Uncertainties 11-13 drive competition and volatility.



**Scenario 1**  
Consumer is King – The Volume to Value Revolution:

- Uncertainties 2, 3, 11 are dominant.
- Likely to drive up volume and value but with some change in industry structure.



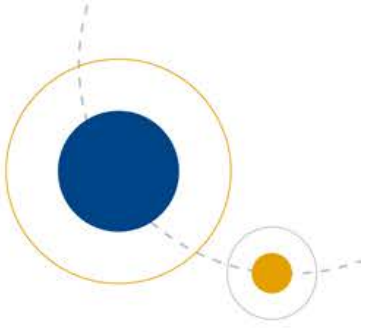


# DAIRY FARM SYSTEMS FOR THE FUTURE RESEARCH PROJECT

[www.agrione.ac.nz](http://www.agrione.ac.nz)





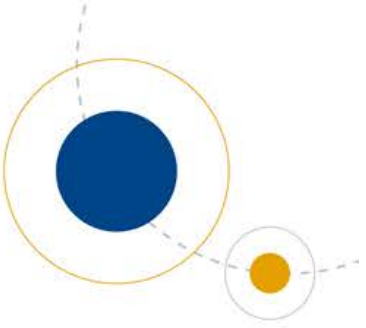


# RESILIENCE IS A PREREQUISITE FOR ACHIEVING SUSTAINABILITY IN ALL SCENARIOS



Resilient farms are  
reliant on the  
resilient qualities of  
people – you cannot  
separate the  
business from the  
people forming and  
operating them.

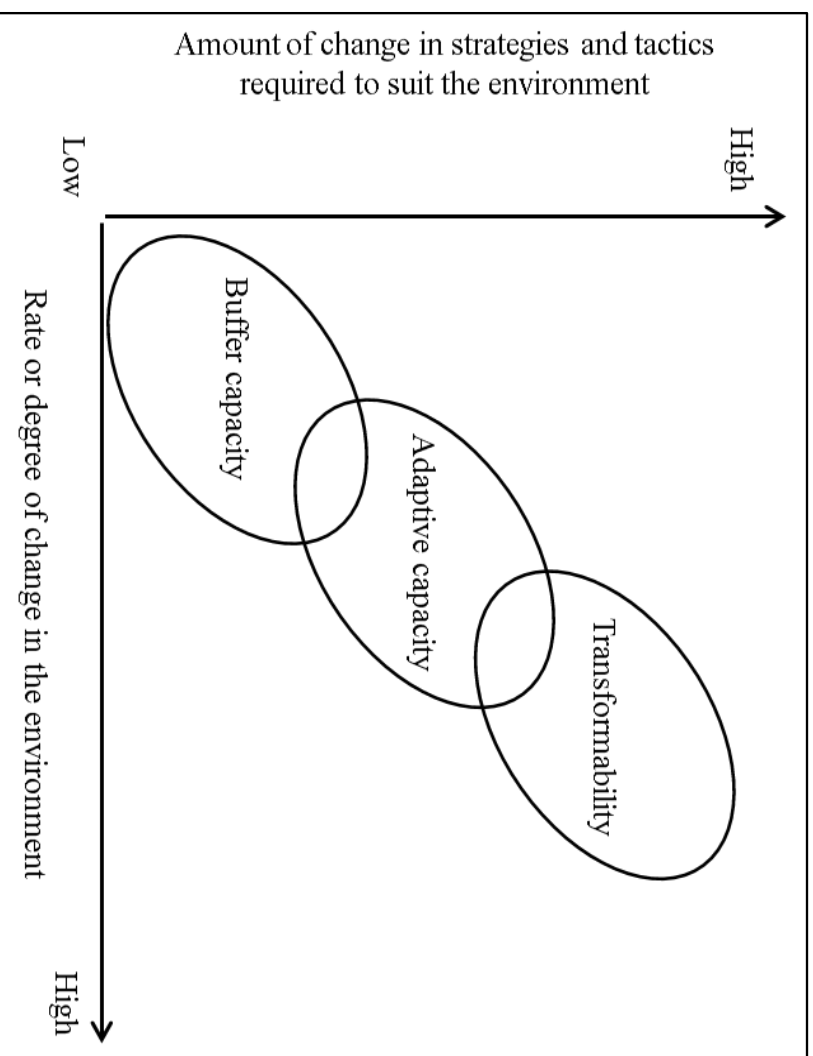
# WHAT IS RESILIENCE?

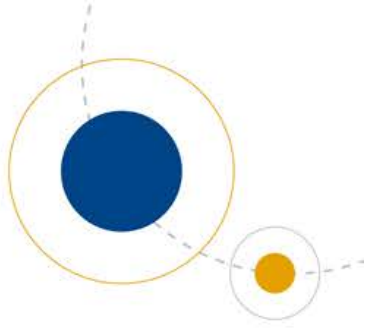


A resilient farm should be able to withstand and/or bounce-back from sudden or acute shocks

It should also be able to adapt to major disturbances

When a farming system is pushed beyond what it can tolerate, transformation becomes the only option





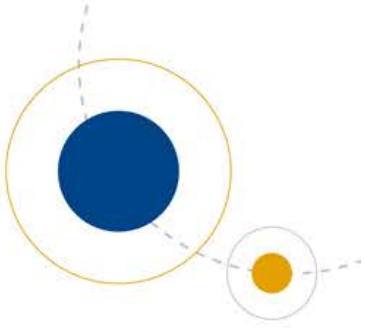
# BEST CAPTURES AND BEST MITIGATES?



**None** of the farmers who best captured  
up-side risk in the good years were in the  
group of those who best mitigated  
down-side risk in the bad years

Only metric that was high for both  
groups was

**Operating Profit Margin**



# BUFFER CAPACITY

Analysis of dairy and sheep and beef farm data identified that efficiency was the key measure that distinguished buffer capacity resilience

- the emergent property

**OPERATING PROFIT MARGIN**

Operating Profit (EFS) / Gross Farm Income





# TO BOUNCE WITHOUT BREAKING

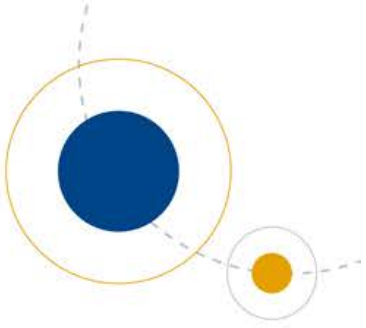


	Higher index group (N=19)	Lower index group (N=21)
Latitude (liquidity)		
Discretionary cash/ha	2,018.27	1,074.97
Resistance (financial efficiency)		
FWE/Kg MS	2.94	3.93
Operating expenses/ha	4,131.72	5,096.16
Operating expenses/Kg MS	3.83	4.89
Operating profit (EFS)/Kg MS	2.75	1.60
Operating profit margin (%)	40.21	22.82
Operating return on dairy assets (%)	7.33	3.68
Total Return on Assets (%)	9.76	5.31
Return on Equity (%)	6.32	0.56

# RISK MANAGEMENT STRATEGIES



- Managing debt
- Planning of capital spending
- Using practical planning steps in your business
- Strategic purpose
- Feed reserves
- Having short term flexibility to adjust quickly to weather, price and other factors
- Having long term flexibility
- Monitoring programme
- Having personal and/or business insurance
- SWOT



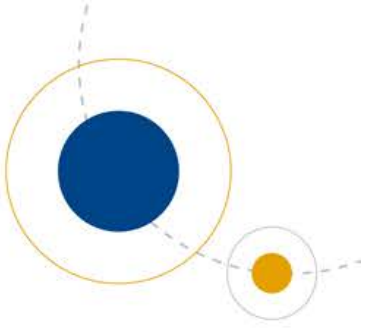
# ATTITUDE TO RISK



Farmers grouped on:

- **their ability to manage risk within a season,**
- **manage risk over the long term,**
- **plan for an uncertain future,**
- **make choices, and**
- **their propensity to ‘playing it safe’**





# 4 GROUPS IDENTIFIED



**1 Risk Takers, 2 Risk Neutral, 1 Risk Averse**

**Risk Takers – 75% had a positive risk perception versus 60% with the other groups**

**All groups ranked ‘managing debt’ and ‘planning capital spending’, **high****

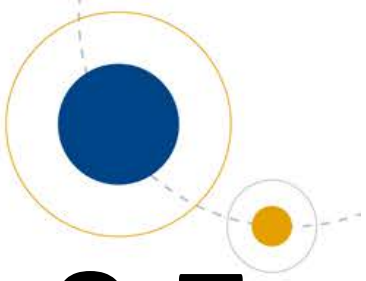
**Risk Takers ranked ‘keeping debt low’ and ‘not producing to full capacity’, **low****

**Risk Neutral group ranked ‘keeping debt low’, **high****



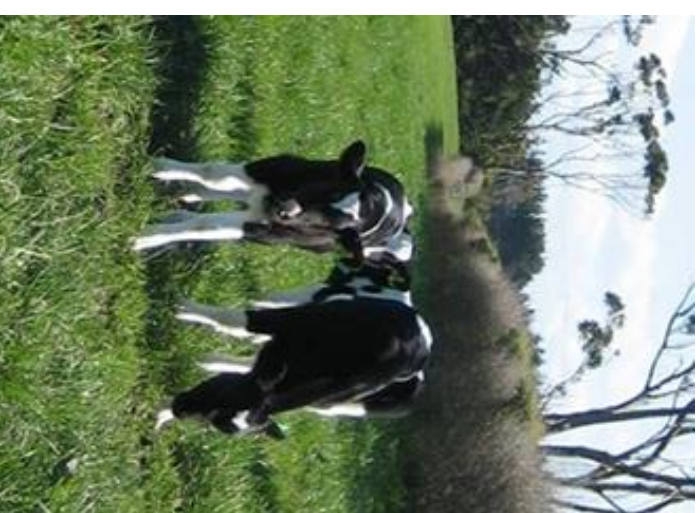


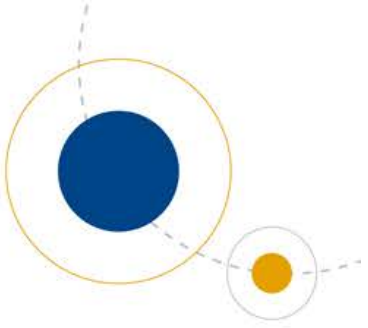
	Risk Taker group	Risk Neutral group	Risk Averse group
<b>Cows per (FTE)</b>	<b>137</b>	<b>157</b>	<b>136</b>
<b>Discretionary cash \$m</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>
<b>Closing Dairy Assets \$m</b>	<b>6.1</b>	<b>10.2</b>	<b>6.7</b>
<b>Debt to Asset %</b>	<b>44.6</b>	<b>45.0</b>	<b>34.3</b>
<b>FWE/Kg MS</b>	<b>3.7</b>	<b>4.1</b>	<b>3.4</b>
<b>Operating expenses/Kg MS</b>	<b>4.5</b>	<b>4.9</b>	<b>4.4</b>
<b>Interest &amp; Rent/GFI %</b>	<b>24.9</b>	<b>21.9</b>	<b>16.2</b>
<b>Return on Equity (%)</b>	<b>1.6</b>	<b>3.0</b>	<b>6.5</b>
<b>Total Return on Equity %</b>	<b>0.4</b>	<b>13.7</b>	<b>11.8</b>



# HOW CAN RESILIENCE - ADAPTIVE CAPACITY - BE MEASURED?

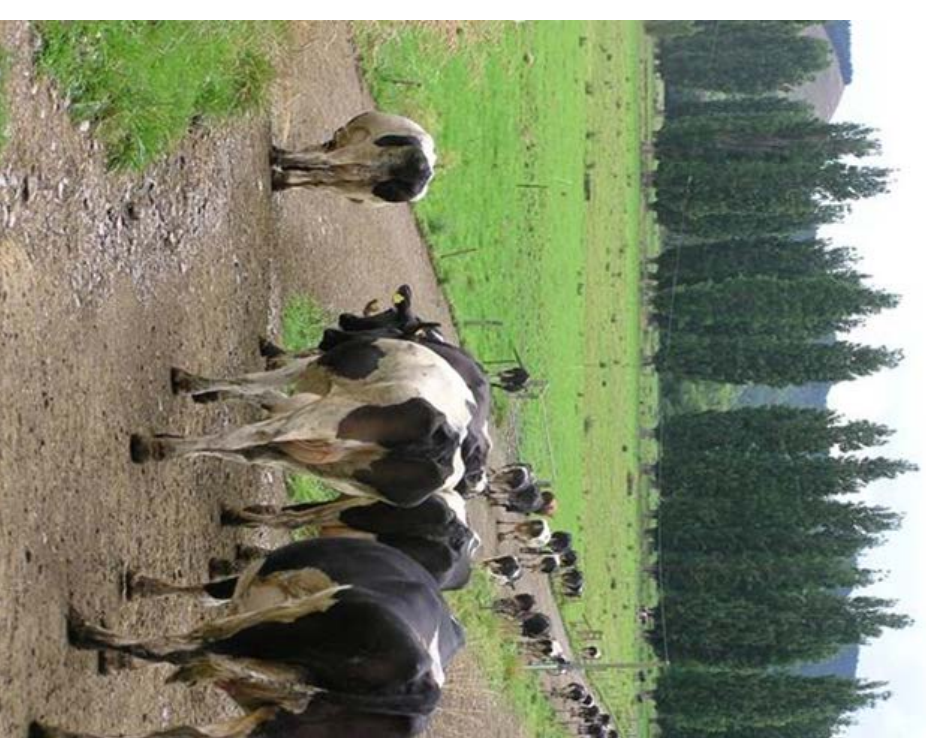
- Willingness to accept uncertainty
- Willingness to change
- Open-mindedness
- Self-efficacy
- Locus of Control
- Sense-making – individual & social
- Strategic Management
  - Strategic thinking
  - Strategic planning

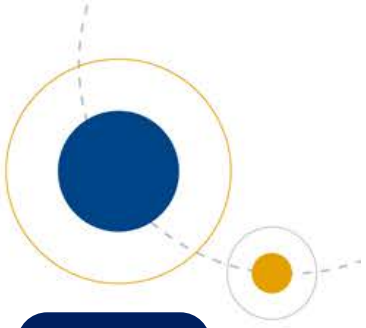




# ATTRIBUTES OF RESILIENT FARMERS

- Willingness to change
- Self-efficacy
- Locus of Control
- Social Sense-making
- Strategic thinking focus





**Strategic thinking**

Holistic and critical thinking  
Ability to develop foresight  
capacity; creative solutions

**Learning**

**Willingness to  
change**

**Resilient  
farmer**

**Self-efficacy**

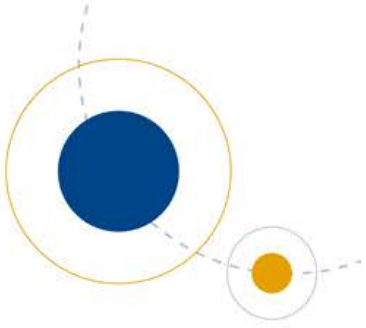
Goal setting  
Perceptions  
of & attitudes  
to risk

Discussion and debate  
with others

**Social Sense-  
making**

**Locus of  
control**

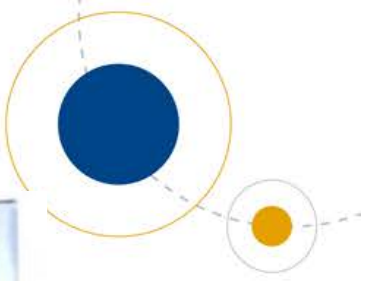
Motivation to  
solve problems  
Learning



# CONCLUSION

- The future is unknown
- Scenarios help by providing possible, plausible futures
- Your ability to cope will rely on your resilience
  - Agility
  - Networking
  - Learning
  - Attitude
- Awareness of the world beyond the farm gate

# THANK YOU



THE ENGINE  
OF THE NEW  
NEW ZEALAND

