

Innovation in Meat. The New Zealand Experience

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New Zealand: an introduction

- 276,000 sq km (27,000,000 ha)
- Temperate climate (35-47degrees south)
- Annual rainfall 350mm-8000mm
- Very mountainous (80% greater than 200 metres altitude, less than 5% flat)
- 4.3 million people
- 87% urban
- GDP approx \$US28,000 (PPP)
- Life expectancy 80 years
- 65% of exports are from land-based industries
- 33% of land is non productive (conservation forests and alpine)

















Livestock numbers (2009)

- 22 million breeding ewes (-27% since 1999)
- 32 million sheep (-27% since 1999)
- 4.1 million beef cattle (-3% since 1999)
- 4.5 million dairy cattle (+28% since 1999)
- 1.3 million deer (-14% since 1999)
- 87.9 million stock units (-5% since 1999)

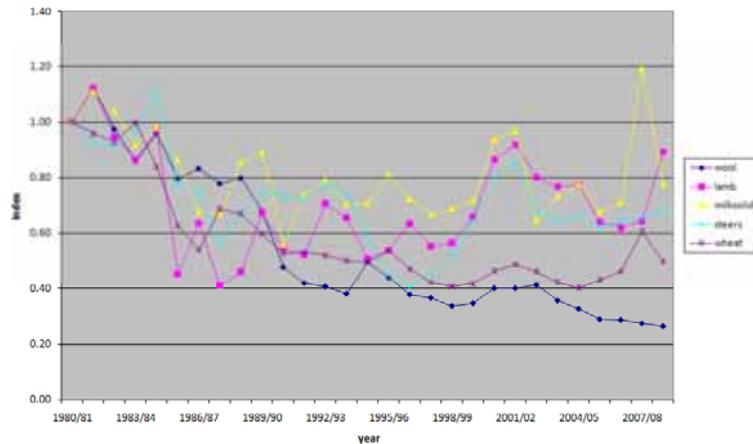
Livestock productivity

	1998/99	2008/09
Lambing Percentage	112	113 (drought affected; should have been 120%+)
Average Lamb Weight (kg)	15.8	17.7
Wool (kg per head)	5.7	4.6
Average steer weight (kg)	306	306
Milk solids per cow (kg)	256	323

Income Source on Sheep and Beef Farms (%)

	2008/9	1998/99
Sheep meat	48	42
Beef	23	23
Wool	10	20
Cropping	11	9
Dairy grazing	3	1
Other	5	5

Inflation Adjusted Product Prices



Meat production (bone-in equivalent)

Year	Thousand tonnes
1998/99	1,079
2007/08	1,230
2008/09	1134 (drought)

Wool production

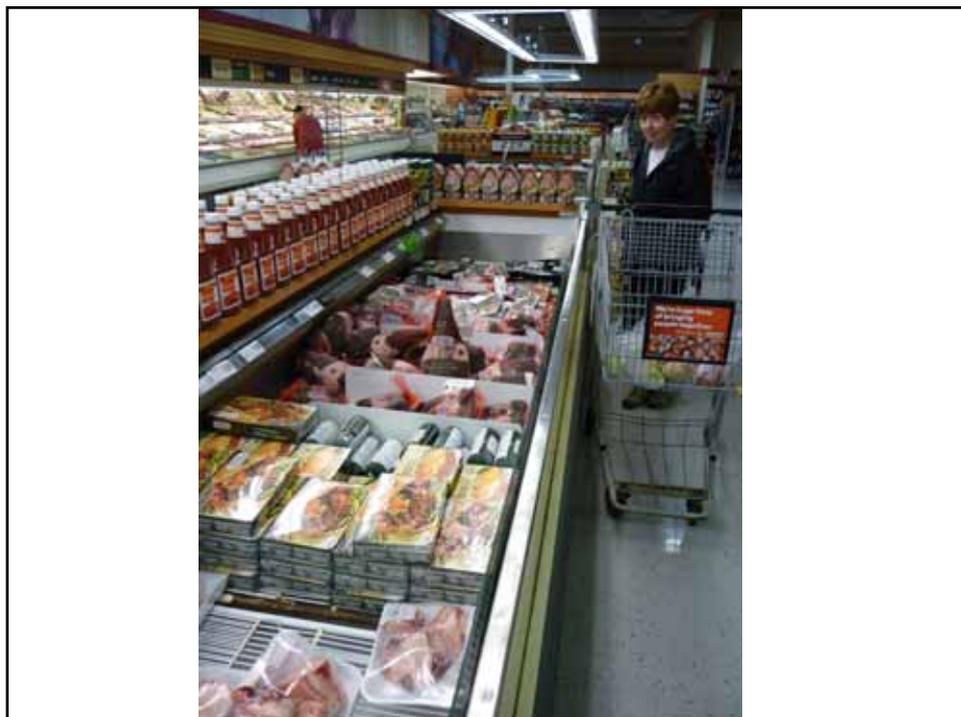
- 1994/95 289,000 tonnes greasy
- 2007/08 206,000 tonnes greasy
- 2008/09 158,000 tonnes greasy

Meat Market Destinations (2008/9; volumes; %)

	Lamb	Mutton	Beef
European Union	50	44	3
North America	11	11	56
North Asia	16	16	24
South Asia	1	9	10
Other	22	20	7









Notable pastoral innovations

- Many new breeds of sheep, including composite breeds, and imported breeds
- Breeding for multiple births
- Breeding for yield
- Ultrasound scanning
- New pastures
- Breeding and management for heavier carcasses

Processing Innovation

- Automation leading to labor saving and increased yields (labour productivity has more than doubled over 25 years)
- Improved hygiene and packaging systems to increase shelf life of chilled product
- Value-adding through further processing and Quality Assurance systems

The Innovation System

- Three parts
 - Public funding
 - Industry funding
 - Private funding
- In total, about \$US 1.4 billion per annum across the whole economy (1.2% GDP).
- Only a small part of this relates to the primary industries, and it is not reported on an industry basis

Public Funding

- Foundation for Research, Science and Technology
 - about \$US600 million per annum of competitive funding to Crown Research Institutes and Universities
- Sustainable Farming Fund
 - supports farmer led projects
- Primary Growth Partnership (PGP)
 - this is the important new research direction by government

Primary Growth Partnership

- Partnership arrangements between Government and industry
- Investments can cover the whole value chain including skill development, product development, commercialisation and technology transfer
- Industry contracts with government, and then industry contracts down to other innovation providers (such as universities, or industry may undertake the research 'in-house')
- So far there is one PGP project for the whole of chain ('del plato.del campo) meat industry, with approximately \$45 million of government money over 7 years ,and about 68 million of agribusiness investment, led by Silver Fern Farms.
- More PGP meat projects are expected.

Industry Funding

- Industry levies are currently (2010) 45c per sheep slaughtered and \$3.80 per cattle beast slaughtered.
- As from 2010 there is no R&D levy on wool as farmers did not support this at the 2009 referendum.
- Beef and Lamb NZ uses these funds to support research and technology transfer

The FAME Project

- FAME = Food and Agribusiness Market Experience
- This project is run by three universities (Lincoln, Massey, Otago)
- So far it has taken 80 agribusiness executives and leading farmers on experiential visits to China, Japan, North America and Europe.(All participants visit all of the markets). Most funding comes from participants, with some funding from an Agricultural Industry Trust.

Old Versus New Models

- The old models were based on the belief that research and development was a linear process that started with research and ended up with extension to farmers
- The new models are based on the belief that industry (producers, processors and marketers) are the ones who have to make the innovations, and hence they have to be in the centre of the innovation model.
- There is a recognition that innovation is a lot more than research.

The Role of Government

- To create the appropriate environment for industry to make its own innovations.
- Current thinking is that it also needs to be involved in public-private partnerships to avoid under-investment, particularly in underpinning long term industry transformation
- It is too early to judge the success of the new partnerships

Some Final Thoughts

- Most New Zealanders are self-critical about there being insufficient innovation in our meat industry.
- However, the industry has changed greatly in the last 15 years.
- Arguably, the changes have been even greater in processing and marketing than in production.
- It is not an easy industry.
- The key issue is integration
- And we still have to do better!

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