Agricultural innovation in NZ

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NZ economy

- Ag and forestry 70% of exports; 12% of GDP
- Productivity in Ag 3.3% 1984-2007 (1% ROE)
- Target in NZ to increase exports to 40% from 30% of GDP (a $10 billion rise in Ag exports)
- Within new constraints—especially environmental
- So need to be innovative!
What is innovation?

• Use of a better and, as a result, novel idea or method – not creation of method
• Doing something different rather than doing the same thing better
• Innovation is then development of new values to meet new requirements or market needs
New Zealand and Innovation

- Built upon preferential access thus culture more of innovation behind farm gate
- Innovation in meeting market needs less apparent
- In addition growing constraints for farm gate production such as nitrate limits affecting innovation
Innovation and extension

• Up to mid 1980’s extension were provided by MAF
• In 1987 advisory and research services amalgamated to help link between science and extension
• In 1990 management consultants created within MAF and this became privatised in 1995 and called Agriculture NZ (Wrightson)
• Staff fell from 310 in 1987 to 120 in 1993
Introducing the segments.....

**Tactical progressives 23%**
- Key markers:
  - 86% looking for the next opportunity to expand
  - 71% less than 40 years old
  - 57% at every milking

**Established tacticians 22%**
- Key markers:
  - 86% concerned about environmental pressures
  - 68% now want to cruise for a while
  - 48% milk 500+ cows

**Sorted strategist 19%**
- Key markers:
  - 78% regularly use farm advisors
  - 48% milk 750+ cows
  - 3% at every milking

**Guarded lifestylers 19%**
- Key markers:
  - 100% farming mostly about lifestyle
  - 63% believe there are too many corporate farmers
  - 64% manage mostly in head

**Traditional operators 17%**
- Key markers:
  - 77% milk less than 300 cows
  - 68% more than 50 years old
  - 52% low input farming

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Most scope for movement

UMR (2012): Farmer Capability Study
The Centre of Excellence in Farm Business Management
Support for innovation on or near farm

- Consultants
- Reps (Fertiliser, farm supplies)
- Neighbours/locals
- Companies (Zespri) supply chain (Waitrose)
- Partnerships with researchers (CEFBM)
- Primary Growth partnerships - PGP
Inventions versus innovation

• No shortage of ideas / inventions
• Funding concentrates on development of these
• Little funding to translate these into innovations
• Almost no funding for innovations that are not related to ‘hard’ technology
Funding for inventions/ science

- Marsden – investigator led - $50 m
- Biological Industries public science fund – $105m
- Sustainable Farming Fund - $10 m
- Primary Growth Partnerships -$53 m
- Callaghan Innovation centre - $141.1 m
- National Science challenges (10) - $73.5 m
- International growth fund all sectors - $30m
OECD Science and Innovation Profile of New Zealand

- HRST occupations as % of total employment
- Science and engineering degrees as % of all new degrees
- Researchers per thousand total employment
- % of GERD financed by abroad
- Patents with foreign co-inventors
- % of firms collaborating (as % of all firms)
- % of firms with new-to-market product innovations (as % of all firms)
- % of firms undertaking non-technological innovation (as % of all firms)
- Industry financed GERD as % GDP
- Triadic patents per million population
- Scientific articles per million population
Science and innovation

- Silo mentality within disciplines
- International science system and PBRF reinforces this
- High quality publications silo discipline driven
- Little incentive to engage in interdisciplinary work or transdisciplinary work for publications
- Little incentive to commercialise science or engage with business or other communities
Knowledge Intensive services

• Agriculture is an engine for growth but don’t recognise it as Knowledge Intensive Sector (KIS)
• KIS included high tech sectors with % R and D but excluded agriculture
• Moreover exclude KI Service Activities from this that is marketing, value chains and the service sector in general
Change – to facilitate innovation

- Change culture/system
- Empower leadership
- Cross disciplinary education
- Linking innovation systems and skills training systems
- Consider ‘governance of system’
Exemplars

- Farm IQ - 7 year innovation programme funded by PGP with silver fern farms
- Aim: to demonstrate the value of consumer requirements led value chain rather than traditional production led approach
- Estimated to increase exports by $1 billion over 7 years and $8.8 billion by 2025
Conclusion

• NZ history of invention/ innovation especially behind farm gate
• Less a history of innovation in business services to enhance value
• Funding favours silo research and science
• Change occurring with new initiatives