An agricultural innovation systems approach – what does it offer Primary Industry Animal Welfare RD&E?

A/Prof Ruth Nettle
Rural Innovation Research Group (RIRG)
University of Melbourne
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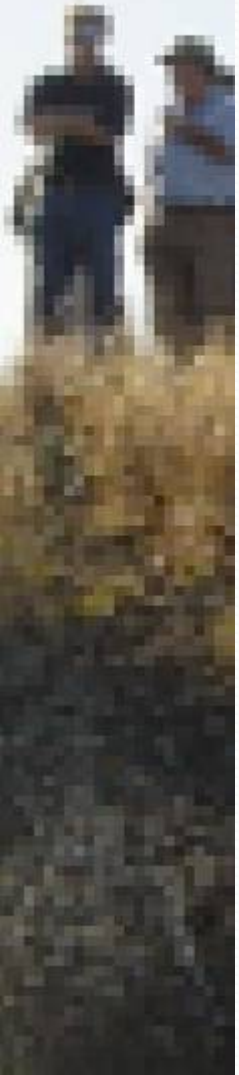
THE UNIVERSITY OF MELBOURNE



Purpose

- Thinking to assist Primary Industry Animal Welfare RD&E
  - Breaking out of *RD&E* thinking
  - Propose a new paradigm
- Discussion of cross-sectoral opportunities

Emerging Issues in agricultural RD&E

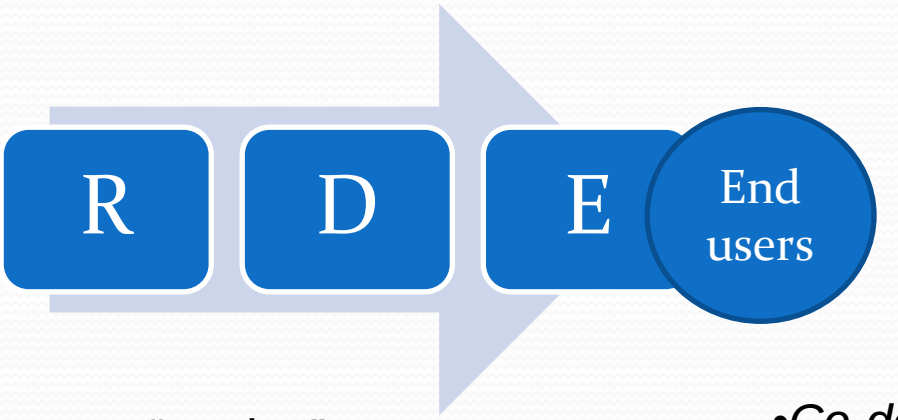
1. Most of the issues agriculture is facing are not served or addressed by an RD&E pipeline.

2. Systemic problems require systemic solutions

3. Systemic solutions are harder when constrained by RD&E pipeline thinking.

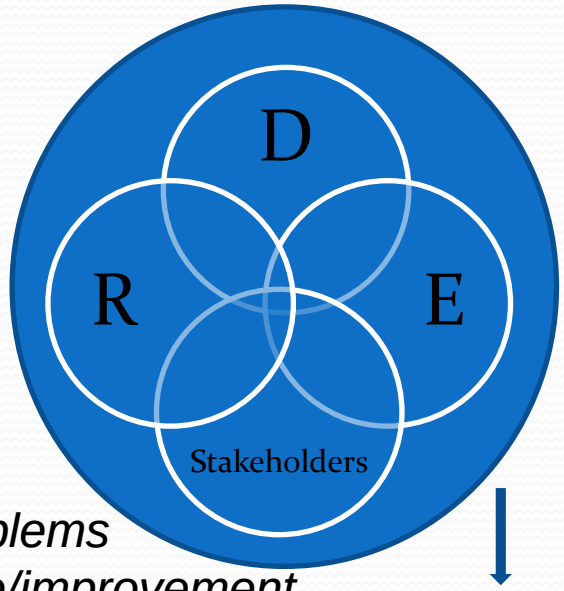
Agricultural RD&E is a *capacity* for innovation not THE innovation system

Pipe-lines



- *Route to "market"*
- *Fit of science pre-determined*
- *Product development/commercialise*

Platforms



- *Co-defining problems*
- *Route to change/improvement*
- *Fit of science established*
- *Work on environment for change*

Benefit: society

Agricultural RD&E → *Agricultural Innovation system*

Houston, we have a problem in change management….

1. Barriers to adoption are well known

Factors impacting adoption:

a) Characteristics of the technology/practice
b) Characteristics of the target population
c) Relative advantage of using the technology/practice
d) Capacity to learn/adapt to generate a relative advantage .

Kuehne, G., Llewellyn R., Pannell, D., Wilkinson, R., Dolling, P., Ouzman, J. (2013). ADOPT: the Adoption and Diffusion Outcome Prediction Tool (Public Release Version 1.0, June 2013) [Computer software] Adelaide SA; CSIRO. Available from www.csiro.au/ADOPT

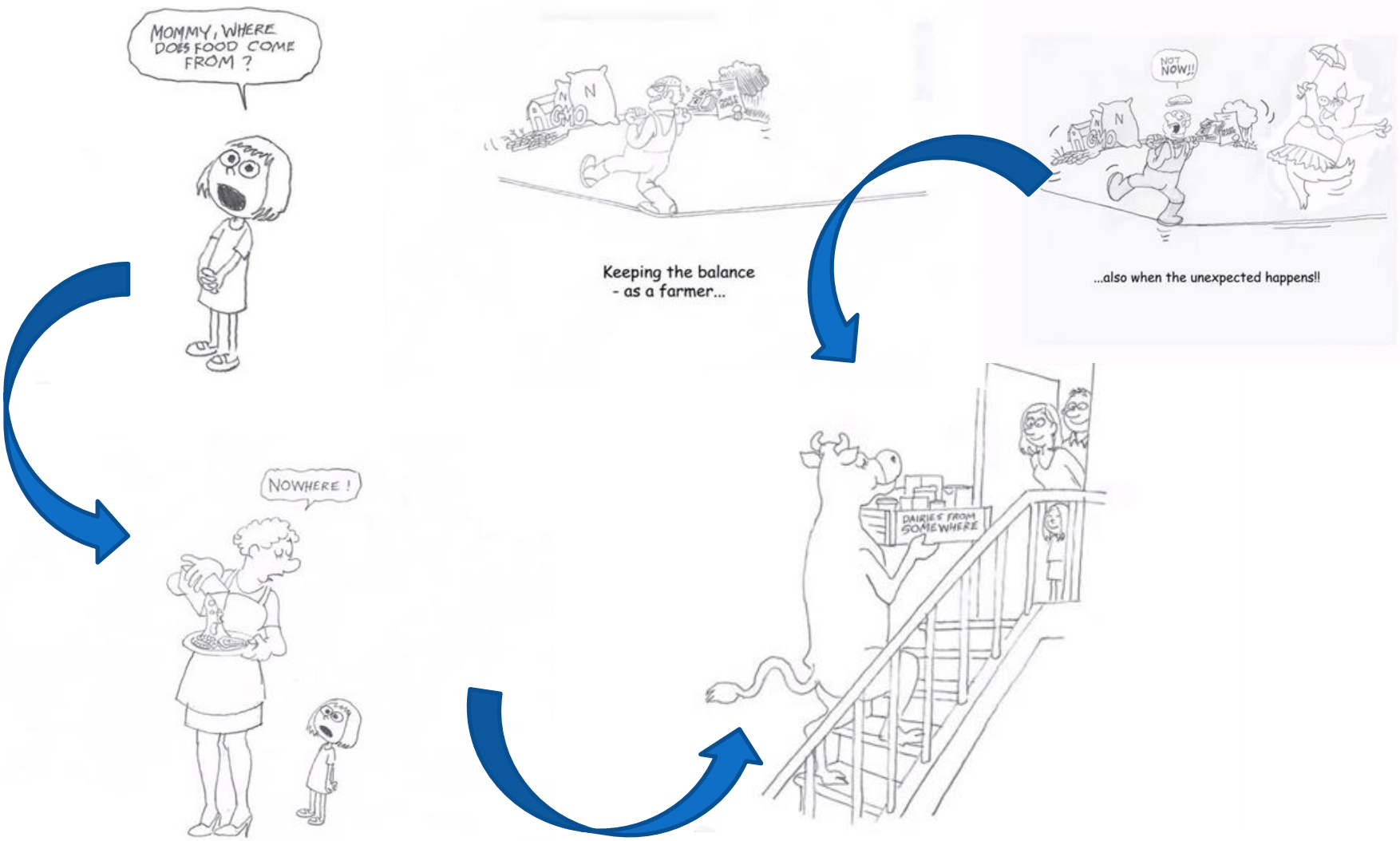
2. *Extension* alone is often a weak instrument

Systemic barriers/drivers influencing adoption
1. Institutional arrangements
2. Policy context
3. Social norms (on and off farm)
4. Sources of advice and re-inforcement
5. Practice change (values, attitudes, actions): consumer/producer/value chain

3. Knowledge and information is still considered the instrument of change….

- Changing producers practices and consumer preferences are considered ***independently*** (and then a miracle happens).
- In reality, making progress is about:
  - negotiation and inter-dependence (mutual understanding)
  - Developing trust;
  - Changing attitudes through experience
  - Modifying social norms; evolving new practices; developing new markets; feedback loops.

information transfer?



Where's the "D" in your RD&E strategy?

D in RD&E is critical, is under-resourced and is being done as clandestine effort

Program Development team Team leader and representatives from relevant:

Research groups	Industry organisations	Businesses	Service providers	Farmers	Extension team	Training organisations	Policy informants

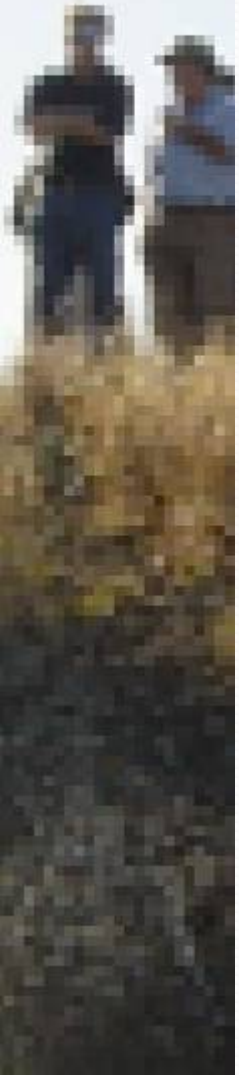
Build and refine the knowledge base

Developing a **business case** for extension:

- Understand businesses of **key players**
- Decide nature of the **desired change**
- Identify the **enabling environment**
- Design a **strategy for change**
- **Pilot** and refine strategy in system

Judge appropriate action

(Nettle, et al, 2013)



Need for innovation

- Innovation ***strategy*** (how will we achieve economic, social and environmental goals)?
- Innovation as ***a process of co-production*** (science & citizens) (Jasonoff, 2004).
- Innovation as an ***outcome*** from co-operative action (new knowledge, technologies, practices, policies, …)

An innovation perspective changes what you do, how you do it and who you do it with.

(Klerkx and Nettle, 2013)

Dairy sector innovation domains:	Netherlands
Innovation agenda setting	•Value-chain focus •Broad engagement - citizens
Radical innovation experiments	•Value chain focus •Multi-stakeholder farming system design
Environmental innovation	•Advisory sector partnerships •Public-private interests
Cattle health innovation	•Maintaining engagement between public and private interests •Capacity building focus
Social innovation	•Non traditional partners (e.g. community) •Wide scope

Diagnosis of the agricultural innovation system for national animal welfare RDE

- Functions of innovation systems

1. Entrepreneurial activities
2. Knowledge development
3. Knowledge exchange
4. Guidance of the search
5. Market formation
6. Mobilisation of resources
7. Creation of legitimacy

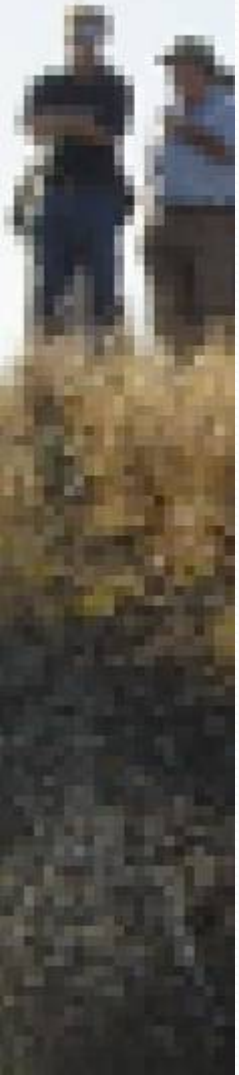
- Innovation occurs when these 7 functions are working well

Wieczorek A., Hekkert M, 2012. *Systemic instruments for systemic innovation problems: A framework for policy makers and innovation scholars.* Science and Public Policy, 39 p. 74-87

Strategies for cross-sectoral animal welfare RDE:

1. Are all the functions of innovation present (cross-sector) (Weak? Strong?)
2. Is your "innovation agenda setting" robust (engage ALL stakeholders)?
3. Is your practice change strategy SYSTEMIC (advisers, attitudes, social norms, champions, regional…..)
4. Whose leading the radical innovation/experiments (cross-sector)? Are the necessary people involved? eg
   - Housing design; farm systems; Pain management
5. 3 ideas for progressing cross-sectoral innovation

The end



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