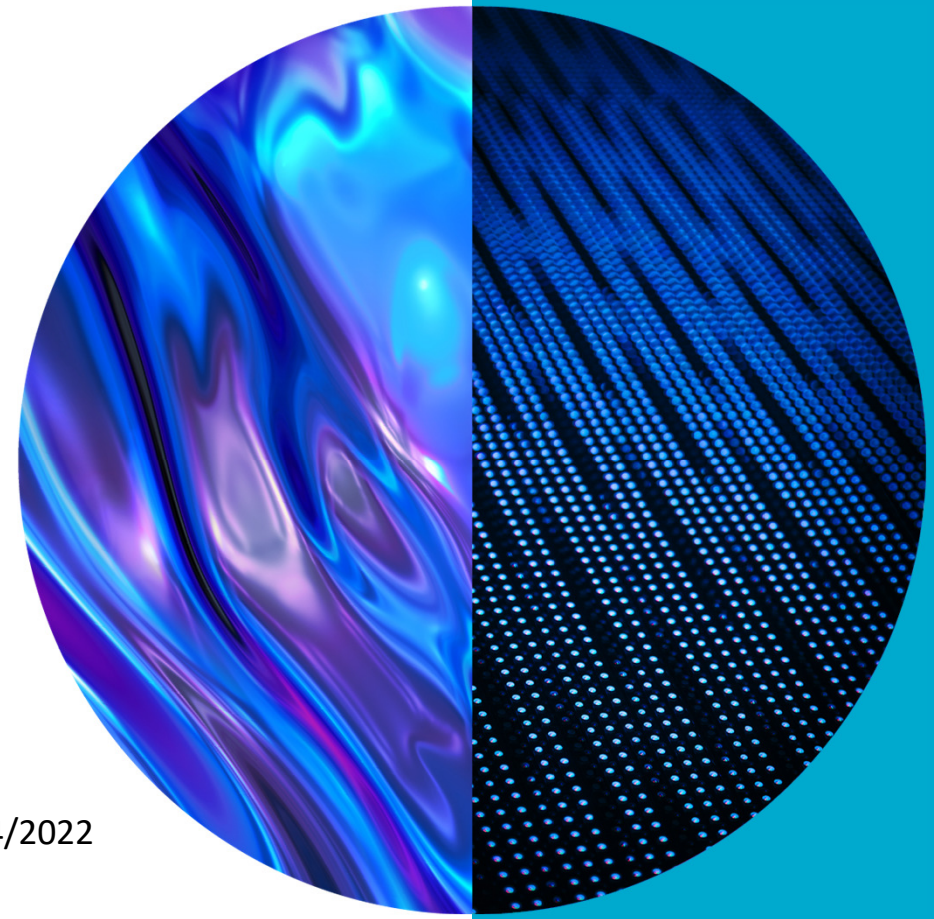
Digitalisation of agri-food systems to enhance resilience? An Australian case



Simon Fielke| ~~9/12/2021~~ 6/4/2022

Australia's National Science Agency

Acknowledgement of Country

I would like to begin by acknowledging that I am joining this meeting from the Traditional lands of the Yuggera Language group – occupied by Quandamooka (Moreton Bay), Jagera (Southern Maiwar), and Turrbal (Northern Maiwar) People for approximately 20,000 years.

I pay my respects to their Elders past and present and I would like to extend this acknowledgement to all Traditional Owners of the various lands on which each of you live and work today.

Defining the food system resilience context

- *Resilience of what?*

Australian **agri**-food sector…

- *To what?*

Ongoing change of **functions and functioning** (digital, pandemic, social licence of practice/s, environmental regulation etc)…

- *From who's perspective?*

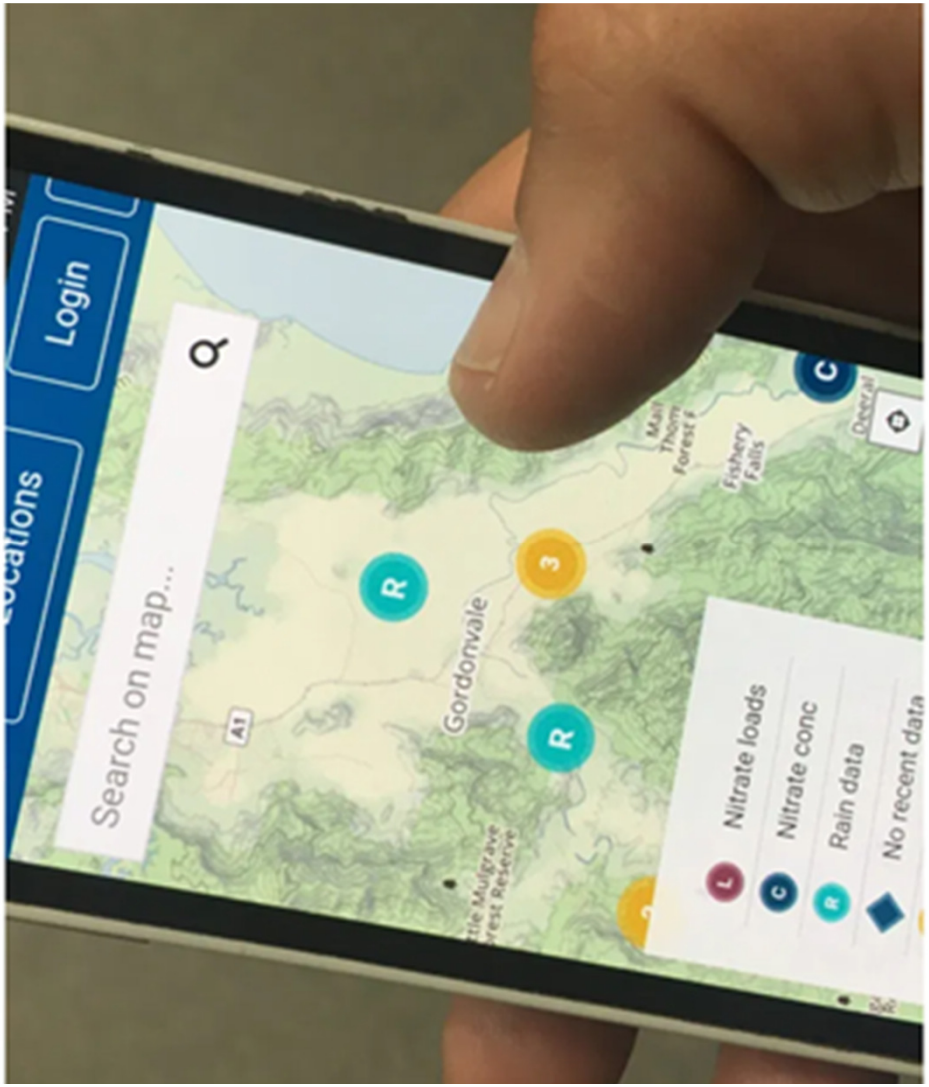
A privileged researcher (me) qualitatively examining/**synthesising diverse agri-food sector stakeholders perceptions**…

- *Over what time period?*

The **last decade** (or so) and looking forward into the next few decades (give or take).

Scope of talk

- What is digitalisation?
- Potential implications for individual, community, national agri-food sector systemic resilience
- Links to more information
- Q&A



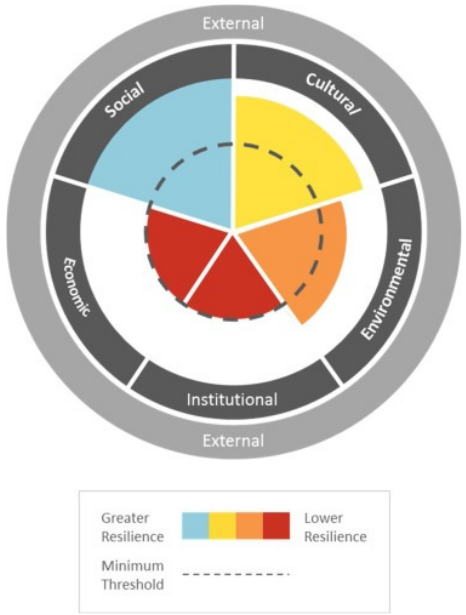
What is the digitalisation of agri-food systems?

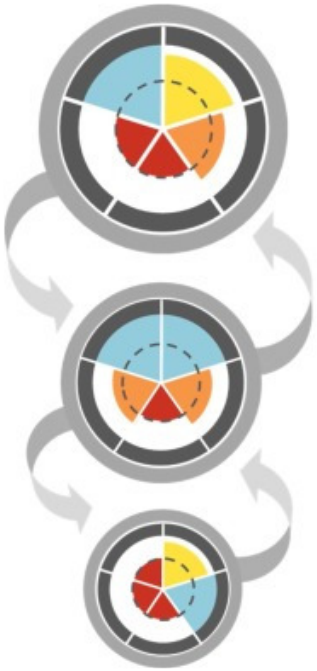
The digitalisation of agriculture involves the development, adoption and iteration of digital technologies in the agricultural sector (Fielke et al. 2019, p.1)

- Likely a natural way of living/engaging with humans/machines for younger generations
- Examples of Kelly Bronson alongside, 1622WQ 'app' on previous slide (or talking to you now!)
- Increasingly advanced digital technologies influencing the ag sector/s

Relevance to agri-food system **resilience**

Thinking about **dimensions of resilience**…





RESILIENCE AT MULTIPLE SCALES

Resilience occurs at different scales and the scales interact with each other.

National

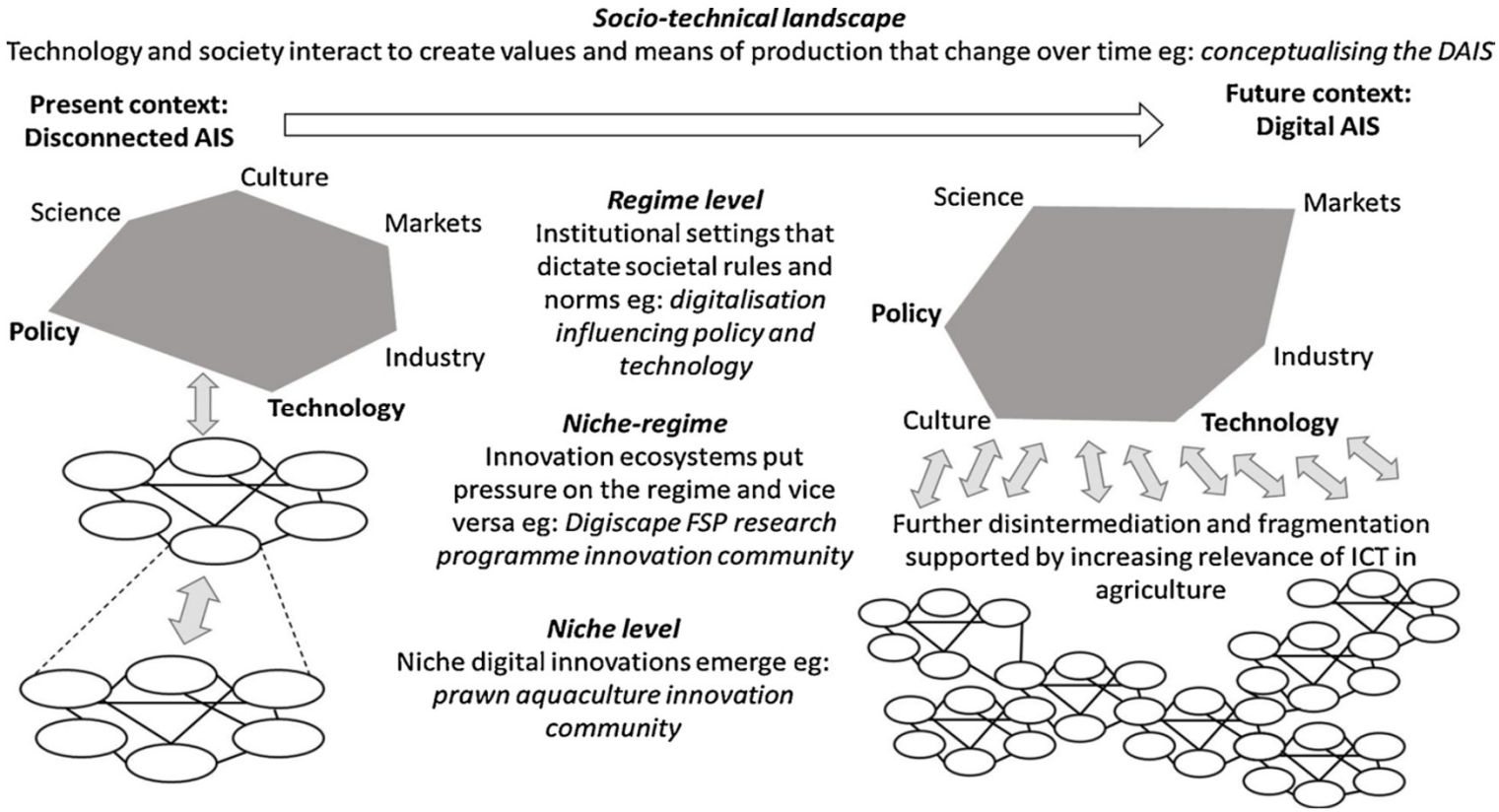
Community

Individual/households

Fielke, S. J., W. Kaye-Blake, A. Mackay, W. Smith, J. Rendel & E. Dominati (2018) Learning from resilience research: Findings from four projects in New Zealand. Land Use Policy, 70, 322-333.

https://www.sciencedirect.com/science/article/pii/S0264837717308025

What does digitalisation mean for agri-food systems?



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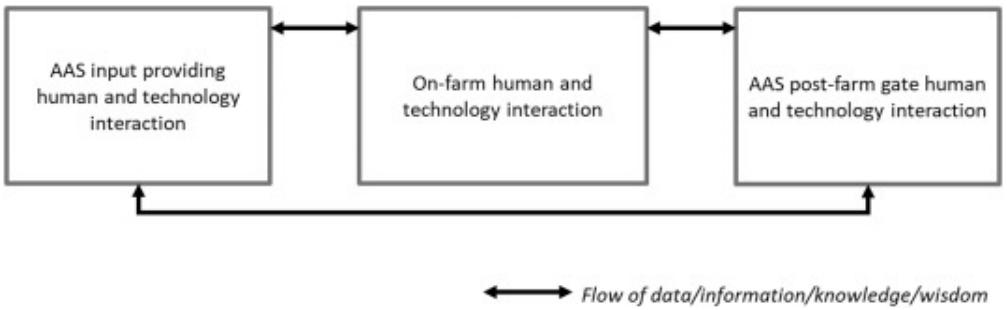
What does digitalisation mean for agri-food value chains?

- Increasing connectivity (**reorientation**)
- Increasing transparency (**adaptation**)
- Increasing need for appropriate (and **transformational**) governance through to practice
- (new institutions, new roles, new practices, new thinking)



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Some examples of building agri-food system resilience via ‘digital innovation’

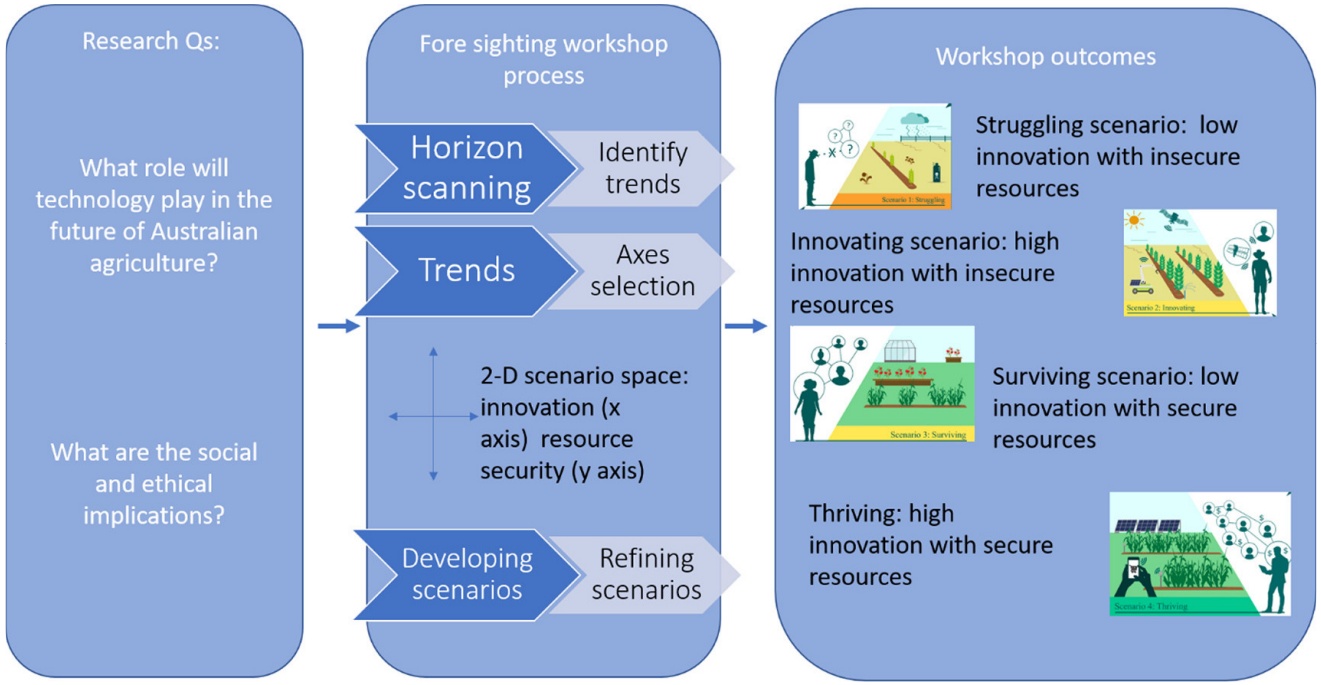
1) International **reorientation -** e.g. Digital innovation and inclusiveness OECD or WEF ‘innovation’ with purpose, COVID induced capacity to WFH and zoom in

2) National level **adaptation** - Building capacity for collaborative (digital) innovation processes - e.g. via National Agricultural Innovation Policy Statement or CSIROs agri-food system ‘Mission’ ambitions – 3 launched

3) Tangible Australian examples of **transformation to ‘more good’** - Integrated science processes (e.g. RI in AgTech development), learning by developing technologies (e.g apps and sensor kit), new institutions e.g. Future Drought Fund, Mission structures (collaborative innovation)

https://research.csiro.au/digiscape/responsible-agtech-symposium/

One specific example… RI ‘practice’ to contribute **foresight** to digital agtech development processes



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For more Australia agri-food+tech information…

References – all open access:

- Jakku, E., Fielke, S., Fleming, A., Stitzlein C., 2022. Reflecting on opportunities and challenges regarding implementation of responsible digital agri-technology innovation. Sociologia Ruralis, n/a. https://onlinelibrary.wiley.com/doi/abs/10.1111/soru.12366
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Thank you

Please get in touch if interested in talking further/collaboration ☺

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