

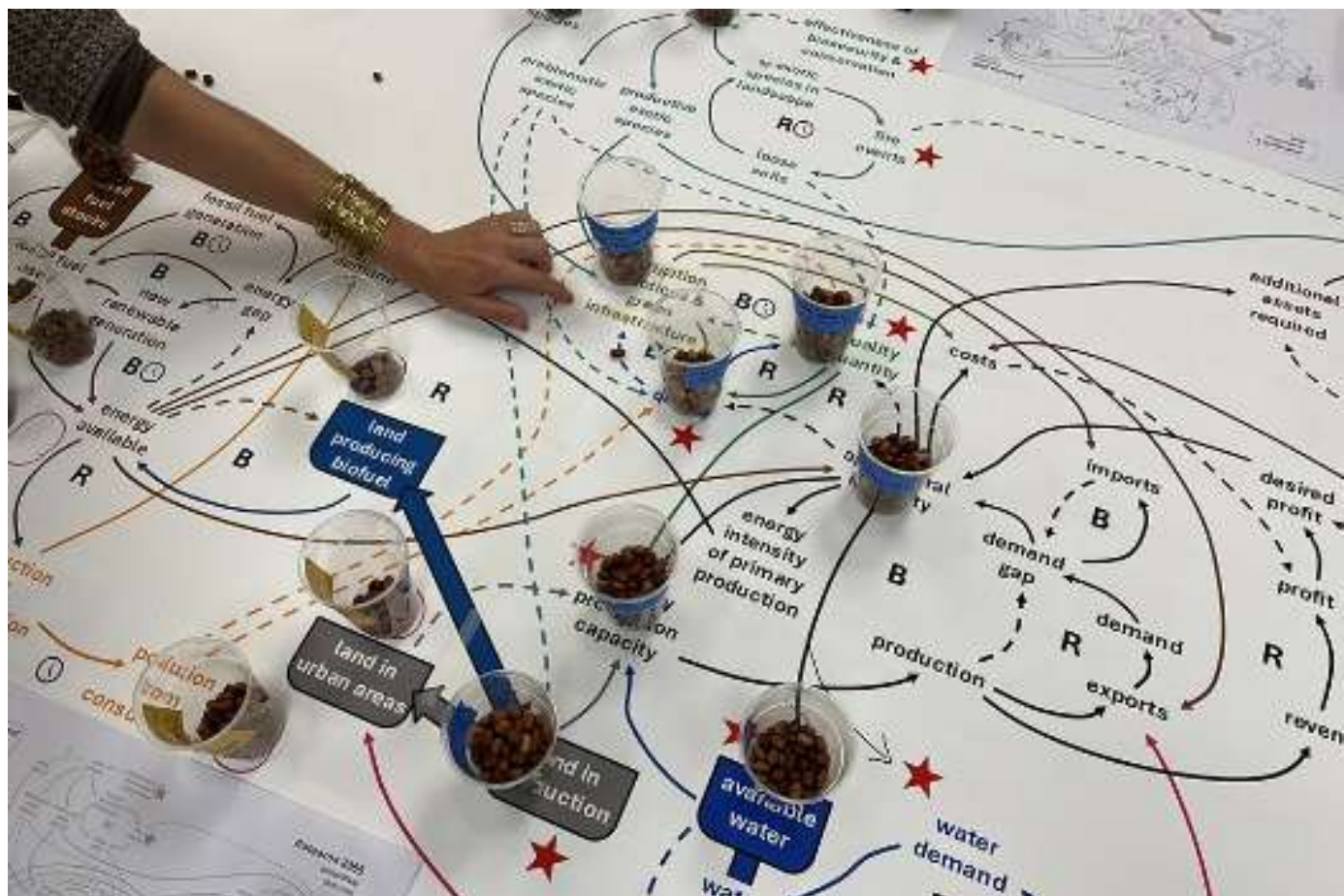
Navigating complexity for making good land use decisions

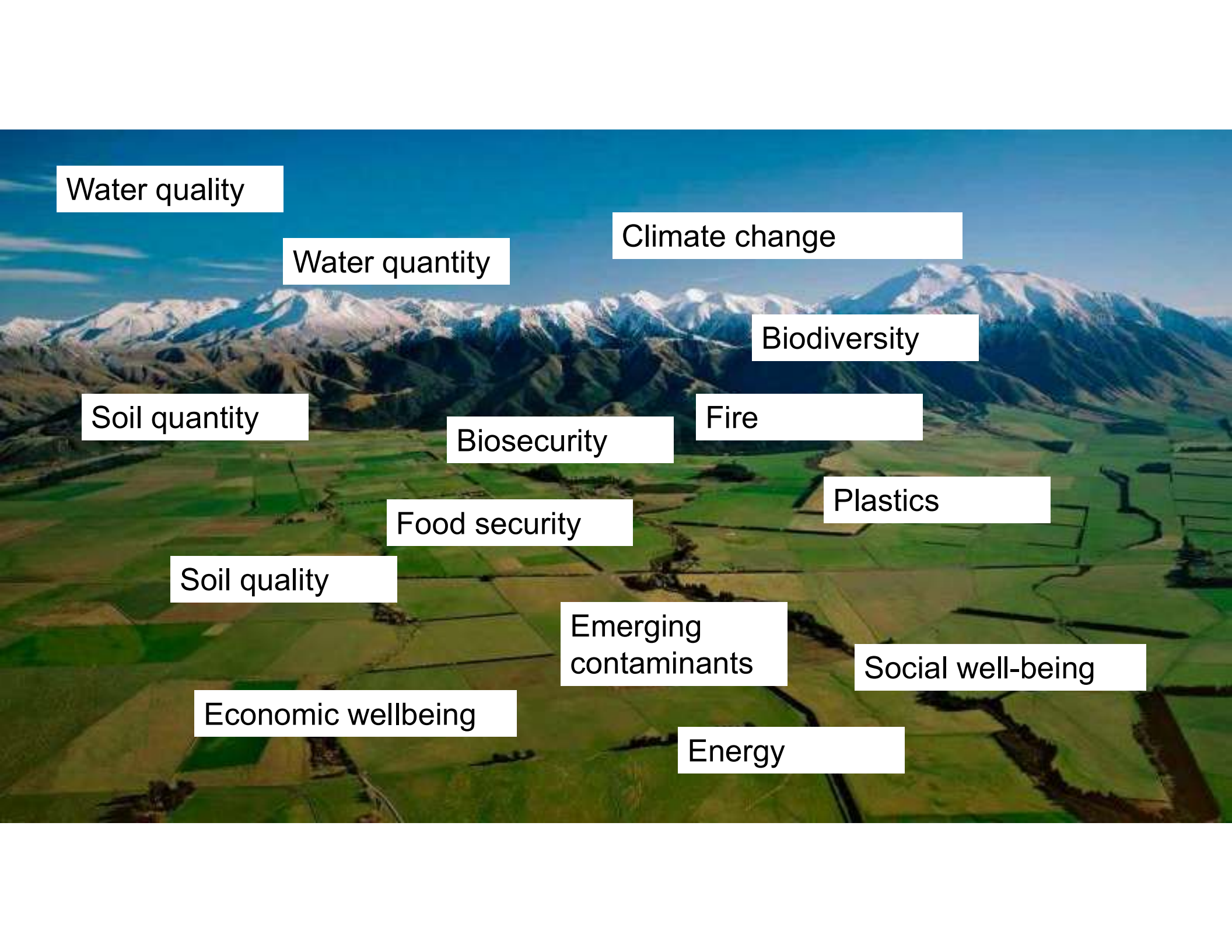
Melissa Robson-Williams

Linda Lilburne

And team members Flo van Noppen, Gwen Grelet, Clemence Vannier and Justin Connolly (Deliberate)

14 Oct 2025





Water quality

Water quantity

Climate change

Biodiversity

Soil quantity

Biosecurity

Fire

Food security

Plastics

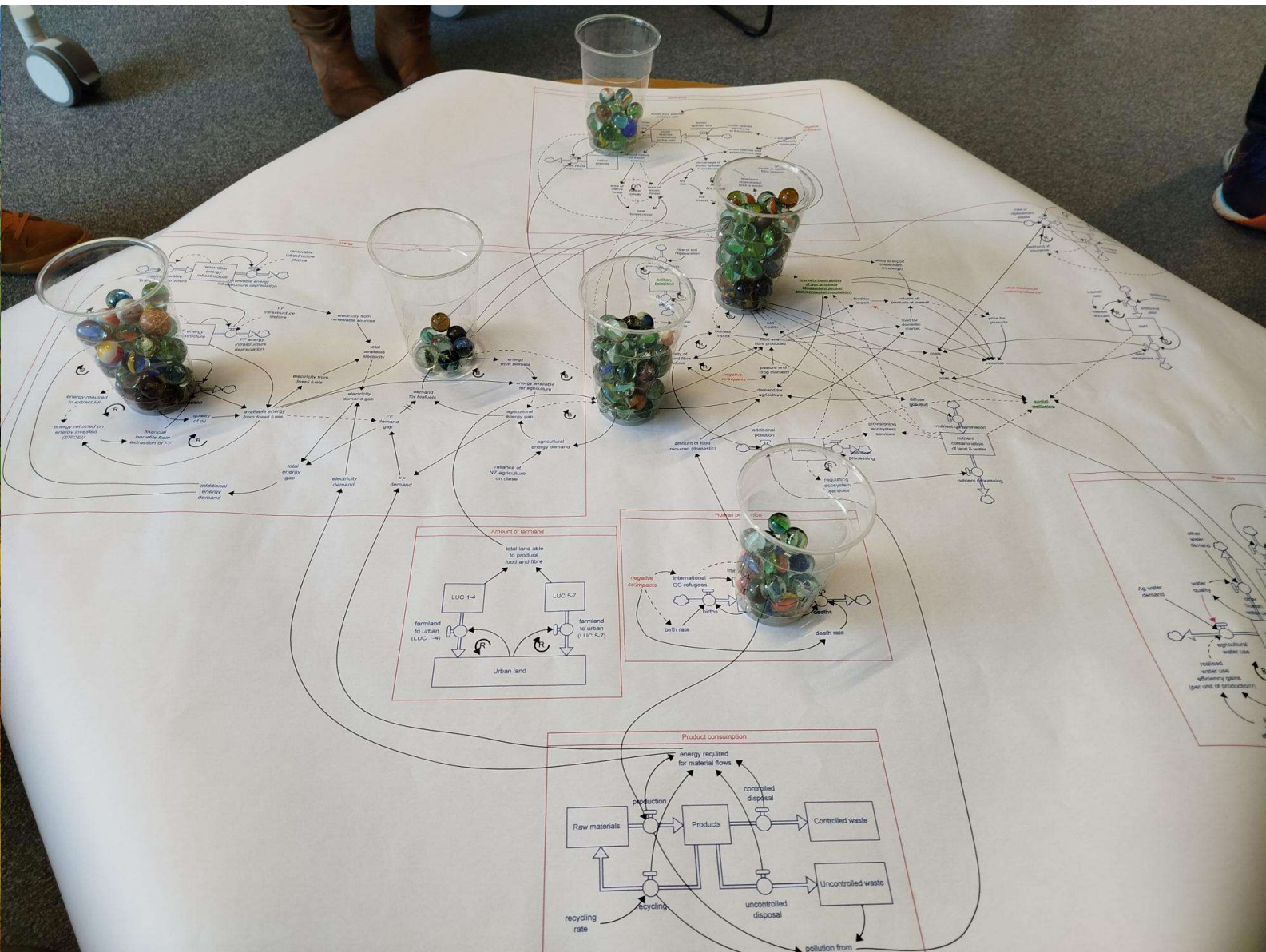
Soil quality

Emerging
contaminants

Social well-being

Economic wellbeing

Energy



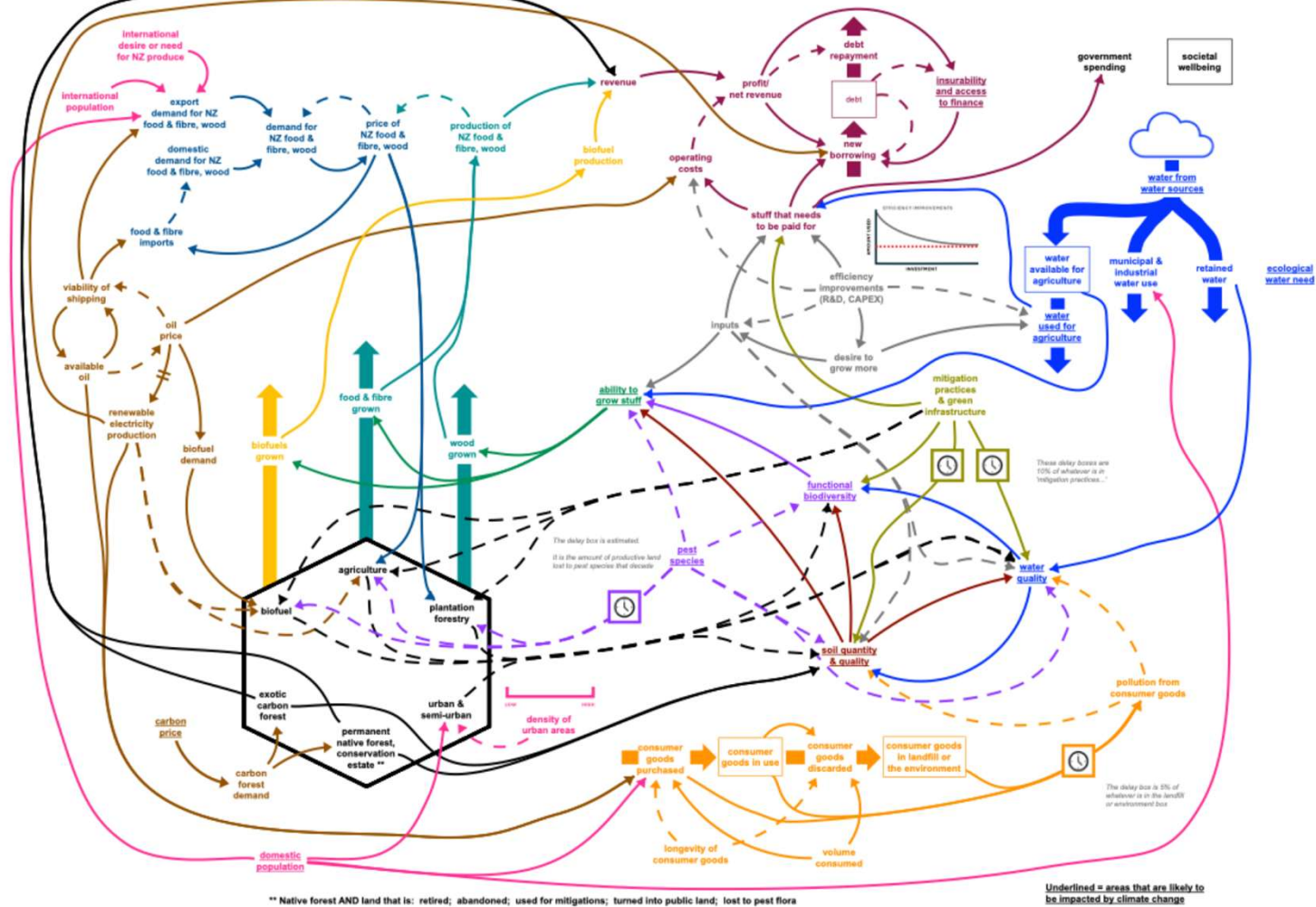


The workshop activity

The diagram



- Developed a causal loop diagram – focuses on how we use land
 - 6 land types in NZ (agricultural, plantation forestry, carbon, biofuel, urban, Other - DoC estate, marginal, retired, abandoned land)
 - Captures representations of :
 - Energy,
 - Environmental quality,
 - Finance,
 - Population,
 - Consumption & Pollution,
 - Biodiversity,
 - Food/fibre demand, prices and production,
 - Water allocation,
 - Carbon farming,
 - Mitigations and efficiency.



The workshop

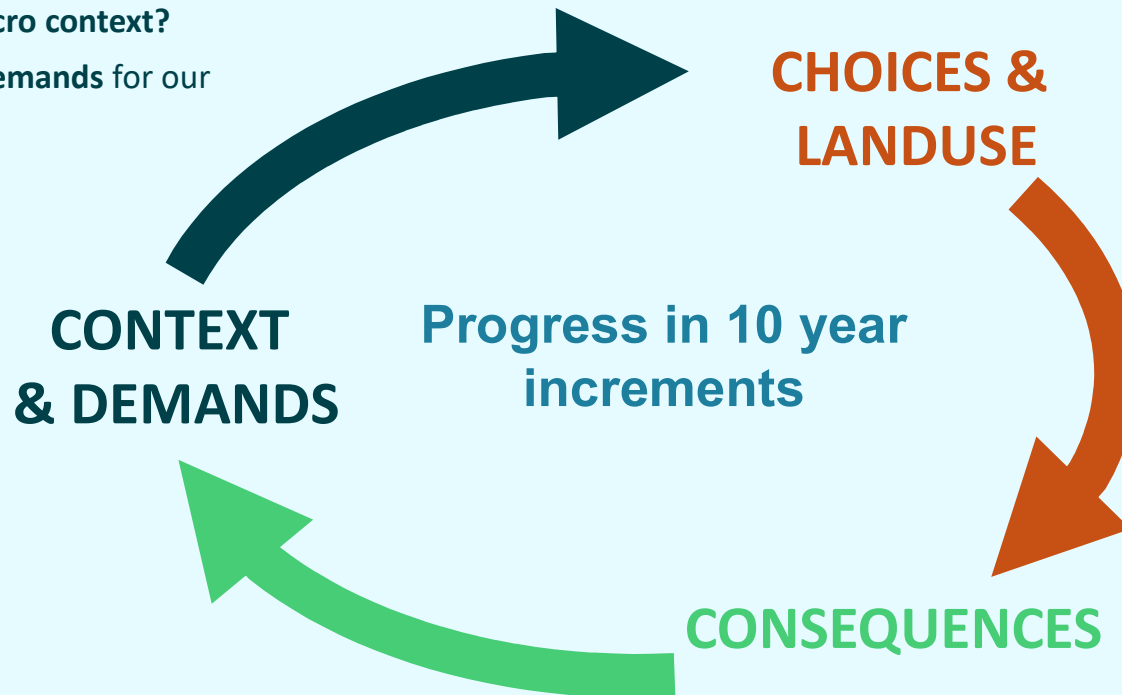


- One day workshop
- 7-9 participants
- Brief introduction to some systems thinking concepts
- Each is assigned some cups (topics) that they are the arbiter or moderator for
- Beans in a cup are increased or decreased representing the changes in the stocks, e.g. debt, water quality, oil price etc.
- A scenario is defined at the beginning e.g. political/societal mindset, climate change projection.
- Facilitator guides the flow of the discussion – participants discuss the interactions and agree how many beans to add or remove
- Repeat for 3-4 decades – the first decade 2015-2025 was done as a demo by the team, then we turned it over to the participants and facilitator for the following decades

The logic that guides the discussion around the diagram



- What is the **macro context**?
- What are the **demands** for our products?

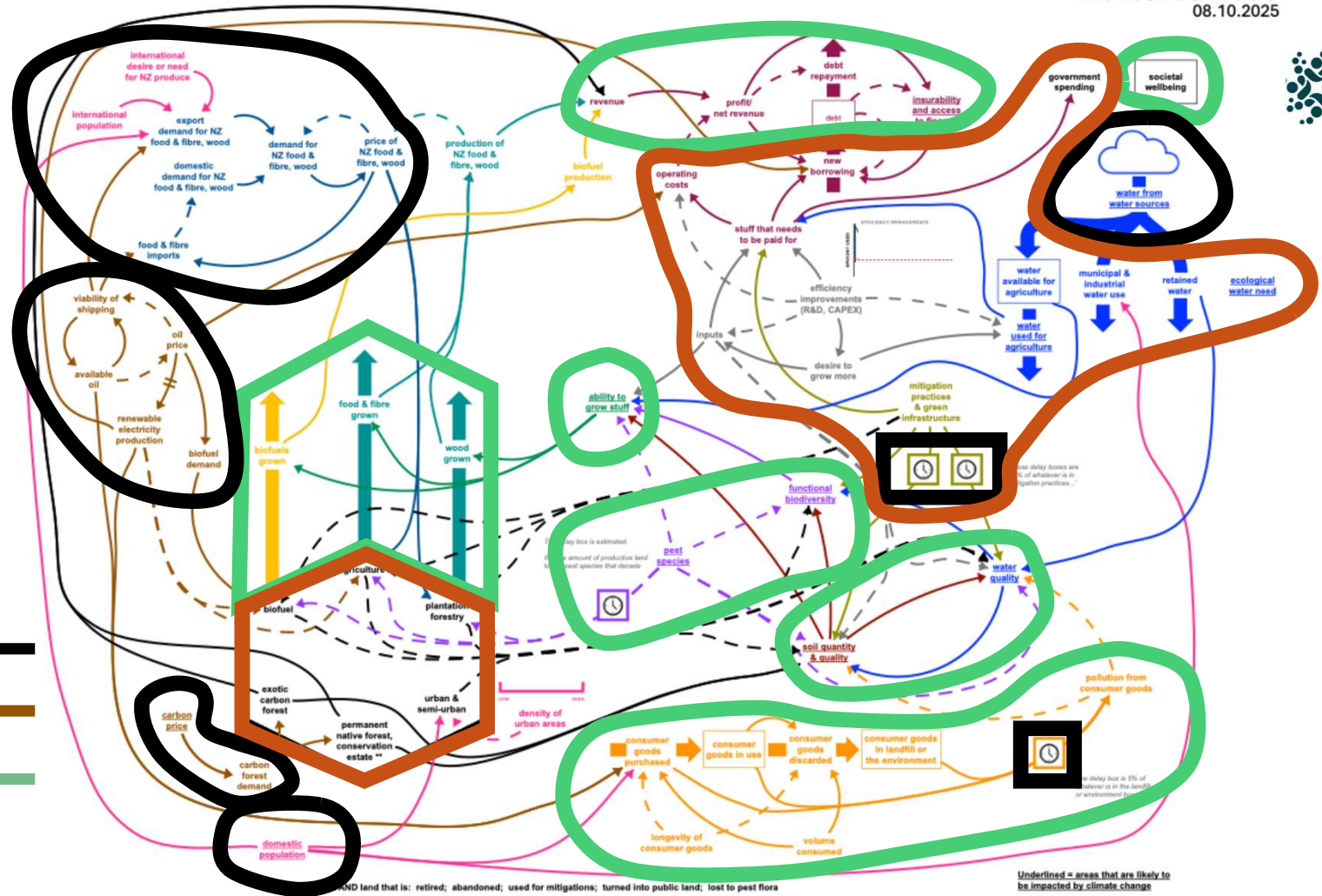


- What **activities** will we put **effort** into?
- What are the **costs** of these?
- How will we **use the land**?

- What are the **environmental impacts**?
- What does this **produce**?
- What **benefits and costs** do we experience?



Context & demands —
Choice & land use —
Consequences —



To-date



- Two within-team workshops and three external workshops
 - Our advisory group (Regional Council, Future Farmers)
 - Future Farmers
 - BSI researchers
- Refined the process each time
- National scale – so far





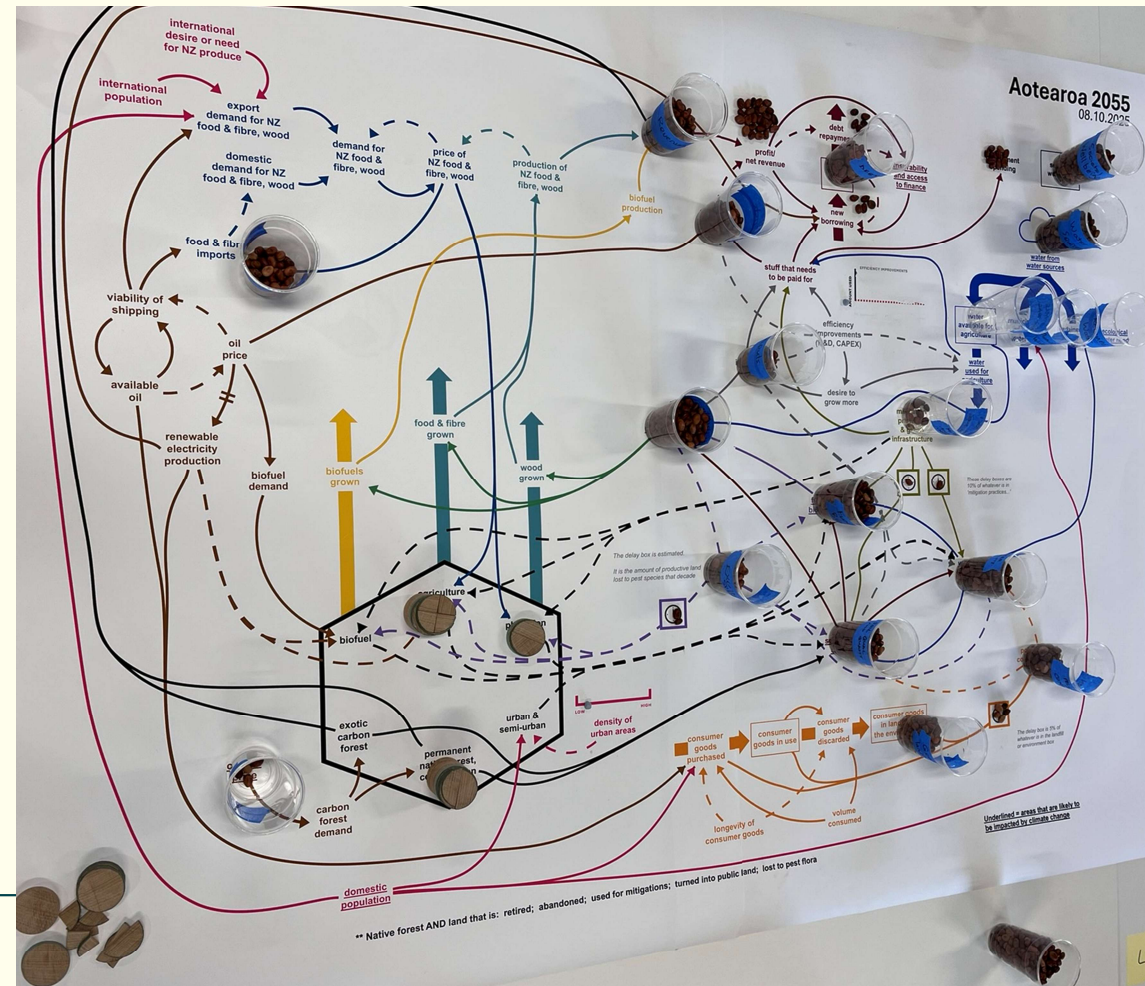
Insights and next steps

Insights on Aotearoa 2055 activity



From participants:

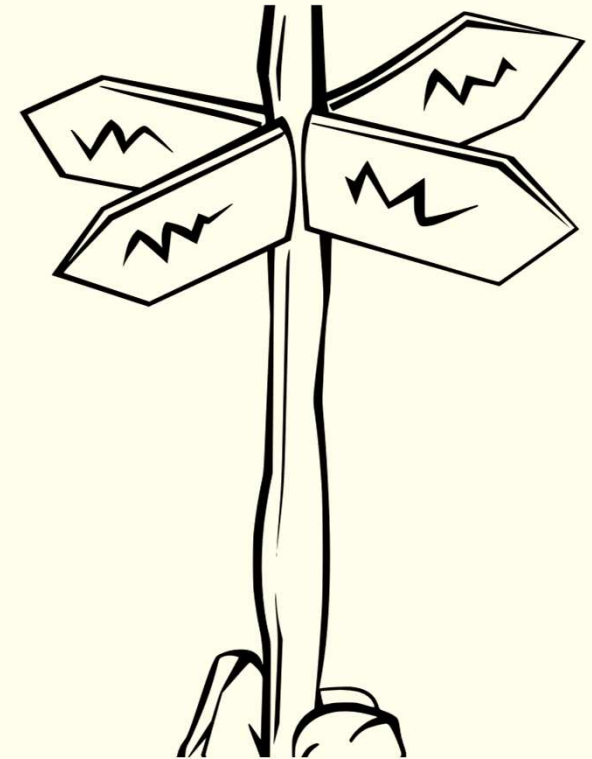
- Broadened perspectives
- 'Experience' is important
- Ongoing usefulness
- What's missing and limitations



What's next...



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Thank you