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Feeding the world, sustainably

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Converging Insecurities

- **Climate change**
- **Energy**
- **Water**
 - Every calorie we consume uses one litre in its production
 - Every litre weighs one kilogram
 - Per capita freshwater availability declining steeply
- **Food** — increase world production up to 70% by 2050
 - Nutrition security (& equity) as crucial as ag productivity
 - Using less land, water, fossil energy and nutrients
- **Biosecurity**
 - One Health – stop being surprised by pandemics
 - Increasing risks of pests and diseases in new places

Food & Nutrition Security

- **In production terms, agriculture has done well**
 - Global population doubled from 1961 to 2003
 - Food production increased by 2.5 (to 2772 kcal/day)
- **YET:** we now face the **triple burden** of food insecurity
 - 816 million people suffering from acute hunger
 - ~ 2 billion people with micronutrient deficiencies
 - ~ 2 billion people consuming too many calories
- Which leaves **less than 1/3 of all people on Earth eating a healthy diet!**
- **Agriculture now needs a new paradigm**
 - A food systems perspective
 - Tailored to deliver against SDGs



The role of Agriculture

In the Anthropocene, agriculture is the biggest lever humans can pull

- Biggest employer of people
- Biggest water user (75% of diverted freshwater)
- 26% of global greenhouse emissions
 - on track to be the largest emitting sector
- Causes 78% of eutrophication
- Uses 87% of ice-free, non-desert land
- The main driver of deforestation
- Animal health & human health interconnected
 - Most pandemics start on farms or in wet markets

AND

- **The most effective way to lift people from poverty**



Profound technical & policy challenges

1. To decouple economic growth from carbon emissions
2. To adapt to an increasingly difficult climate
3. To increase water productivity
 - decoupling the 1 litre per calorie relationship
4. To increase energy productivity
 - more food energy out per unit of energy in
 - while shifting from fossil fuels to renewable energy
5. To develop more sustainable & resilient food systems
 - in competition for land and water with the resources & energy sectors
 - Improving human nutrition and health
 - while conserving biodiversity and
 - improving landscape amenity, soil health, animal welfare
6. **TO DO ALL OF THE ABOVE SIMULTANEOUSLY!**

Landcare:

grassroots environmental governance for the Anthropocene?

- We are facing unprecedented challenges stemming from the ‘**converging insecurities**’: food, water, energy, climate
- These challenges cannot be met effectively through centralised, top-down approaches
- Engaged, informed, empowered communities are key to more decentralized governance models
 - Environmental monitoring and management
 - ‘natural’ disaster preparedness and response
 - public health (including mental health)
- 3 decades of landcare ‘experiments’ in several continents show exciting possibilities

Farm and watershed planning was widespread

Linking farm-scale actions to watershed outcomes – especially river health

Key principle was community ownership of problems and solutions at local levels – direct engagement in planning & works







Many landcare groups now tired, some moribund











through the microscope

- Despite lost momentum (in Australia), we still have the elements of a world-leading policy & practice story
- Landcare experience in The Philippines and elsewhere is highly relevant, and a useful counterpoint to Australia
- New technologies and opportunities offer new possibilities
 - Carbon markets (proceed with caution!)
 - Enviro monitoring much easier & cheaper (citizen science)
 - Social media for local organising and info sharing
- **Landcare can be a community base for environmental governance in red gum country, and beyond!**