



Resilience

Contribution to more 'dynamic' farm economics?

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Overview


- What is resilience?
 - ▶ Different conceptualisations
 - ▶ Why is it gaining prominence?
- Social-ecological resilience
 - ▶ Adaptive cycle and panarchy
 - ▶ Persistence, adaptation, transformation
 - ▶ Resilience as attribute and/or process?
- Implications for (farm) management

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What is ,resilience'? (1)

- Dictionary:
 - ▶ Ability to recover, ability to return to the original state
- Psychology:
 - ▶ Keep your cool despite setbacks, not be overwhelmed
- Engineering, ecology, disaster recovery, policy:
 - ▶ Return to 'normal', esp. in face of climate change
- Focus on:
 - ▶ Time to return to 'normal'
 - ▶ Amplitude of shock that can be dealt with




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What is ,resilience'? (2)


- Social-ecological resilience (Holling, Folke, ...)
 - ▶ 'Command and control' leads to rigidity and collapse
 - ▶ Ability of a system to absorb change and still persist
 - ▶ Emphasis on unpredictability and change
- Evolutionary resilience (Davoudi, Simmie, ...)
 - ▶ Persistence (robustness)
 - ▶ Adaptability (flexibility)
 - ▶ Transformability (innovation)
 - ▶ Preparedness (learning)




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Disciplinary divide...




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Why resilience?

- Paradigm shift?
 - ▶ World is orderly, mechanical, reasonably predictable; change can/needs to be controlled (planning mind-set)
 - ▶ World is chaotic, complex, uncertain, unpredictable; change cannot be predicted, see it as opportunity!
- Increased rate of change
 - ▶ Frequency, amplitude ↗
 - ▶ Predictability ↘
- Need for 'profound' change?

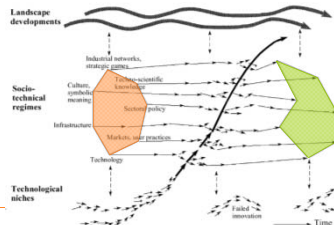


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Business as usual?



- Is maintaining status quo desirable?
 - ▶ Planetary boundaries
 - ▶ Climate change
 - ▶ Western lifestyles...
- Adaptation might not be enough...
 - ▶ Transformation
 - ▶ (Socio-technical) transitions (MLP)



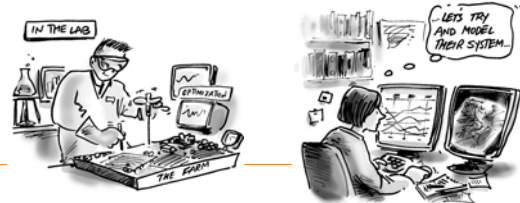
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Geels (2005) Technological Forecasting & Social Change 72: 681-695

Adaptation



- Incremental change
 - ▶ Slight adjustment, but no fundamental questioning of status quo
 - ▶ Usually reinforces existing structures (bureaucracy)
 - ▶ Often localised, 'band aid' solutions



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Transformation



- Cross a threshold into a new dev. trajectory
- Radical change
 - ▶ Systemic change: whole system is affected (but some subsystems more than others)
- Aim to maintain function (e.g. health/wellbeing)
 - ▶ But through a different approach/system
 - ▶ Different structures (e.g. bureaucracy, institutions)
 - ▶ Different regime (policies, values, research paradigms, user practices, ...)



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Social-ecological resilience



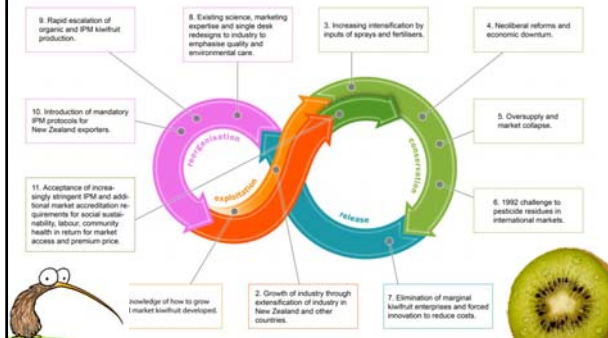
„The capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure and feedbacks, and therefore identity, that is the capacity to change in order to maintain the same identity“

Folke et al. (2010) Ecology and Society 15(4)
Holling and Meffe (1996) Conservation Biology 10(2): 328-337

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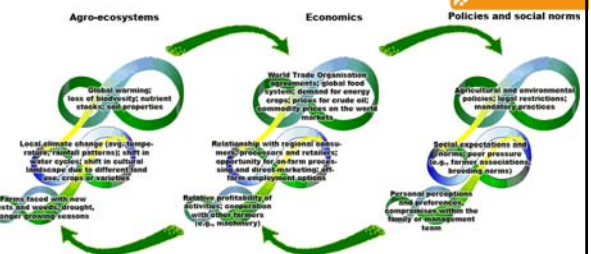
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Adaptive cycle



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Panarchy and farms



Changes occur in different domains and at different spatial scales within each domain... all of which interact, leading to unpredictability!

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Example: agricultural policy



- In the 1950s-1980s: 'the glorious 30'
 - ▶ Post-WWII economic expansion
 - ▶ Strong government regulation of markets: high, stable prices; control of imports; subsidies for export
 - ▶ Very successful: high productivity
 - ▶ Downside: farm size; environ. impact; over-production
- Since 1990s: 'change is the only constant'
 - ▶ Fall of 'Iron Curtain' in 1989; GATT Uruguay Round
 - ▶ EU-accession in 1995; new CAP in 2000
 - ▶ 2003 'mid-term review' → CAP reform

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Impact on farm management



- During the 'glorious 30'
 - ▶ Can plan and invest: stable policy, predictable prices
 - ▶ Focus on optimising production systems: increase produced quant./qual., reduce cost of production
 - ▶ Context stable = Focus on-farm; on 'doing things right'
- Since the 1990s
 - ▶ Unpredictable change requires flexibility, modularity
 - ▶ Focus on building up buffers and adaptability
 - ▶ Co-evolution: recognize emergent trends, Focus on 'doing the right things' (context dependent!)

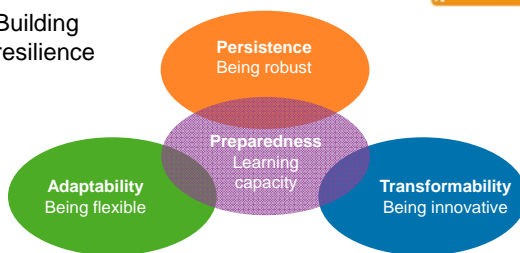
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Four-dimensional framework



Building resilience



Davidoff, S. (2012). Planning Theory and Practice 13(2):299-307
Davidoff, Brooks, Mahmood (2013). Planning Practice and Research

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Managing for resilience (1)



- Preserve the ability to adapt to change
 - ▶ Not about conserving the elements
 - ▶ Not about preserving current function / structure / feedback: risk of lock-in: rigidity on the long term
- Change in system components
 - ▶ Recombination (modularity!)
- Change in (distribution of) function(s)
 - ▶ E.g. food production vs. recreation/care



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Managing for resilience (2)



- Build resources
 - ▶ Build buffers of economic, social, natural 'capital'
 - ▶ Maintain redundancy: unused resources that can be mobilized quickly (avoid the 'efficiency trap')
- Be diverse
 - ▶ Different activities (crops, energy, off-farm job)
- Experiment (tinkering, bricolage, trial-and-error)
 - ▶ Be bold and try out new (wild) ideas on limited scale
 - ▶ Be ready to scale-up ('window of opportunity')
- Challenge: limited time/energy; trade-offs

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Managing for resilience (3)



- Farmers need to do both:
 - ▶ Ensure competitiveness/production efficiency to secure (econ.) viability on short-term
 - ▶ Ensure flexibility to secure adaptability on medium-term and transformability on long-term
- Trade-offs
 - ▶ Specialisation vs. diversification
 - ▶ Invest time in production vs. in networking
 - ▶ Learning and change vs. 'relax and cruise along'
 - ▶ 'Right' depends on stage of 'adaptive cycle'

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Resilience: research challenge



- Focus on relationship between syst. components
 - ▶ Not on individual components
- Focus on ability or process
 - ▶ Not on stability or outcome
- Focus on change dynamics
 - ▶ Not on how things are at one point in time
 - ▶ Different types of change: continuous stress vs. abrupt shock; internal vs. external source of change
 - ▶ Accept the unpredictability of change

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Research what?



- Resilience as a property of the system
 - ▶ Empirically attractive: identify characteristics / attributes; what is: **'being'**
 - ▶ Then 'measure' factors that affect resilience:
 - Diversity (elements, links, functions)
 - Modularity (how elements are linked: tight or loose)
 - Learning: tightness of feedback loops; networks
- Resilience as a process
 - ▶ Adaptive capacity, linking, recognizing opportunities
 - ▶ Emergent, **'becoming'**

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Ability to change



- Resources (what you have)
 - ▶ On-farm: econ. capital, technology, information and knowledge
 - ▶ Context: infrastructure, institutions
- Ability to use these resources
 - ▶ Social capital, social learning
 - ▶ Context: policy, bureaucracy, norms, values, structures, power relations
- This is why processes are so important!
 - ▶ Only reveal themselves: emergent, not pre-defined!

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Importance of process - Metaphors



- Chess: interactive game
 - ▶ But: all have the same pieces to start with
 - ▶ Winning depends on how you play and how you respond to how your partner plays
- Card games: better metaphor?
 - ▶ Not all get the same cards (better/worse hands)
 - ▶ May be more than 2 players (diversity increases)
 - ▶ Winning also depends on: (1) what cards you get; (2) how you play, (3) how others play their cards
- Either way: pre-defined strategy is not helpful!

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Thank you!



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