



University of Sussex
SPRU – Science & Technology Policy Research



Resilience in Rural Development

some key concepts and challenges in policies for sustainability

Andy Stirling

presentation to conference of the TERESA Project on
'Rural Potentials for Rural Development', Vienna, 27th November 2008



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Resilience in Rural Development

some key concepts and challenges in policies for sustainability

- from **sustainability** to 'resilience'
- the **objects** of resilience – key qualities
- the **dynamics** of resilience – key properties
- distinguishing different **strategies**
- a close look at **diversification**
- **towards rural resilience**

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Resilience and Sustainability

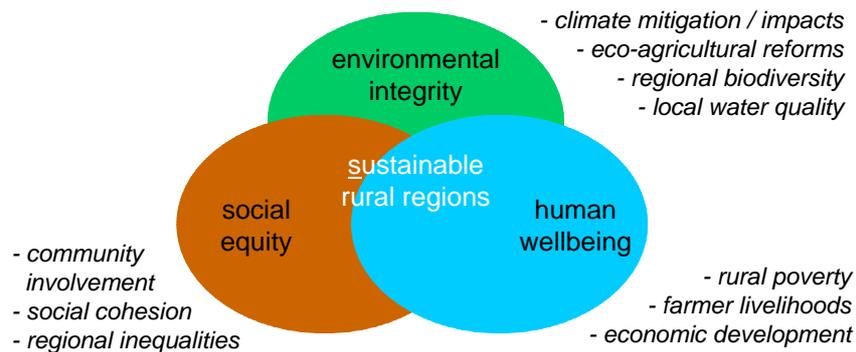
'Sustainability' = maintenance of something indefinitely over time

'Resilience' = maintenance through shocks and stresses

These are just adjectives – what is the noun? What is maintained?

After Brundtland (1987); Rio (1992), Millenium Development Goals (2001)

The objects of "Sustainability" policy are **specific qualities** addressing:



Rhetorics of Resilience

Non-specific 'resilience', like 'sustainability', is open to expediency

eg: UK DEFRA sustainability indicators include pesticide use
all agricultural activities referred to as 'sustainable farming'
thus: support for pesticide programmes is 'sustainable'
pesticide support at DEFRA agencies is 'sustainable science'

Applies equally "what is the object of resilience in rural communities?"

Ambiguous usage can mean sustaining unsustainable practices!

eg: 'resilient' intensive agriculture challenges sustainable biodiversity
'resilient' obsolete industries challenge regional sustainability
'resilient' polluting infrastructures reduce local ecological sustainability

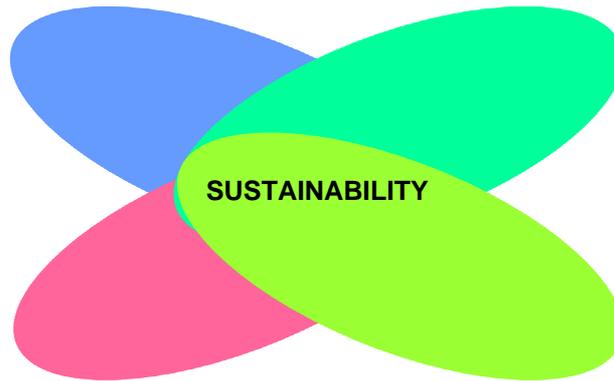
Need to be clear exactly: "what is sustained?"; "what is resilient?"

From Sustainability to Resilience

Sustainability and resilience are not just about static qualities

(whether environmental, economic or social)

'Maintaining' qualities involves **dynamics** with time and action

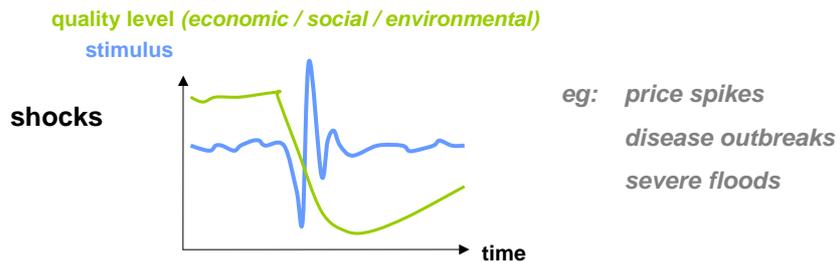


four necessary and sufficient conditions for sustainable dynamics

From Sustainability to Resilience

Actions to promote 'sustainability' involve assumptions about:

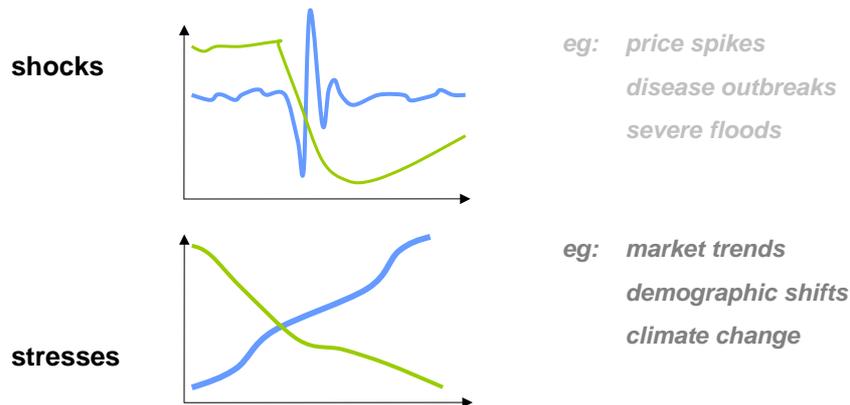
- temporality of change –do changes manifest as:



From Sustainability to Resilience

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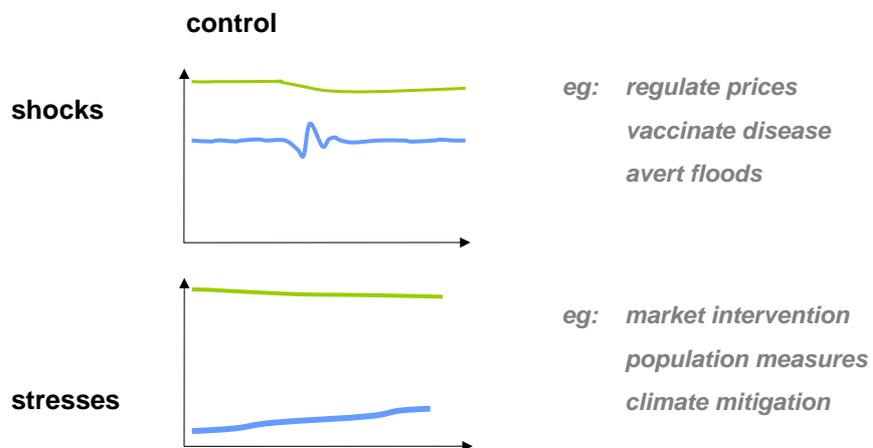
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From Sustainability to Resilience

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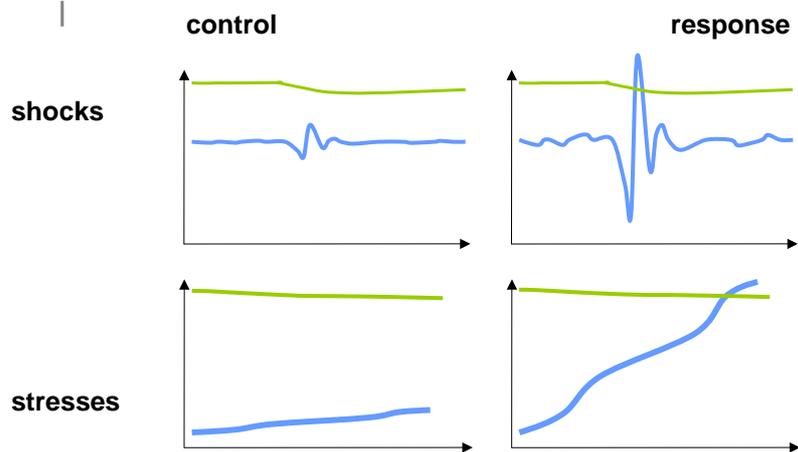
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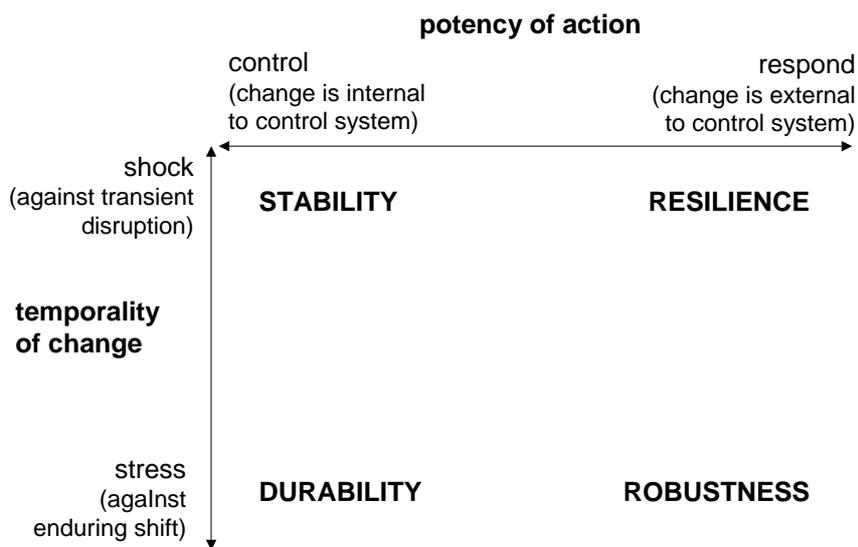
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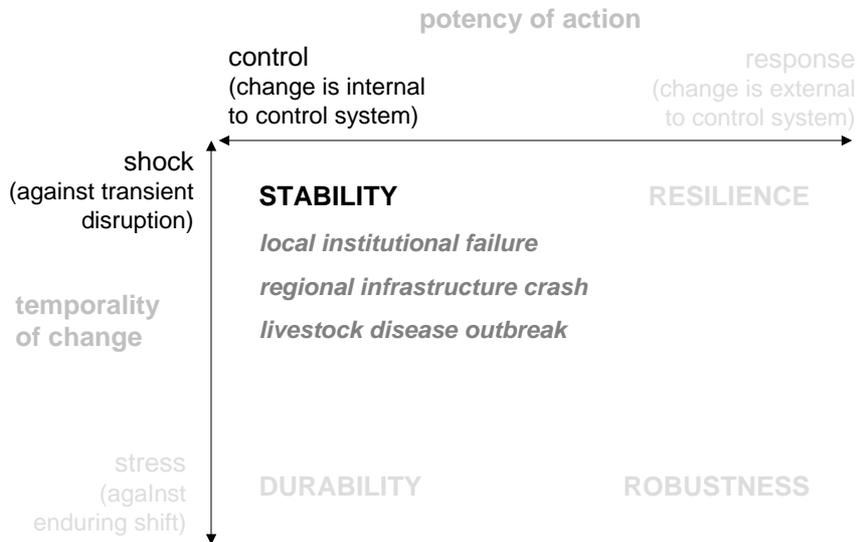
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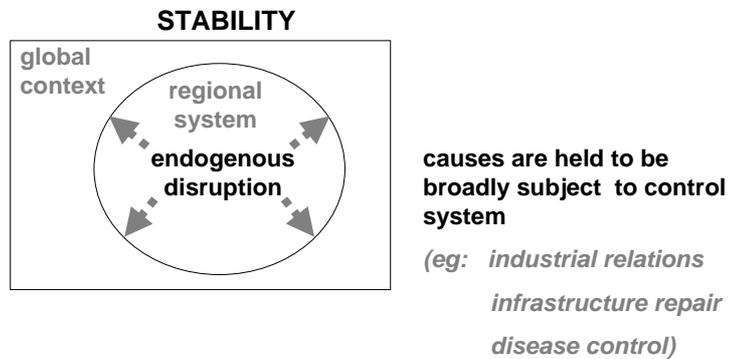
Dynamic Sub-properties of Sustainability



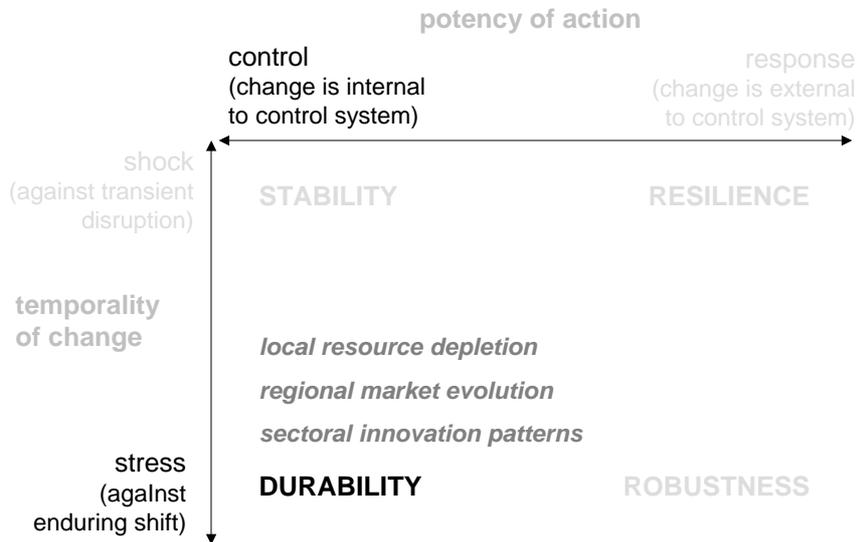
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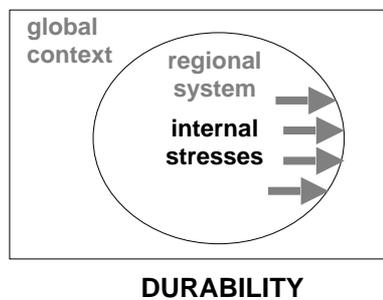
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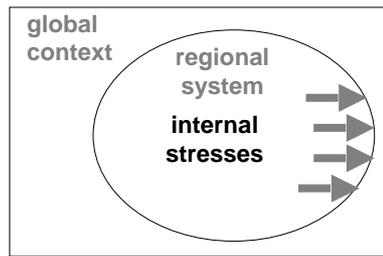
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Dynamic Sub-properties of Sustainability



DURABILITY

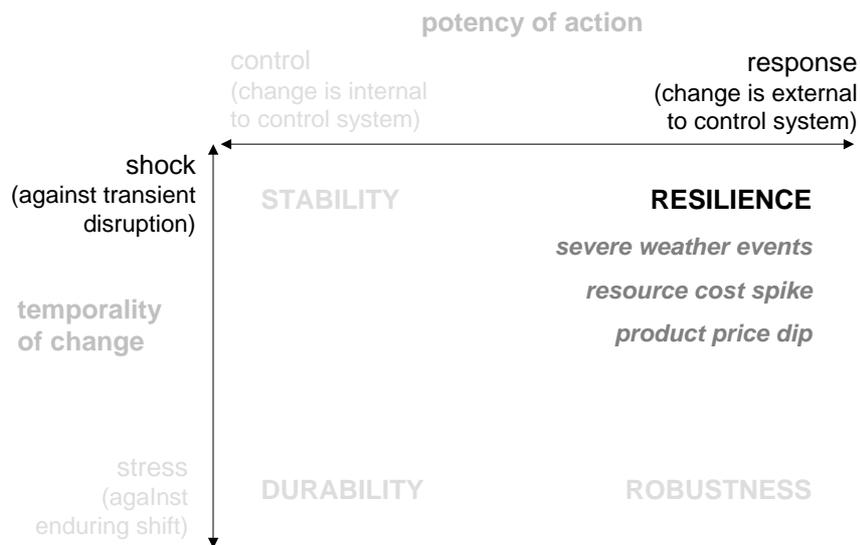
causes are held to be broadly
subject to control system

(eg: *resource substitution*

market regulation

innovation incentives)

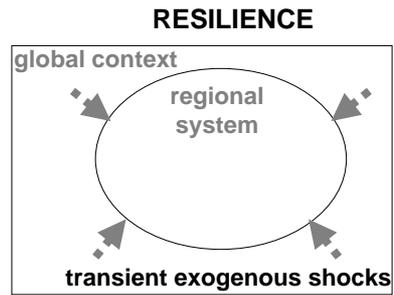
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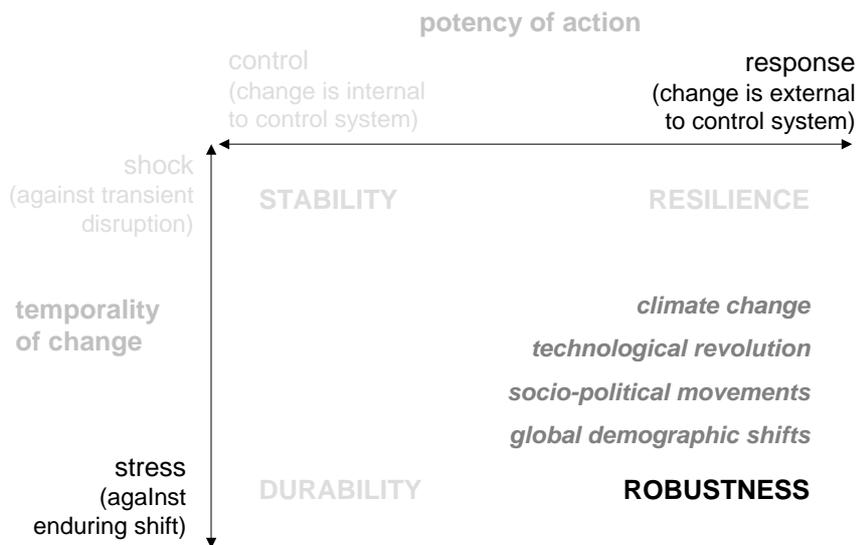
Dynamic Sub-properties of Sustainability

causes are held to be beyond control system, so subject only to response

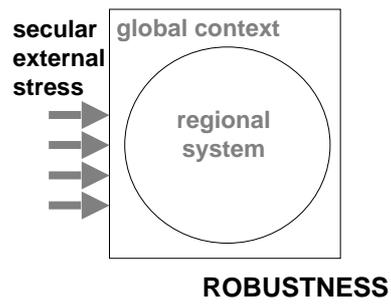
(eg: *flexible infrastructures*
redundant capacity
supply chain flexibility)



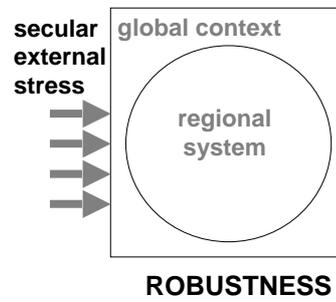
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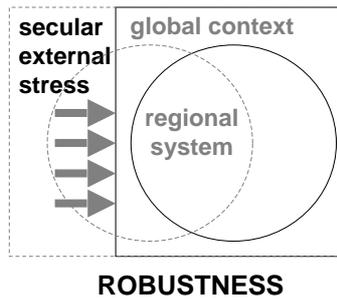
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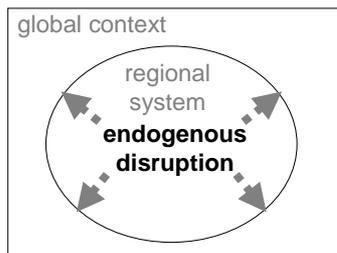
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(eg: *climate adaptation*
adaptive infrastructures
transiton management
sectoral diversification)

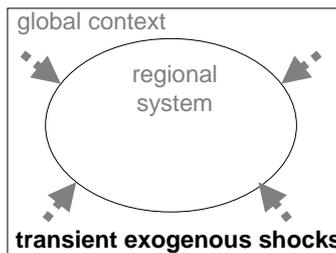


Dynamic Sub-properties of Sustainability

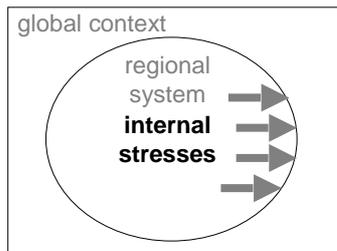
STABILITY



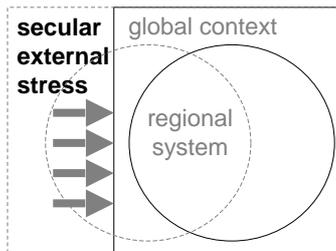
RESILIENCE



DURABILITY

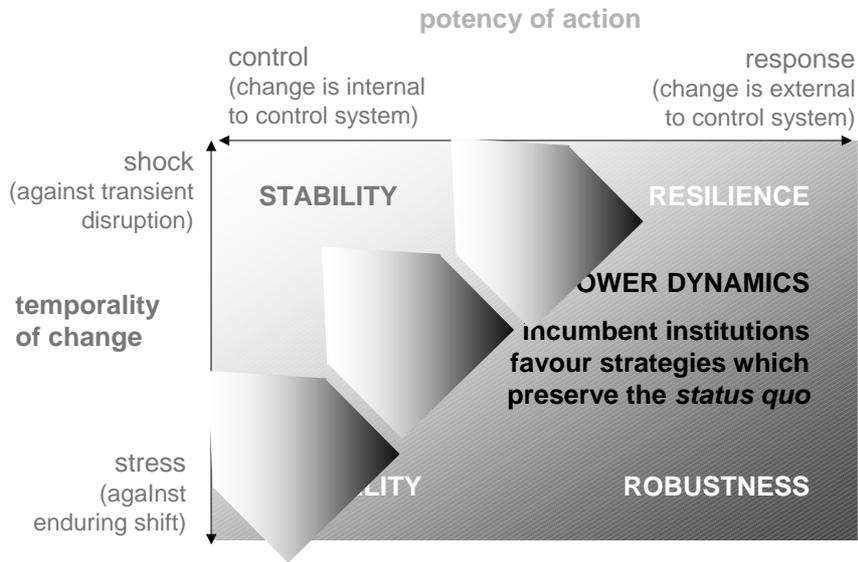


ROBUSTNESS



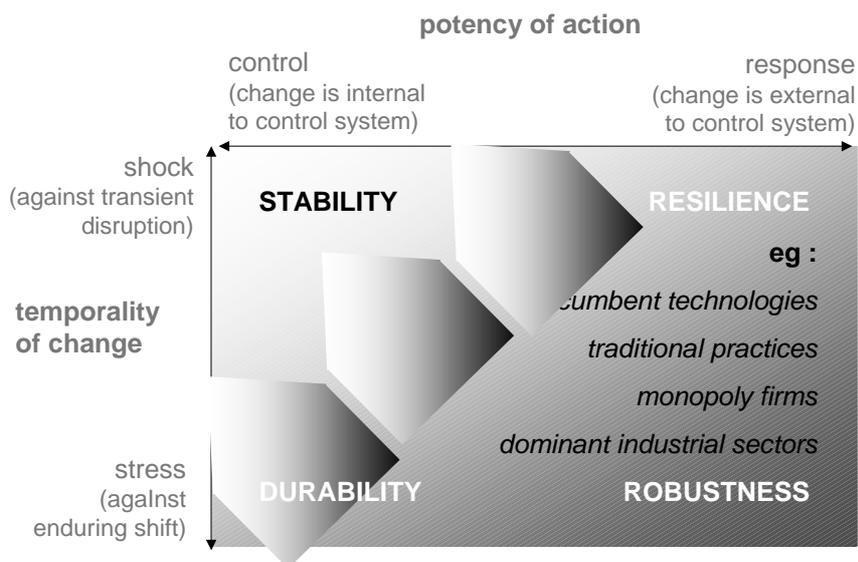
The Dynamics of Power

Need to be recognise politics of representation



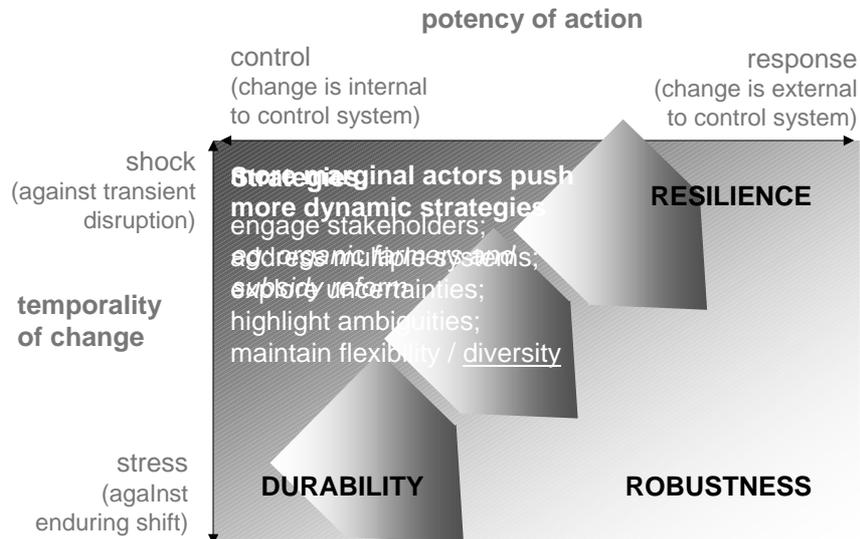
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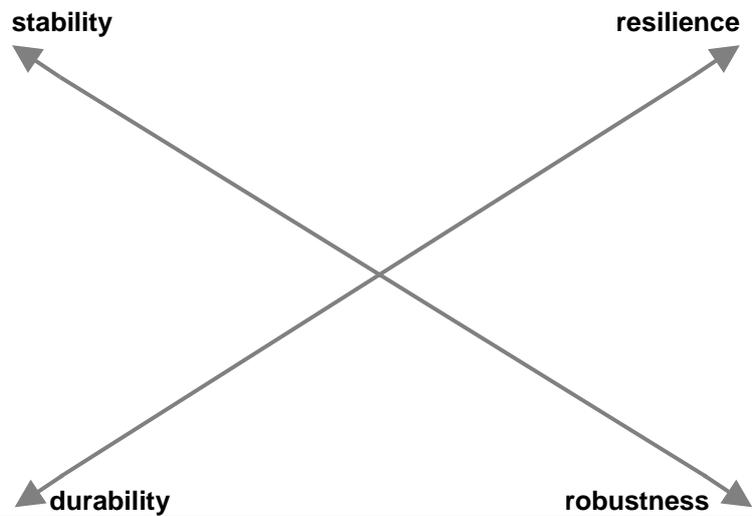
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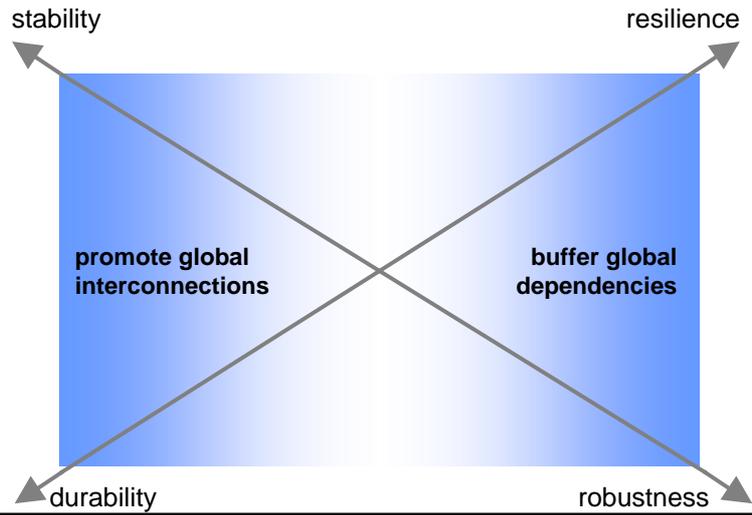
Strategic Implications

Different rural strategies promote different qualities



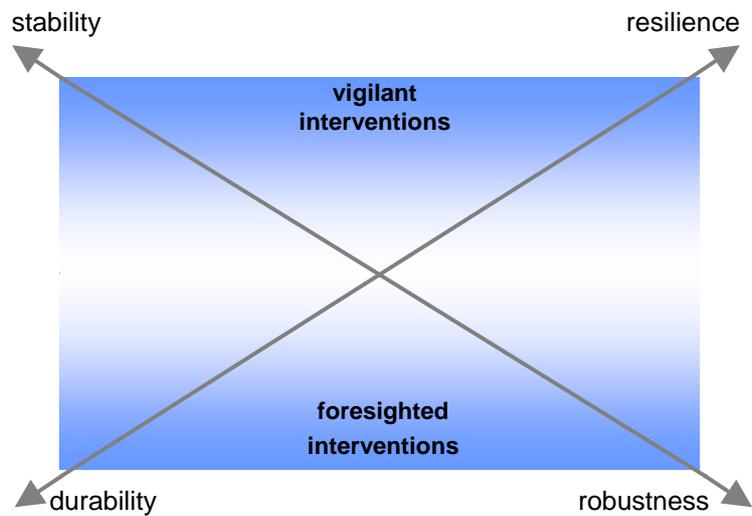
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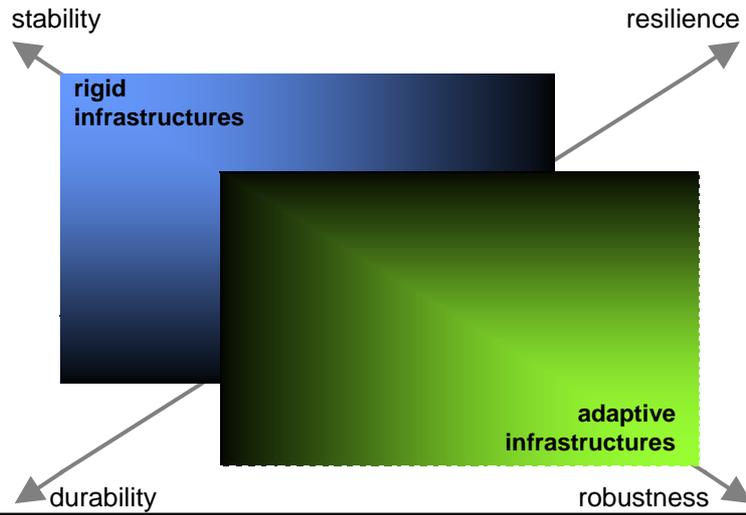
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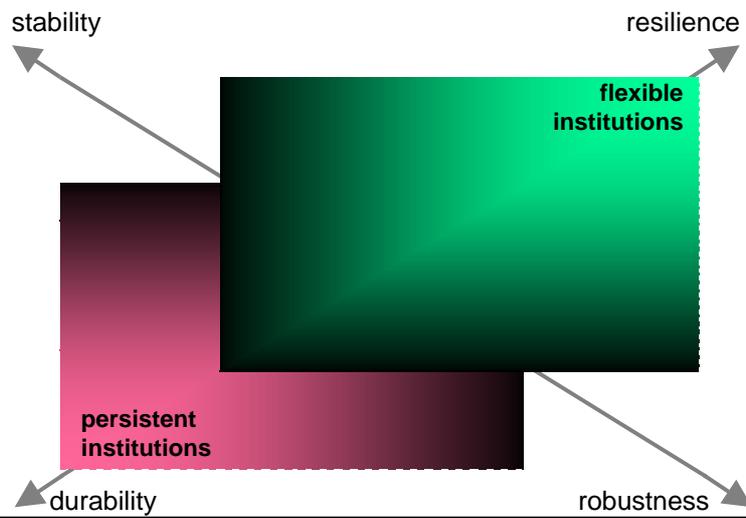
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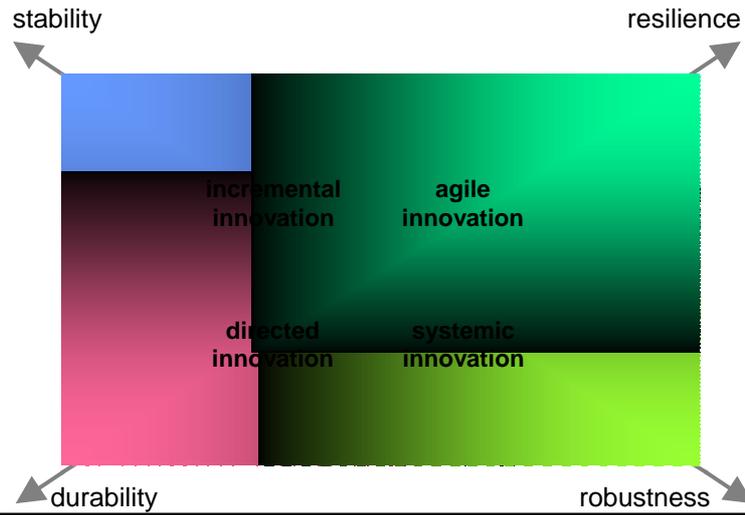
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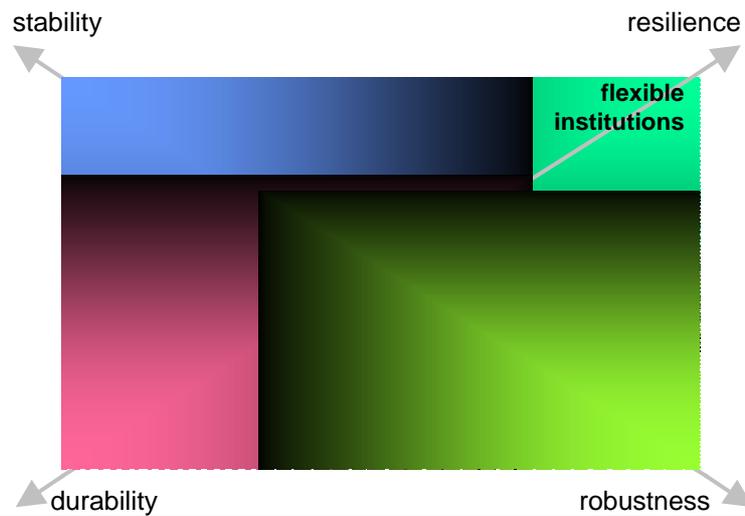
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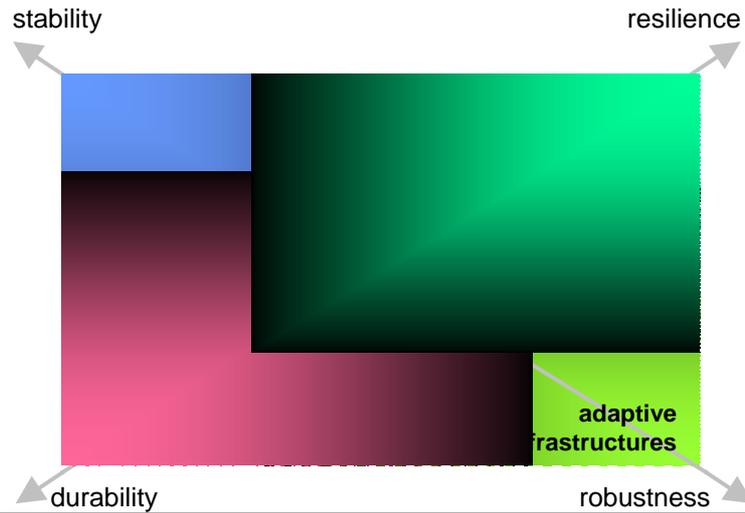
Only some of these promote **resilience** in the strict sense



Strategic Implications

Only some of these promote resilience in the strict sense

Others promote **robustness** or **durability**

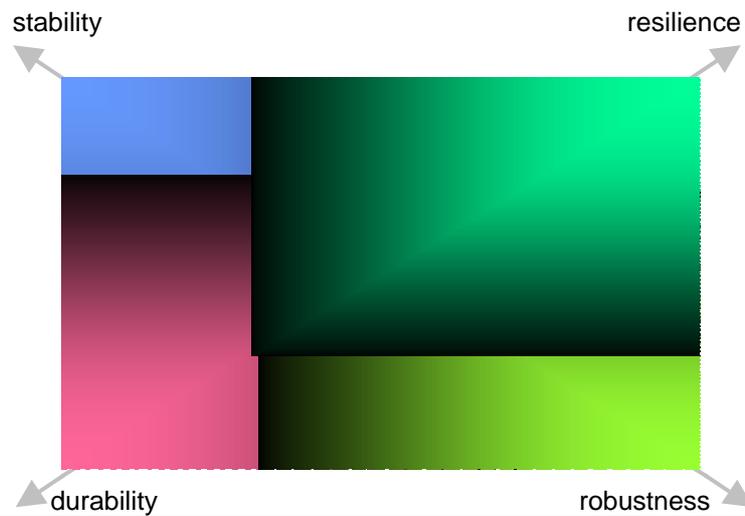


Strategic Implications

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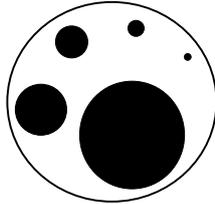
Others promote **robustness** or **durability**

Some are more generally effective in promoting **all properties**



Dimensions of Rural Diversity

diversity can be increased
in three different ways

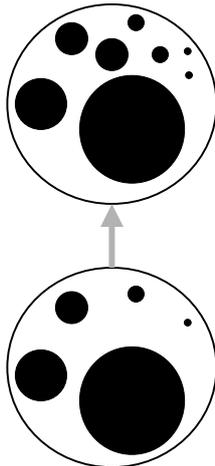


employment modes / commercial sectors /
supply chain / primary commodities / strategic options
comprising mix of 'options'

eg: tourism, dairy, cereals, homeworking, commuting

Dimensions of Rural Diversity

increasing
diversity ↑



variety

number of elements in mix
eg: more cereal crop varieties

Dimensions of Rural Diversity

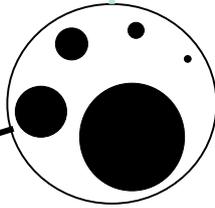
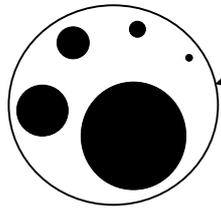
increasing
diversity



variety
number of elements in mix



balance
evenness in contributions
eg: crop prioritisation



Dimensions of Rural Diversity

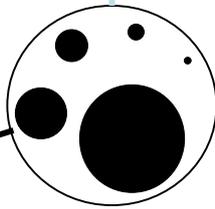
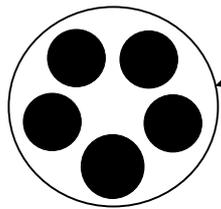
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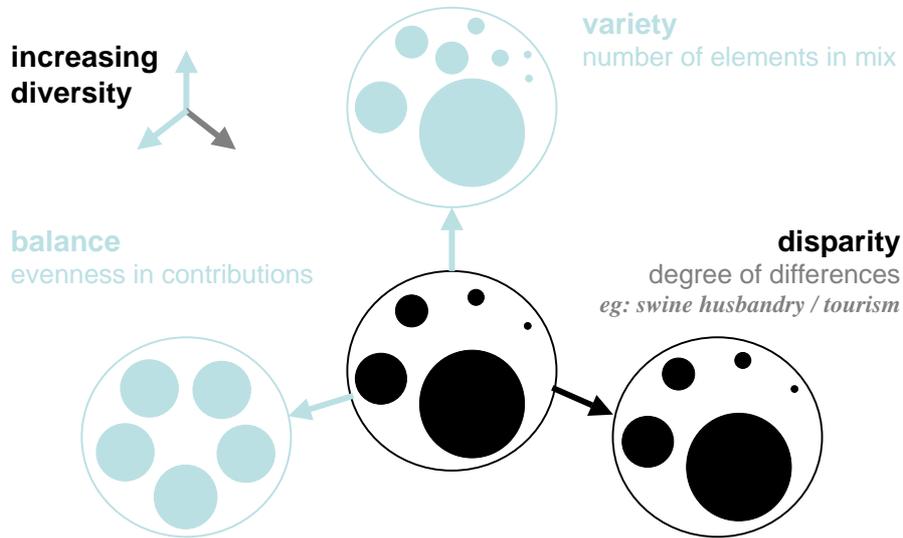
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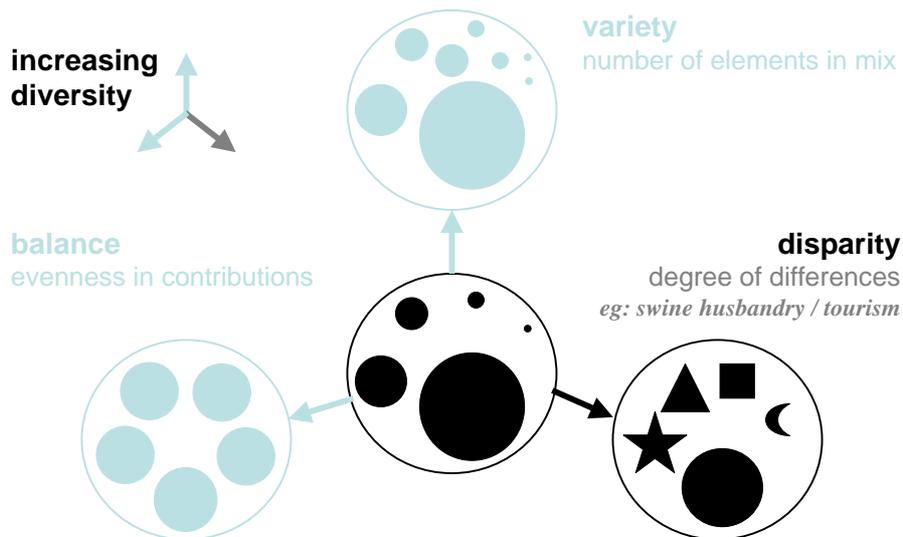
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Dimensions of Rural Diversity



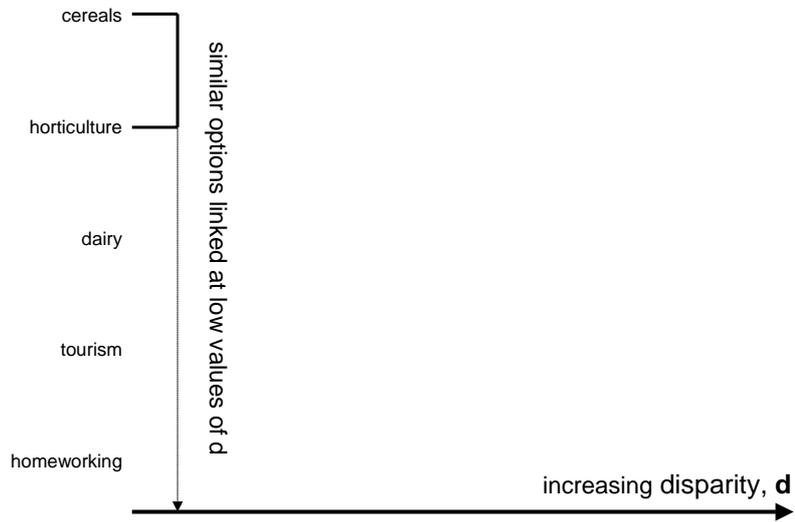
Dimensions of Rural Diversity



All three dimensions are necessary for rural diversity

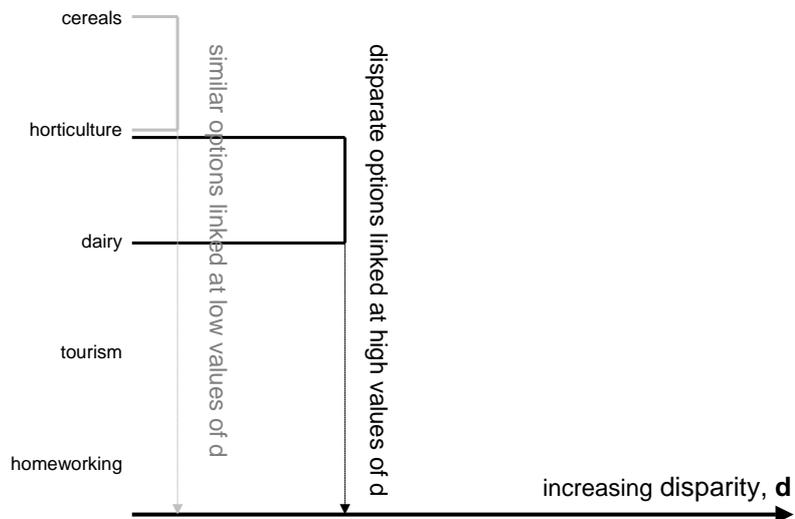
The Importance of Disparity

Detailed multicriteria diversity analysis can reveal structure of rural diversity



The Importance of Disparity

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Towards Rural Resilience

start with sustainability

objects of resilience are functional qualities, not structures
environmental integrity, social equity, human wellbeing
(not specific agricultural strategies, institutions or sectors)

multiplicity of properties

resilience just one dynamic sub-property of sustainability
different actions (control / response) and timings (shock / stress)
distinguish: **stability, durability, resilience, robustness**

extend scope of strategies

certain strategies promote some properties and not others
eg: connect / insulate; rigid / supple; react / foresight
powerful incumbents emphasise stability-strategies

importance of diversity

equally addresses all sub-properties of sustainability
but crucial to address three aspects: variety, balance, disparity
engage rural stakeholders to define key levels / dimensions

TERESA Project: modelling these concepts in new ways to develop new tools

