

# Cultivating innovation in our regions

*A guide to  
ecosystems, complexity & resilience*



- Regional innovation systems
- Complexity
- Resilience



# Regional innovation ecosystems



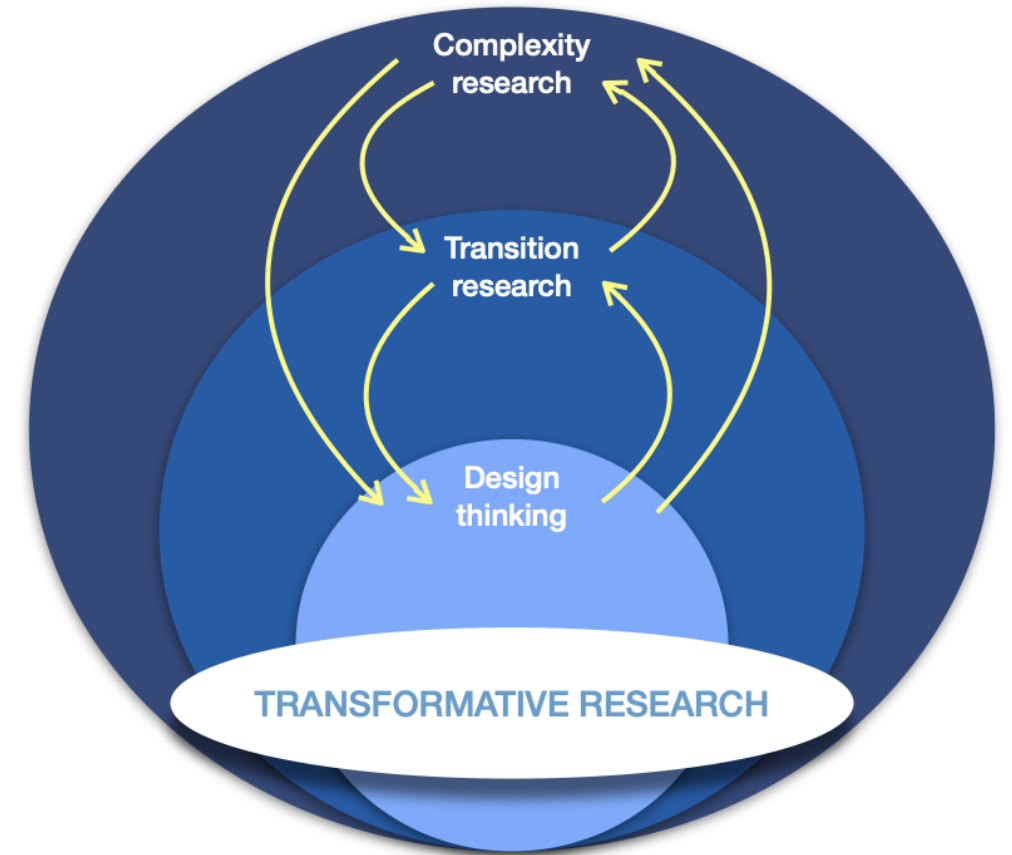
## Regional innovation ecosystems

*...are not mechanical systems but a dynamic, living environment*



## Regional innovation ecosystems

*...are changing because people interact & respond to everything*

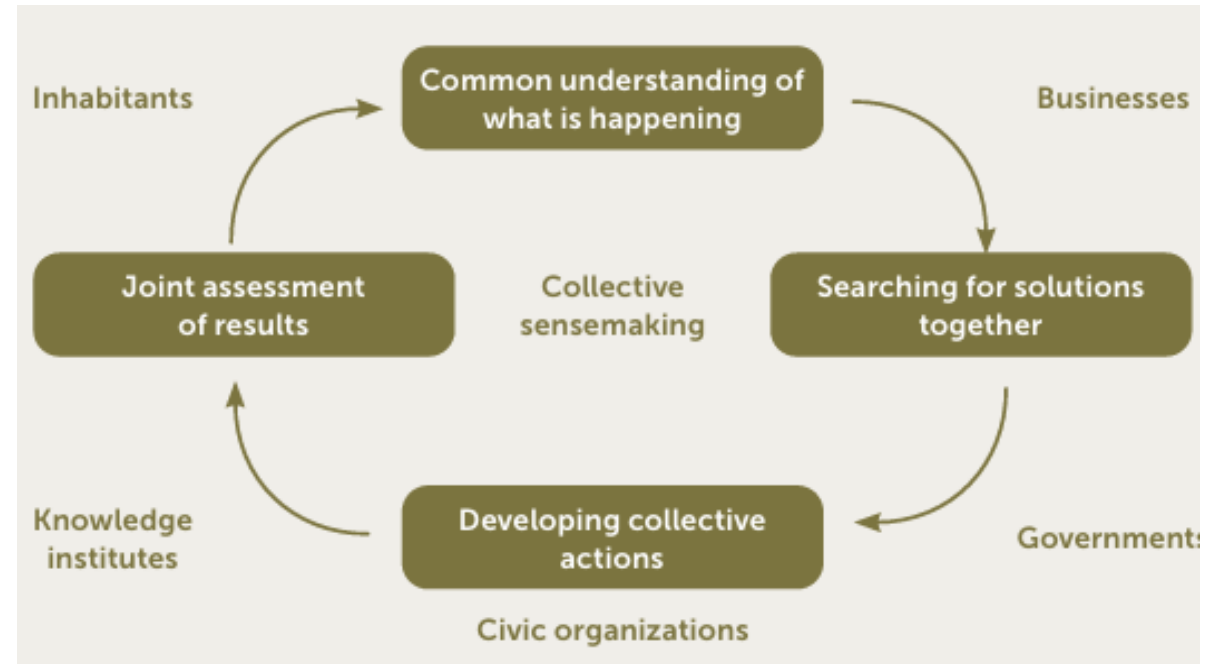


## Regional innovation ecosystems

*How do we get everyone on board to work on a common, sustainable future?*

*Invite everyone!*

The multi-helix  
*A quintuple helix*



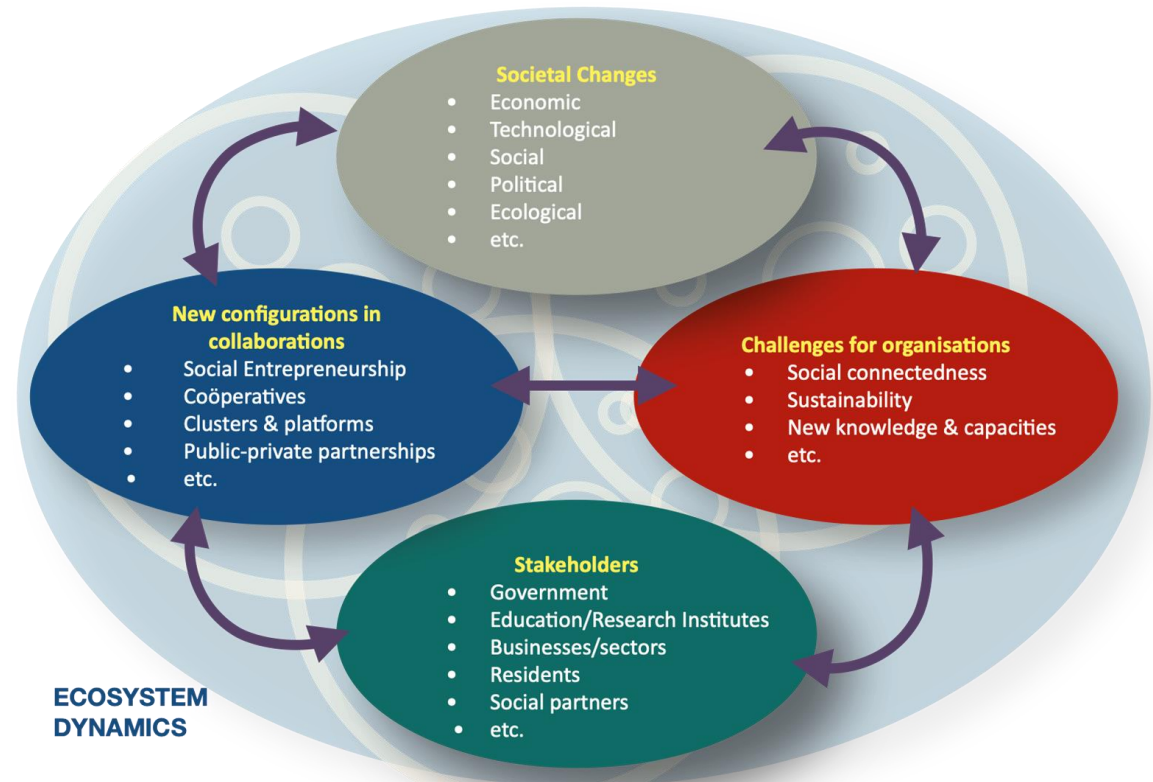
Manickam, A., van Berkel, K., & Foorthuis, W. (2023). *Regions taking the lead*. Marian van Os Centre of Expertise Ondernemen, Hanzehogeschool Groningen.

# Regional innovation ecosystems

*When everyone works together on common (societal) challenges, new forms of collaborations happen, organizations also change...*

*...the ecosystem starts to change!*

*Ecosystems at work*

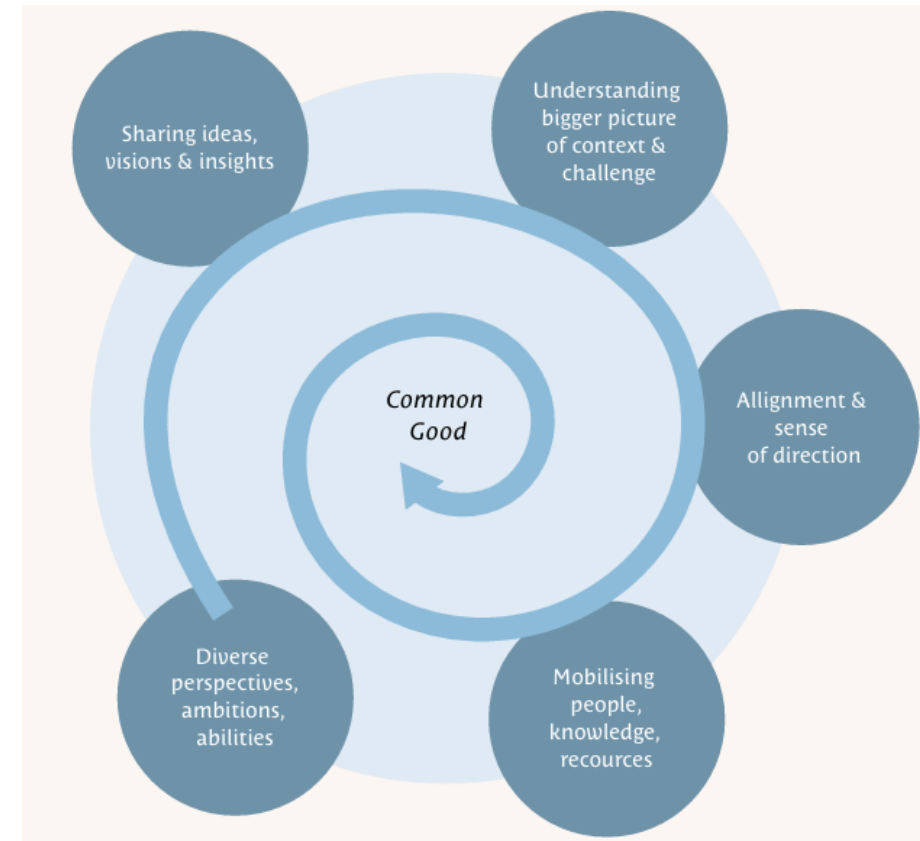




## Regional innovation ecosystems

*solving common societal challenges*

*... involves a process of collective sensemaking*

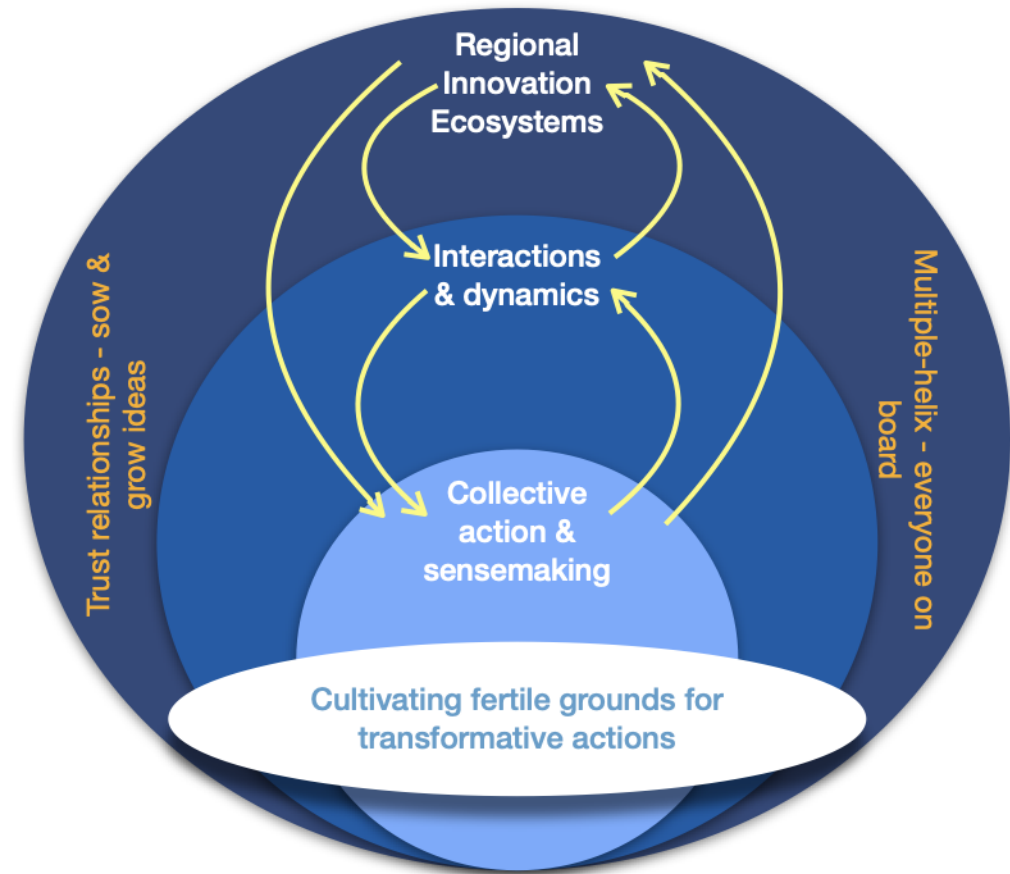


Manickam, A., & Van Berkel, K. (2025). *Reclaiming common good: A complex adaptive systems approach for inclusive and sustainable futures*. International Business School & Centre of Expertise Entrepreneurship, Hanzehogeschool Groningen.



# Regional innovation ecosystems

*solving common societal challenges*





Embracing  
complexity

## Embracing complexity

*Why? Simple solutions fail when dealing with societal challenges*

### Complicated vs. complex

- a rocket to the moon (need specialists!)
- a lagging region is complex (need multiple actors, ideas & approaches)

### Macro & micro are linked

- global crises plays out in the region & *vice versa*

### Interconnectedness

- a change in one place affects everything else

### Transition is difficult

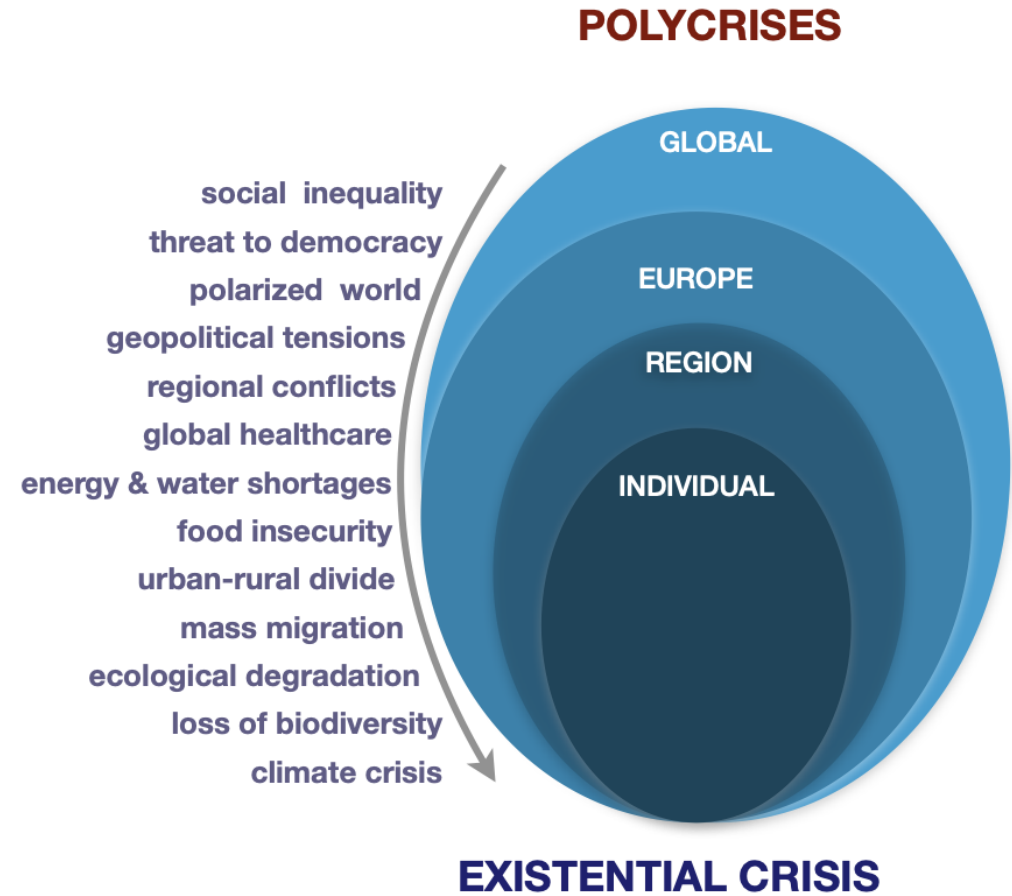
- every partner must change to '*outside-inside*' thinking





# Embracing complexity

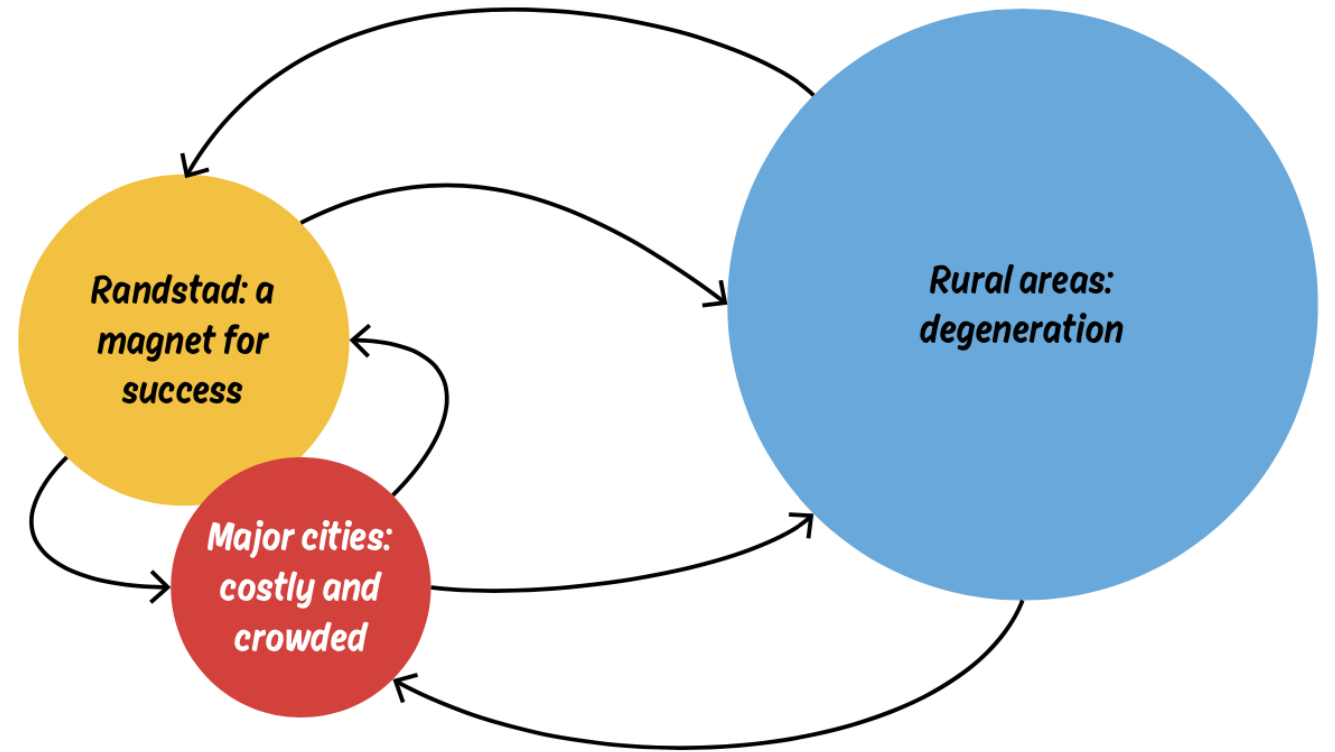
*Interconnected crises at all levels*



Manickam, A., & Van Berkel, K. (2025). *Reclaiming common good: A complex adaptive systems approach for inclusive and sustainable futures*. International Business School & Centre of Expertise Entrepreneurship, Hanzehogeschool Groningen.

# Embracing complexity

## *Interconnected systems*

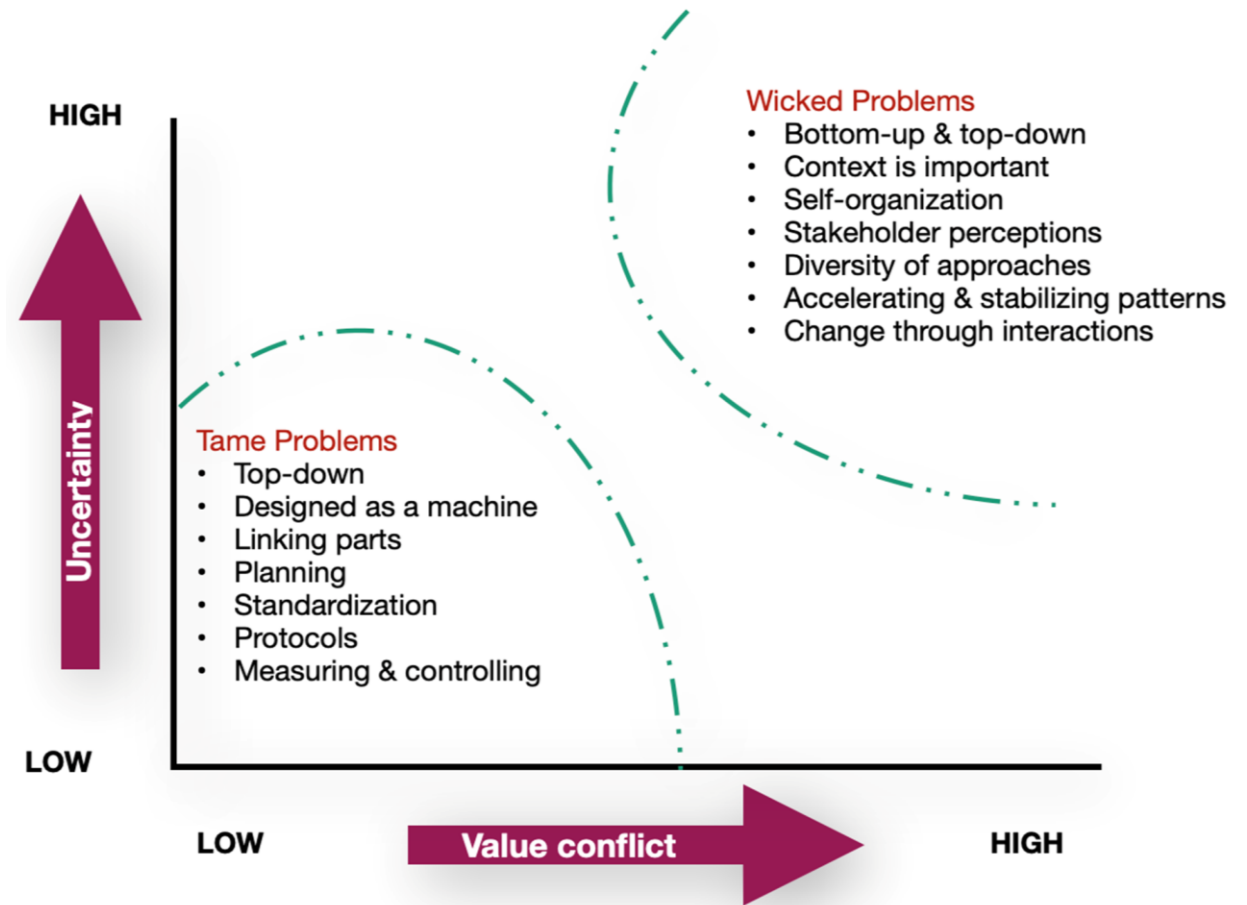


Van Berkel, K., & Manickam, A. (2020). *Wicked world: Complex challenges and systems innovation* (International edition). Noordhoff Uitgevers.



# Embracing complexity

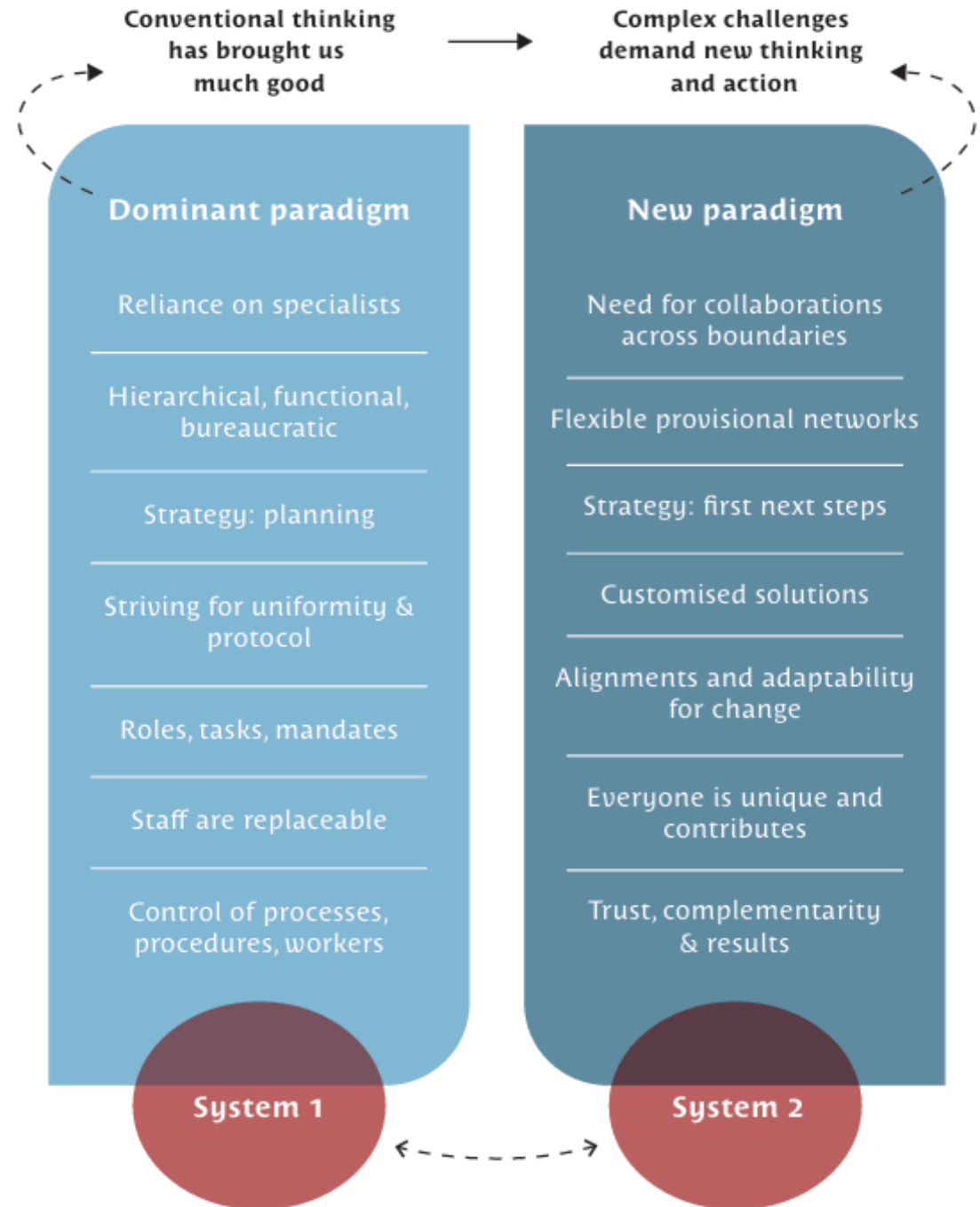
*Different problem,  
different approach!*





# Embracing complexity

*Changing mindsets:  
thinking 'outside-in'*



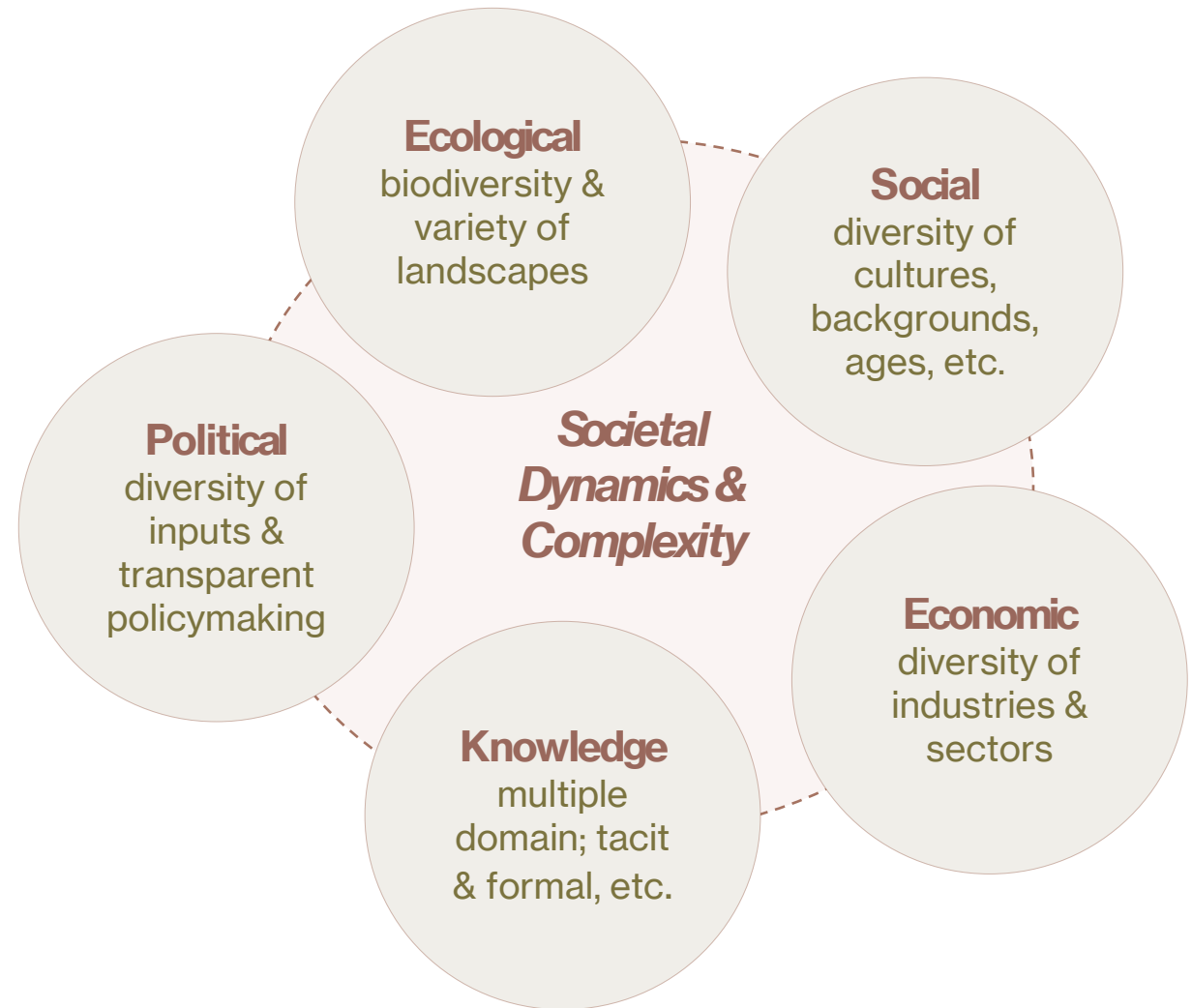


# Building resilience

*bouncing forward, not  
backwards*

# Building resilience

*Diversity is essential*





# Building resilience

## *Adaptive capacity*

- *responsive to challenges*
- *'outside-in' adaptations*
- *investments needed for*
  - *skills, infrastructure & innovation capacities*
  - *flexible, adaptive systems in organizations (System 2)*



## Building resilience

### *Investment in*

- *skills*
- *Infrastructure*
- *innovation*

- Developing human capital (education, training, lifelong learning arrangements)
- Maintaining robust infrastructure (transport, digital, energy)
- Fostering innovation (entrepreneurship, applied & transformative research)
- Equip regions to pivot and recover from disruptions (adaptive governance & leadership)

# Building resilience

## *Adaptive capacity: System 2 supports outside-in' strategies*

### Knowledge institutions in transition

System 1	System 2
Stewards of Knowledge	Engaged university
Hierarchical & discipline-based	Interdisciplinary & intersectoral networks
Focus: knowledge creation/professions	Focus: societal development
Detailed & fixed curriculum	Flexible programmes
Uniform profile of graduates	Unique graduate profiles
Class-based lessons: theory & practice	Practical engagement & focus on applied research, knowledge creation & innovative solutions
Priority: specialized competences	Priority: transversal skills & use of data & technology
Assessment criteria focused on mastery	Assessment focused on effectiveness of interventions

### Business organizations in transition

System 1	System 2
Hierarchical & pyramidal organization	Network organization
Competitive: closed & independent	Collaborative networks: shared, open and interdependent
Focus on profits, growth & speed	Integral (or broader) focus: economic, technological, ecological & sustainable
Focus on shareholders/ profit-driven: win-lose	Collaboration with stakeholders: win/win
Rational/linear strategic & operational planning	Self-organization based on scenarios, goals, rules & boundaries
Striving for uniformity & standardization	Looking for variety that matches changing contexts
Roles, tasks, authorization and accountability	Alignment, coherence & coordination
internal systems	Frame of reference: new developments, changing contexts/landscapes
Control of processes, procedures & workers	Trust, complementarity & results







## Building resilience

*Strong social capital &  
inclusive governance*

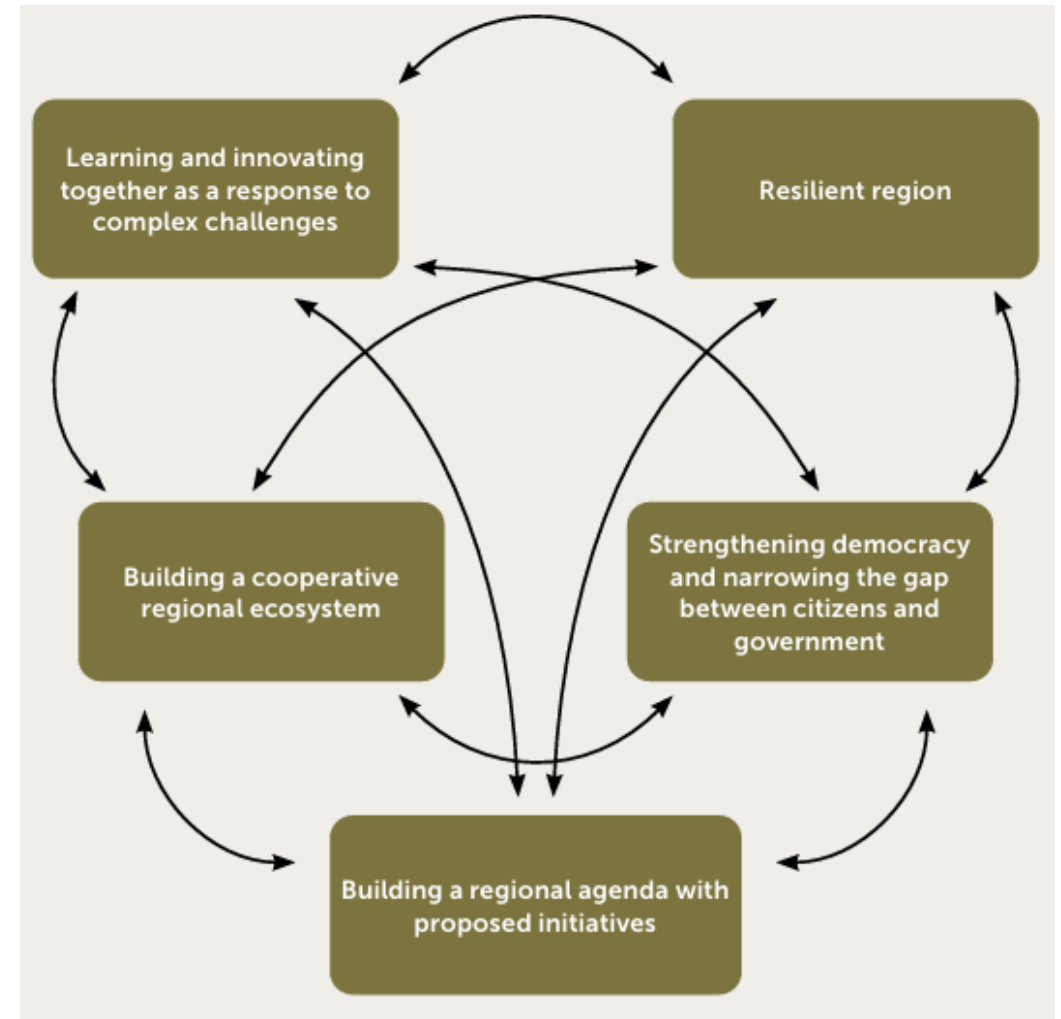
- Nurturing trust
  - *trusted networks & collaboration among local actors enable collective action, rapid response & innovation in the face of challenges*
- Decentralized decision-making & broad participation as key drivers
- Place-based policy shaping

# *Flexible, learning-based*

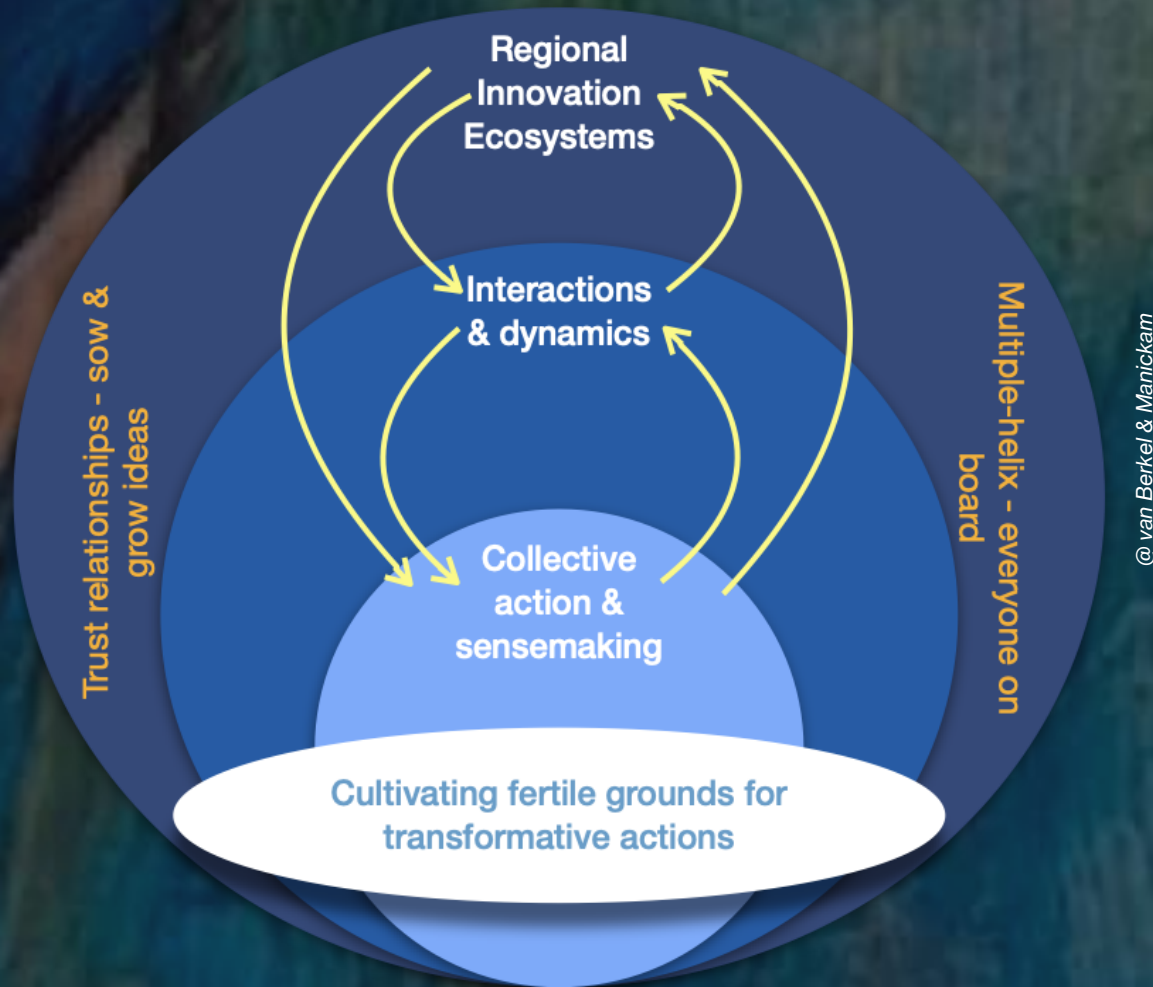
***governance*** is crucial for managing complex, changing environments with

- *diverse stakeholders*
- *continuous adaptation (as norm)*
- *Common good as goal*

## A new regional cohesion



## Cultivating innovation in our regions



- Regional innovation systems - *provides the networks (who)*
- Complexity - *provides the mindset (how)*
- Resilience - *provides the results (why)*



*Example of innovation in regions solving common problem collectively*

A local cooperative of local businesses (ecosystem) notices a drop in soil quality & develops a new composting business (complexity) that keeps money in the town & protects against future fertilizer price hikes (resilience).



# Resources

Manickam, A., & Van Berkel, K. (2025). *Reclaiming common good: A complex adaptive systems approach for inclusive and sustainable futures*. International Business School & Centre of Expertise Entrepreneurship, Hanzehogeschool Groningen.

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An aerial photograph of a tropical coastline. On the left, a dark, rocky shoreline meets the water. A narrow strip of white sandy beach runs along the coast, bordered by a dense line of green vegetation. The water is a vibrant turquoise color, with visible ripples and small waves. In the background, more land is visible, featuring a mix of green trees and some buildings or structures. The overall scene is bright and scenic.

Thank you