

THE ROLE OF INNOVATION AND KNOWLEDGE NETWORKS ON REGIONAL RESILIENCE IN THE PERIPHERAL REGION



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Presentation layout



1

**REGIONAL
RESILIENCE**



2

**INNOVATION &
KNOWLEDGE
NETWORKS**



3

**PERIPHERAL
REGION**
South Africa

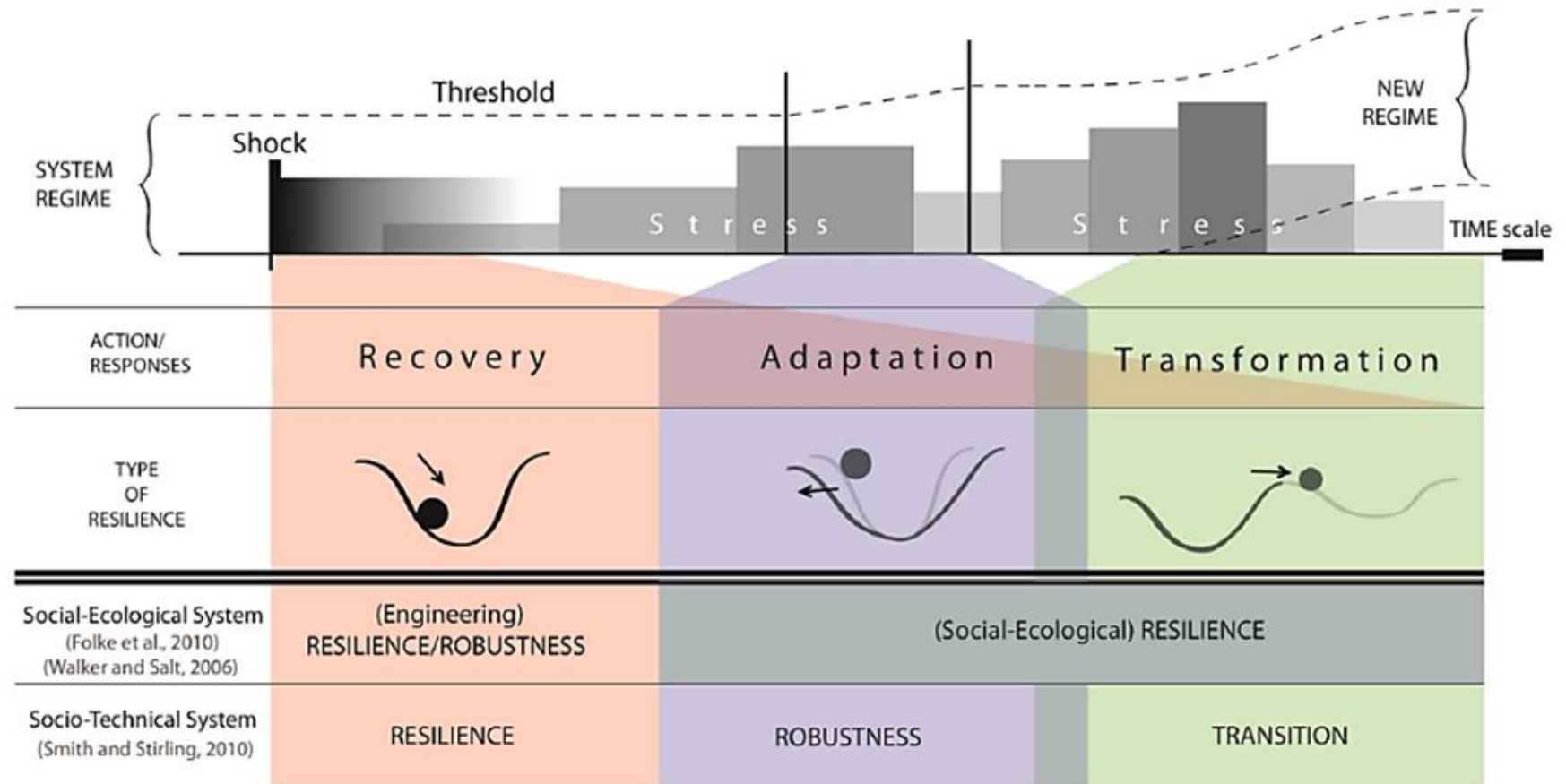
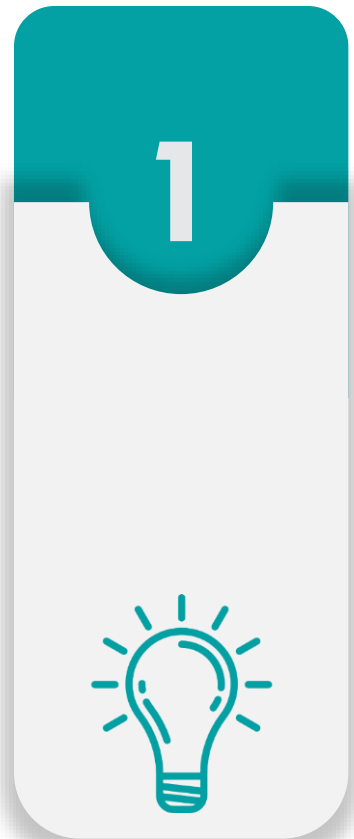


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FINDINGS



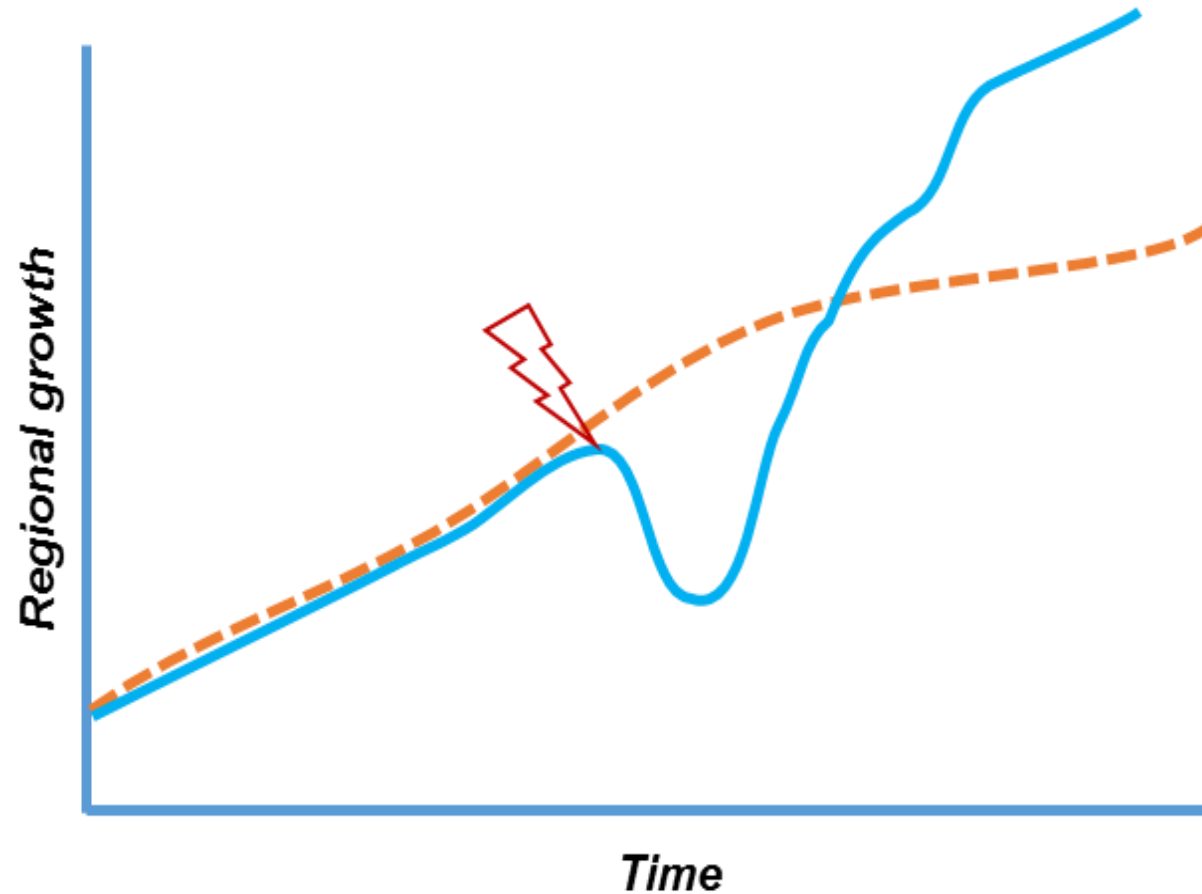
REGIONAL RESILIENCE



Chelleri et. al., (2015)

REGIONAL RESILIENCE

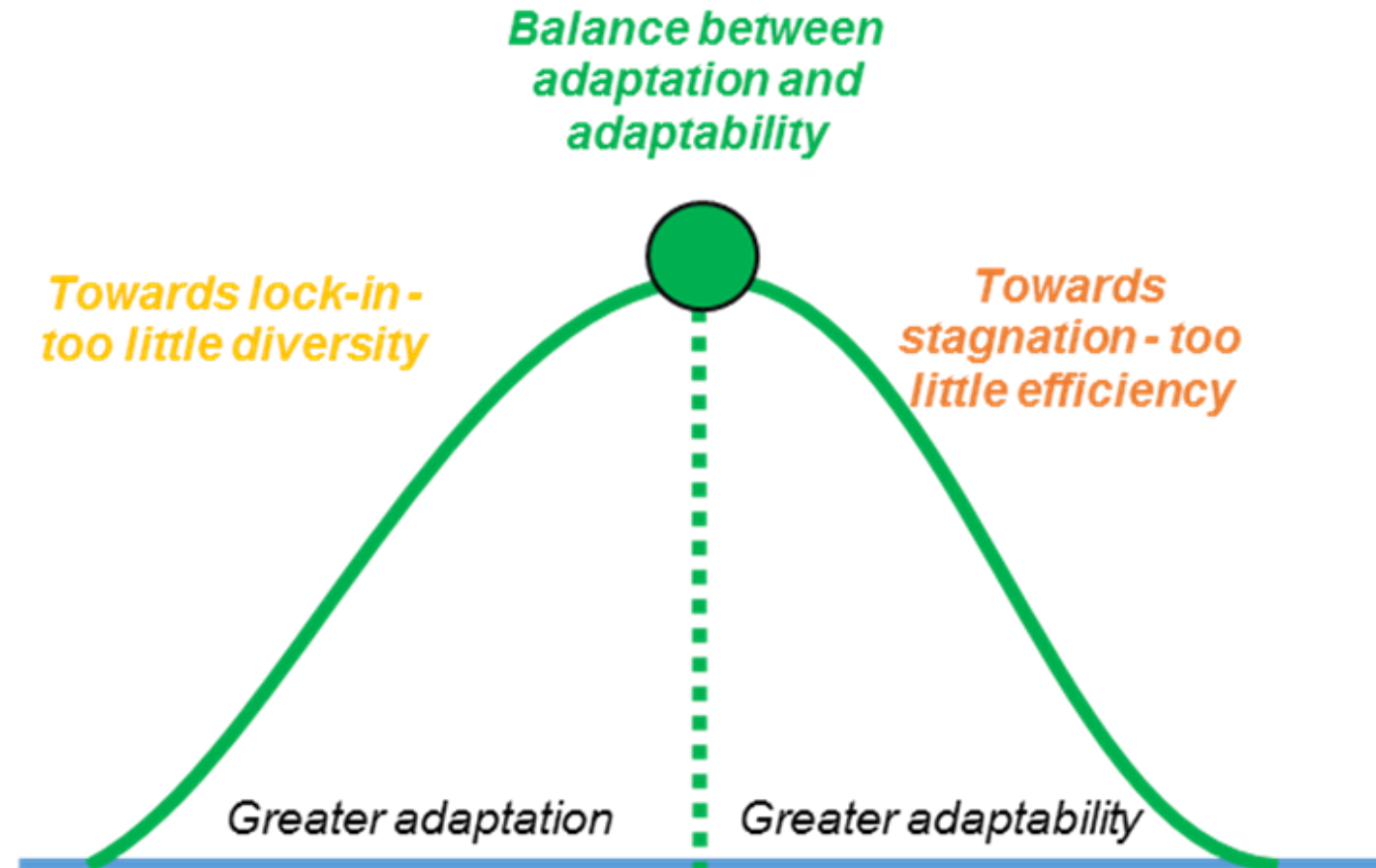
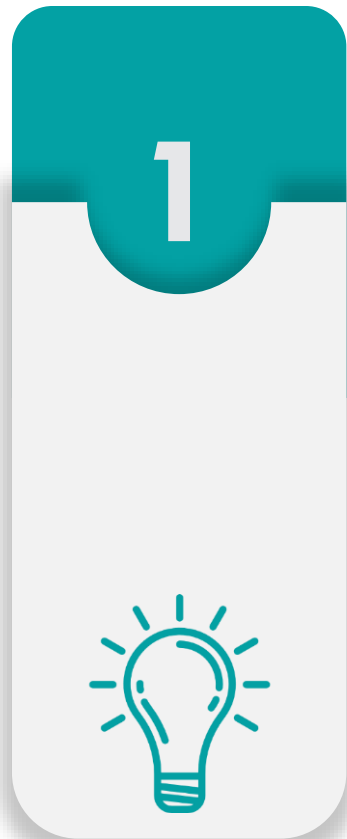
1



*Normal regional
growth path*

*Evolutionary
resilient regional
growth path*

REGIONAL RESILIENCE



REGIONAL RESILIENCE

1



- **De-locking mechanisms** / adaptability strategies
- **Three pillars** identified towards increased regional resilience in the peripheral region:

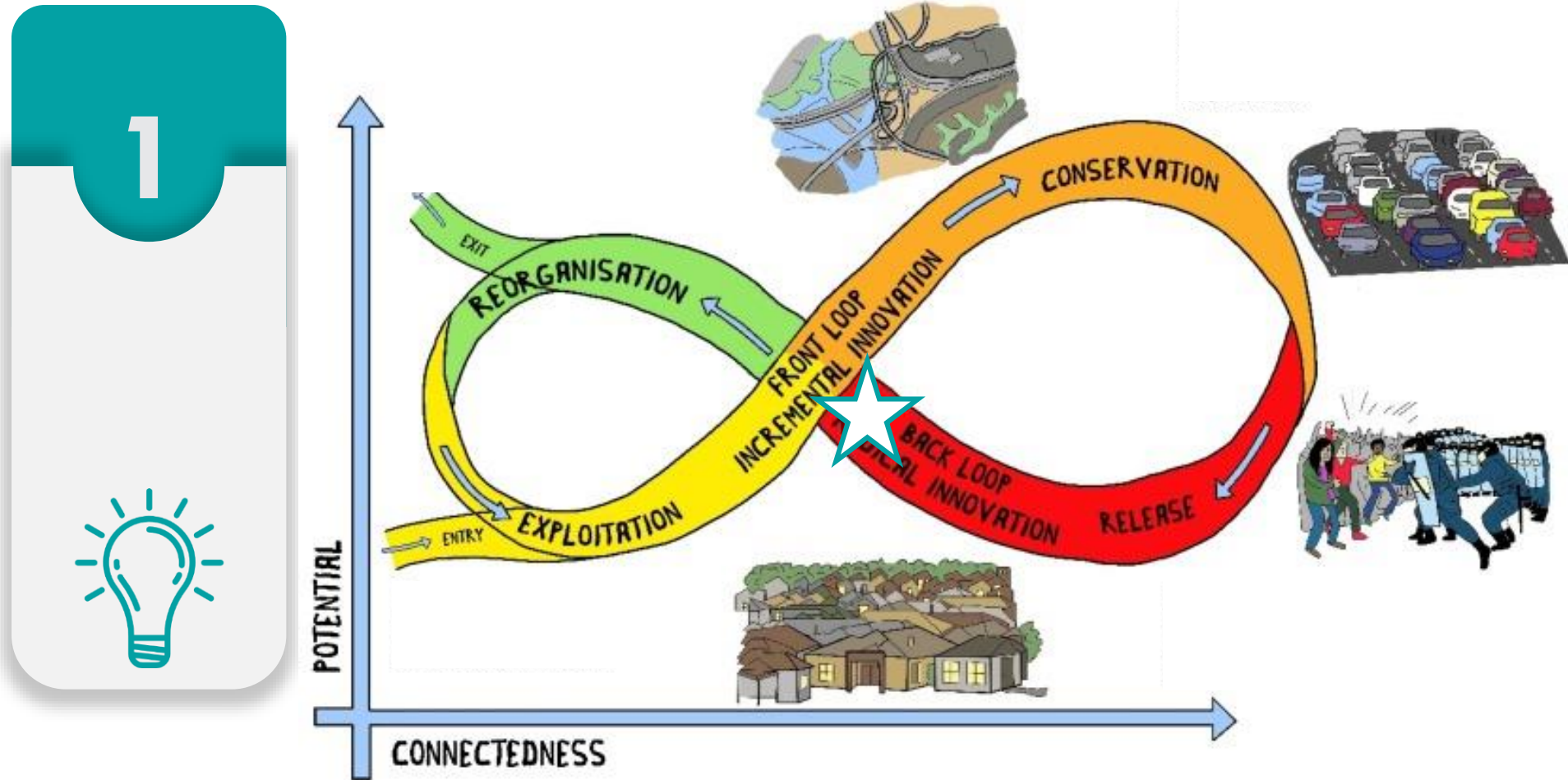
**Sectoral
Composition**

**Knowledge
networks**

Institutions

REGIONAL RESILIENCE & PANARCHY

THE GROWING PAINS ADAPTIVE CYCLE



Window of
opportunity for
intervention
and
transformation

INNOVATION & KNOWLEDGE NETWORKS

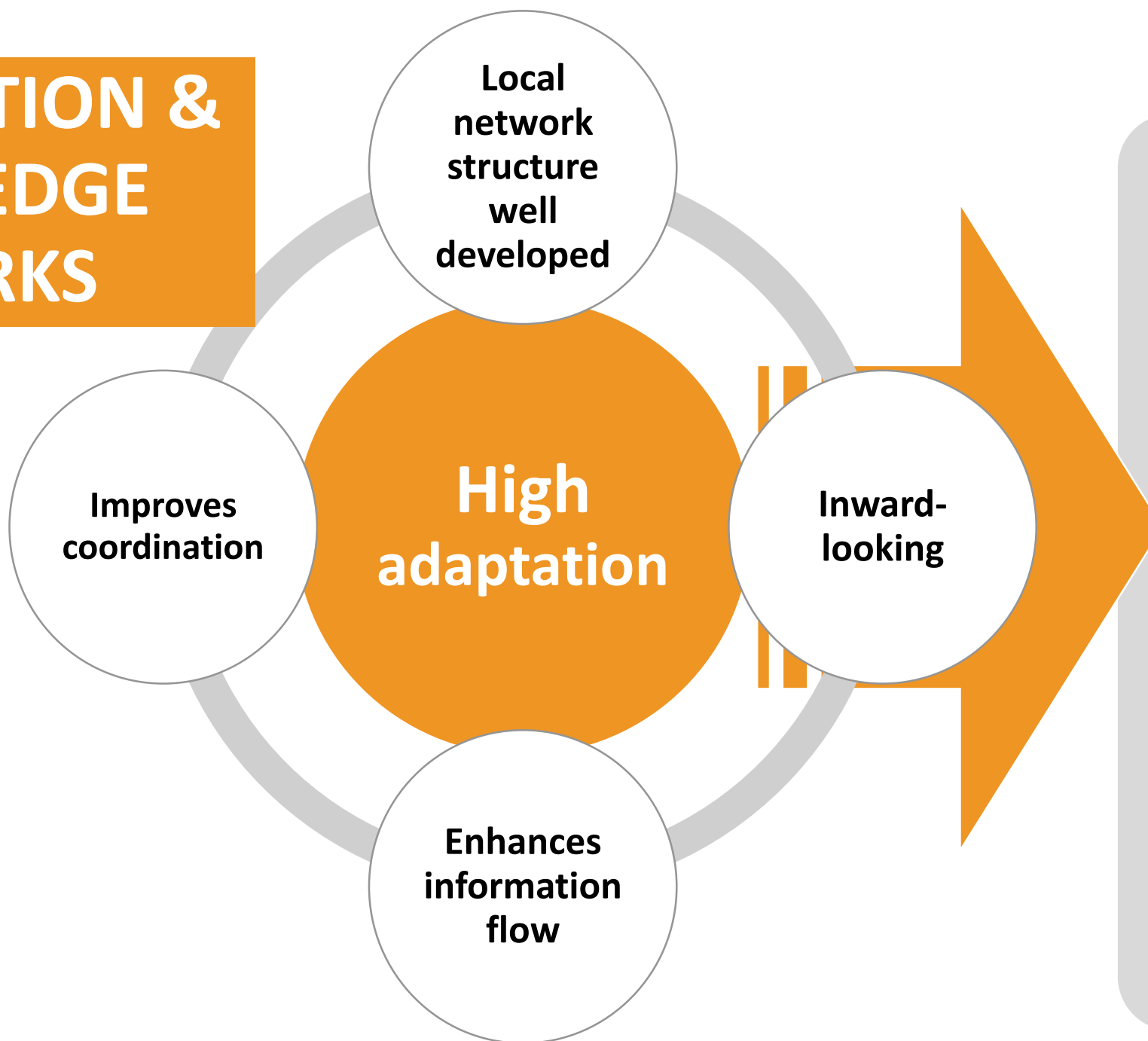
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- Influences the **sensitivity of regions to shocks/ slow burn processes** as there is a constant **conflict** between **connectedness and resilience**
- Viewed as the **social interactions** which leads to **knowledge gain or exchange** between local role-players and those outside the region

INNOVATION & KNOWLEDGE NETWORKS

2



Could lead to **low adaptability** as the excessive **'cognitive proximity'** makes **renewal almost impossible** due to a **closed mind-set** by role-players

INNOVATION & KNOWLEDGE NETWORKS

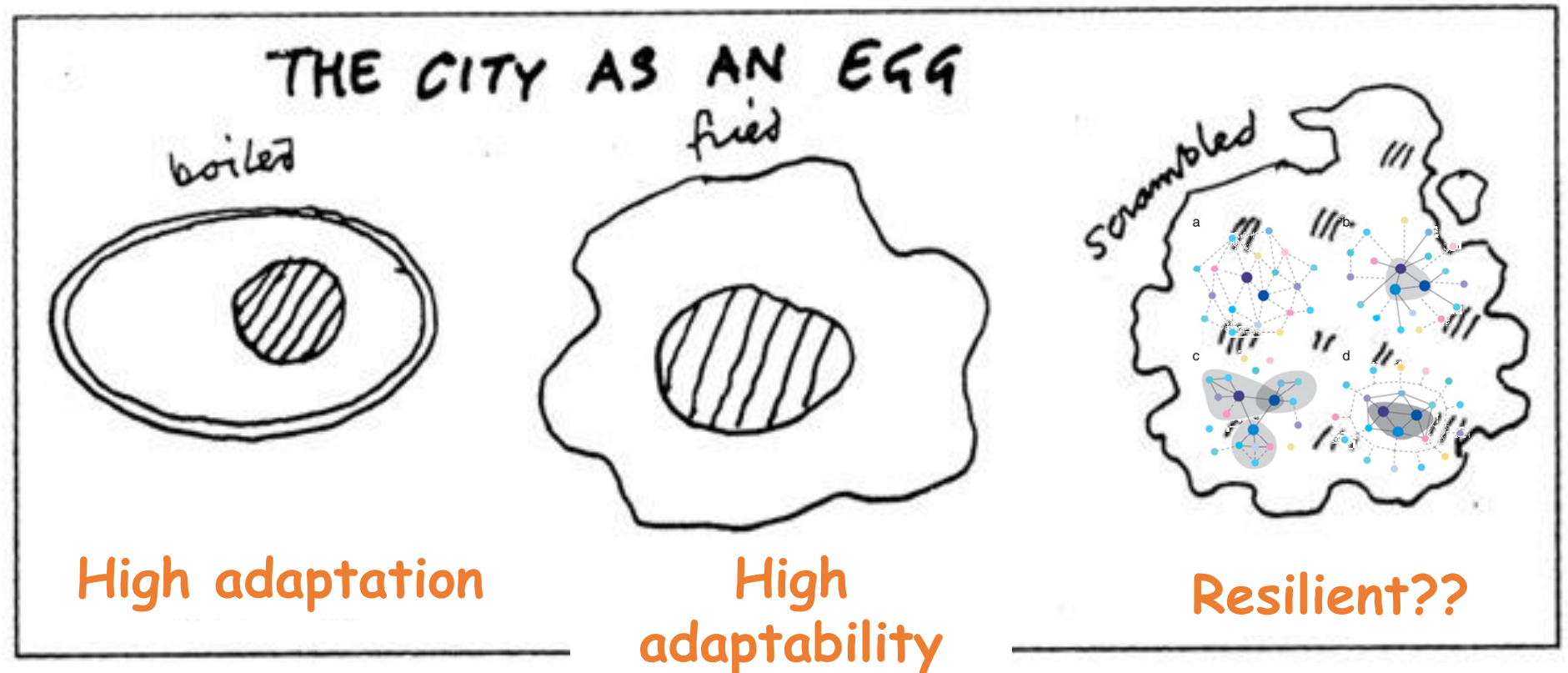
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- Fleming *et al* (2007) **sensitive balance** between adaptation and adaptability can be overcome by a **'knowledge network structure'**, similar to the **core-periphery structure**
- **CORE** leading to intensification of **new ideas** = increasing adaptability
- **PERIPHERY** will increase **adaptation** through **coordination and circulation**

INNOVATION & KNOWLEDGE NETWORKS

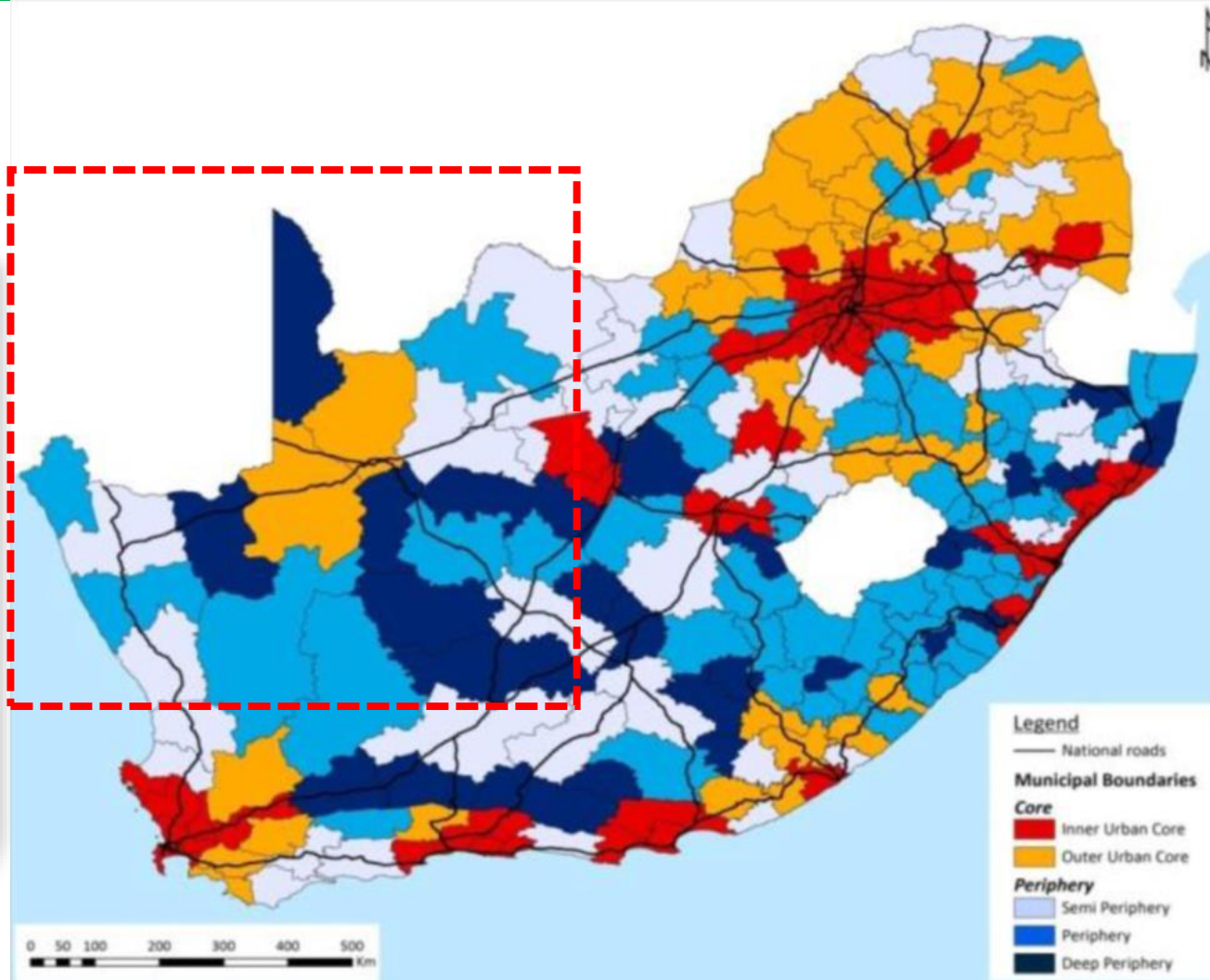
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Cedric Price

PERIPHERAL REGION – South Africa

3



INNER CORE

OUTER CORE

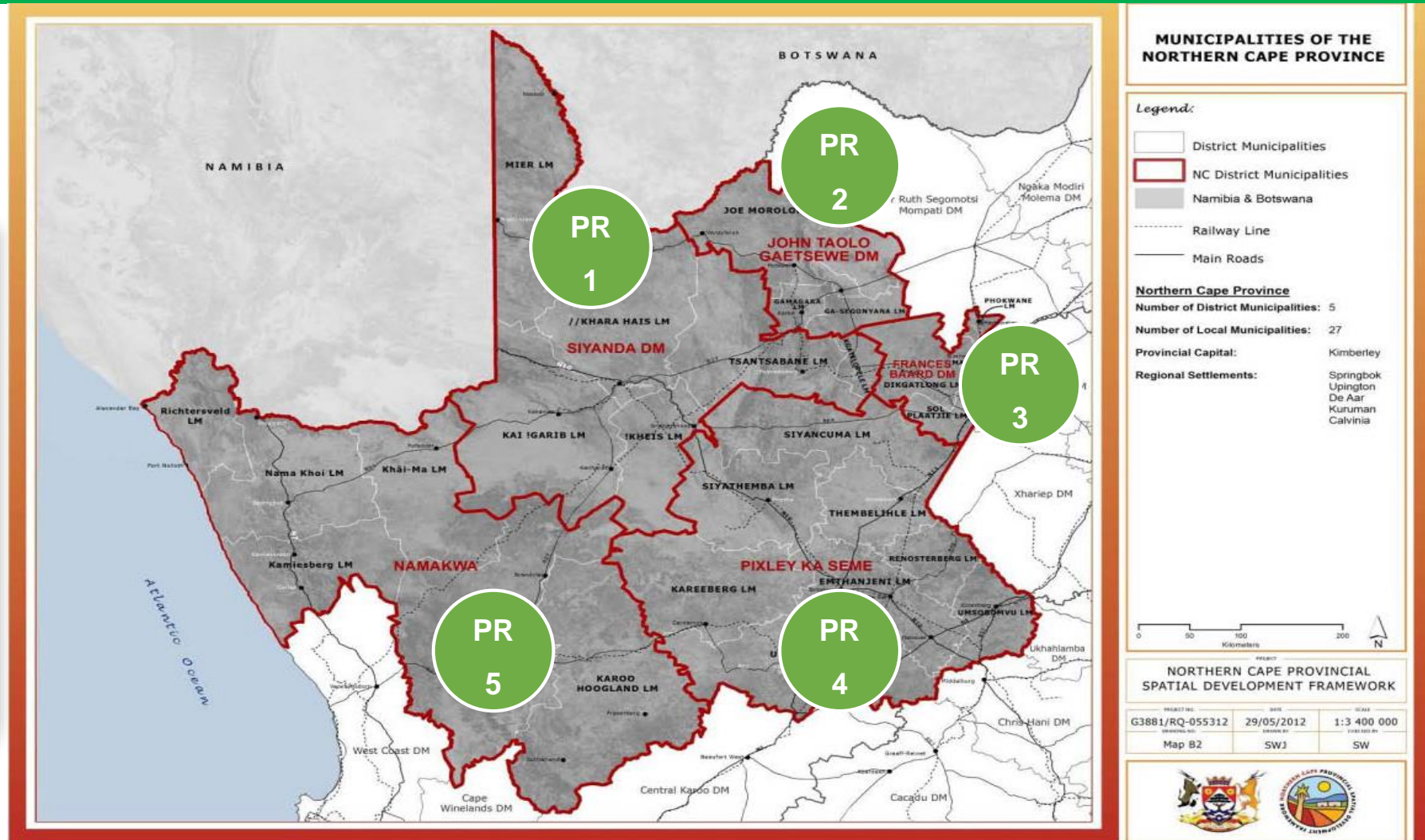
SEMI-PERIPHERY

PERIPHERY

DEEP PERIPHERY

PERIPHERAL REGION – South Africa

3



PERIPHERAL REGION – South Africa

3



- National '**digital divide**' (Avgerou, 2003) is visible in the presence of two very distinct economies, one having characteristics of **wealth and technological advances (CORE)**, the other **poorer and not connected (PERIPHERY)** as intricately to new innovation.
- **ICT Access Index (IAI)** based on a composite international index (ICT Development Index (IDI))
- The IAI combines **12 access indicators** into a single benchmark measure, grouped in three sub-indexes, i.e. **active, passive and readiness**

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3



**ICT Access
Index
(IAI)**

Active

0.65

Passive

0.20

Readiness

0.15

Cellphone

Mobile internet

Fixed internet

Computer

Telephone

Post

Radio

Television

Adult literacy
rate

Highest
education rate

Secondary gross
enrolment ratio

Tertiary gross
enrolment ratio

0.2

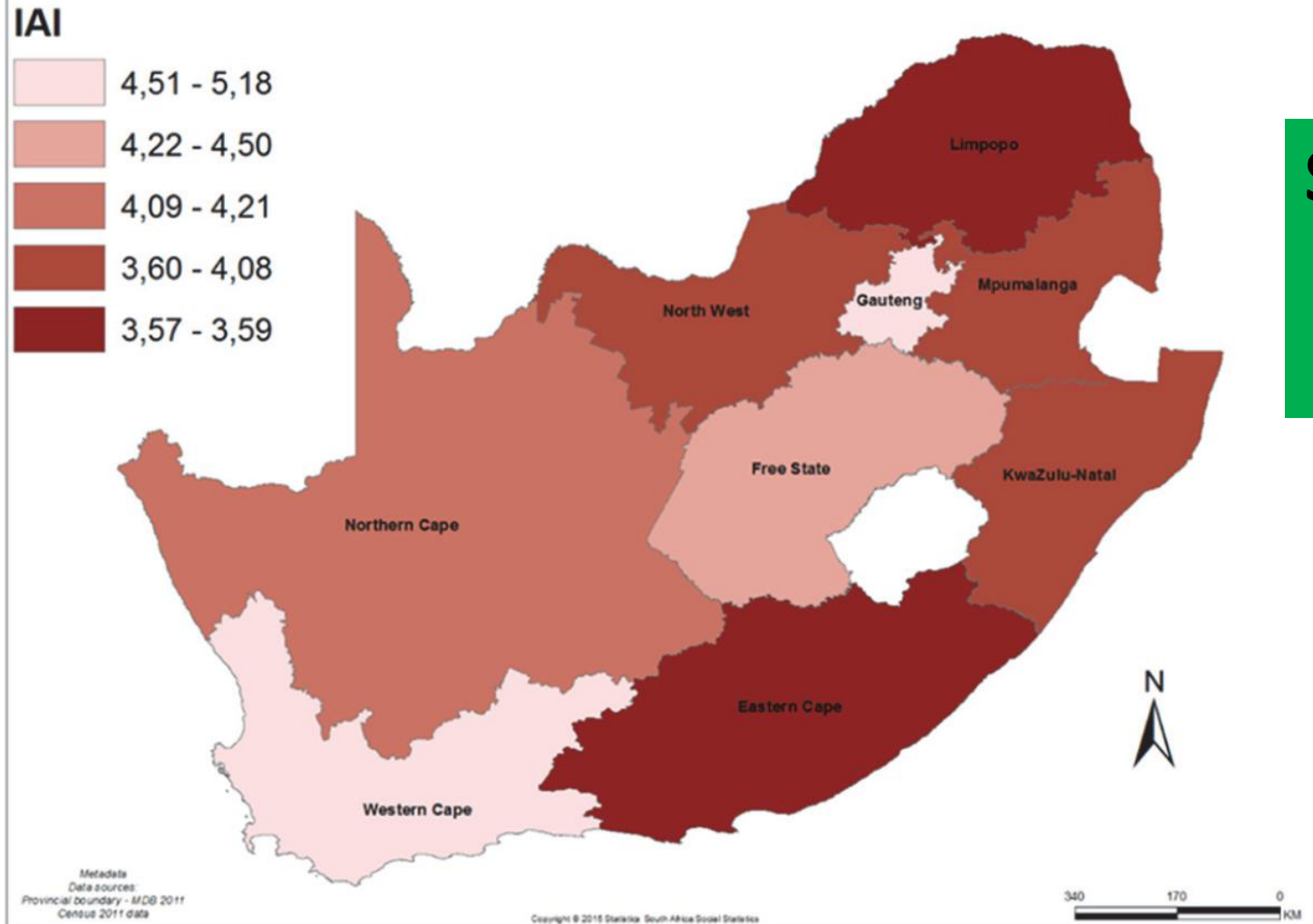
0.33

0.25

15

PERIPHERAL REGION – South Africa

3



**SA average
4.36 or
43,6%**

PERIPHERAL REGION – South Africa

3



Province	IAI rank	Active rank	Passive rank	Readiness rank	ICT Access Index (IAI)	Active sub-index	Passive sub-index	Readiness sub-index
WC	1	1	2	2	5,18	4,26	7,84	5,60
GP	2	2	3	1	4,94	3,93	7,50	5,87
FS	3	3	1	3	4,50	3,17	8,06	5,49
NC	4	5	4	6	4,21	3,13	6,93	5,23
KZN	5	6	6	5	4,08	3,05	6,55	5,23
NW	6	7	5	4	4,07	2,99	6,69	5,25
MP	7	4	7	9	4,03	3,17	6,01	5,12
EC	8	8	9	7	3,59	2,69	5,33	5,17
LP	9	9	8	8	3,57	2,61	5,48	5,14
RSA					4,36	3,37	6,79	5,45

PERIPHERAL REGION – South Africa

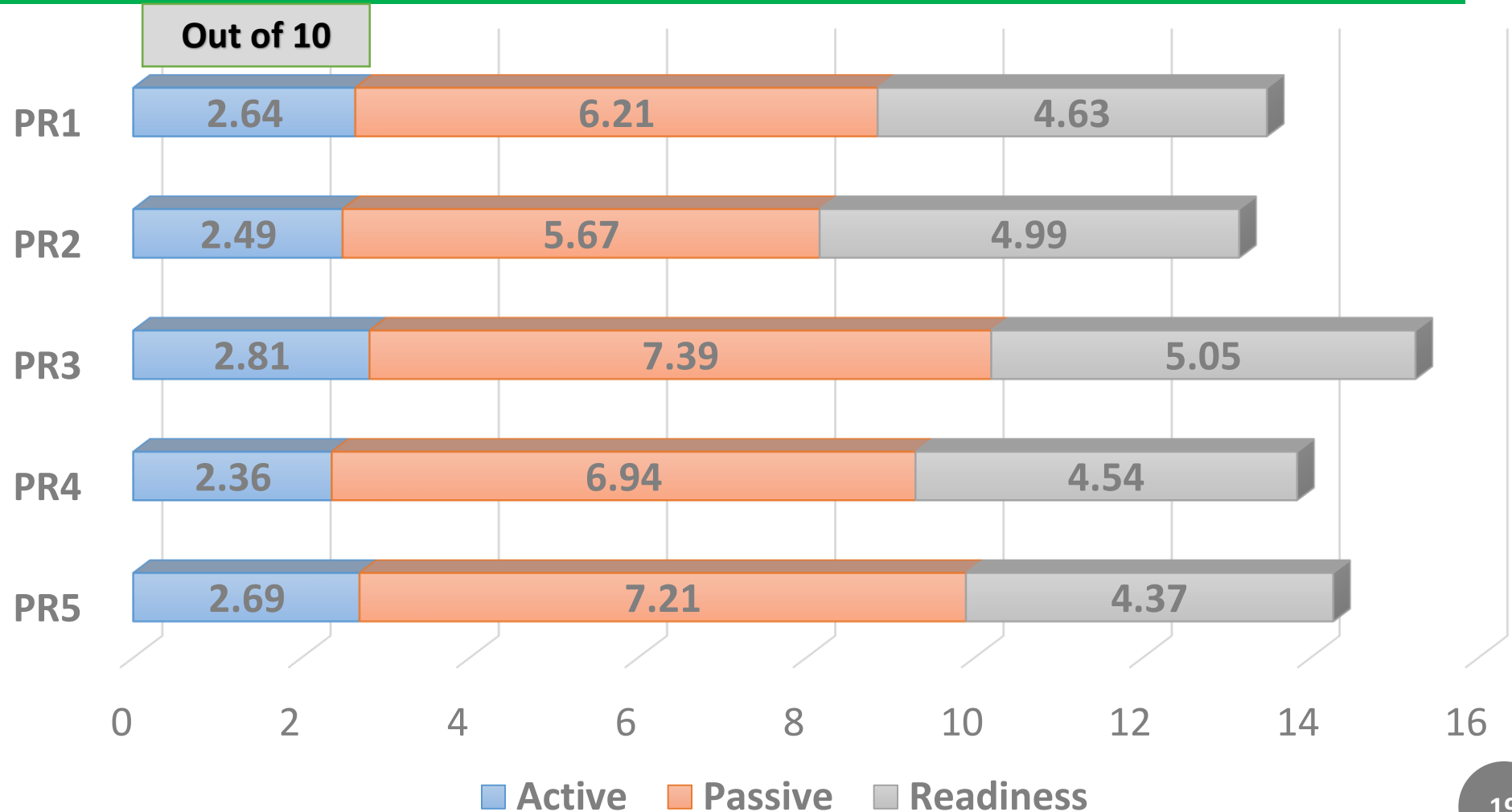
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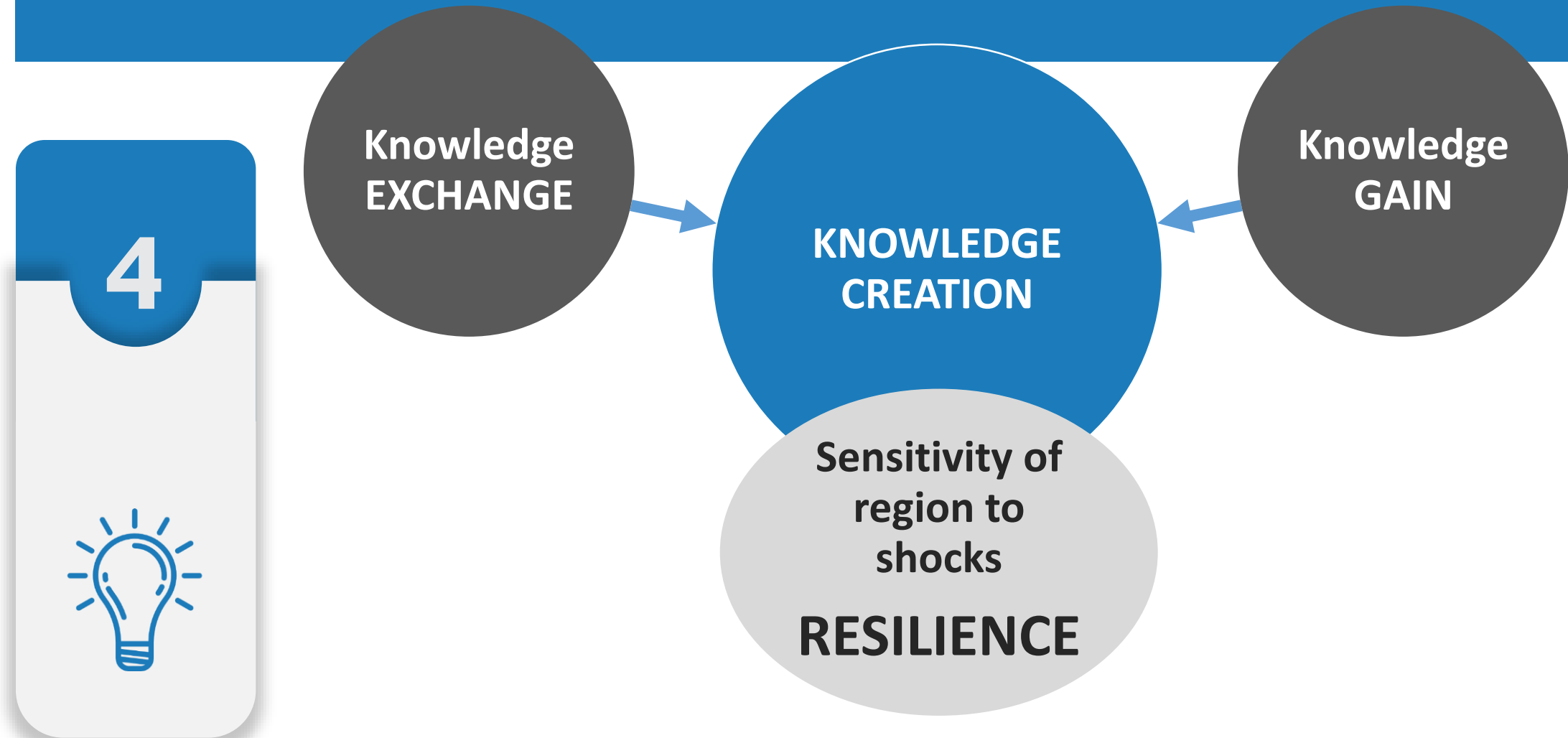
IAI rank out of 52	PRs	Active rank	Passive rank	Readiness rank
18	PR 3	19	16	36
25	PR 5	23	19	52
32	PR 1	28	29	49
34	PR 4	41	24	50
39	PR 2	36	36	38

PERIPHERAL REGION – South Africa

3



FINDINGS



FINDINGS

4



Resilience pillars

Resilience
actions

Primary policy actions

**SECTORAL
COMPOSITION**

*Adaptability
VS
Adaptation*

**KNOWLEDGE
NETWORKS**

*Innovation
Support*

INSTITUTIONS

*Local leadership
Arrangement
Adaptive capacity*

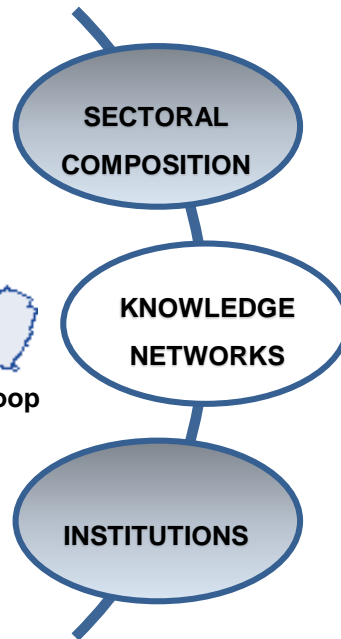
*Special Economic
Zones
Skills training
Centres of expertise
Business
development
Venture capital*

**LINKED
INDUSTRIES**

Example Policy proposals

PLANNING REGION 1

4



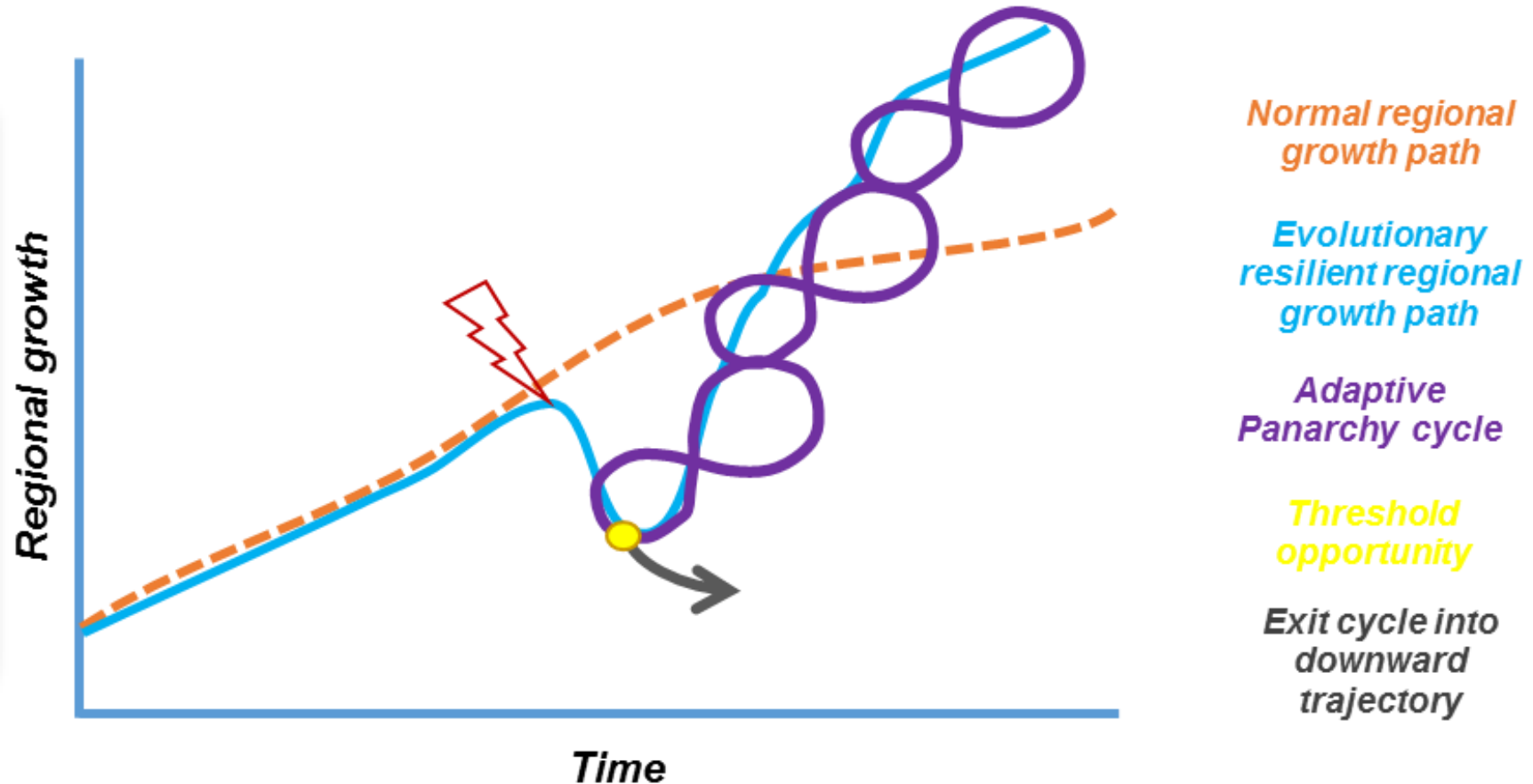
PILLAR 2

- **Least resilient pillar in PR1**
- Enhance active access to ICT
- Focus on **utilising the region's readiness for innovation**, with a focus on **related-industries** as identified in Pillar 1
- **Skills training centres** related to industries of national advantage and provincial advantage.
- Provide **business support and venture capital** targeted at industries related to industries of **comparative advantage**.
- Focus on **establishing PSET** related to the **two national industries of comparative advantage** in **regional growth pole** as identified in Pillar 1

FINDINGS

An overlap of the **three shock-absorbing pillars** within the region is illustrated as **coinciding with the threshold opportunity** (or previously referred to as a **window of opportunity**) for **intervention and transformation**.

4



FINDINGS

4

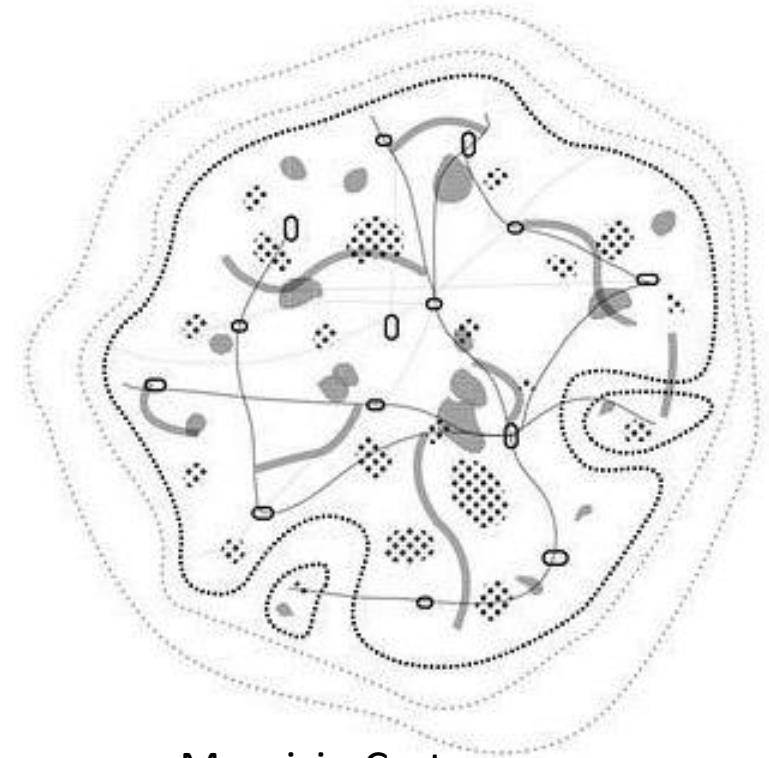


**The city as scrambled eggs
on toast??**

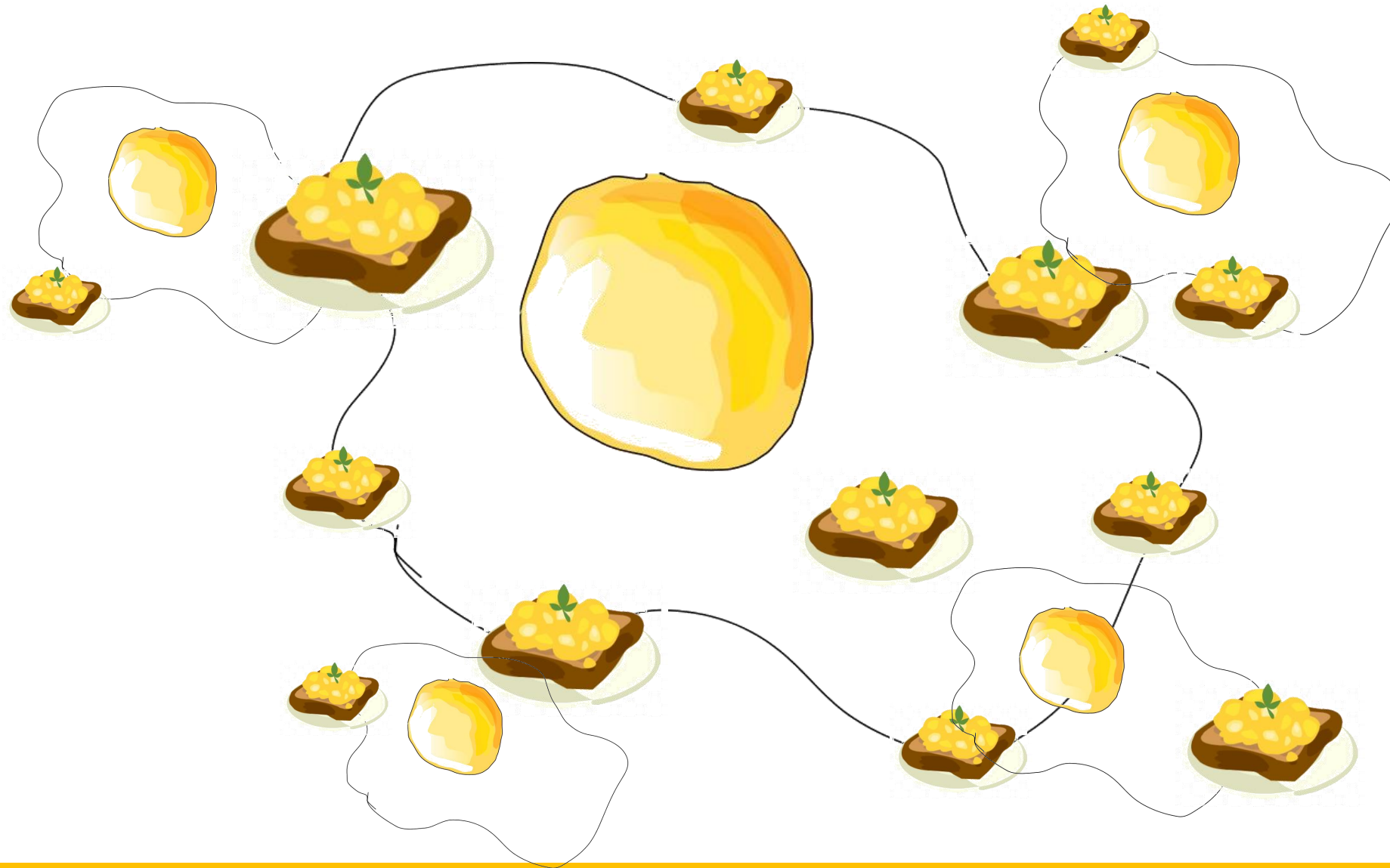


Pedro Bortiz

The city as a TORTILLA??



Maurizio Carta



*The **core** of the knowledge network should be **loosely tied** to the **periphery** of the **knowledge network***

THANK YOU



Any questions?

