

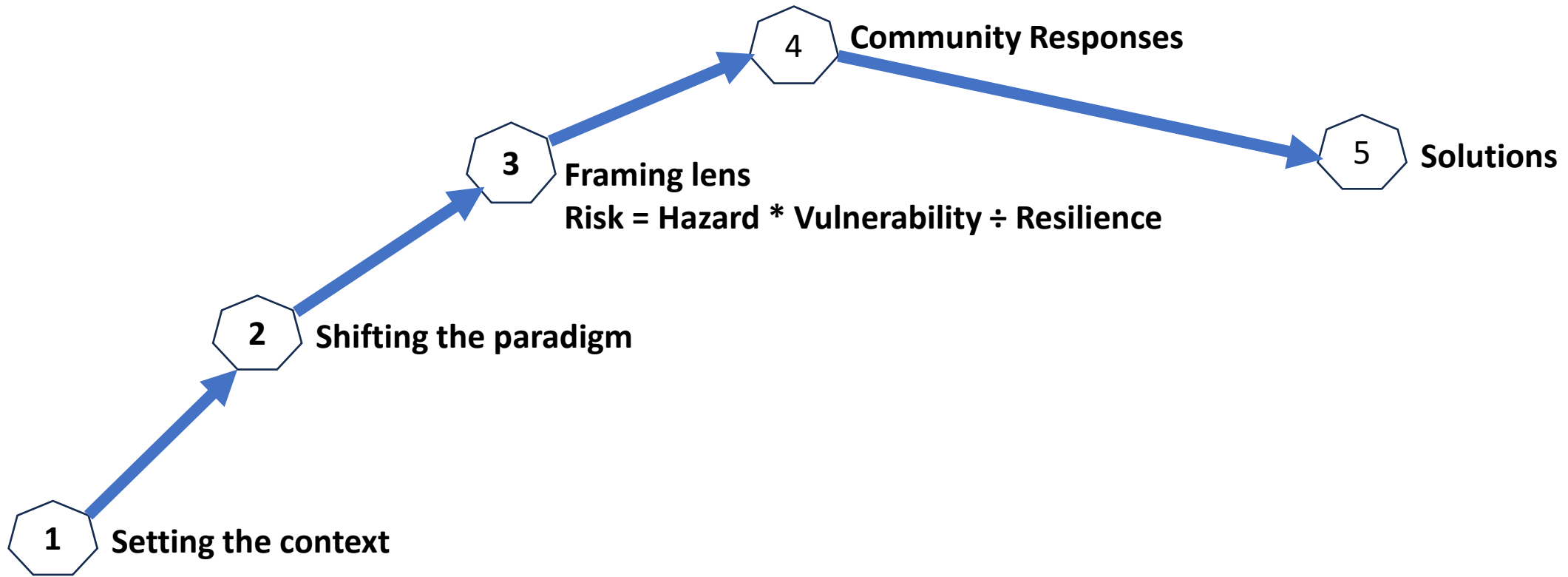
International experiences in responding to climate change: Towards forging social compacts



Shafick Adams
Presidential Climate Commission
Water Research Commission



Storyline

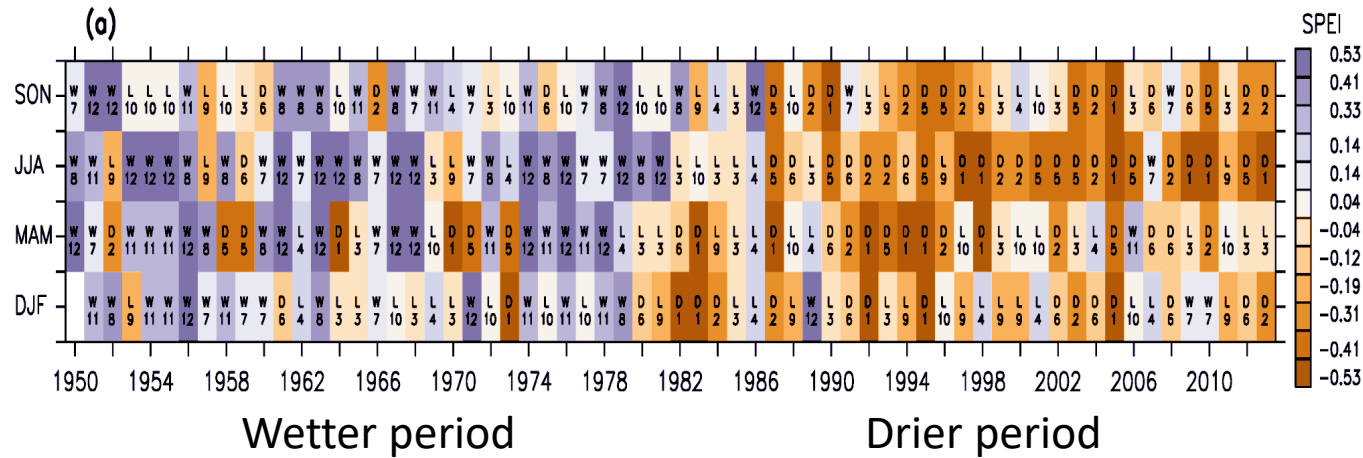


“Disasters, climate change, and sustainable development are inextricably linked. One issue that cuts across all three is extreme weather. ... **Societies are not well adapted to the extreme weather being experienced today.**”

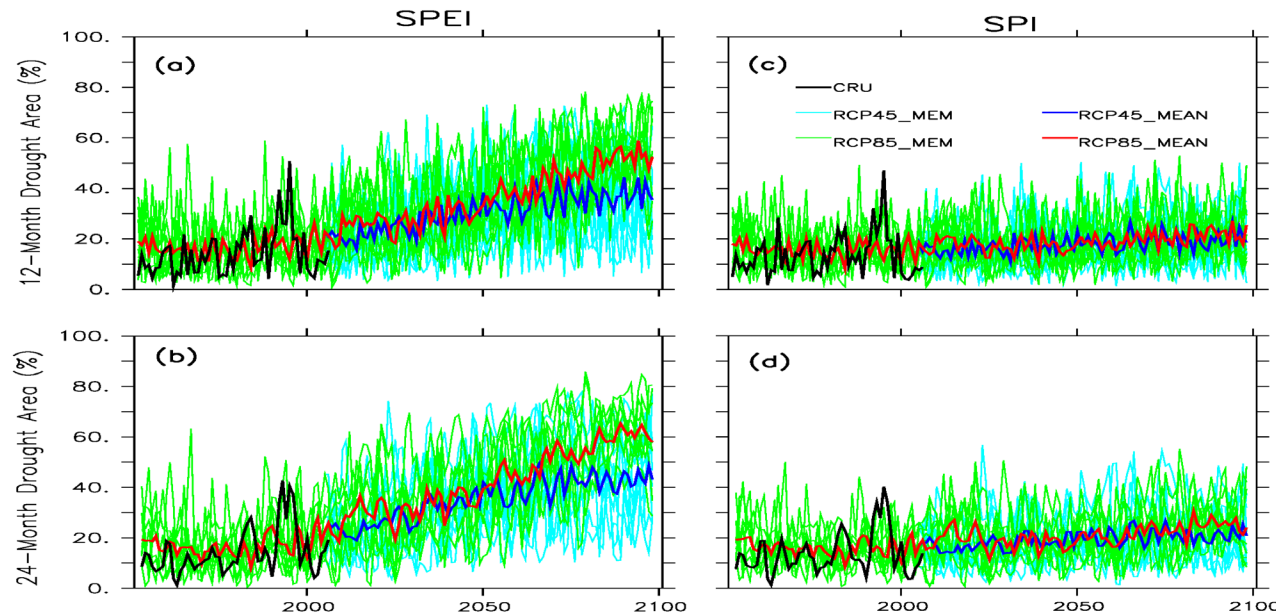
The Royal Society



Local climate and weather variability



We have been resilient but slow to adapt.

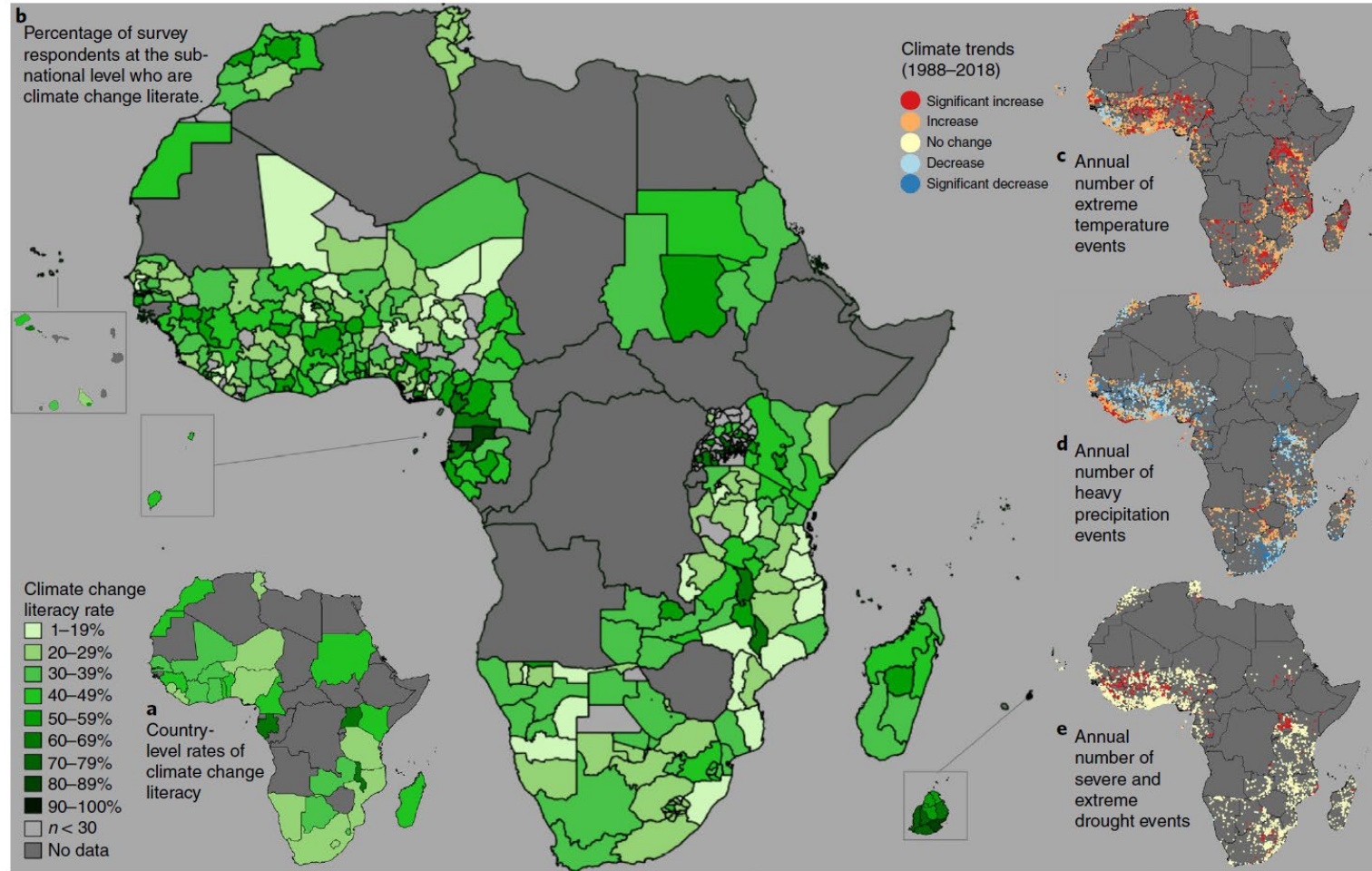


90% of Southern Africa will experience drought with significant variability (extreme events) by the end of this century (2100)

Climate literacy

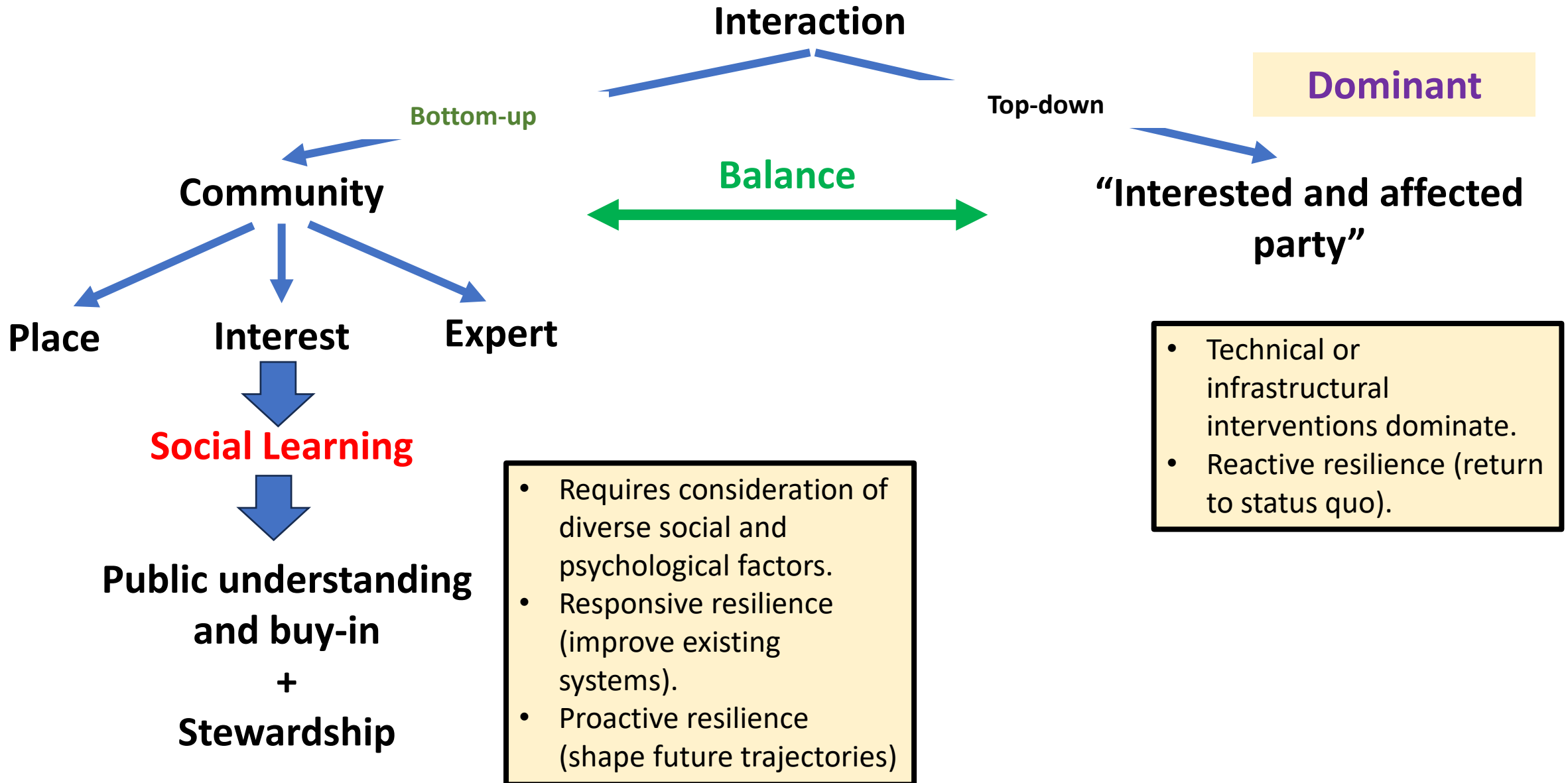
ARTICLES

NATURE CLIMATE CHANGE



Simpson et al.

Shifting the paradigm



Response, adaptation and resilience

$$\text{Low Risk} = \downarrow \text{Reduce} * \downarrow \text{Reduce} \div \uparrow \text{Increase}$$

$$\text{Risk} = \text{Hazard} * \text{Vulnerability} \div \text{Resilience}$$

Drivers

Droughts Floods Heatwaves
Storms Fires

Social capital Spatial planning
Infrastructure Ecosystems

Individuals Infrastructure
Communities Economy



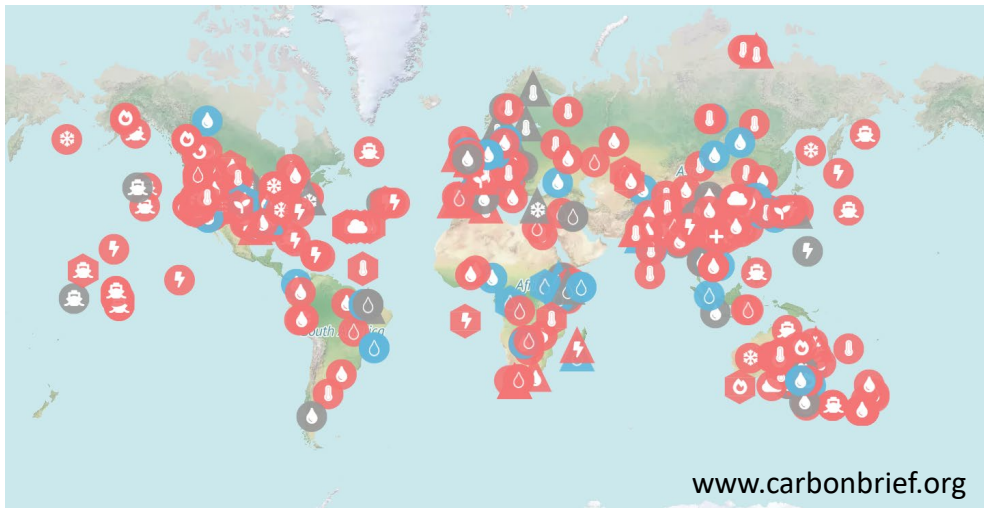
Christopher Furlong/Getty Images



$$\text{Risk} = \text{Hazard} * \text{Vulnerability} \div \text{Resilience}$$

Realised High Low

= Disaster



“In a crisis, neighbours are almost always the first responders.”

Community response vs community-led responses

- In some jurisdictions, governments lead responses with the aid of communities while others allow communities to lead the responses.
- Complex interplay between communities, governments, and community sector organisations in disaster recovery.
- Varying expectations and experiences.



- Clear policies and frameworks
- Enabling environment
- Training & Awareness
- Community hubs for local resilience
- Early warning systems
- Recovery tools and approaches
- Authentic partnerships
- Proactive planning and preparedness

$$\text{Risk} = \text{Hazard} * \overset{\downarrow \text{Reduce}}{\text{Vulnerability}} \div \overset{\uparrow \text{Increase}}{\text{Resilience}}$$

by

↑ Adaptation

Deliberate effort to reduce vulnerability

↑ Ability to absorb, respond and recover



AFRICA

Burkinabe Farmer Wins 'Alternative Nobel' for Drought-fighting Technique

September 24, 2018 11:35 PM Reuters



Yacouba Sawadogo is known as "the man who stopped the desert" and a co-winner of the Right Livelihood Award.

- Co-designing climate smart infrastructure using local/indigenous knowledge.
- Building back smarter after damage.
- Develop localised early warning systems with citizen scientists.
- Established local disaster risk reduction and management committees.
- Plant drought tolerant crops.

- Self-organisation through social media and community-based media.
- Strengthening local leadership and social capital.
- Always coordinated and resourced.
- Community-managed ecosystems/buffers, such as conservancies.
- Food banks & shelters.

Communities have plenty of ideas



Local knowledge



**Optimised by scientists
and engineers**



↑ Increased resilience

Limpopo Province

Citizen Science

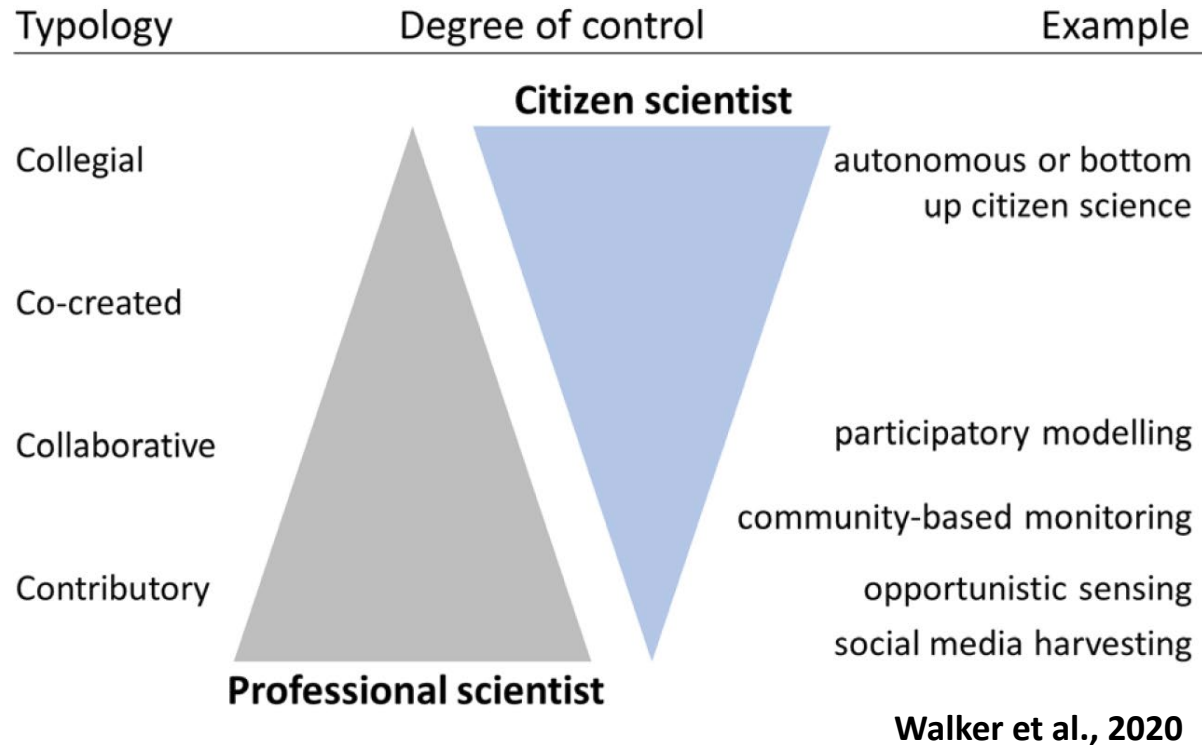
28/08/23



Climate monitoring upgrades urgently needed in Africa



Community leaders learning how to read the rain gauge in Ghana. Africa has less than 40 weather stations, compared to hundreds in US, Europe. Copyright: WMO (CC BY-NC-ND 2.0)

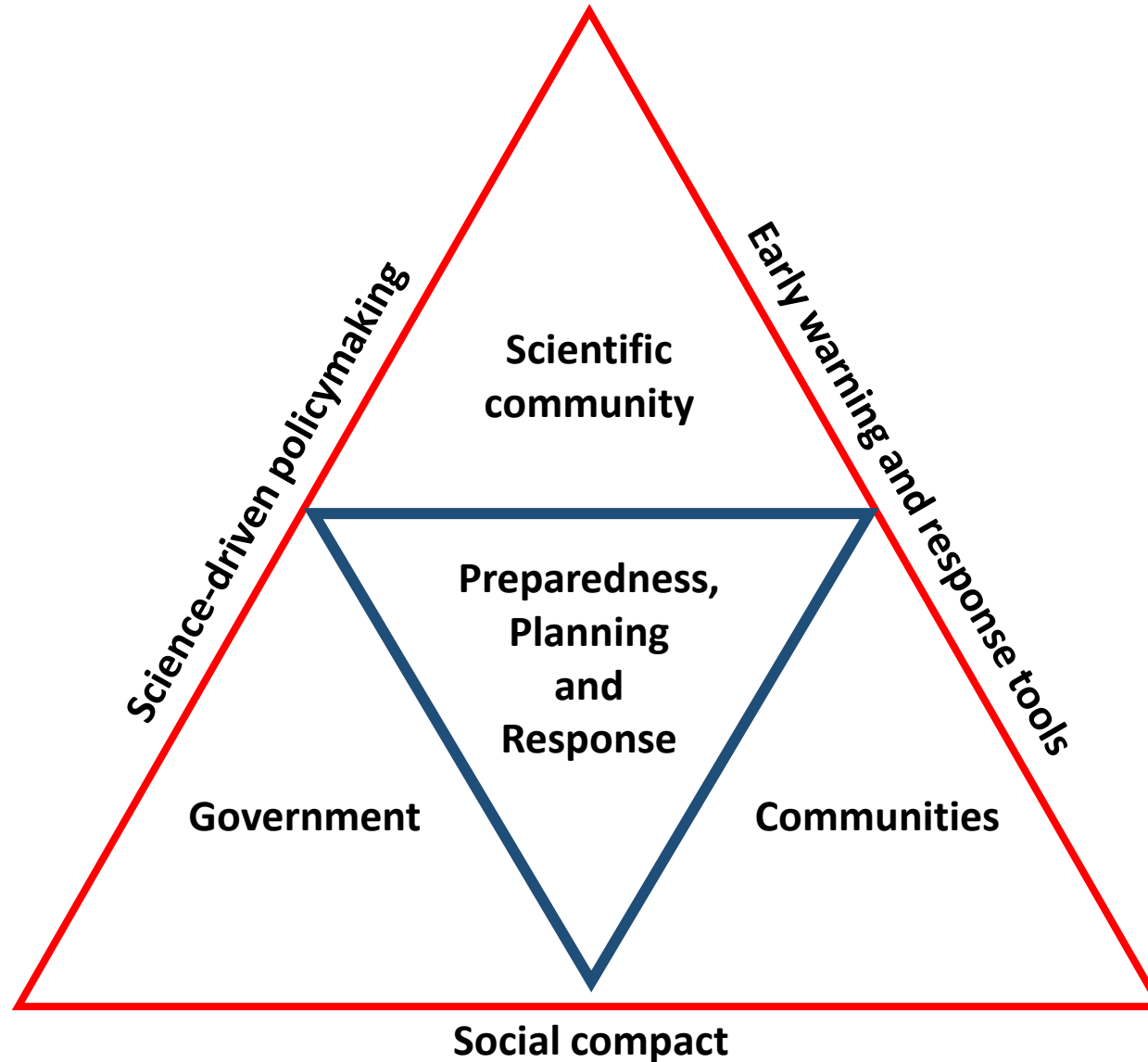


19 November 2021

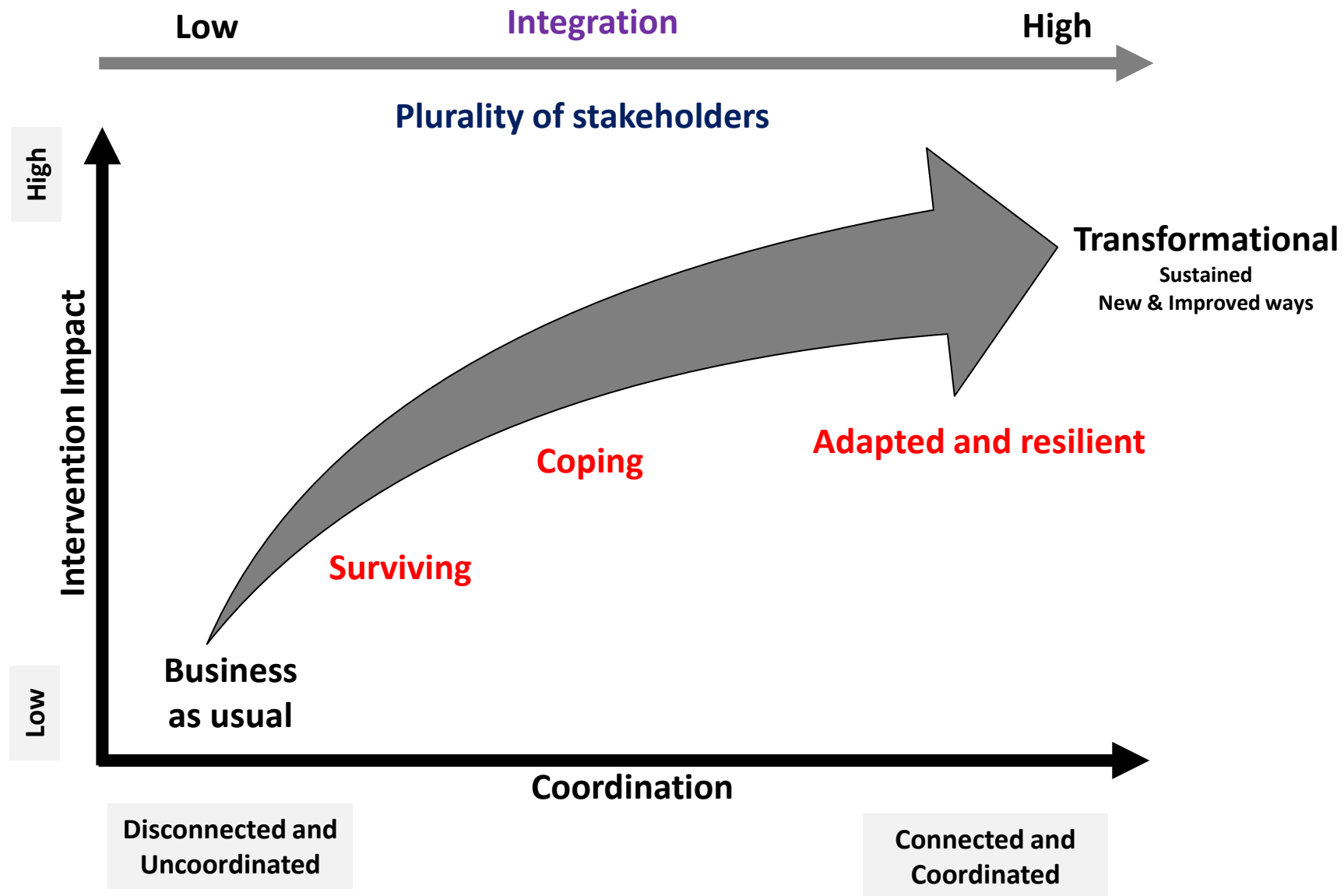
UWC citizen scientist water project is a winner at the Berlin Science Week Summit



Scaling and integration



Requires systems approach = actors (people + institutions) + factors (social, economic, political, environmental, technological)



Thank You



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