



# STRATEGIC CRISIS MANAGEMENT IN THE EUROPEAN UNION

The case of wildfire  
Response diversity

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A dramatic photograph of a wildfire. In the background, a large wooden structure, possibly a house or a barn, is engulfed in intense orange and yellow flames. The fire is very bright, with thick smoke rising into the air. In the foreground, several tall, dark evergreen trees are silhouetted against the bright fire. The overall scene is one of a major fire event in a forested area.

# Changing wildfires in Europe





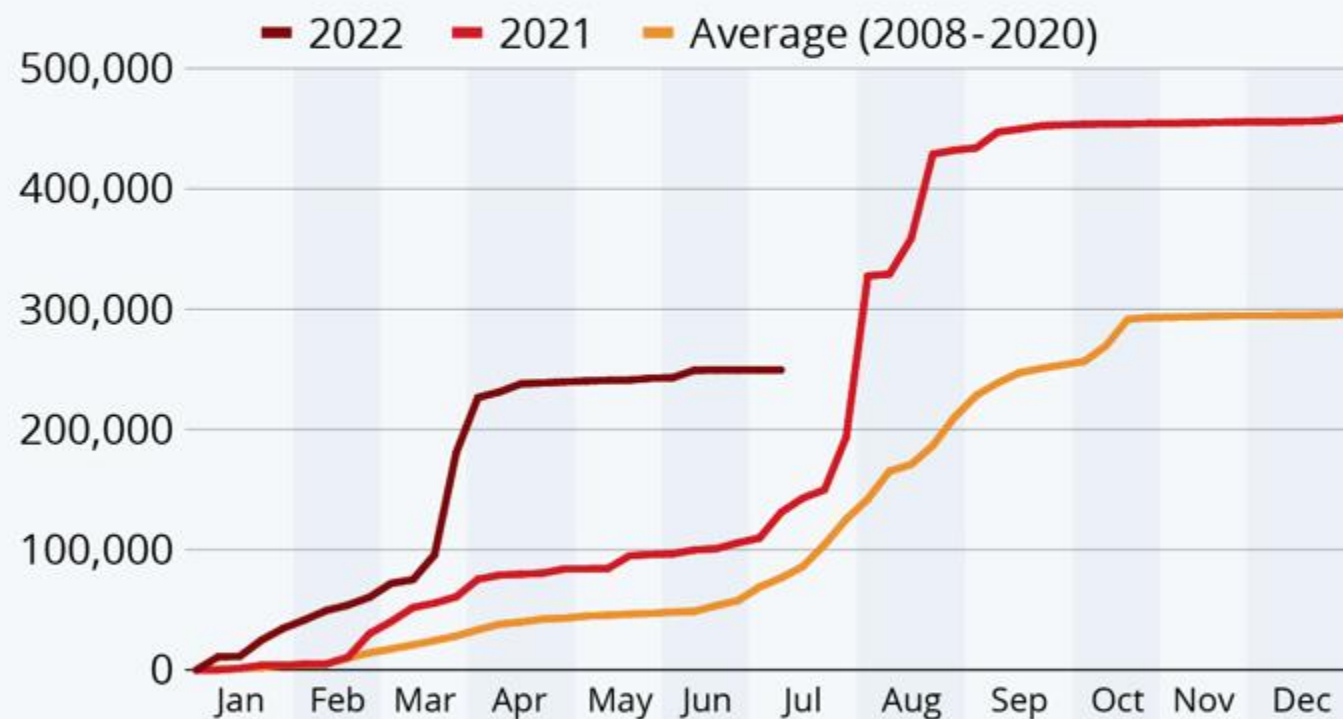
# Wildfires

- Globally, the climate crisis and land-use changes are currently driving an increase in extreme wildfires - 14% increase predicted by 2030, 30% increase by 2050 (IPCC 2021)
- Wildfires are now occurring not only in regions where seasonal fires are common, but also in areas *where fires have not normally occurred*
- In Europe, fire events have escalated way beyond their normal size and intensity and risks are increasing

# Europe's Wildfire Season Is Starting Earlier Each Year



Cumulative area of land burnt by forest fires of approx. 30 ha or larger in the EU in 2022 vs. previous years



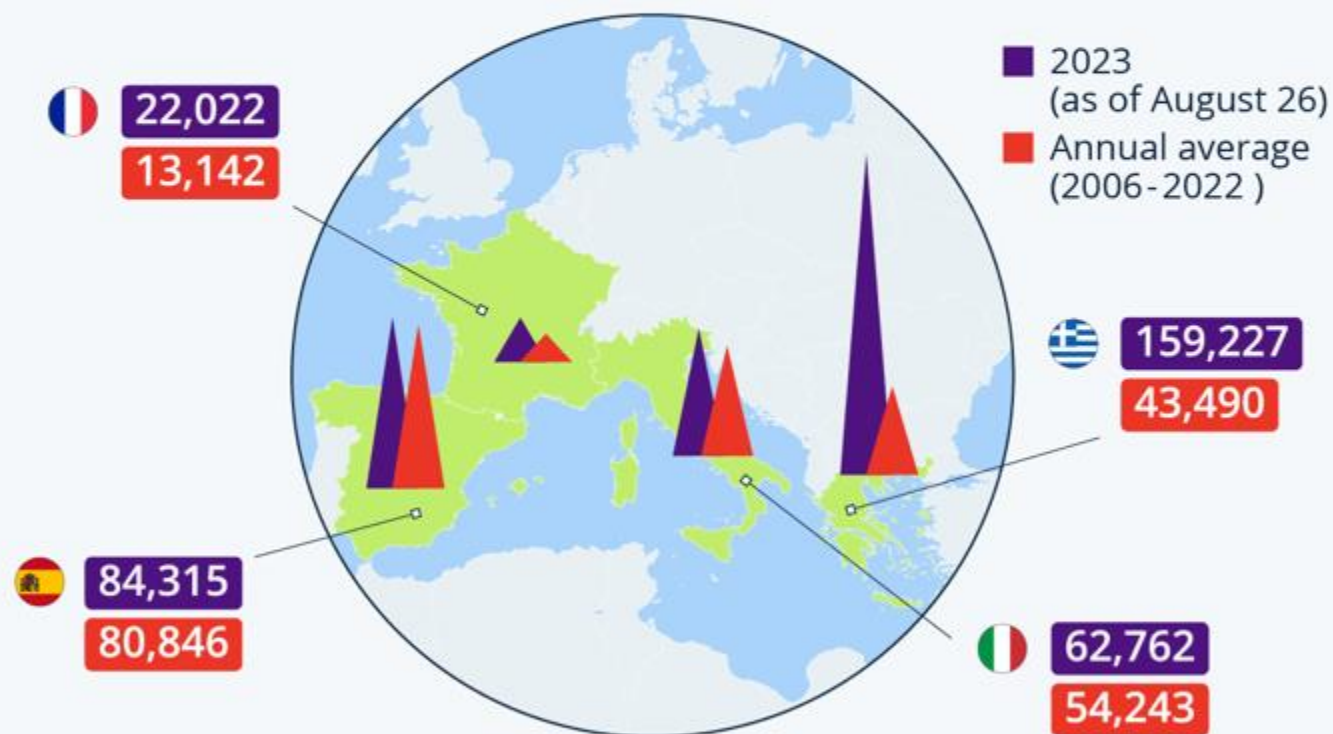
As of July 9 for 2022

Source: EFFIS



# Wildfires Ravage Southern Europe

Cumulative area burned by forest fires in selected countries (in hectares)\*

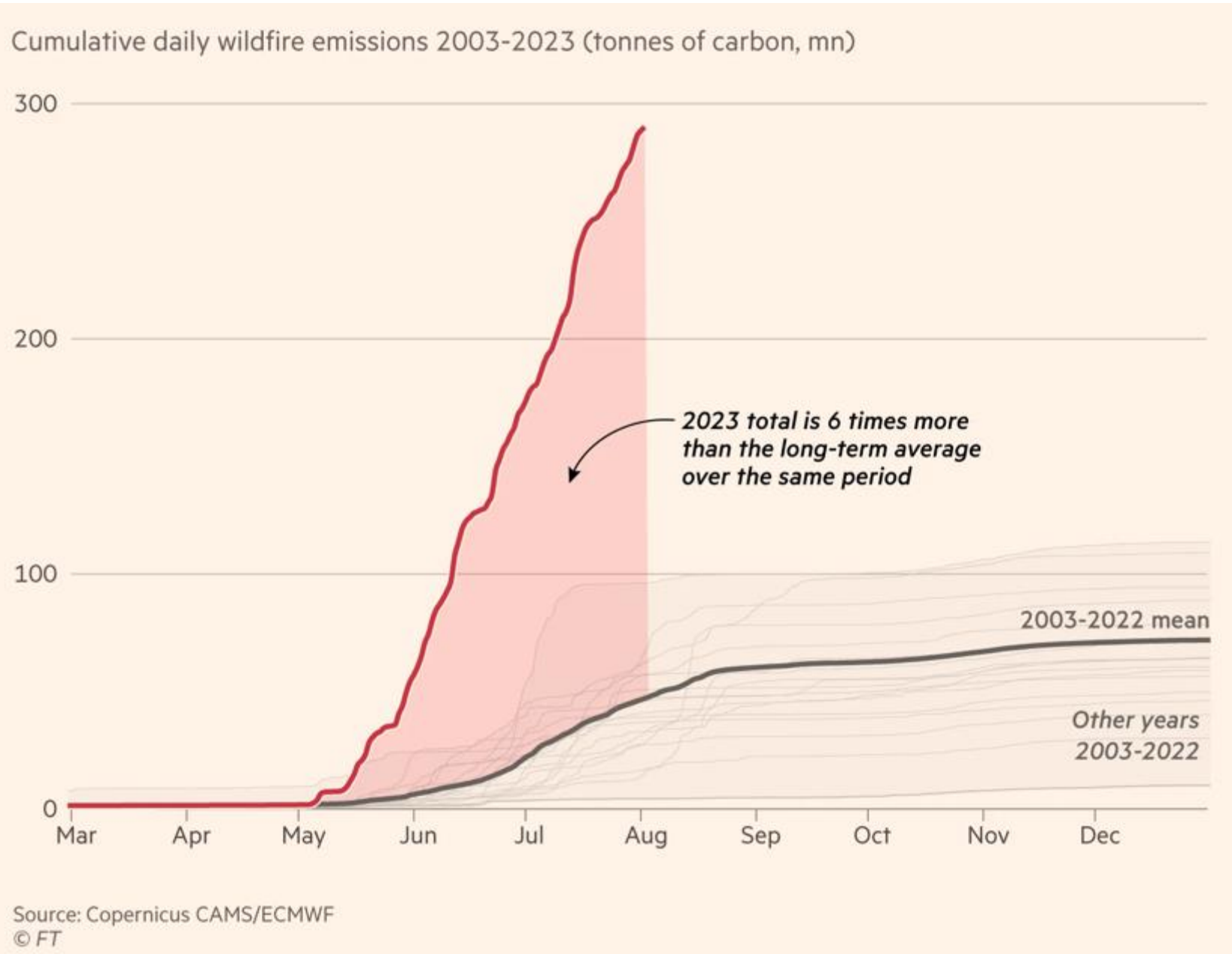


\* Only fires over 30 hectares are recorded.

Source: EFFIS

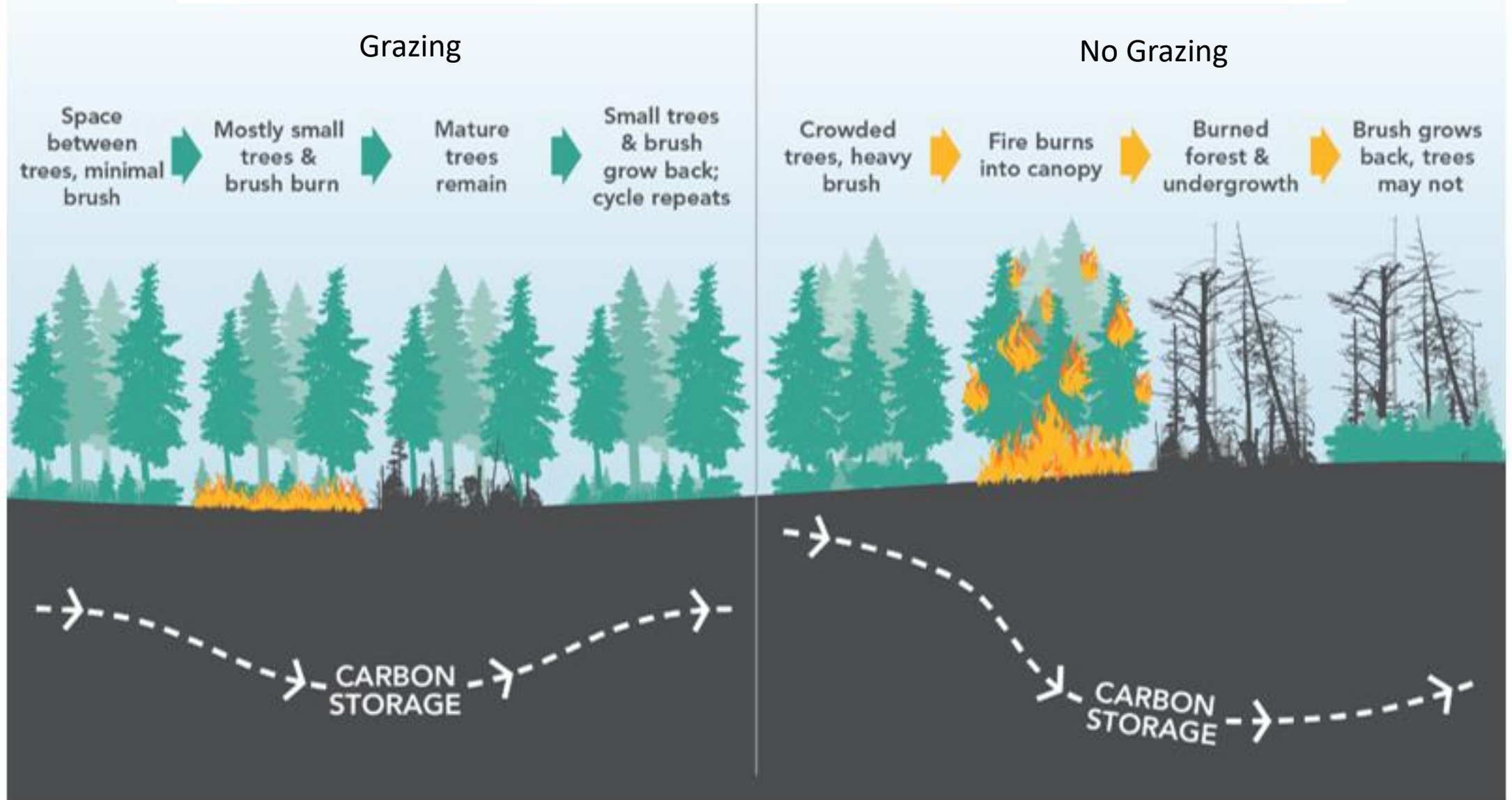


# Wildfires and carbon (Canada)





# Management, wildfires and carbon





## **SAPEA report:**

In general, direct emergency responses to wildfires often have received more than 50% of available funding, while planning and prevention have typically got less than 1% (UNEP 2022)

EU and member states should do substantial reallocations of public spending on wildfires, with more spending on pro-active preventing initiatives compared to today

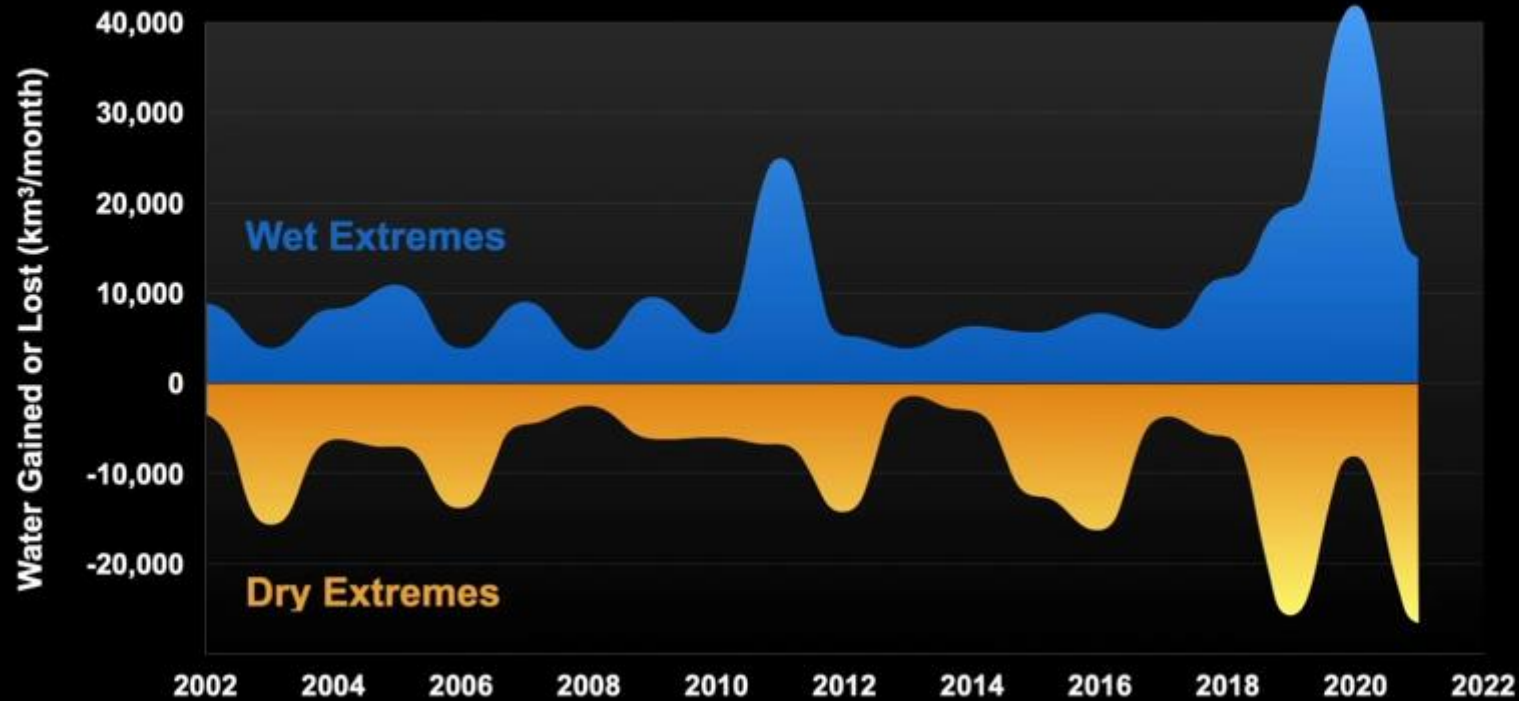


## EASAC report 2024 – “Changing wildfires in Europe”

- will make a critical analyses of the evidence base for a range of proactive actions and provide advise framed in local and regional contexts of Europe
  - proactive measures include landscape management including grazing and prescribed burning, fire regime restoration and fire regime management
- explore design principles for the massive EU tree planting program (3 billion additional trees, *EU biodiversity strategy 2030*) to avoid adding substantial flammable fuel in many vulnerable landscapes across Europe
- will link to a number of EU policy areas: *the Climate strategy, Biodiversity strategy, Farm to fork strategy, the EU Forest strategy and the new Nature Restoration Law*

# Global Intensity of Extreme Rainfall And Droughts

2002 – 2021



Data: Rodell, M., Li, B. "Changing intensity of hydroclimatic extreme events revealed by GRACE and GRACE-FO." *Nature Water* 1, 241–248 (2023)



City of Derna, Libya, Tuesday 19 September 2023



Photo credit: Aljazeera



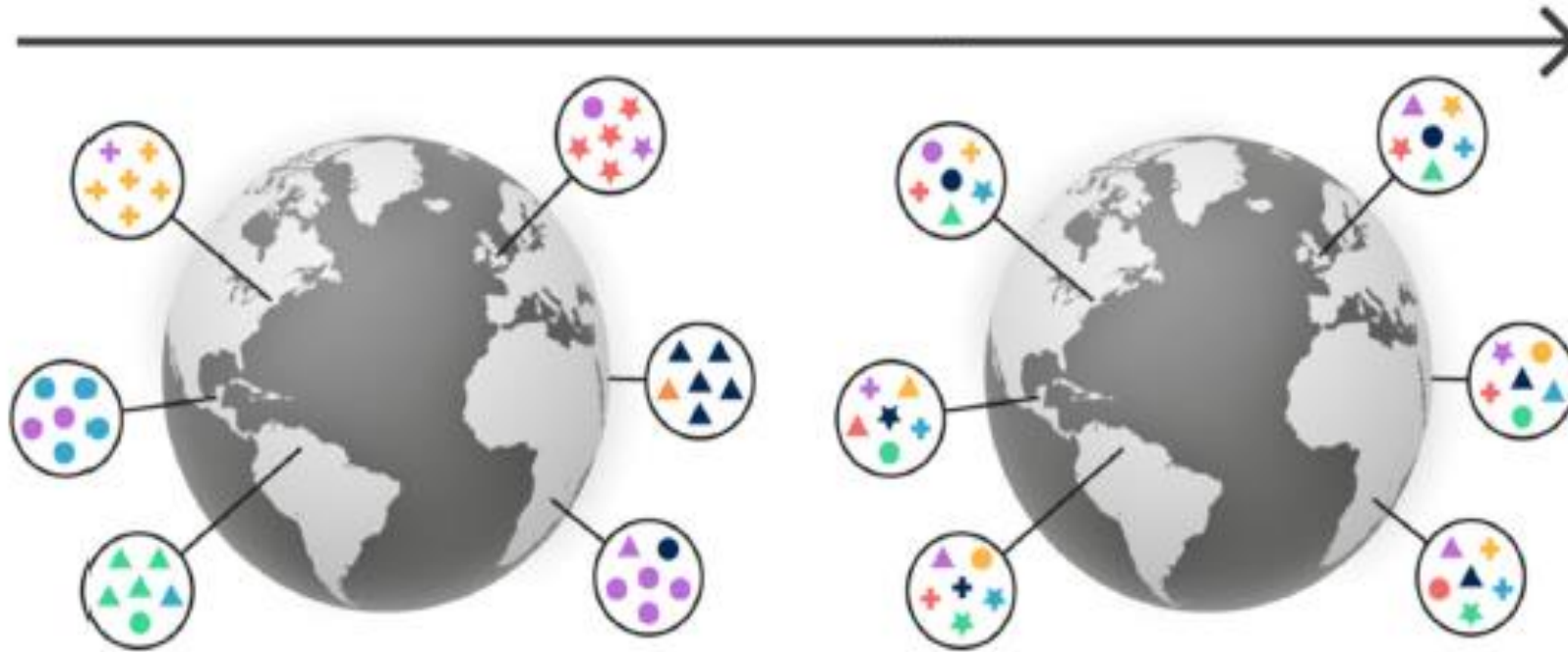
City of Catania, Sicily, July 31, 2023





# Shifting diversity

Globalization

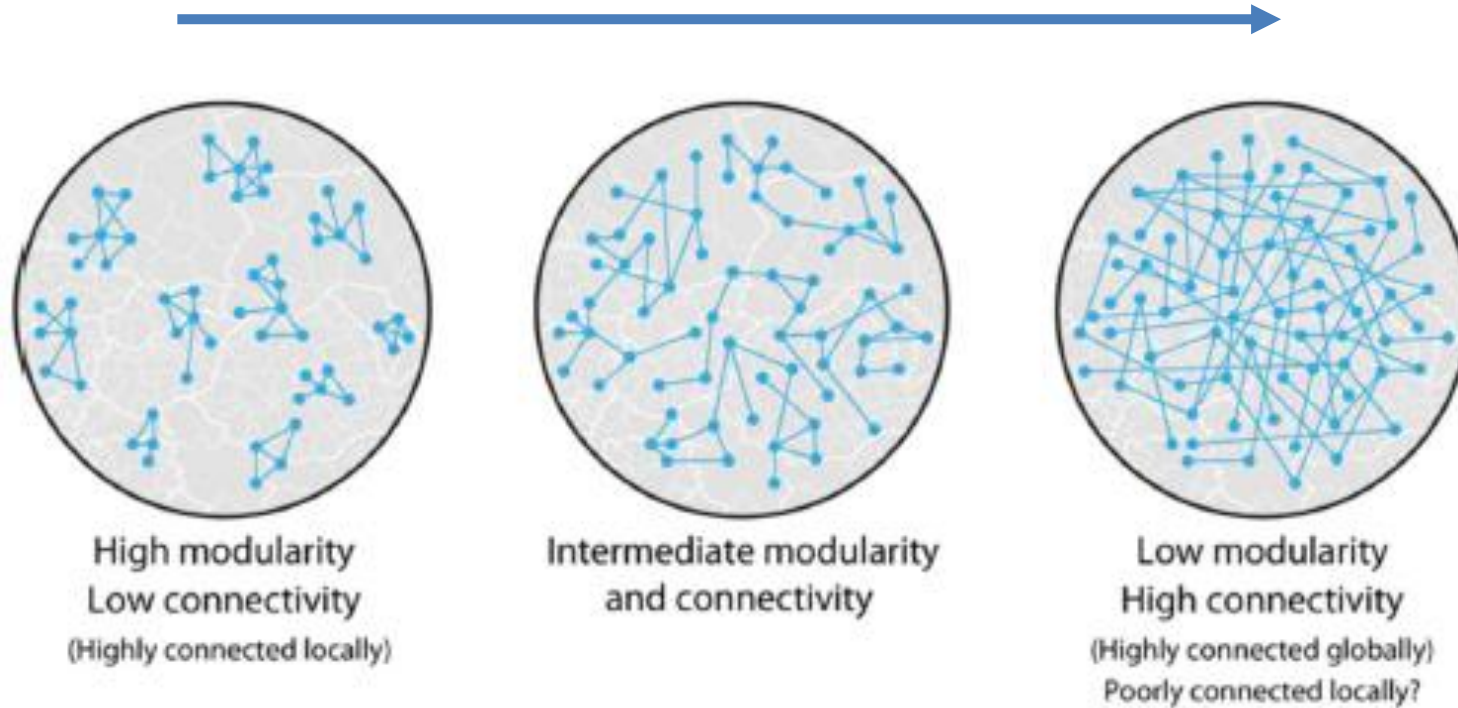


(Shifting patterns of diversity of e.g. food, information at local city scales and global scales)

Elmqvist et al. 2021

# Shifting modularity and connectivity

Globalization



Elmqvist et al. 2021





# **Polycrisis – a cascade of crises collide**

Distinct but entangled, causing damage much greater than the sum of their individual harms.

(Tooze 2022)



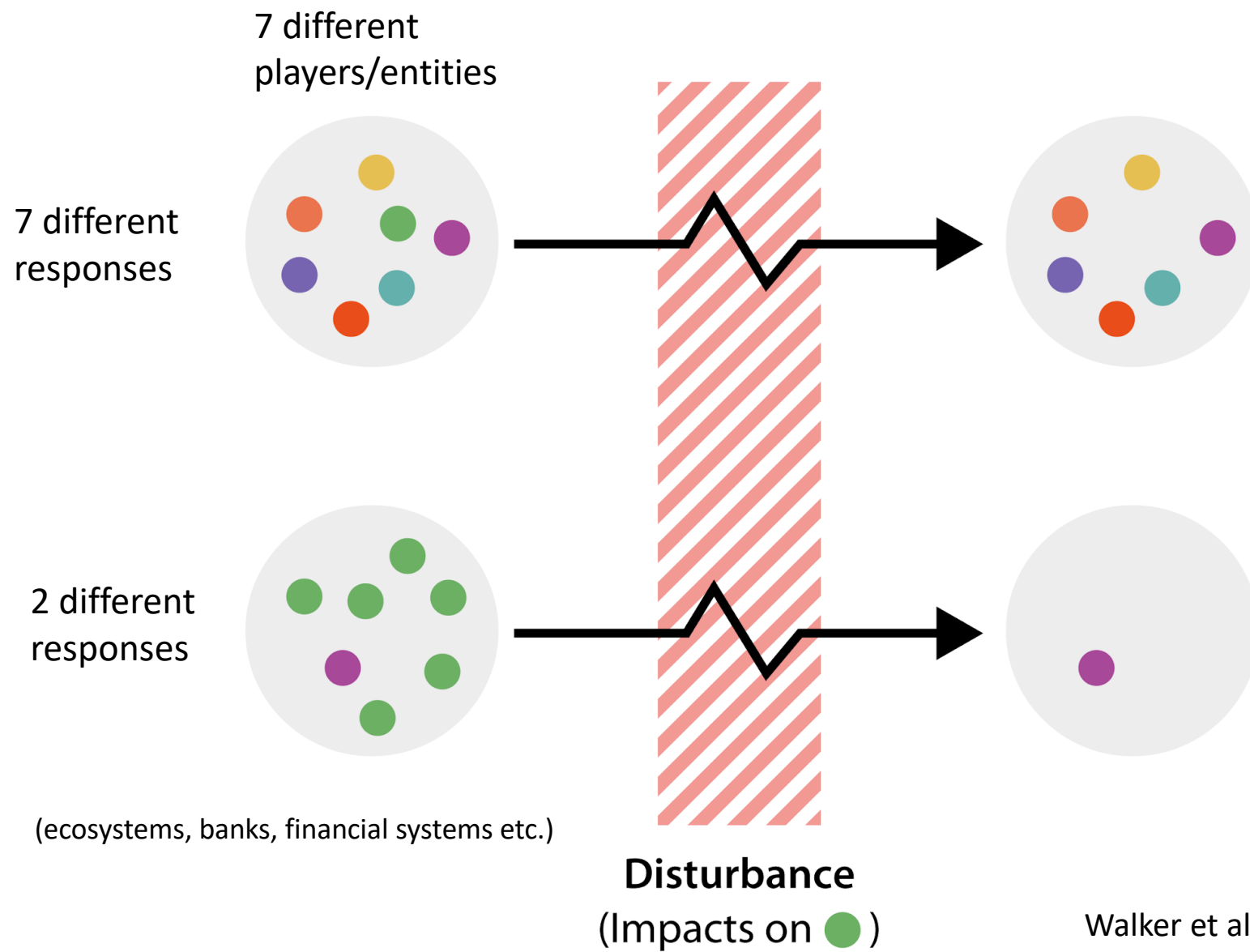
# Response diversity

The diverse ways in which different kinds of players (species, actors, infrastructures) perform functions and enables them to respond differently to a variety of shocks, thereby enabling maintaining functions.

The system as a whole would continue functioning in much the same way, over a range of different shocks and polycrises it might encounter.

(Elmqvist et al. 2003, Walker et al. 2023)

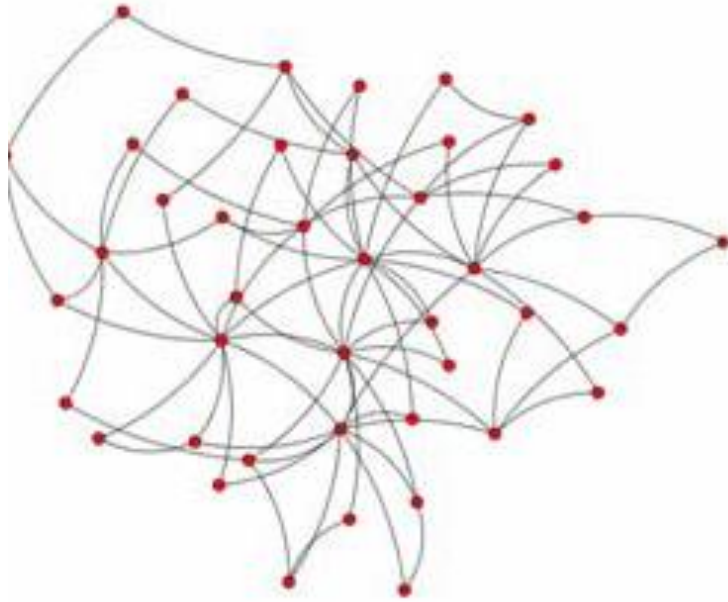
# Response diversity



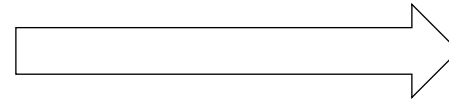


# Trade-off between Efficiency - Response diversity

Less sustainable



Self-organized network

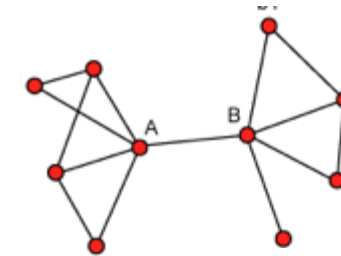
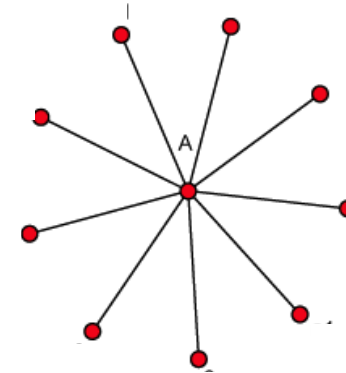


Efficiency

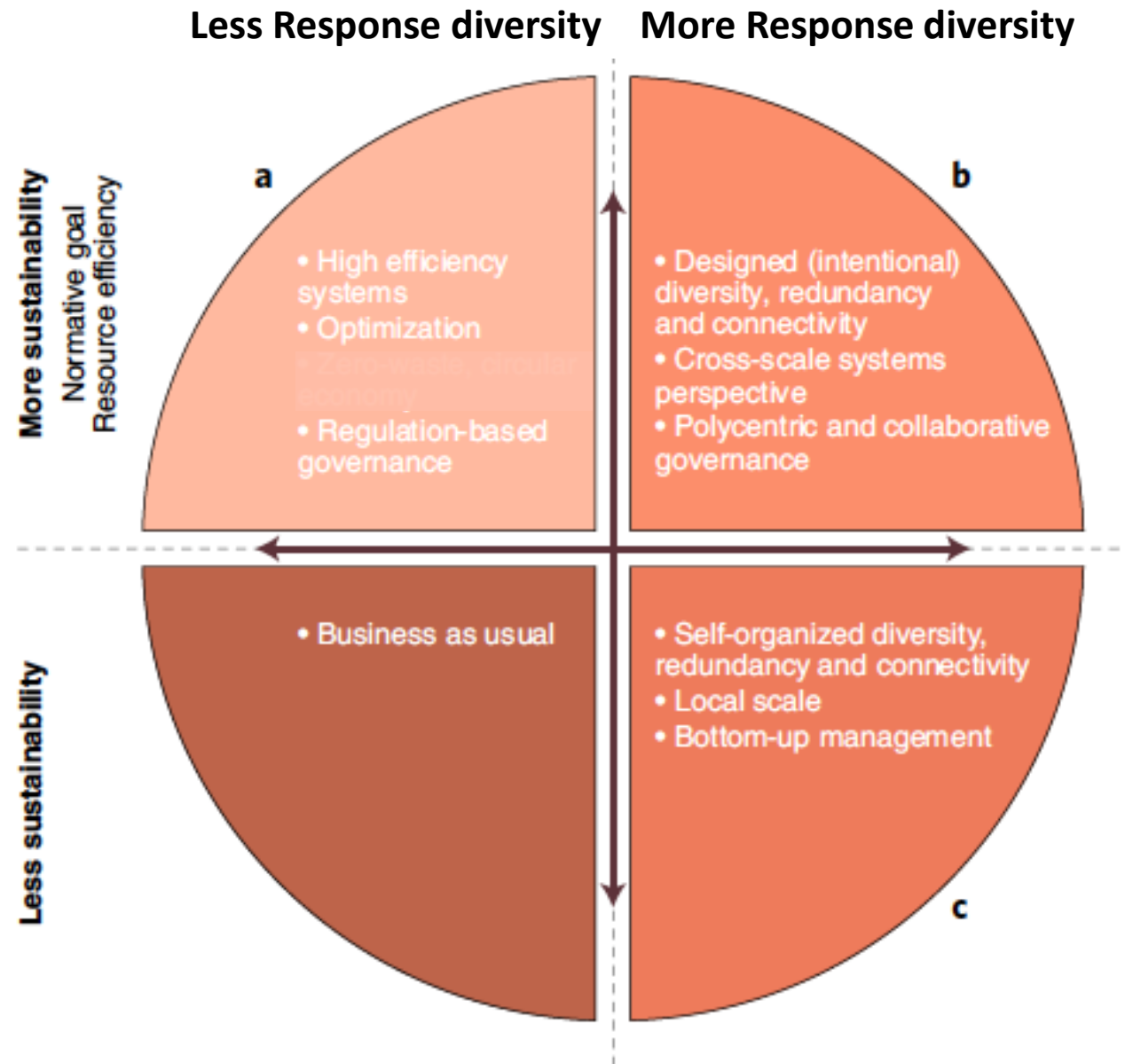


Response diversity

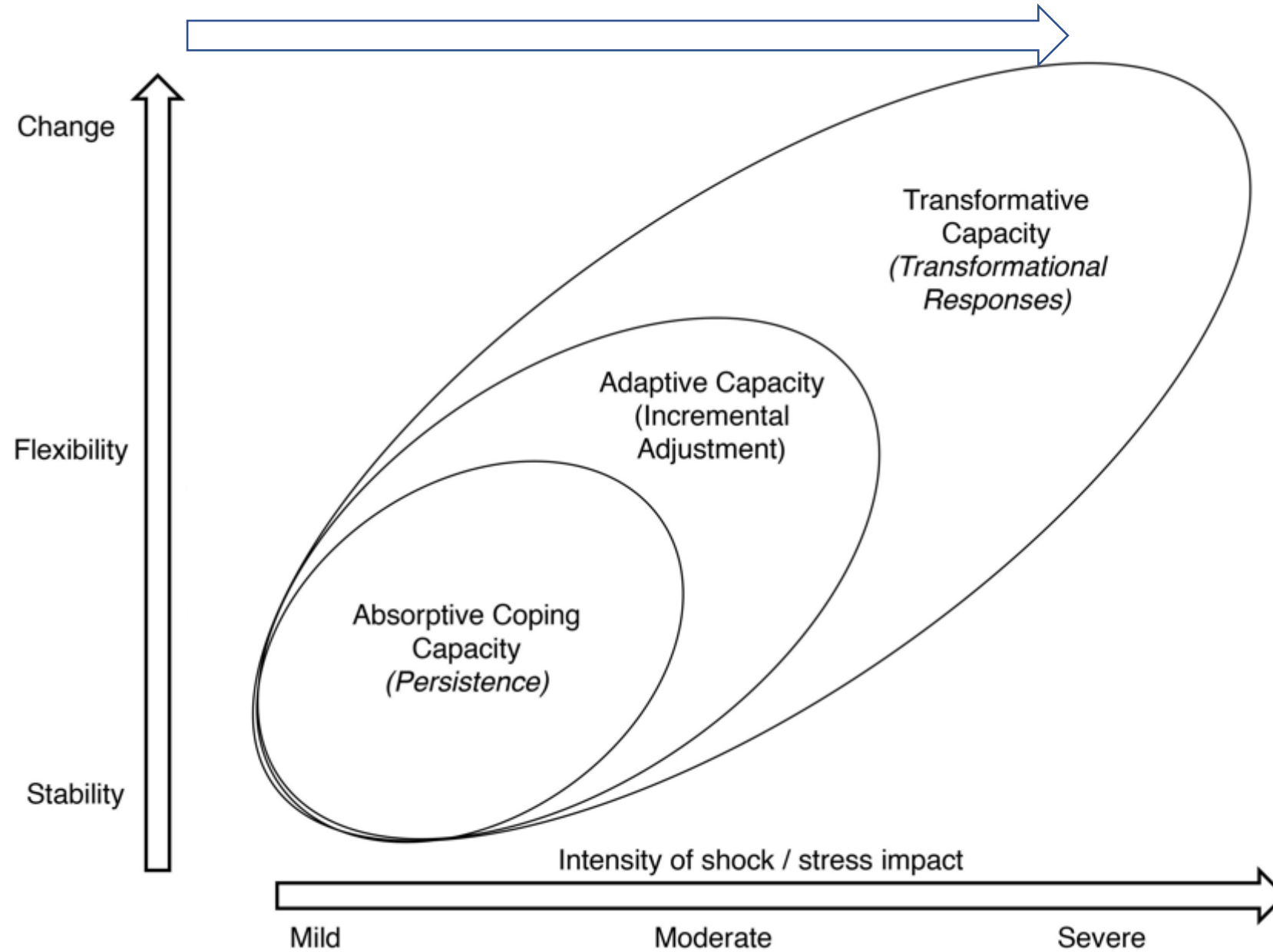
More sustainable



Designed networks



## The need for response diversity in policy and management







# RESPONSE DIVERSITY

- Scale is important – local diversification may occur at the expense of global simplification
- Serious trade-offs - increasing efficiency to meet targets of sustainability often reduce options for response diversity
- Maintaining response diversity entails social and financial costs

Walker et al. 2023



**Thank You**