

# Stress-testing Scotland's Multifunctional Water Resources Against Systemic Risks



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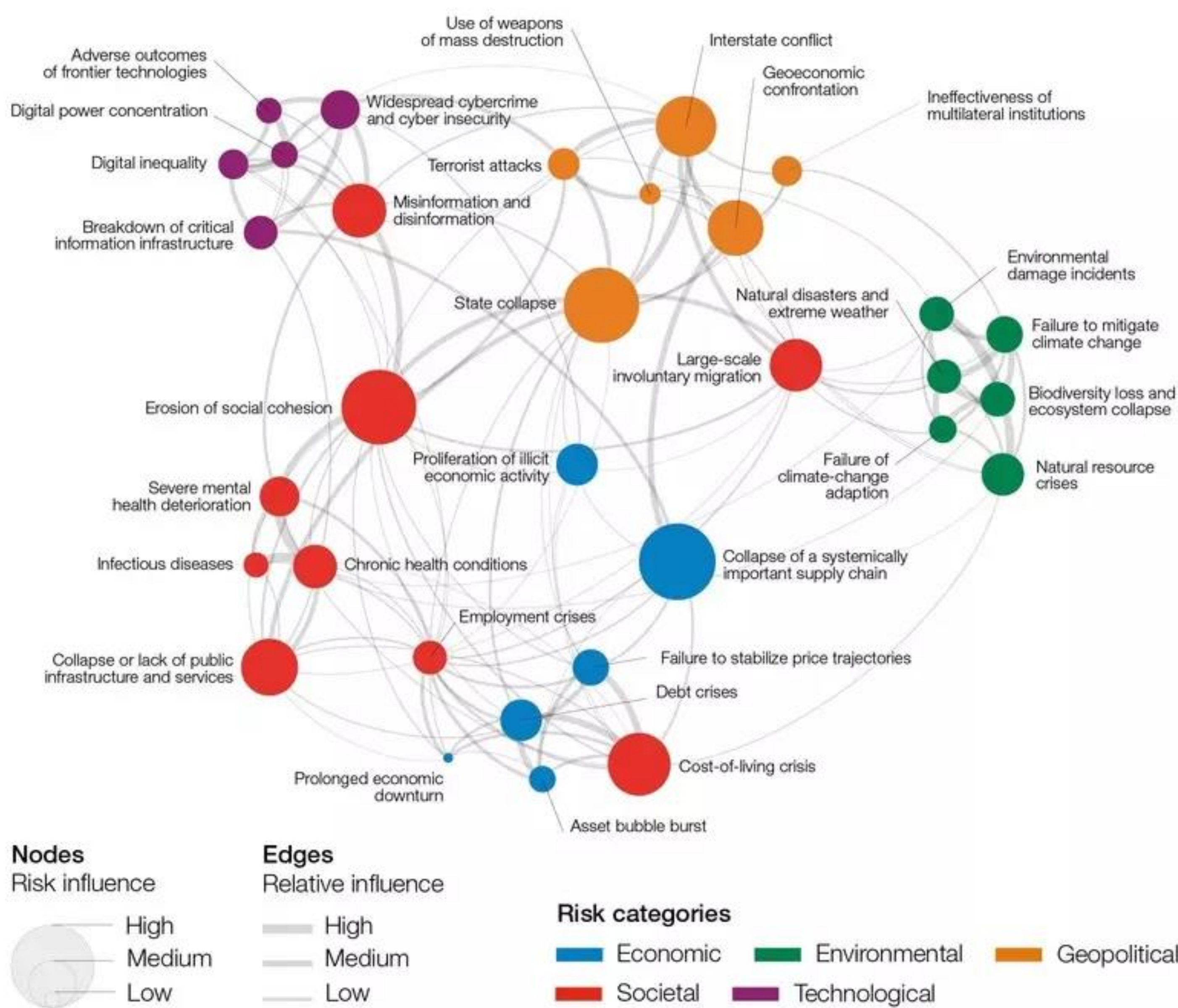
Hydro Nation Scholars Programme

The aim of the research project is to stress test the resilience of Scotland's water governance to future risks and evaluate the robustness of its response options against future stresses and uncertainties.

## Context

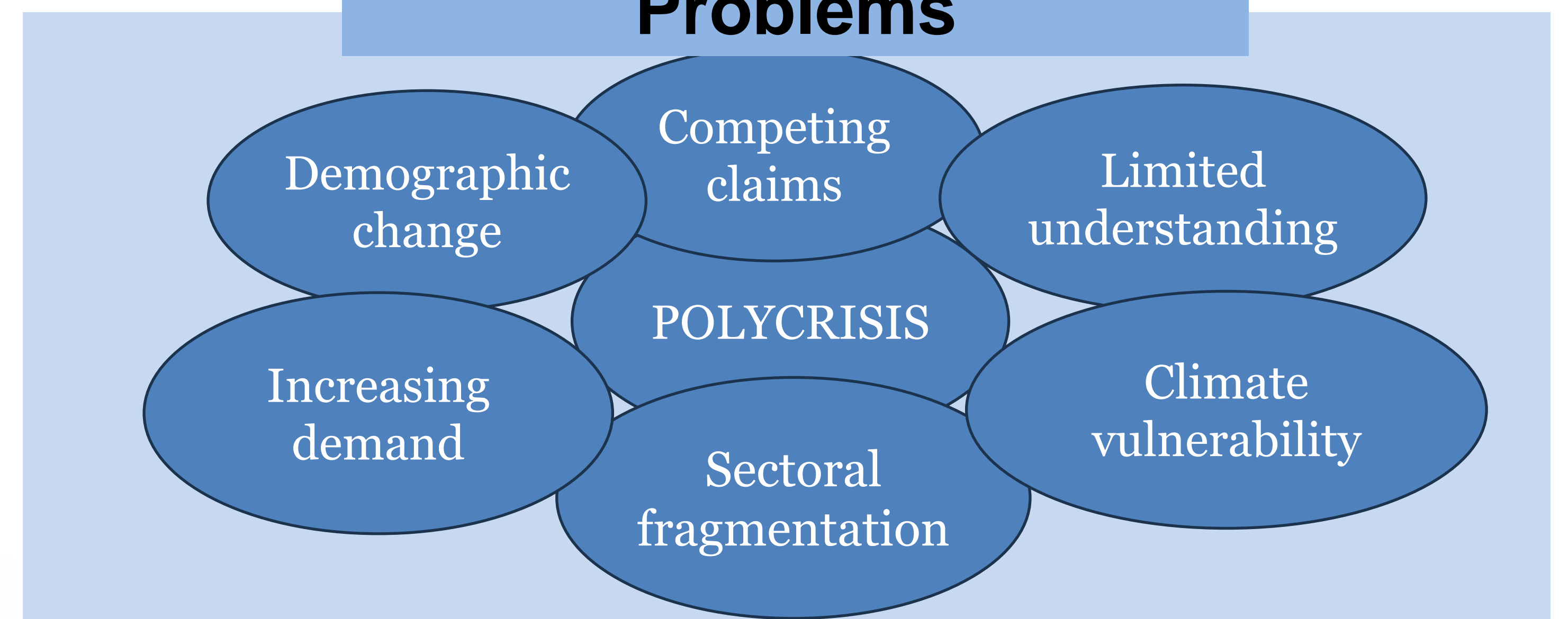
Global Risks Report 2023

### Global risks landscape: an interconnections map



Source: World Economic Forum, Global Risks Perception Survey 2022-2023

## Problems



## Objectives

- Develop a systems-based stress-testing framework
- Identify and map stakeholders
- Develop future scenarios
- Assess the resilience of Scotland's water governance
- Identify the factors that most affect its resilience
- Explore alternative response options

## Outcomes

- A stress-stressing framework template
- A mapping of stakeholders, their relationships and interactions
- A set of future scenarios in the context of socio-economic, geopolitical and environmental risks and uncertainties
- An assessment of the resilience of Scotland's water governance
- An understanding of alternative response options

## Methods

### Framework Development

- Defining the system
- Identifying the elements and their interconnectedness

- Literature review
- Expert interview

### Stakeholder Analysis

- Identification
- Characterisation
- Investigation

- Semi-structured interview
- Content analysis & WCM
- Multi-stakeholder dialogue

### Scenario Building

- Exploratory Scenario Planning  
*Business as usual*  
*Changes with low disturbance*  
*Changes with high disturbance*  
*Massive and abrupt changes*

- DELPHI
- Historical data analysis
- Stakeholder workshop

### Stress-testing

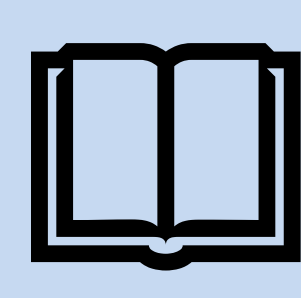
- Multi-stakeholder multi-scale process

- Data analysis
- Stakeholder workshop

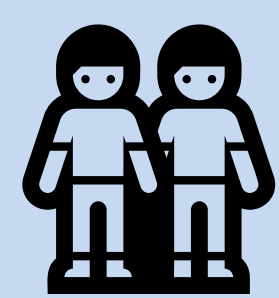
## Contribution



Decision-making



Academia



Society

## References

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- Kramer, K. et al. (2022) 'Roadmap to develop a stress test for forest ecosystem services supply', *One Earth*, 5(1), pp. 25-34.
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