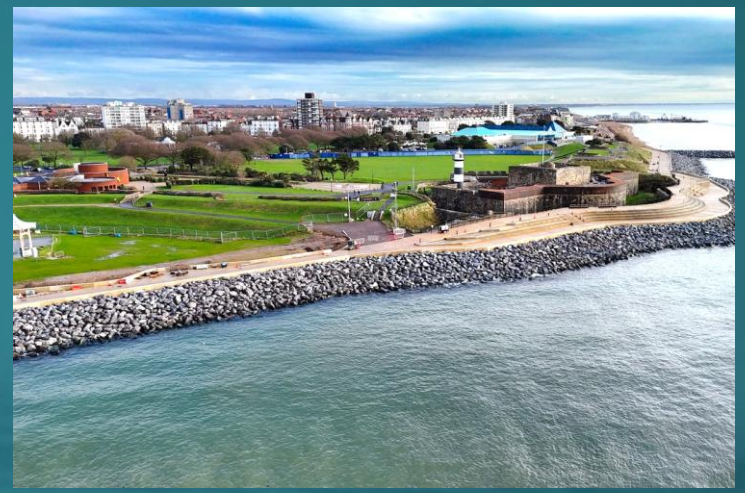


How do we perceive flood risk? – and what are the barriers to resilience?

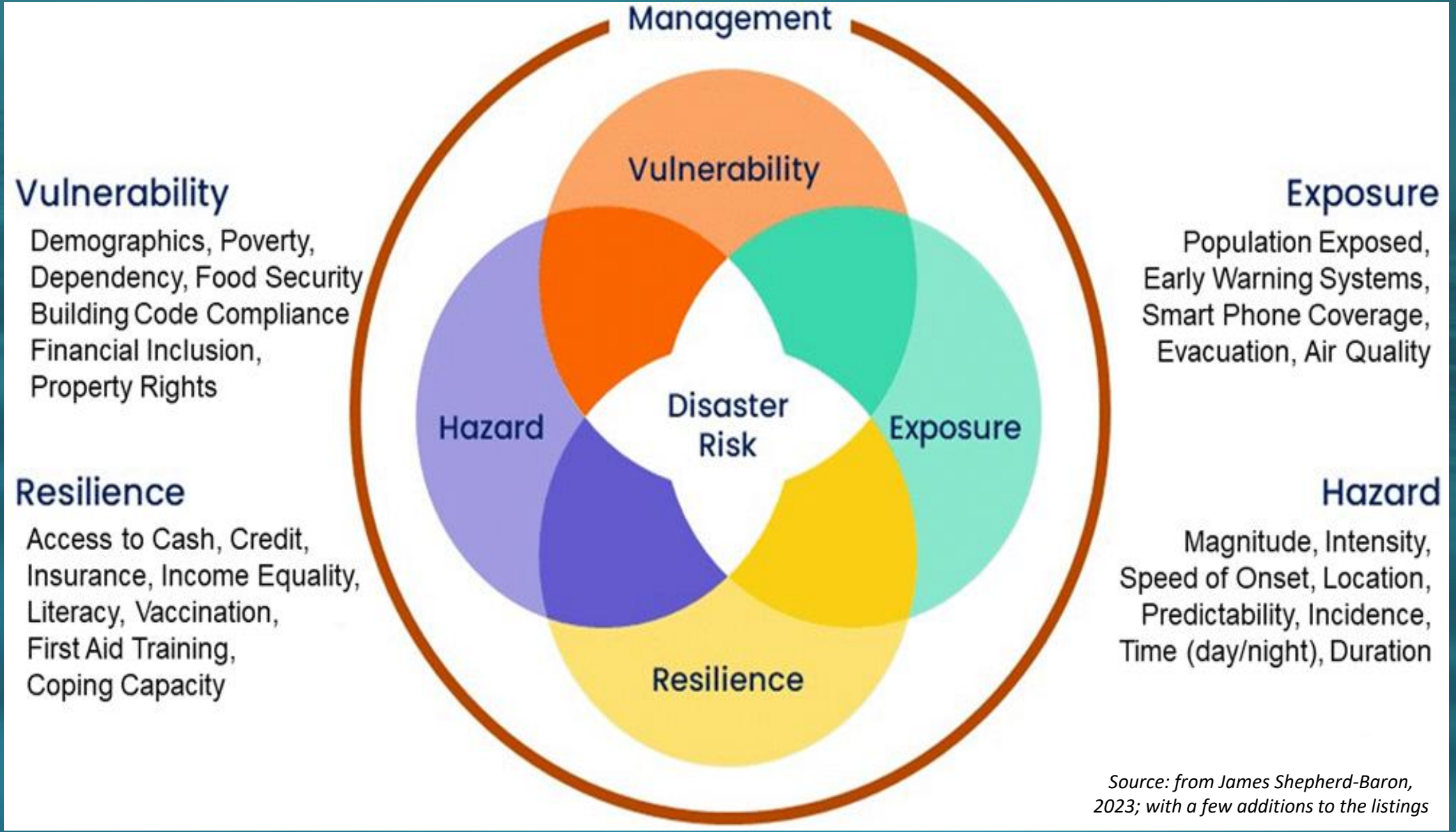
Richard Teeuw,
Professor of Geoinformatics & Disaster Risk Reduction
Co-director: Centre for Defence, Risk & Resilience (CEDRR)
University of Portsmouth

UNIVERSITY OF PORTSMOUTH

How do we perceive risk? - *complex: driven by many factors!*

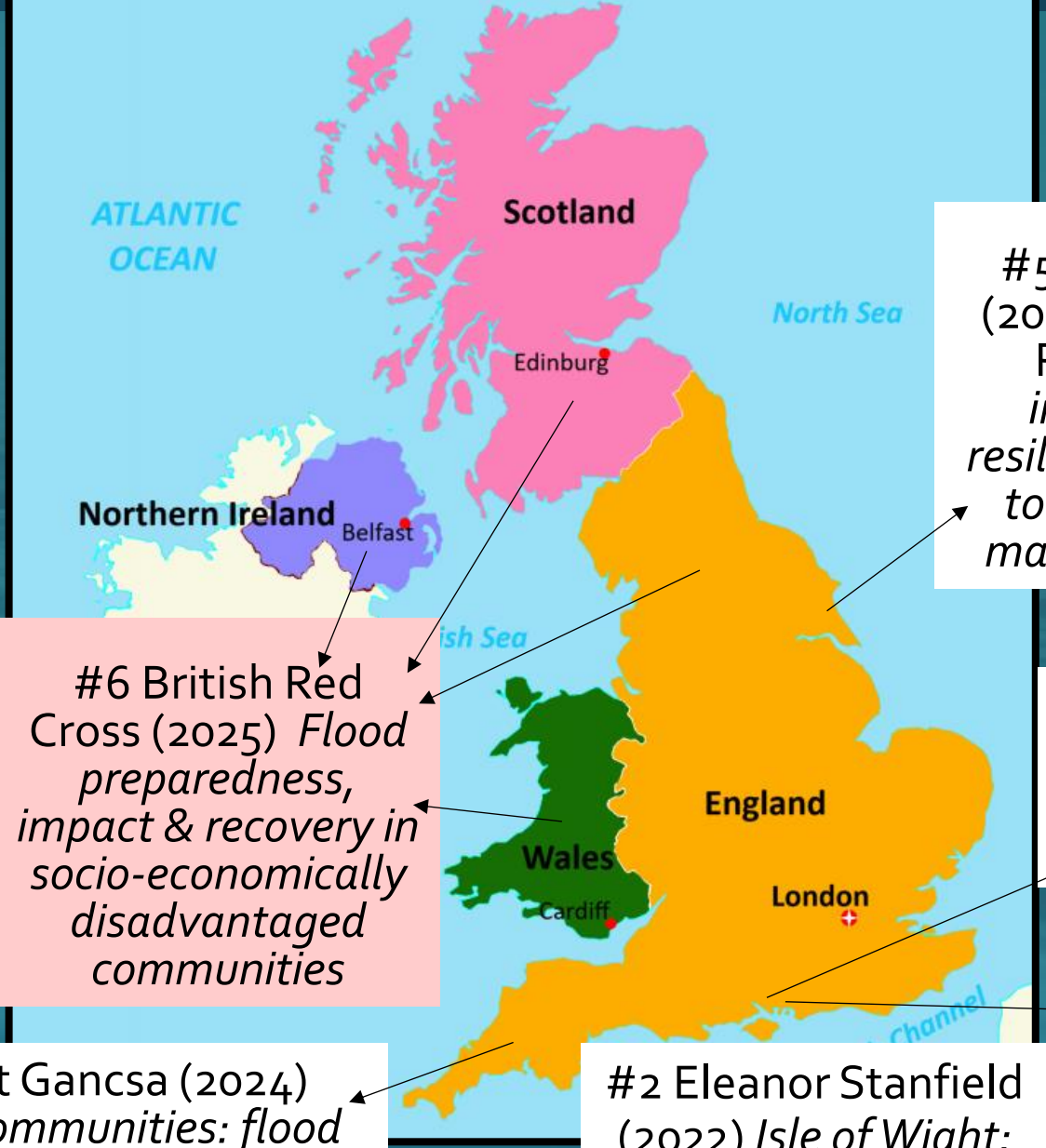
The main drivers of Risk: features Exposed to Hazards and Vulnerability, with Resilience to the ensuing impacts

Disaster Risk Management aims to reduce those drivers, decreasing the risk of a disaster occurring and reducing impacts



Source: from James Shepherd-Baron, 2023; with a few additions to the listings

Some recent research, MSc dissertations and publications examining UK flood risk perceptions and barriers to resilience



Based on 4 case studies:

- one each in England, Scotland Wales & Northern Ireland

- *2 in urban communities*
- *1 in a rural community*
- *1 in mixed urban/rural*

#6 British Red Cross (2025) *Flood preparedness, impact & recovery in socio-economically disadvantaged communities*

#5 Olivia Mansell (2025) SE Yorkshire: *Perceptions on individual flood resilience and barriers to community risk management (MSc)*

#4 Samantha Mundell (2022) *Gosport: school preparedness for a major flood event (MSc)*

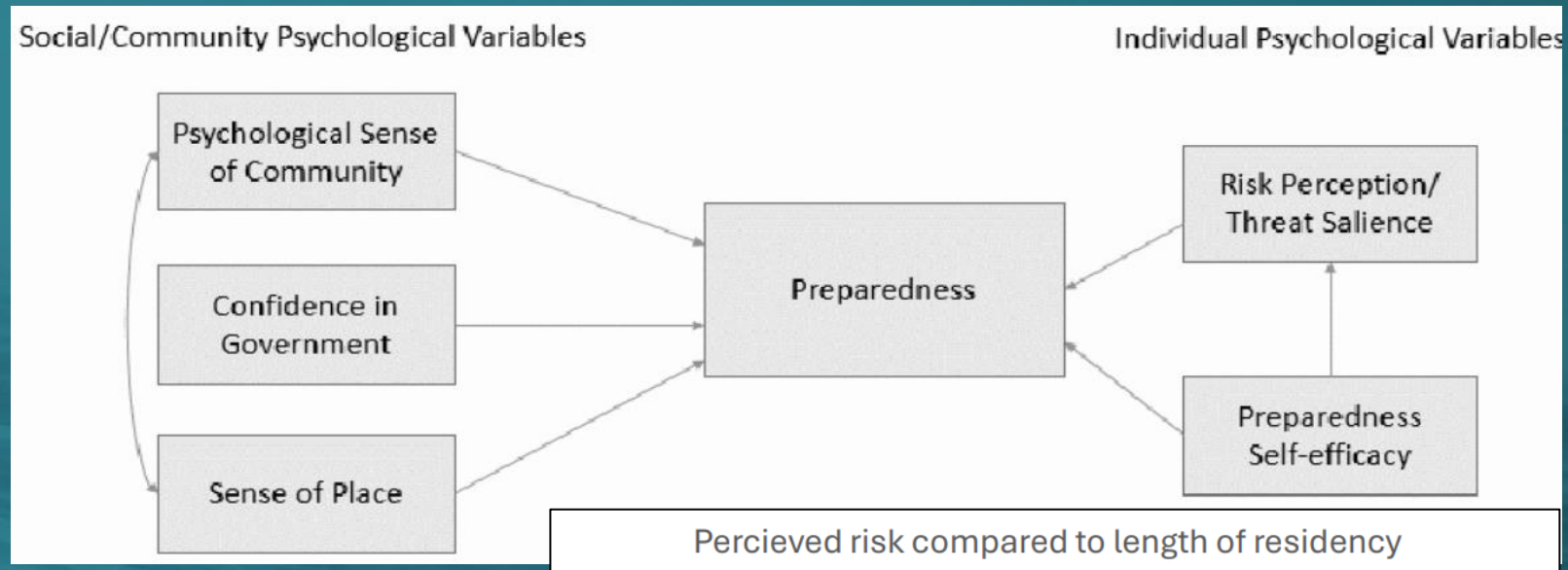
#3 UoP (2022) *Portsmouth: public perceptions of flood risk, preparedness and alerts (*Hants & IoW Local Resilience Forum)

#1 Judit Gancsa (2024) *Cornish communities: flood risk perception and Volunteer Flood Warden recruitment (MSc)*

#2 Eleanor Stanfield (2022) *Isle of Wight: pensioner flood risk perceptions & resilience (MSc)*

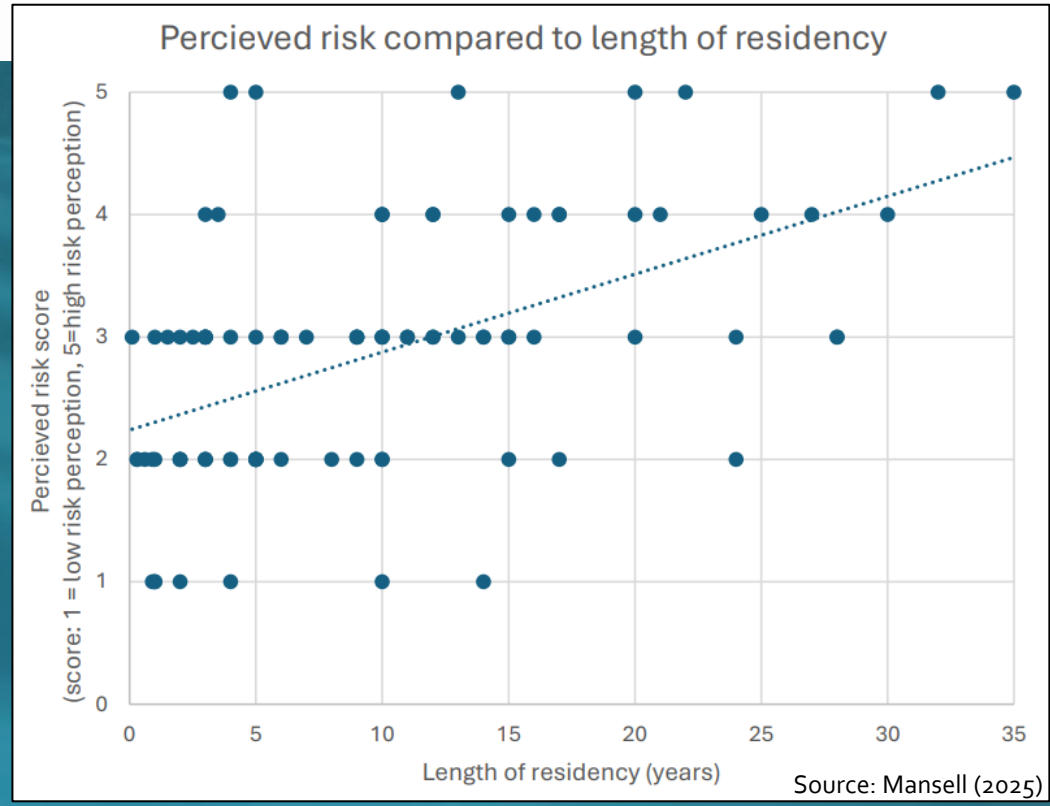
Flood risk perceptions

- Individual / family
- Business / livelihood
- Community / District
- *Sense of Community*
- *Sense of Place*
- Residency / local knowledge
- Experience



Across locations, participants mentioned they became **more aware of flood preparation after experiencing flooding**, but most have had to seek out the information themselves.

Source: BRC (2025)



Source: Mansell (2025)

Flood perception variations

(i) By personal vulnerability:

- Previous flooding experience & awareness of what to do
- The very young or the very old: mobility & awareness
- Emotional coping capacity & mental health
- Social Capital: support of family & friends - or isolated & alone?

(ii) By socio-economic status

- rich enough to cope?
- Home owner or renter?
- Insured?

There was widespread dissatisfaction with permanent re-housing by local authorities

Some renters relied on their local council for long-term rehousing after the floods. Across all four sites, **dissatisfaction was common**, with **many left in unsuitable or unhealthy conditions** and receiving limited recovery support.

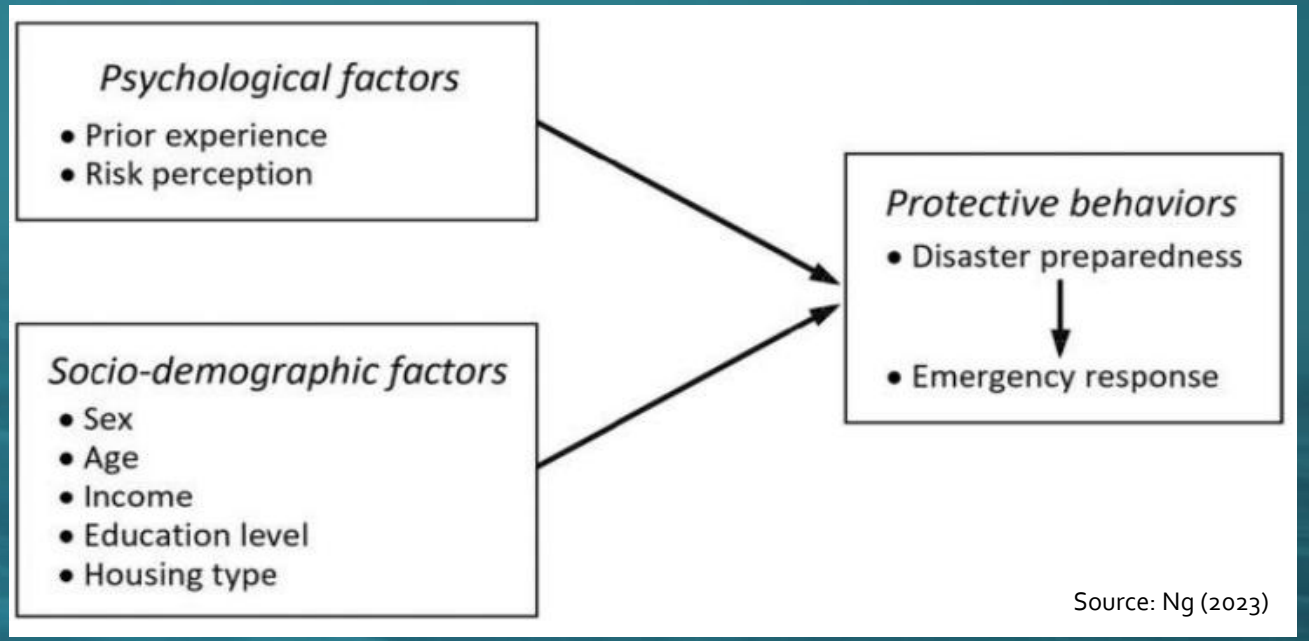
Source: BRC (2025)

Phases of flood risk management

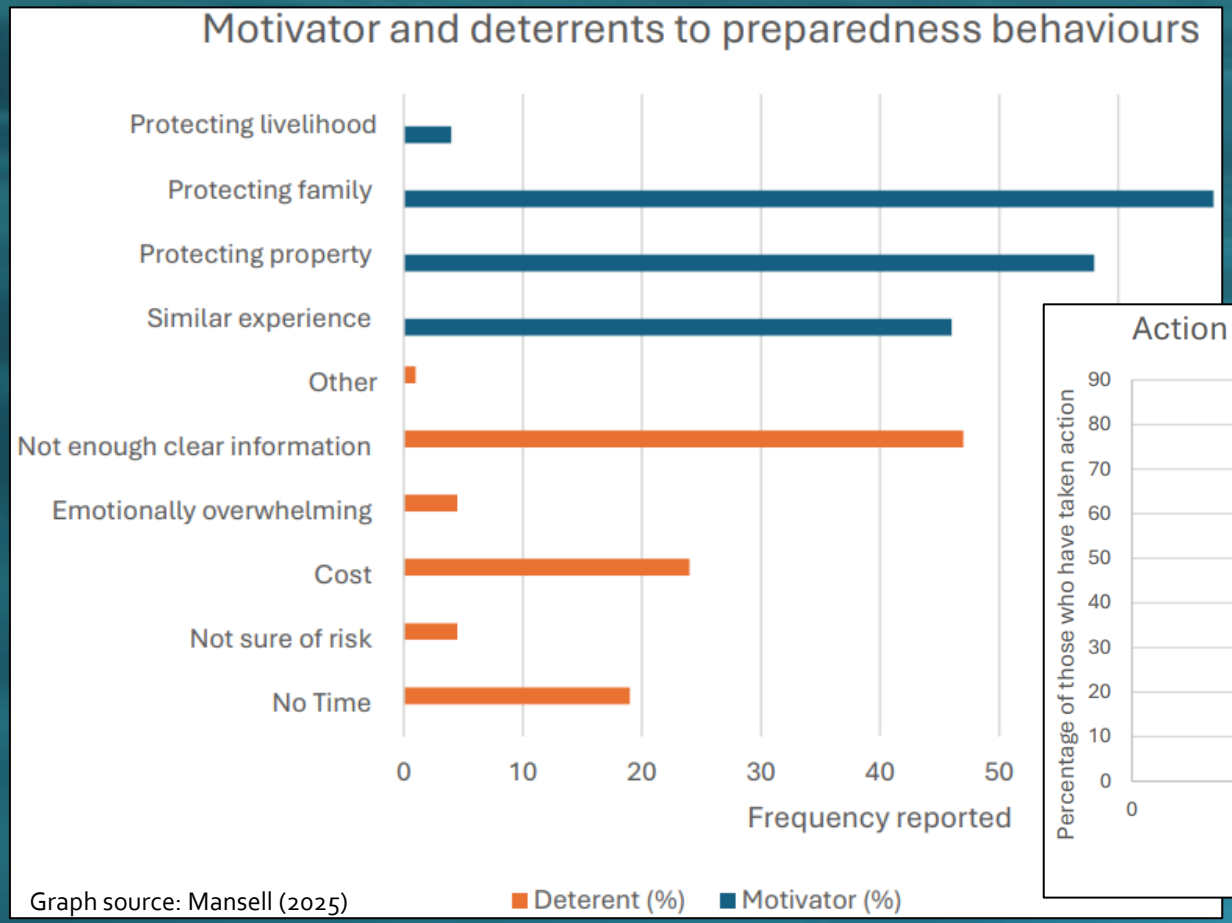
Preparedness -*"Before the flood"*

Response - *"During the flood"*

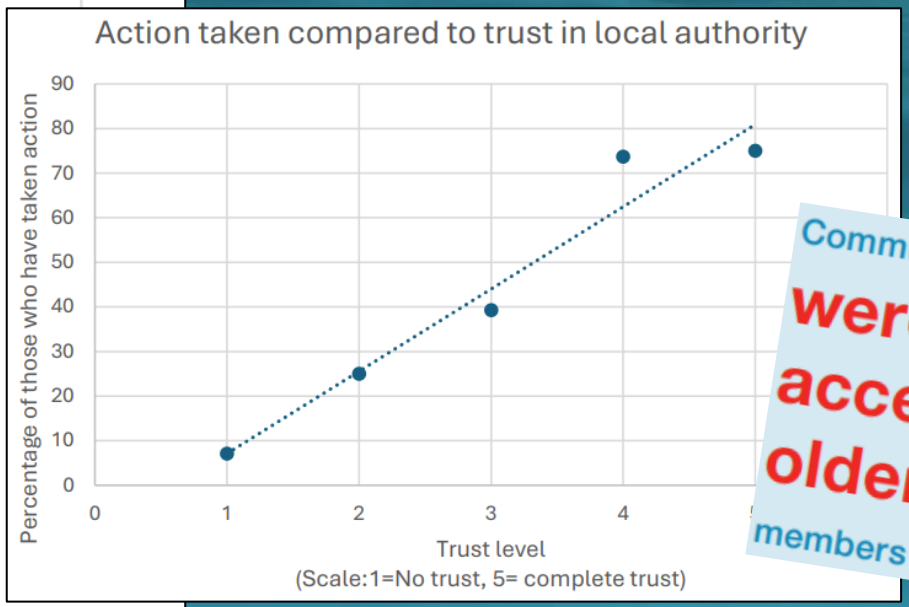
Recovery - *"After the flood"*



Source: Ng (2023)



Graph source: Mansell (2025)



Source: BRC (2025)

Review of the research findings

- major barriers to community flood resilience across the UK....

Barrier type	Description	Cited in case studies
Lack of clear information	Vague, generic or inaccessible information on risks & preparation	#1, #2, #3, #4, #5, #6
Low risk perception; lack of flood experience	Belief that local flood risks are unlikely to be serious	#1, #2, #3, #4, #5, #6
Knowledge gaps	Lack of understanding of flood hazards or response actions	#1, #2, #3, #4, #5, #6
Financial constraints	High cost of protective measures, from households to councils	#4, #5, #6
Infrastructure challenges	Limited transport access; rural isolation; poor telecom links	#2, #5, #6
Community cohesion issues	Weak local networks or leadership	#1, #5, #6
Distrust of government	Perceived lack of support or transparency from government	#1, #4, #5, #6
Elderly & other vulnerable folk	Often fragile health, less mobile & with limited access to alerts	#2, #4, #5, #6
Emotional stress and mental health	Psychological burden of flood preparations & recovery	#4, #5, #6
Home ownership issues: renters	Living in rented accommodation: private renters or social housing	#6
Limited recovery grant access	Difficult to find info about recovery grants, slow delivery times	#6

Review of the research findings

Barriers to community flood resilience - some recommended remedial actions

Barrier type	Some recommended remedial actions
Lack of clear information	**Improve flood messaging** - awareness campaigns: the general public, businesses and especially schools - encourage local Volunteer Flood Warden recruitment
Low risk perception & lack of flood experience	
Knowledge gaps	
Financial constraints	**Prioritise flood resilience funding to deprived areas** Flood management awareness events with local communities
Infrastructure challenges	
Community cohesion issues	
Distrust of government	**Enhance trust in government** e.g. via flood management awareness events with local communities
Elderly & other vulnerable folk	**Prioritise informing & assisting the elderly and vulnerable**
Emotional stress and mental health	**Improve mental health support**, especially in flood-prone areas
Home ownership issues: renters	**Give more support for renters** & social housing
Limited recovery grant access	**Improve access to recovery grants**

Thank you! - any questions?

References cited

British Red Cross (2025) *Water's Edge: understanding flood preparedness, impact & recovery in socio-economically disadvantaged communities.* Water's Edge UK Flooding Research Report | British Red Cross

DeYoung, S. E., & Peters, M. (2016) *My community, my preparedness: the role of sense of place, community & confidence in government in disaster readiness.* International Journal of Mass Emergencies & Disasters, 34(2), 250-282.

Gancsa, E.J. (2024) *Cornish communities: flood risk perception, Volunteer Flood Wardens & recruitment struggles.* Crisis & Disaster Management MSc dissertation, University of Portsmouth.

Mansell, O. (2025) *Perspectives of communities living near hazards & barriers in community disaster management.* Crisis & Disaster Management MSc dissertation, University of Portsmouth.

Mundell, S. (2022) *How prepared is the local school community for a major flood event in Gosport?* Crisis & Disaster Management MSc dissertation, University of Portsmouth.

Ng, S. L. (2023). *The role of risk perception, prior experience, and socio-demographics in disaster preparedness and emergency response toward typhoons in Hong Kong.* Natural Hazards, 116(1), 905-936.

Solana et al. (2022) *Public communication guidelines for flood emergencies in the City of Portsmouth.* Report by the University of Portsmouth for Hampshire & IoW Local Resilience Forum.

Stanfield, E. (2022) *Storm preparedness of residents on the Isle of Wight, UK.* Crisis & Disaster Management MSc dissertation, University of Portsmouth.