

Linking community resilience and infrastructure resilience

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Community and infrastructure resilience

- A research gap?
- Community resilience
- Bottom-up infrastructure
- Floods and drainage



Resilience

- Ecology
- Engineering
- Psychology
- Social work
- Community development



Social resilience

the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change.

(Adger, 2000)

Resilience

The capacity of an individual, community or system to adapt in order to sustain an acceptable level of function, structure, and identity.

(Cabinet Office [after Demos, 2009], 2011)

Community resilience

Communities and individuals harnessing local resources and expertise to help themselves in an emergency, in a way that complements the response of the emergency services.

(Cabinet Office, 2011)

Community resilience

- Adapt to changing environment
- Bounce back from extreme events
- May emerge or transform under changing conditions
- More than the sum of individual actions and behaviours
- Beyond formal institutions

Community resilience

- Disaster preparedness
- Disaster response
 - Emergent responses
 - Social networks
 - Key social actors
- Disaster recovery



Community resilience

- Critical infrastructure planning
- Vulnerable communities and individuals
- Urban planning
- Building design
- Citizen science and co-design



National resilience planning

- Category 1 and 2 responders
- Emergency preparedness
- Local resilience forums
- Infrastructure resilience
- Community resilience

Community flood resilience

- Lead Local Flood Authorities
 - Public consultation and engagement in defence schemes
- Local flood forums
- Voluntary sector
- Community engagement?
 - Local resilience forums and local communities?

Bottom-up infrastructure

Infrastructure provision based on direct engagement of communities in engineering design and decision-making to deliver resilient, sustainable systems that meet the needs of people and the environment under conditions of uncertainty.

Bottom-up infrastructure

- LWEC Challenge Fellowship
- 5 year programme
- Repowering, Tideway, HS2, TEAM2100, Arup, Crossrail, Thames Water, Greater London Authority

Bottom-up infrastructure

- Case studies
- Community of practice
- Document best practice
- Appraisal and decision support tools
- Standardised engineering methods

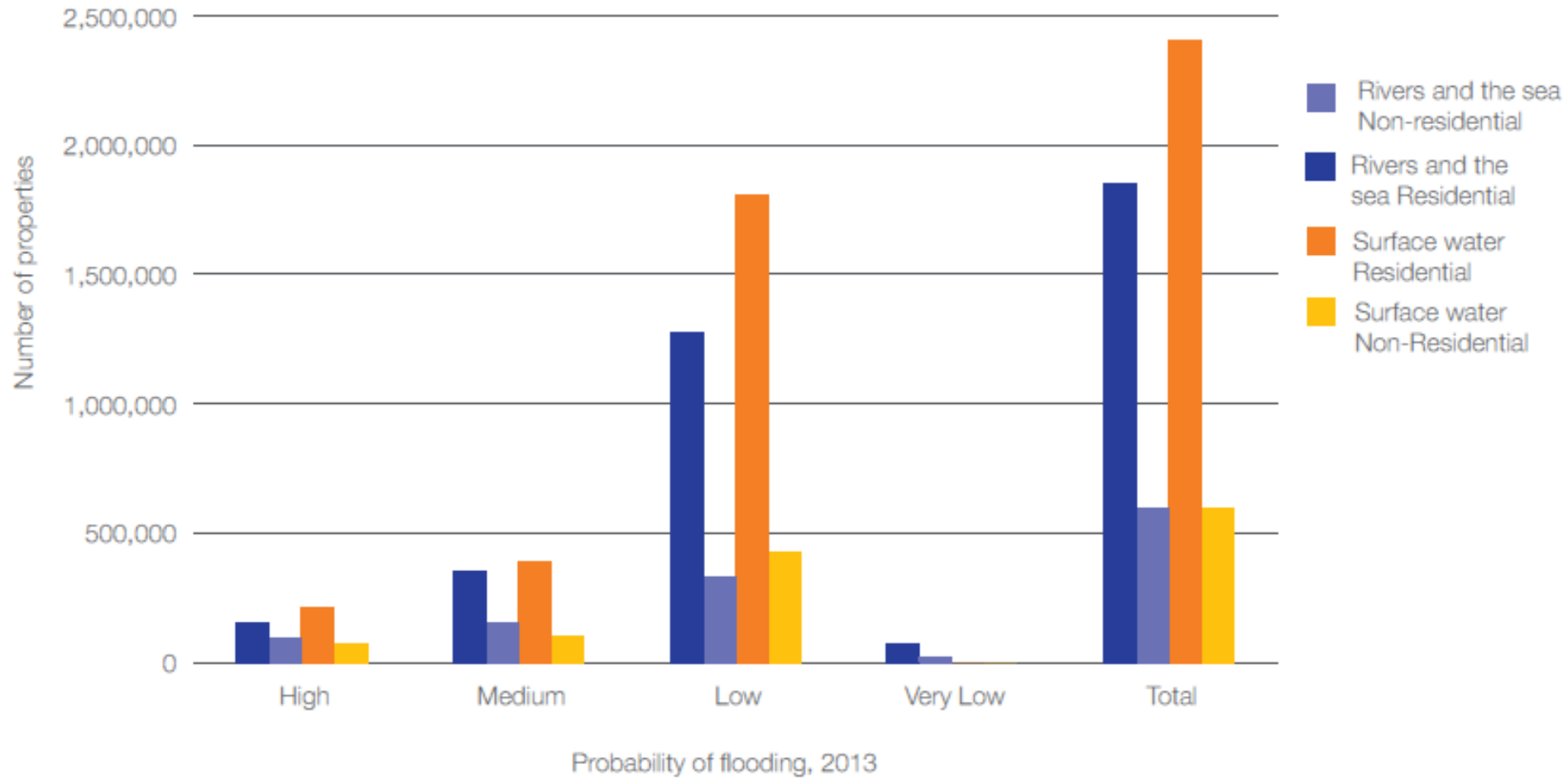


Community engagement in planning and design for flood resilience

- Engagement throughout the infrastructure lifecycle
- Modelling
- Options generation and assessment
- Multiple benefits
- Funding



Chart 9.A: Properties at risk from flooding, by type of property and source of risk



Source: Environment Agency, Long-Term Investment Scenarios, Dec 2014

Community engagement in flooding defence

- Competency groups
 - Whatmore et al
 - Flood modelling and catchment based defence
 - Drought responses



Community SuDS

- Engineering design
- Community engagement
 - Environmental education
 - Multiple benefits
 - Acceptability and planning
- Can we do both, together?



Infrastructure and community resilience

- Can infrastructure planning and design enhance community resilience?
 - process and outcome
- Does community engagement deliver more resilient infrastructure and communities?
 - Different infrastructure?
 - Different communities?
 - Different engineering?

Linking community and infrastructure resilience

- Upstream engagement
- Learning from local experience
- Support and build resilient social networks
- Guiding science and engineering
- Document and standardise engineering methods

