

Community Coping Strategies and Decision Making for Resilience to Extreme Weather

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Objectives

- To undertake stakeholder-led research seeking to better understand how community groups (decision-makers, households, SMEs) respond to EWEs
- To study the complex relationships between these groups in order to improve understanding of the influence that these relationships have on community resilience
- To develop an integrated decision-making framework that supports individual and collective action amongst stakeholder groups in such a way that actions result in improved resilience

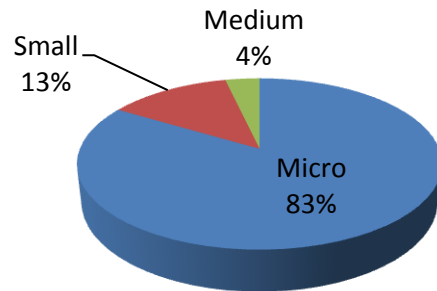
Outline

- ❖ SMEs
- ❖ Decision makers
- ❖ Householders
- ❖ Integration
 - Social Responsibility
 - Cognitive mapping

SME Update

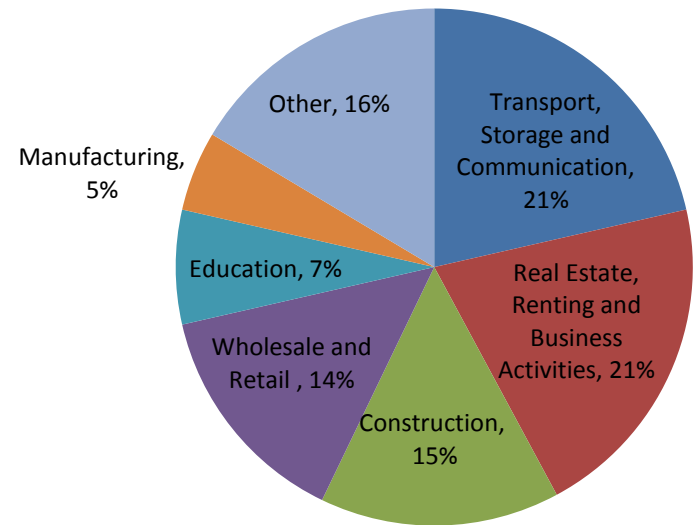
❖ Fieldwork

- Questionnaire survey involving 140 SMEs
 - Assisted by Federation of Small Businesses
 - SMEs located in Greater London
 - Top management as participants



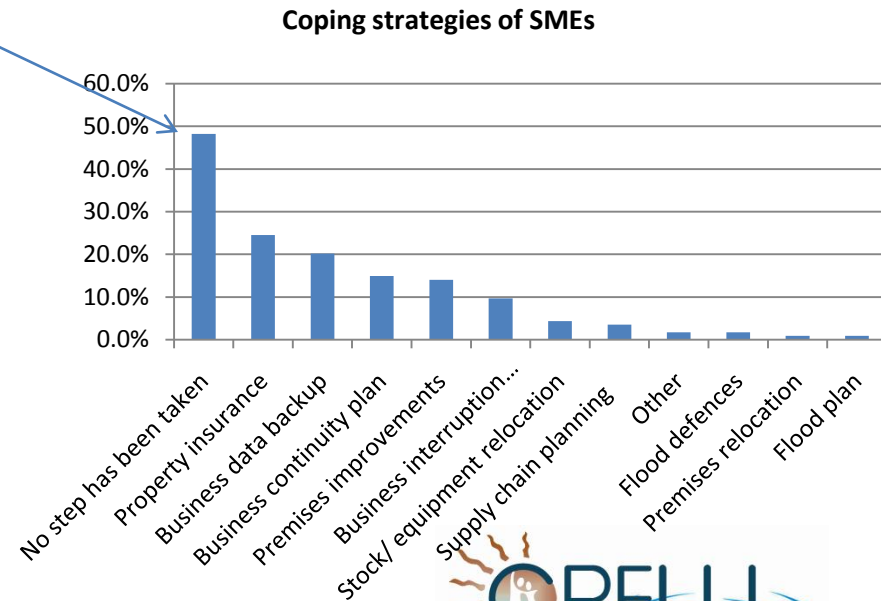
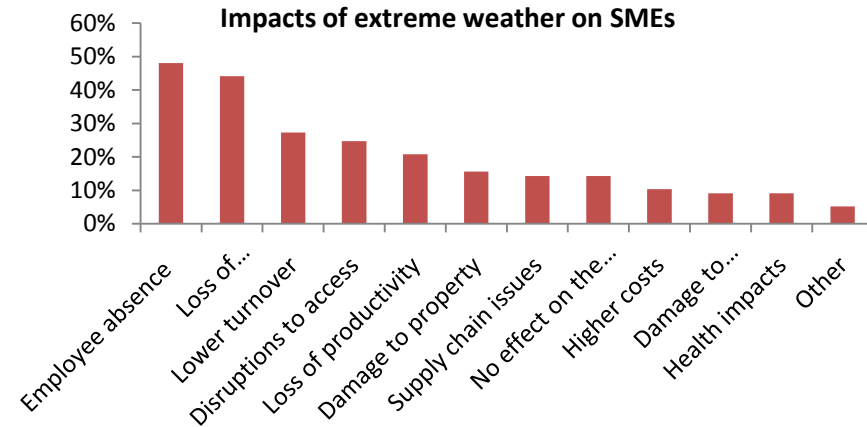
- In-depth interviews with SMEs
 - Focused on flood risk
 - 12 businesses, across sectors

❖ Development of a template for EWE risk assessment for SMEs



Questionnaire survey

- ❖ 60% have experienced EWEs during the last 5 years
- ❖ 84% of which were impacted negatively
- ❖ Yet nearly 50% have no coping strategy
- ❖ EWEs are not foreseen to affect businesses nor have significant enough impact to warrant strategy
- ❖ Semi structured interviews followed up survey, focussing on
 - Decision making processes
 - Perceptions of risk, vulnerability and resilience
 - Interrelationships with stakeholder groups



SME Interview findings

- ❖ Out of the 12 SMEs studied, four had been directly impacted by flooding
- ❖ Two had implemented coping strategies other than property insurance after being affected, and one without being affected
- ❖ None had been approached by the local authority regarding flooding
- ❖ Eight believed that flooding could have a critical impact on their business
- ❖ In the case of one business, the premium for building and content insurance has doubled after being flooded
- ❖ A recently established flood sensitive SME was not aware of its premises being flooded few years back (2007)
- ❖ Local authority as a desirable source of hazard information and advice

Decision-makers (1)

❖ Key findings so far

- Local/bottom-up 'silver buckshot' approach to resilience tools/strategies & primarily post-EWE
- National/top-down indicators etc. (e.g. NIs) early days

❖ Recent changes

- Framework/strategy developments
 - Cabinet Office: Draft Strategic National Framework on Community Resilience; critical infrastructure resilience; sector resilience plan; economic regulated sector resilience
 - Scotland: resilience strategy; adaptation framework
- Political risk
 - Policies in the coalition agreement; decentralisation?
 - ~25% budget cuts over 5 years; Spending Review due

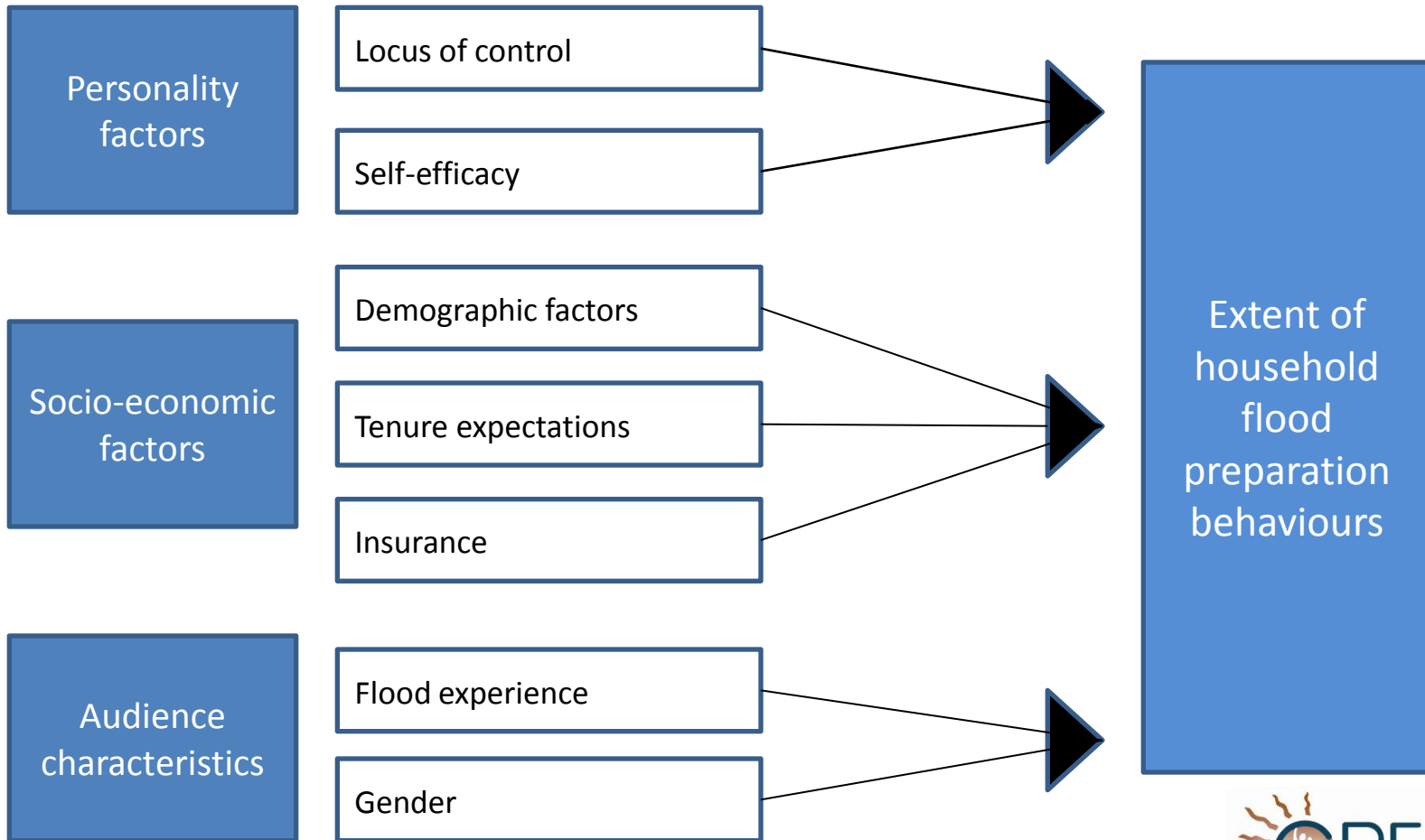
Decision-makers (2)

- ❖ **Fieldwork plan in place for further interviews with:**
 - Local representatives of public sector, NDPBs/agencies, and private sector
 - PLUS several national & regional representatives
- ❖ **Aims:**
 - To gauge the novelty, utility & 'fit' of CREW's tools
 - To get user feedback to improve our tools
 - To explore problems & opportunities in decision-making (using our cognitive maps)
 - To capture recent changes & further examples of past/ongoing positive initiatives
 - 20+ interviews expected

Household Report

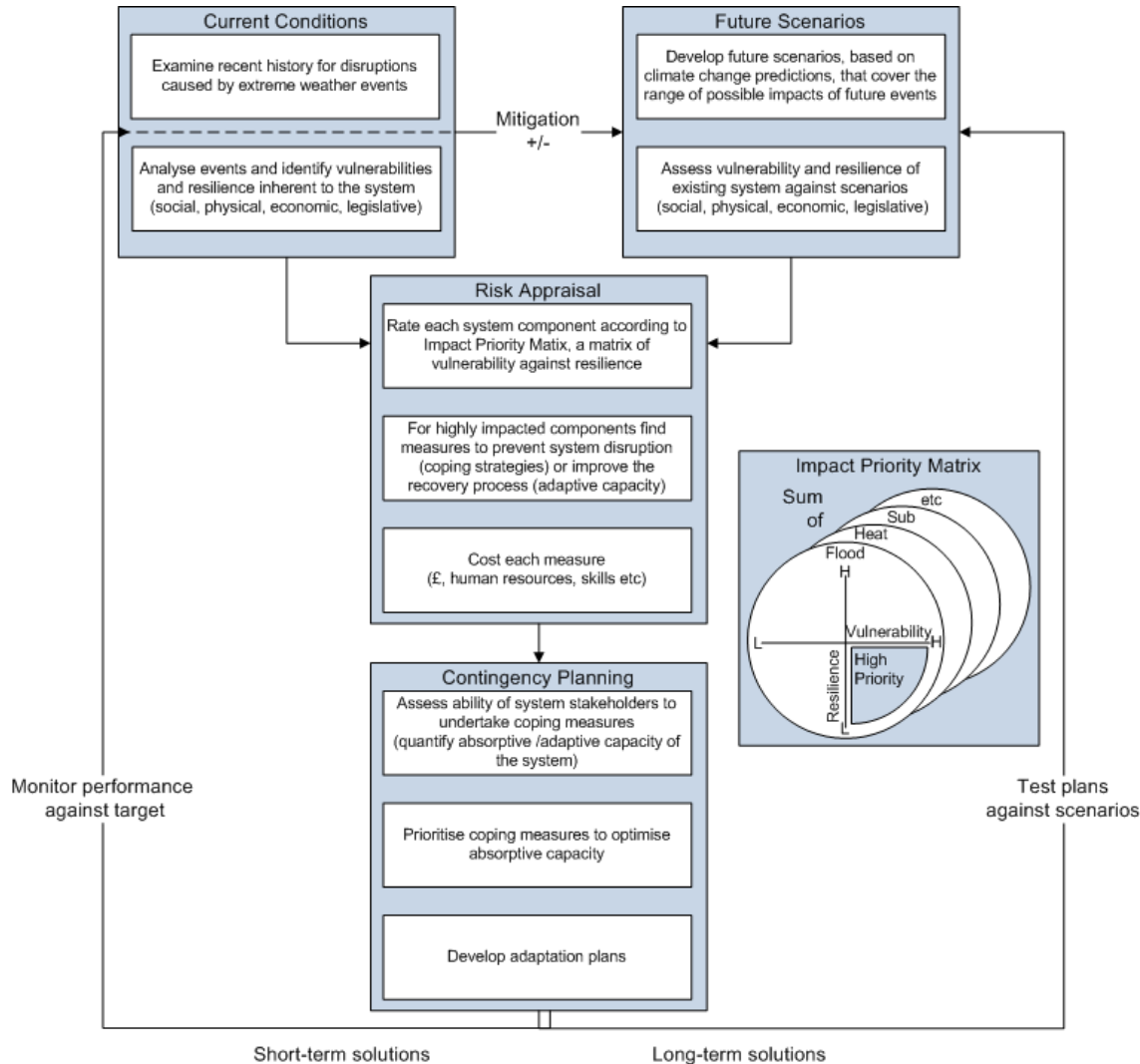
- ❖ This research is investigating the factors influencing opportunities for improving and/or strengthening adaptive capacity at the household level, in particular flood adaptation
- ❖ Much research focuses upon overcoming known barriers to adaptation – the other side of the coin is to look at the drivers of behavioural change

Hypothesised framework: Drivers of protective behaviours



Researchers: David Proverbs and Carly Rose

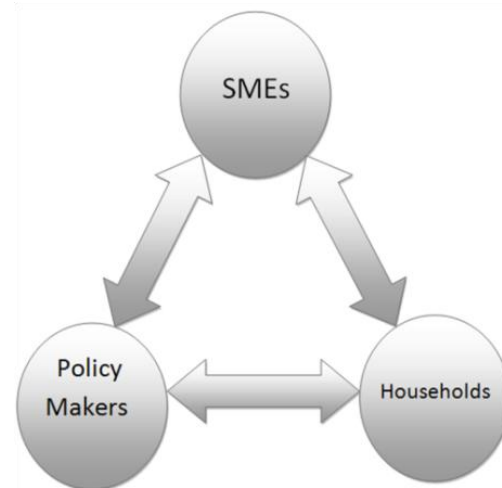
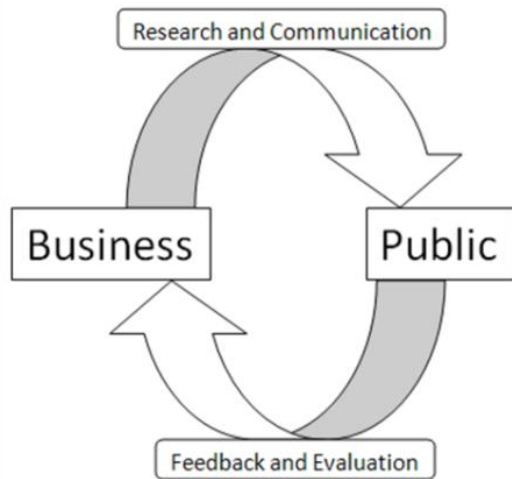
Operational EWE Risk Framework



- ❖ Developed through field work with social housing SME, Octavia Housing
- ❖ Draws upon Cutter et al, 2008 and BACLIAT tool
- ❖ Intended for use by Built Environment professionals advising government and business
- ❖ Impact Priority Matrix
- ❖ Interventions as vectors

Social Responsibility (1)

- ❖ C(orporate)SR (PR?) vs C(ommunity)SR



- ❖ The **gaps** in perceptions of SR between community groups are indicative of *barriers to community resilience*

Social Responsibility (2)

- ❖ Pitt Report 2008: Individuals should be more socially responsible, accept a greater individual responsibility for community resilience
- ❖ Pre-EWE social characteristics mediate
 - Absorptive Capacity
 - Motivation
 - Self organisability
 - Willingness to learn (Walker and Salt, 2006)
- ❖ Social responsibility has the potential to greatly affect decision making (e.g. Colten, 2008 for US example).

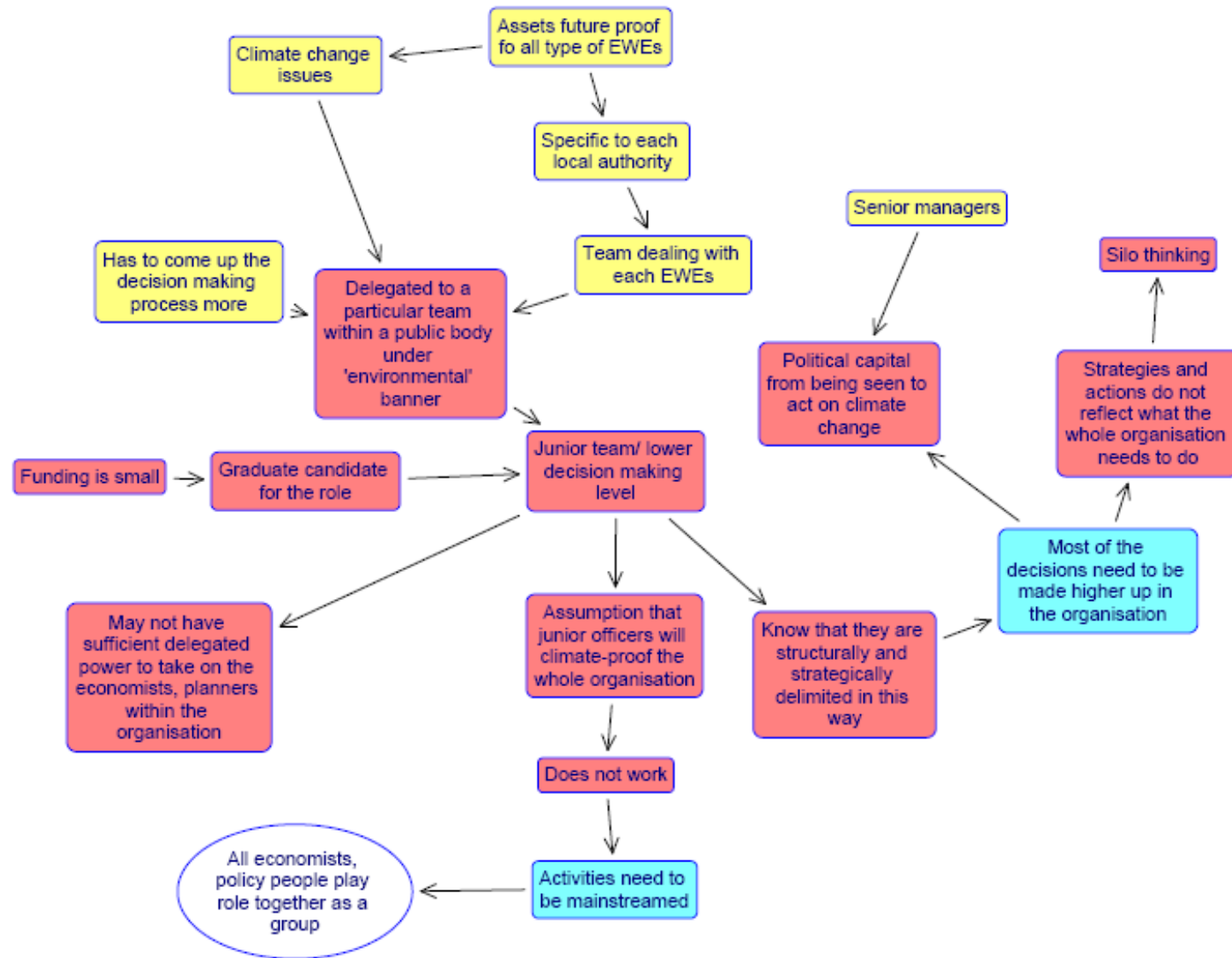
Soc Res Survey and Findings

- ❖ Questionnaire survey exploring barriers to resilience through interrelationships between stakeholders
- ❖ Demographic sampling for: Age, Gender and Ethnicity
- ❖ Returns from 175 H/Hs and 51 SMEs from two recently flooded areas of Birmingham
- ❖ Early findings: confirmed existence of barriers to community resilience
 - Similar levels of self reported SR (77% SME, 73% H/H)
 - However both H/Hs and SMEs identified 20% less SR in each other than in themselves
 - Significant difference in SR reported by different ethnicities
 - Older participants report higher SR

Cognitive Mapping

- ❖ Visual representation of an individual's **subjective** construct system which helps to unpack the **specific elements** of an individual's thoughts
- ❖ Network of **causal relationships** in the form of **nodes** and **paths**
- ❖ Technique applied to nine decision maker interview transcripts
 - Focal constructs – Barriers, Strategies, Outcomes and Actors
 - Two main themes – 'Policy/Governance' and 'Behavioural Change'
- ❖ We will expand on decision making processes in our afternoon workshop (here are a few examples)

Are EWEs even a priority?



actor (other) barrier outcome strategy

Further Work

- ❖ Continue data collection:
 - Decision makers
 - Households (Pilot, National, SE London)
- ❖ Analysis of questionnaire responses from all three community groups
- ❖ Interviews with members of all three community groups
 - deeper qualitative context to the quantitative findings
- ❖ Cognitive mapping of interview transcripts and further analysis across groups

Intra-CREW linkages

- ❖ Technical Coping Measures (PP1)
 - ❖ Householder and SME receptivity to technical coping measures
 - ❖ Cost-effectiveness issues with decision-makers
- ❖ EWESEM (PP3)
 - ❖ Floods/employment/housing tool with decision-makers
- ❖ SWERVE (PP4)
 - ❖ Model assumptions/outputs with decision-makers
- ❖ WISP (PP5)
 - ❖ Functionality and design with all stakeholder groups
 - ❖ Raising awareness of differing notions of social responsibility

Workshop:

Improving Community Resilience

- ❖ Break into four groups (6 per group)
 - Behavioural change x2 (Robby and Fuad)
 - Difficult to engage SMEs (Bingu)
 - Are EWEs even a priority? (David)
- ❖ Each member of the group (15 minutes)
 - Identify two barriers and propose three strategies to improve community resilience taking account of given barriers
- ❖ Collectively as groups (20 minutes)
 - Compile and discuss five barriers and strategies
 - Identify parties who have to take part in the process:
Responsible, **A**ccountable, **S**upportive, **I**nformed
- Reporting (10 minutes)