Climate change & social justice: Introducing Climate Just

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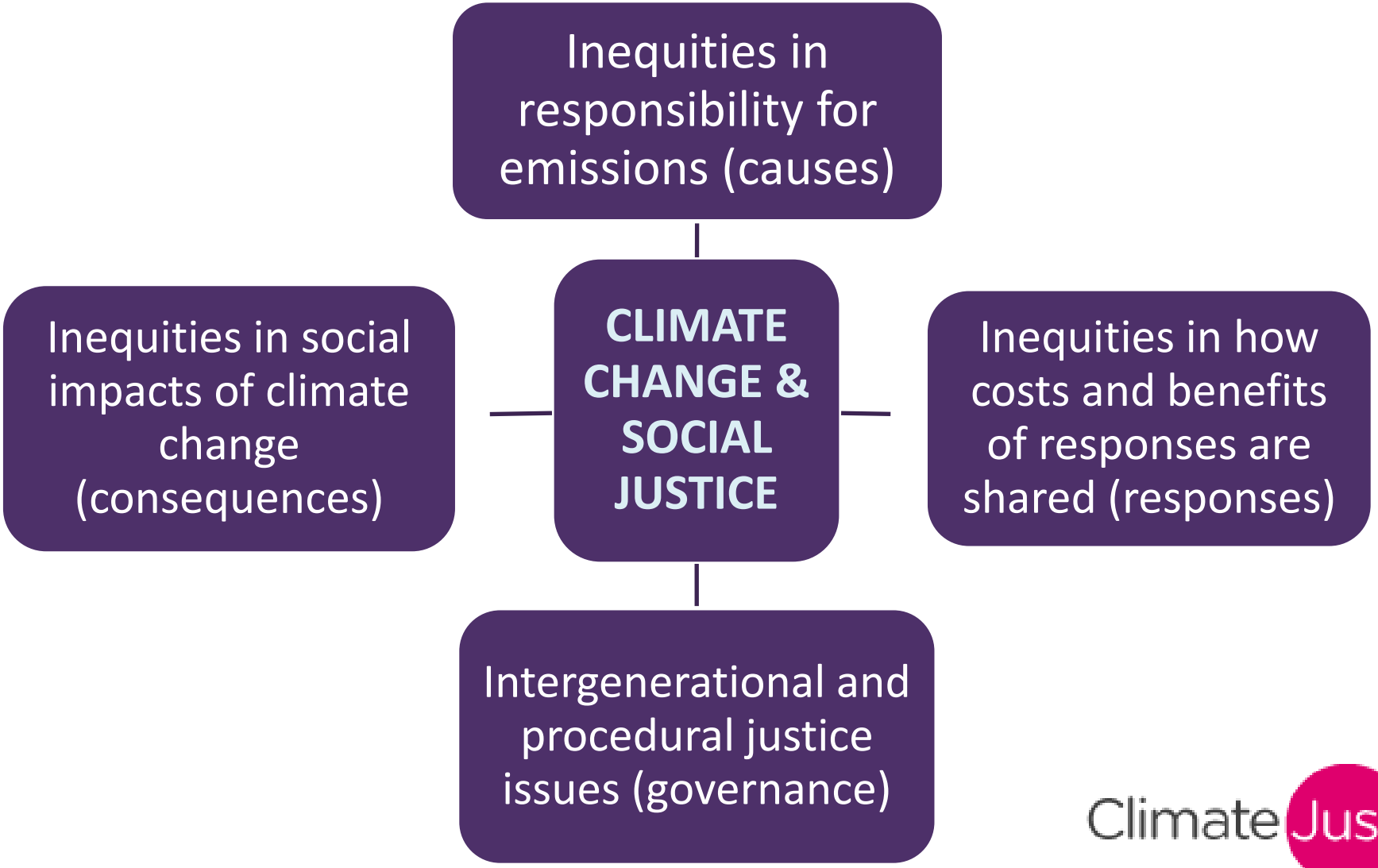
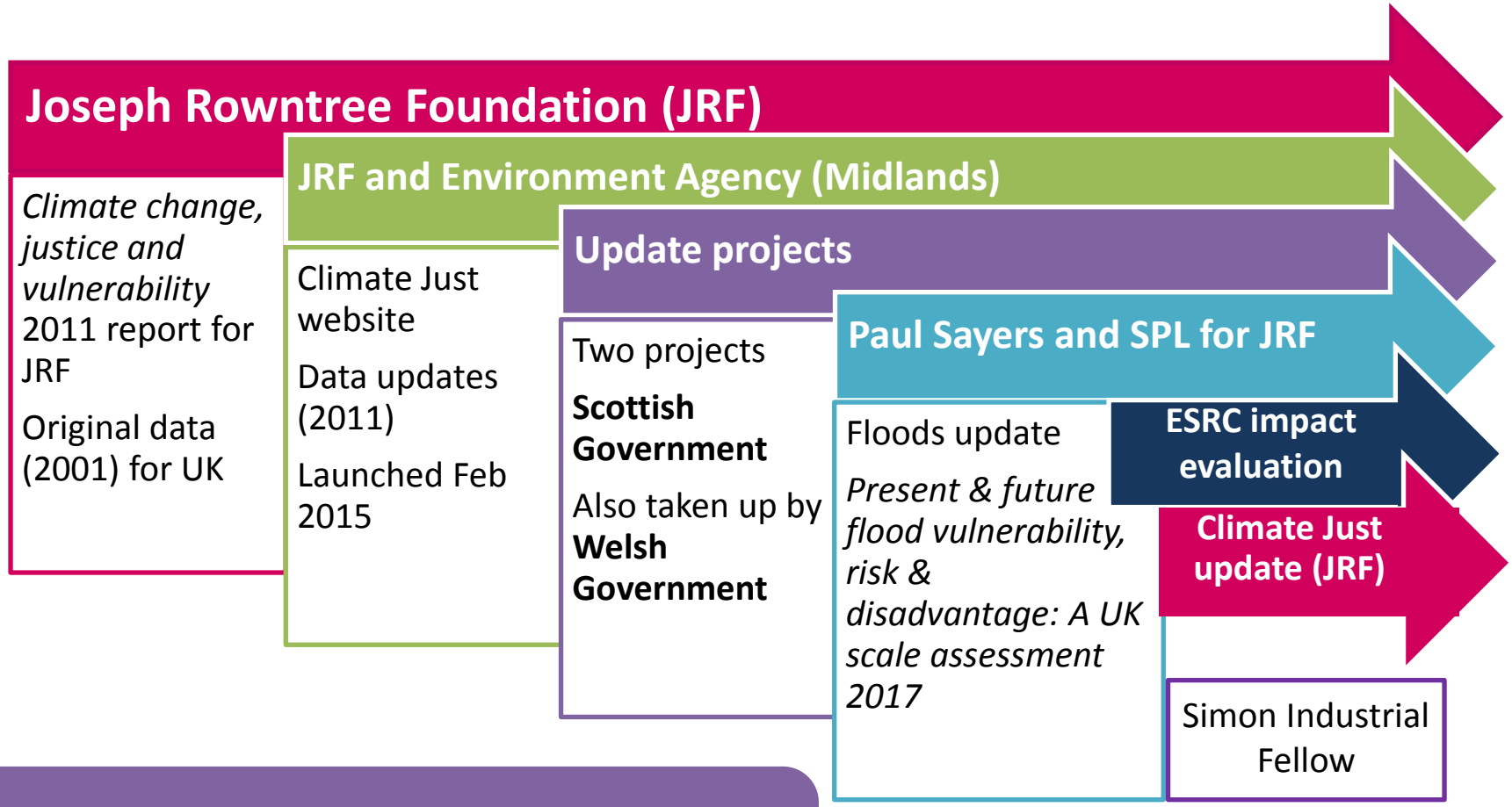
Overview

- Climate justice in the UK
- Introducing Climate Just website www.climatejust.org.uk
- Findings from supporting research
  - paul.sayers@sayersandpartners.co.uk
  - www.sayersandpartners.co.uk/flood-disadvantage.html
- New Scotland neighbourhood data

Climate justice issues in the UK



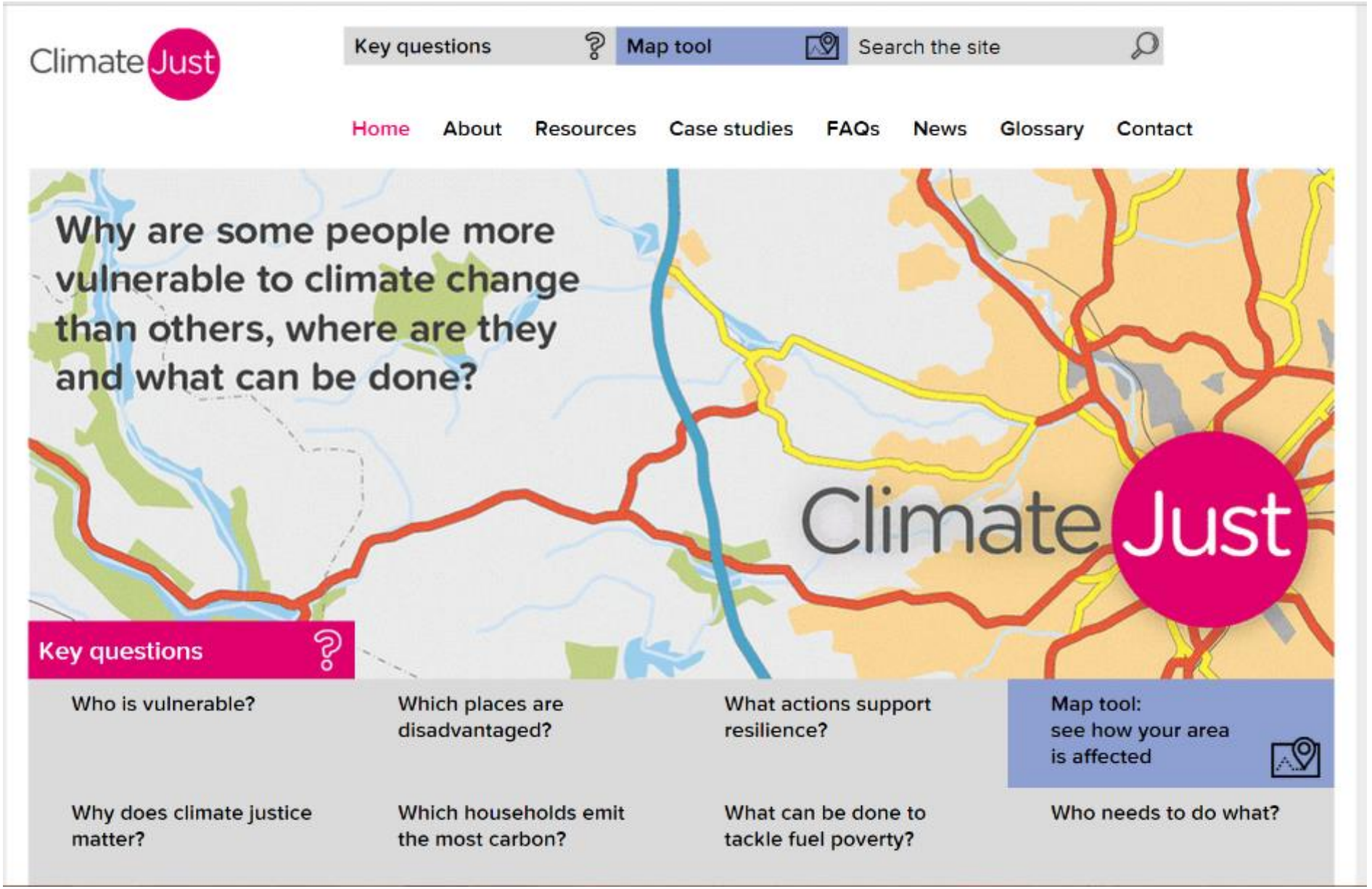
ClimateJust



Lindley, S. J and O'Neill, J. (2013) **Flood disadvantage in Scotland: mapping the potential losses in well-being** http://www.scotland.gov.uk/Publications/2013/10/5328

Kazmierczak, A., Cavan, G., Connelly, A and Lindley, S. (2015) **Mapping Flood Disadvantage in Scotland 2015** http://www.gov.scot/Publications/2015/12/9621

The Climate Just story to date...

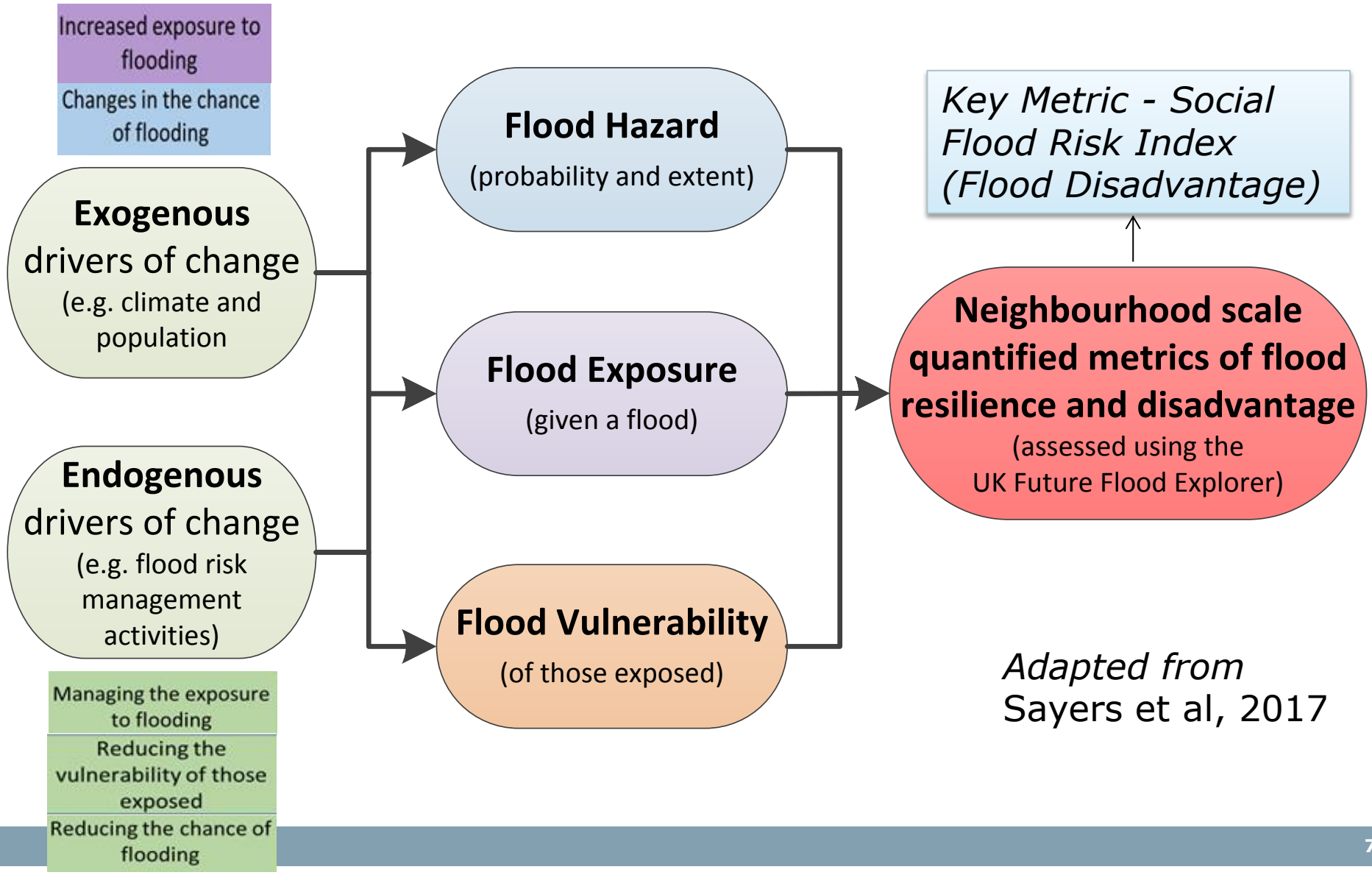


www.climatejust.org.uk

Introduction

- **Sayers study provides a quantified UK scale assessment that buildings upon:**
  - UK Climate Change Risk Assessment (Future flooding, Sayers et al, 2015)
  - JRF's climate programme (Climate Just, Lindley et al., 2011) and work in Scotland (Kazmierczak et al., 2015)
  - Flood Hazard Research Centre (FHRC) on social flood vulnerability (Tapsell et al., 2004 and others)

Framework of UK analysis

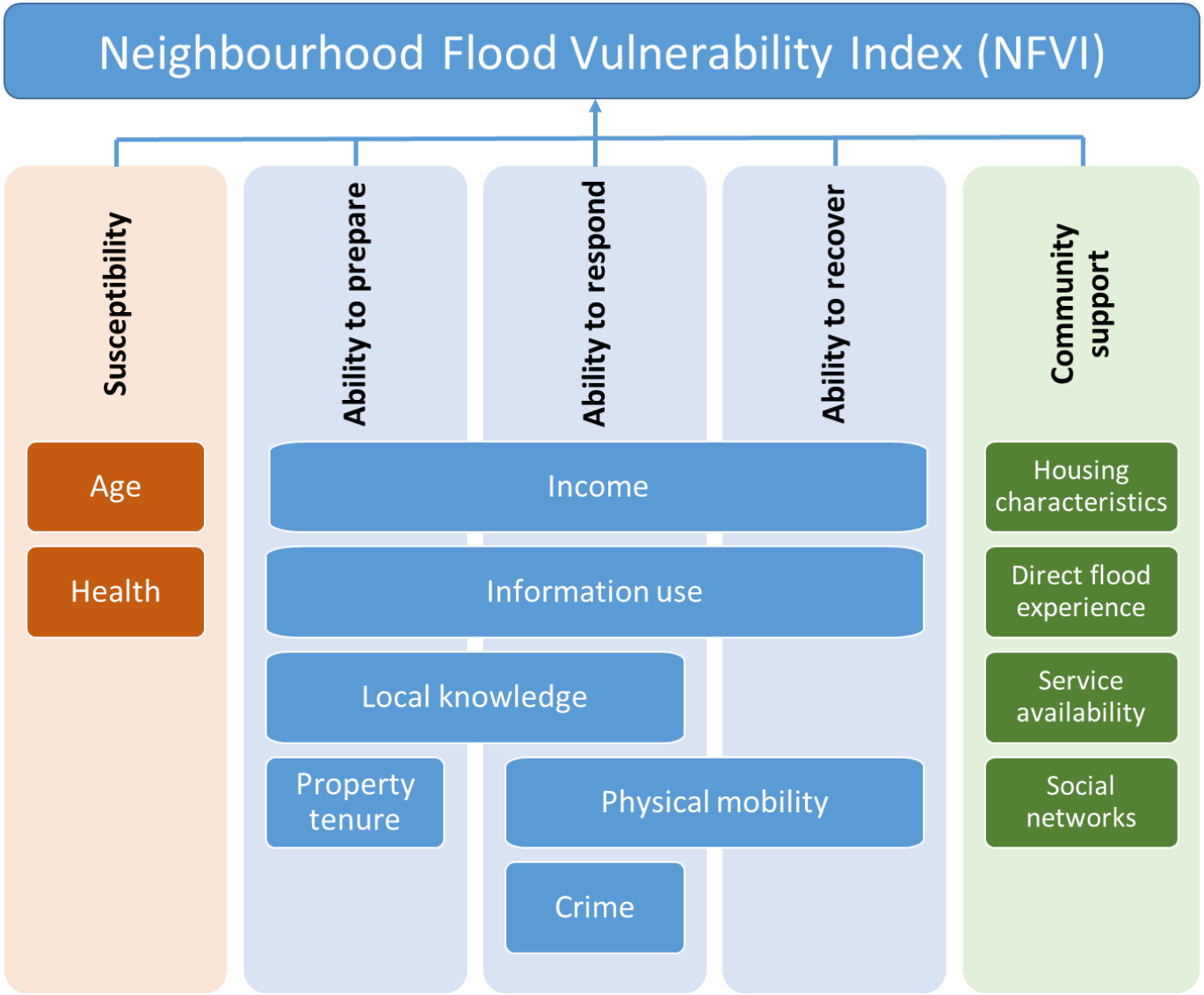


Adapted from Sayers et al, 2017

Approach: Social vulnerability

Social vulnerability is defined by the **Neighbourhood Flood Vulnerability Index** (NFVI)

At the spatial scale of ~1000ha and 1500 people for UK, 760 people in Scotland (DZ)



Sayers et al, 2017

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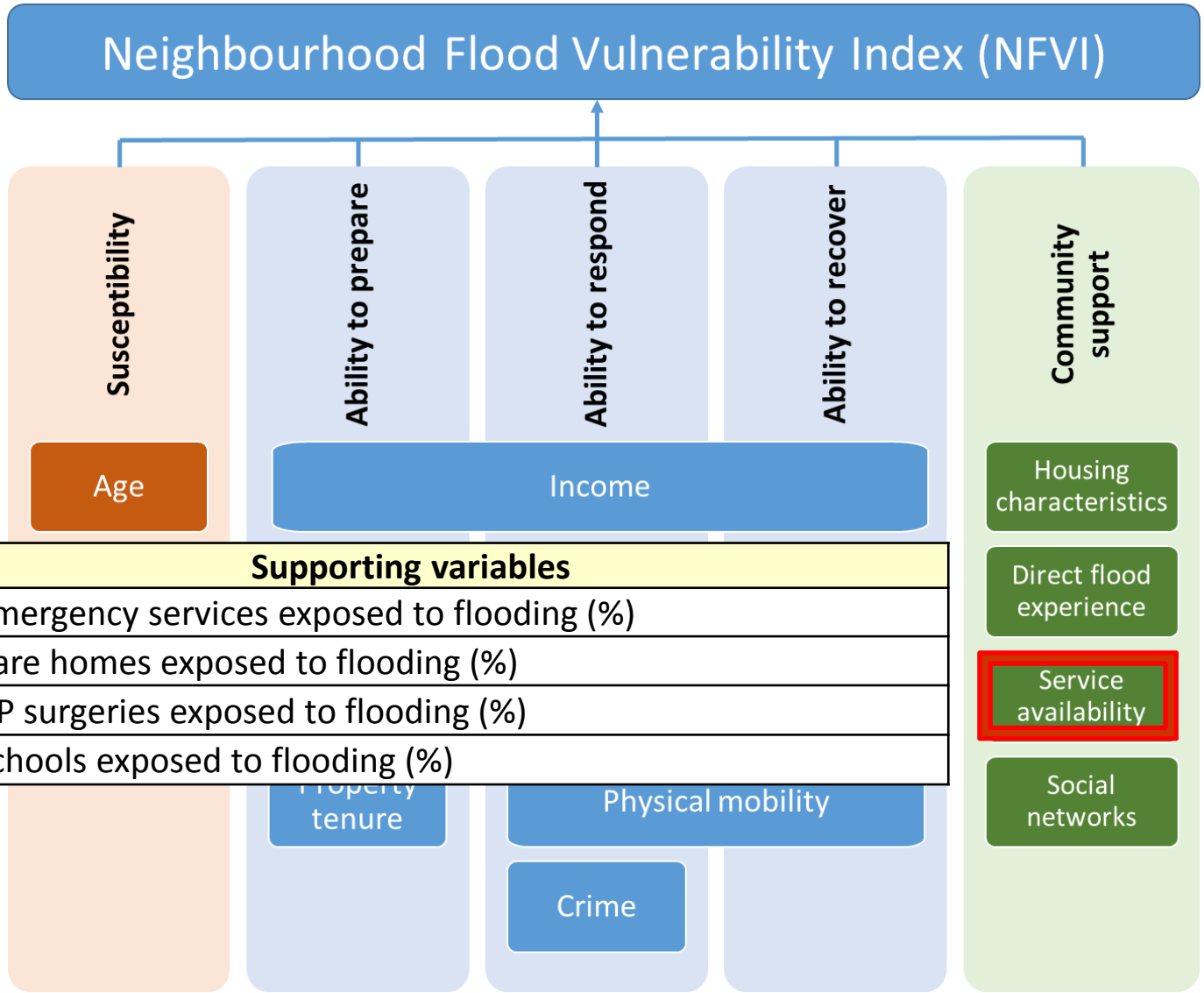


Supporting variables	
s1	Emergency services exposed to flooding (%)
s2	Care homes exposed to flooding (%)
s3	GP surgeries exposed to flooding (%)
s4	Schools exposed to flooding (%)

Sayers et al, 2017

Approach: Vulnerability variables

The **NFVI** is based on 23 supporting variables.

Each is evaluated at neighbourhood scale

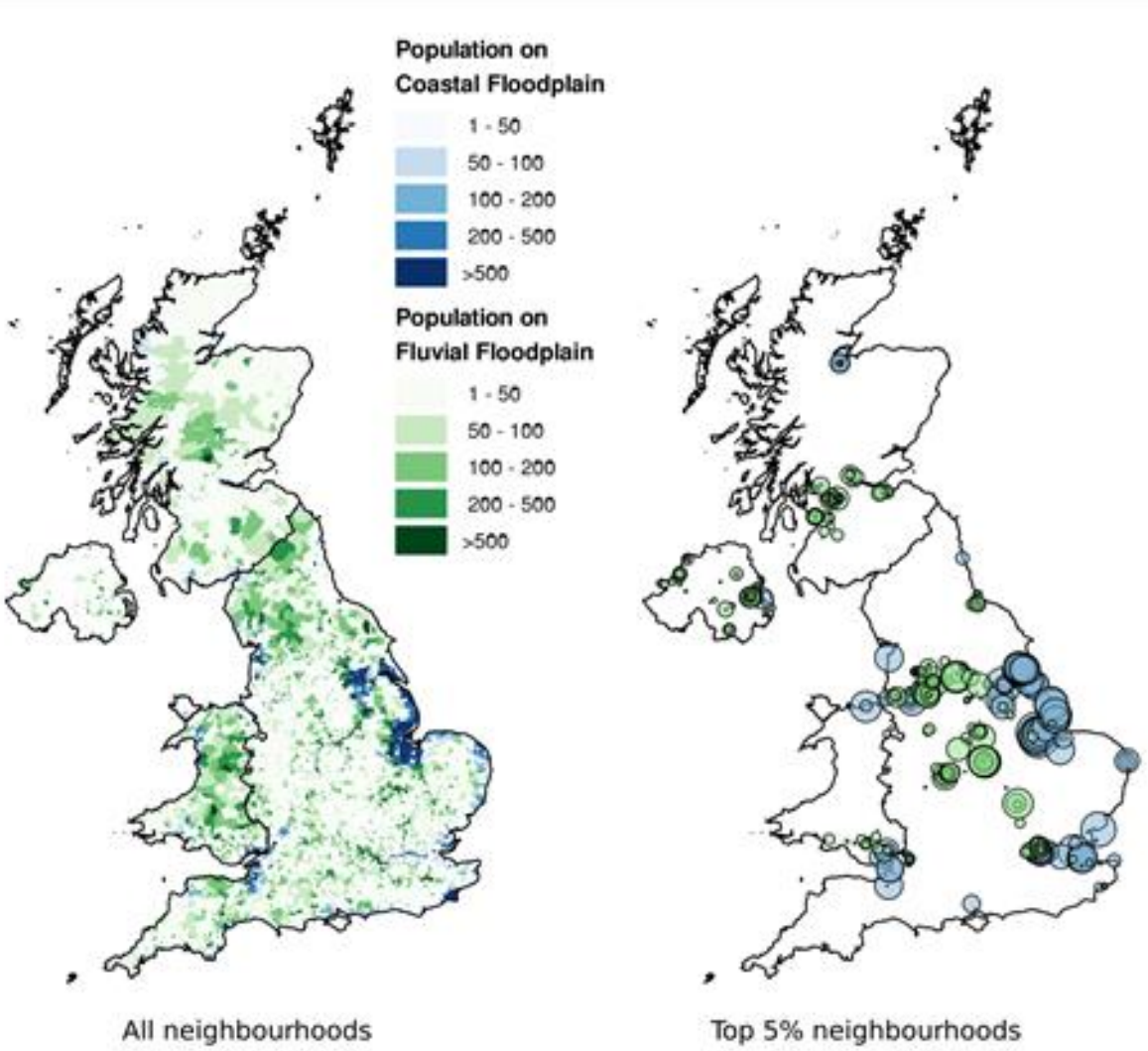
They can be used to drill-down into local examples to find the reasons for scores

Indicator	Supporting variables	
Age	a1	Young children (% people under 5 years)
	a2	Older people (% people over 75 years)
Health	h1	Disability / people in ill-health (% people whose day- to-day activities are limited)
	h2	Households with at least one person with long term limiting illness (%)
Income	i1	Unemployed (% unemployed)
	i2	Long-term unemployed (% who are long-term unemployed or who have never worked)
	i3	Low income occupations (% in routine or semi-routine occupations)
	i4	Households with dependent children and no adults in employment (%)
	i5	People income deprived (%)
Information use	f1	Recent arrivals to UK (% people with <1 year residency coming from outside UK)
	f2	Level of proficiency in English
Local knowledge	k1	New migrants from outside the local area (%)
Tenure	t1	Private renters (% Households)
	t2	Social renters (% households renting from social landlords)
Physical mobility	m1	High levels of disability (% disabled)
	m2	People living in medical and care establishments (%)
	m3	Lack of private transport (% households with no car or van)
Crime	c1	High levels of crime
Housing characteristics	hc1	Caravan or other mobile or temporary structures in all households (%)
Direct flood experience	e1	No. of properties exposed to significant flood risk (%)
Service availability	s1	Emergency services exposed to flooding (%)
	s2	Care homes exposed to flooding (%)
	s3	GP surgeries exposed to flooding (%)
	s4	Schools exposed to flooding (%)
Social networks (non-flood)	n1	Single-pensioner households (%)
	n2	Lone-parent households with dependent children (%)
	n3	Children of primary school age (4-11) in the population (%)

Summary findings

Floodplain population, vulnerability and exposure to frequent flooding

- 6.4 million people live in flood prone areas; increasing to 10.8 million by 2080s
- 1.5 million people live in socially vulnerable neighbourhoods exposed to flooding (over 50% in just ten local authorities)
- Socially vulnerable people are disproportionally exposed to flooding (e.g. 10% of people prone to coastal floods live in the 5% most vulnerable neighbourhoods)



Spatial distribution of present day floodplain population – Sayers et al, 2016

Summary findings

Floodplain population, vulnerability and exposure to frequent flooding

- The most vulnerable neighbourhoods are over-represented in areas prone to frequent flooding (all sources) particularly in areas prone to coastal/tidal flooding.
- **In Scotland 26% of the population most exposed to frequent flooding is found in the 20% most vulnerable neighbourhoods** (– if all things were equal this would be 20%)
- By the 2080s vulnerable neighbourhoods see a significant increase in exposure to more frequent floods.

Present day: People exposed to frequent flooding (1:75 years or more frequent)

	All neighbourhoods (000s)	Vulnerable neighbourhoods (000s)					
		Top 20% by NFVI		Top 10% by NFVI		Top 5% by NFVI	
By country							
UK	1,985	451	23%	239	12%	122	6%
England	1,612	335	21%	174	11%	88	5%
Wales	117	36	30%	15	13%	4	3%
Scotland	**200**	**51**	**26%**	**29**	**15%**	**17**	**9%**
Northern Ireland	55	29	53%	20	35%	14	25%
By flood source							
All sources	1,985	451	23%	239	12%	122	6%
Coastal (and tidal)	489	164	33%	95	19%	50	10%
Surface water	870	103	21%	92	11%	48	5%
Fluvial	626	184	16%	52	8%	24	4%

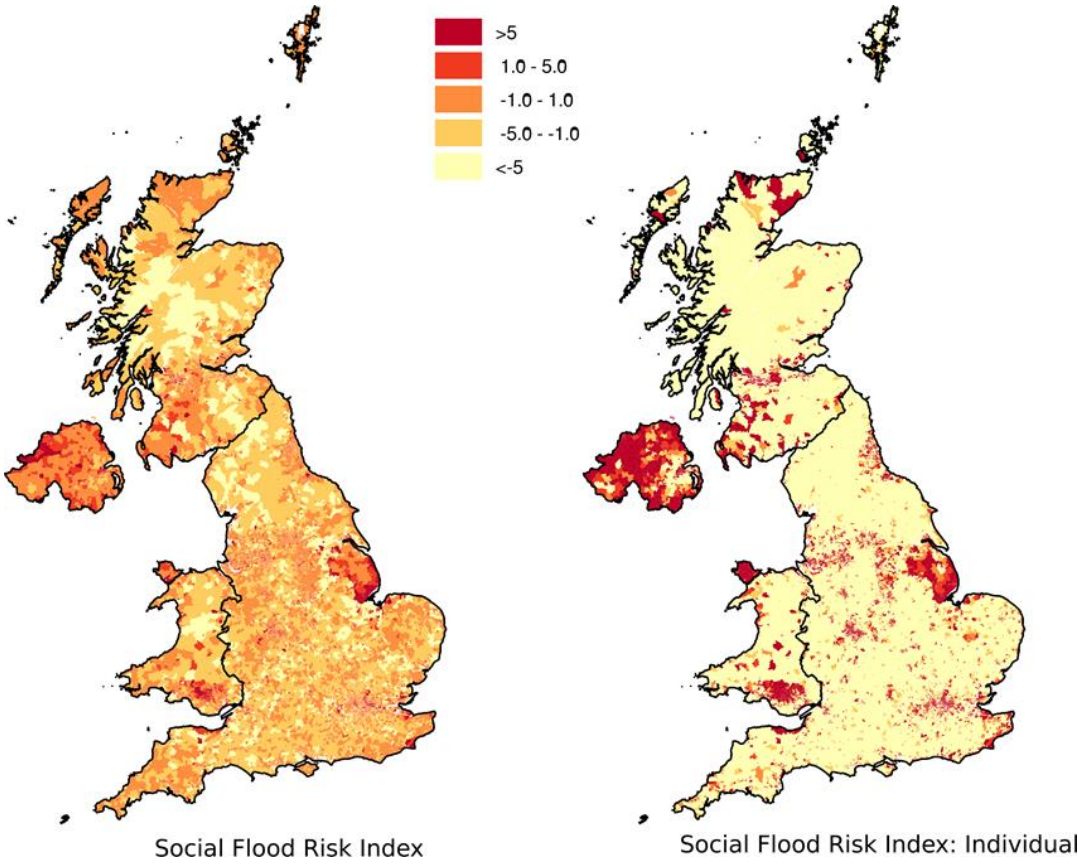
Summary findings

Local authorities and flood disadvantage

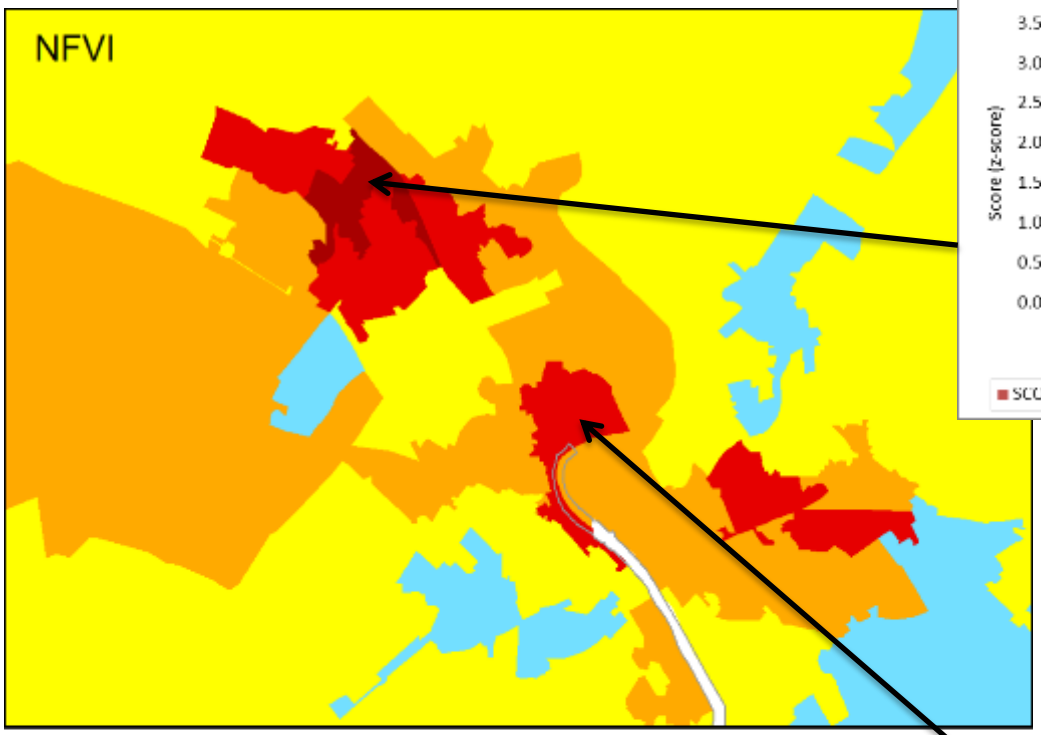
- **(left)** Hull has the greatest levels of social flood risk (SFRI); it has the highest floodplain population, people exposed to frequent flooding and EAD.

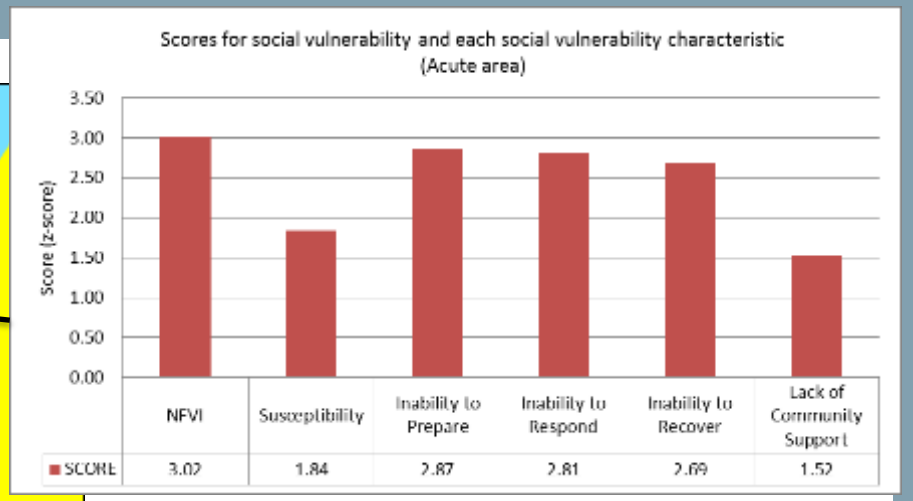
……..ranking local authorities by social flood risk to the individual (rather than wider area) offers a different profile

- **(right)** Clusters in Northern Ireland, coastal areas from the Wash to the Humber, North and South Wales and the **lowlands of Scotland**

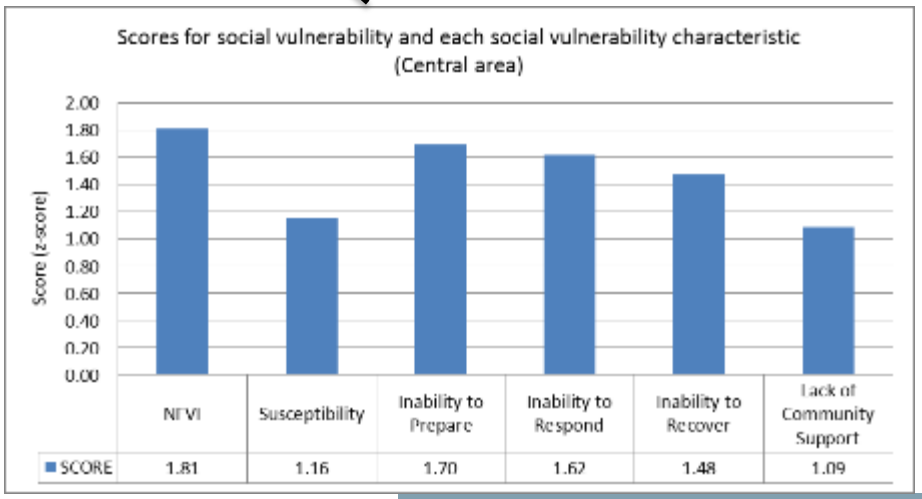


Map: Spatial distribution (Present day) – Sayers et al, 2016





Analysing local neighbourhood characteristics



Legend

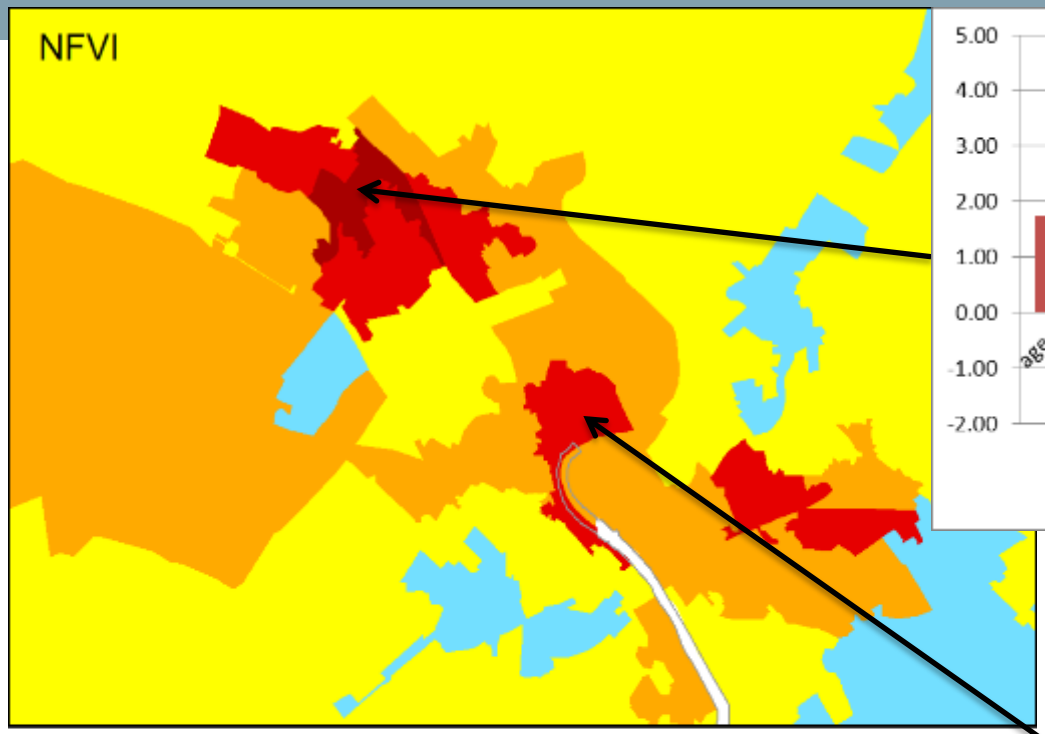
- National boundary

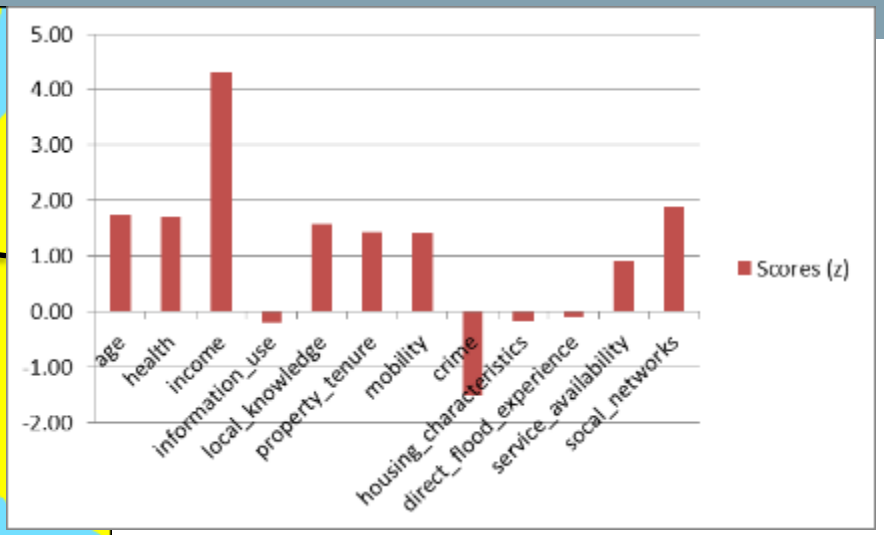
Neighbourhood Flood Vulnerability Index

- Acute
- Very high
- Relatively high
- Average
- Relatively low
- Very low
- Slight

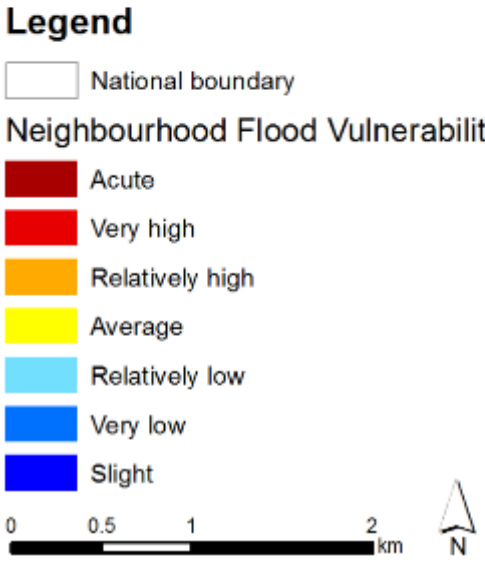
0 0.5 1 2 km

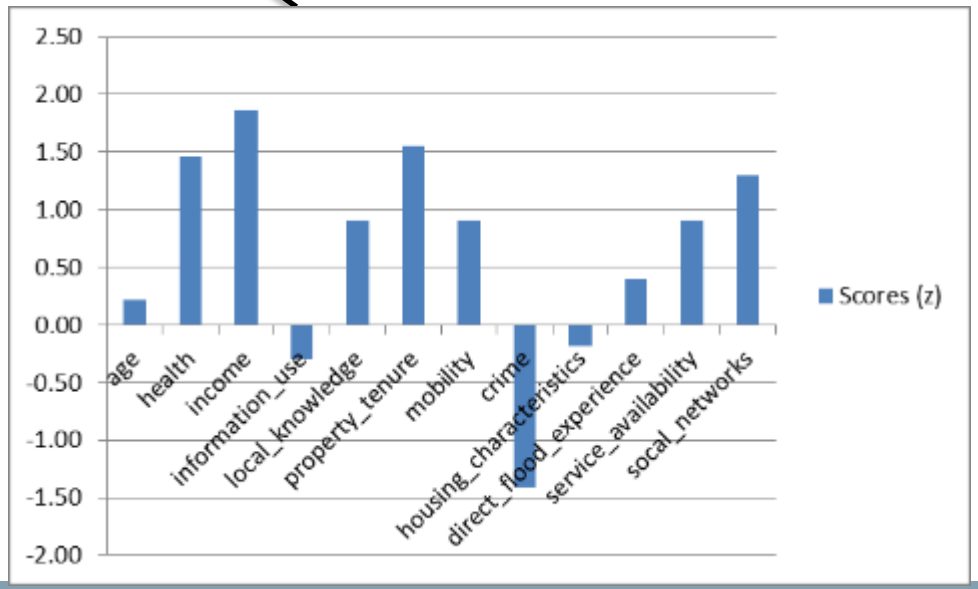
N





Understanding the influence of underlying vulnerability indicators





Conclusions

The findings

- Today some 6.4 million people live in flood prone areas in the UK and this is set to increase to 10.8 million people by the 2080s
- Around 1.5 million people live in socially vulnerable neighbourhoods exposed to flooding, with over 50% in just ten local authorities.
- Cities in relative economic decline, coastal areas and dispersed rural communities experience levels of flood disadvantage above the UK average, suggesting flood risk could undermine economic growth in areas that need it most.

The recommendations

- Use new indicators (incl NFVI, SFRI) to highlight the risks faced by the most socially vulnerable.
- Use these to better target support for the most socially vulnerable in flood investment decisions.
- Ensure flood risk management policy actively supports inclusive growth.
- Better reflect the disproportionate long-term flood risks faced by vulnerable neighbourhoods in national and local planning policy.

Taking action locally

- Climate Just provides new maps and data for supporting local strategic responses
- Review your local area to understand the issues
- Opportunities for hands on practice today…