

# Addressing social vulnerability to climate change in Europe



# The European Environment Agency



- An agency of the EU
- Tasked to provide sound, independent information on the environment to policy makers and the public
- Information is collected through the European environment information and observation network (Eionet)
- 33 member countries + 6 collaborating
- Supported by European Topic Centres



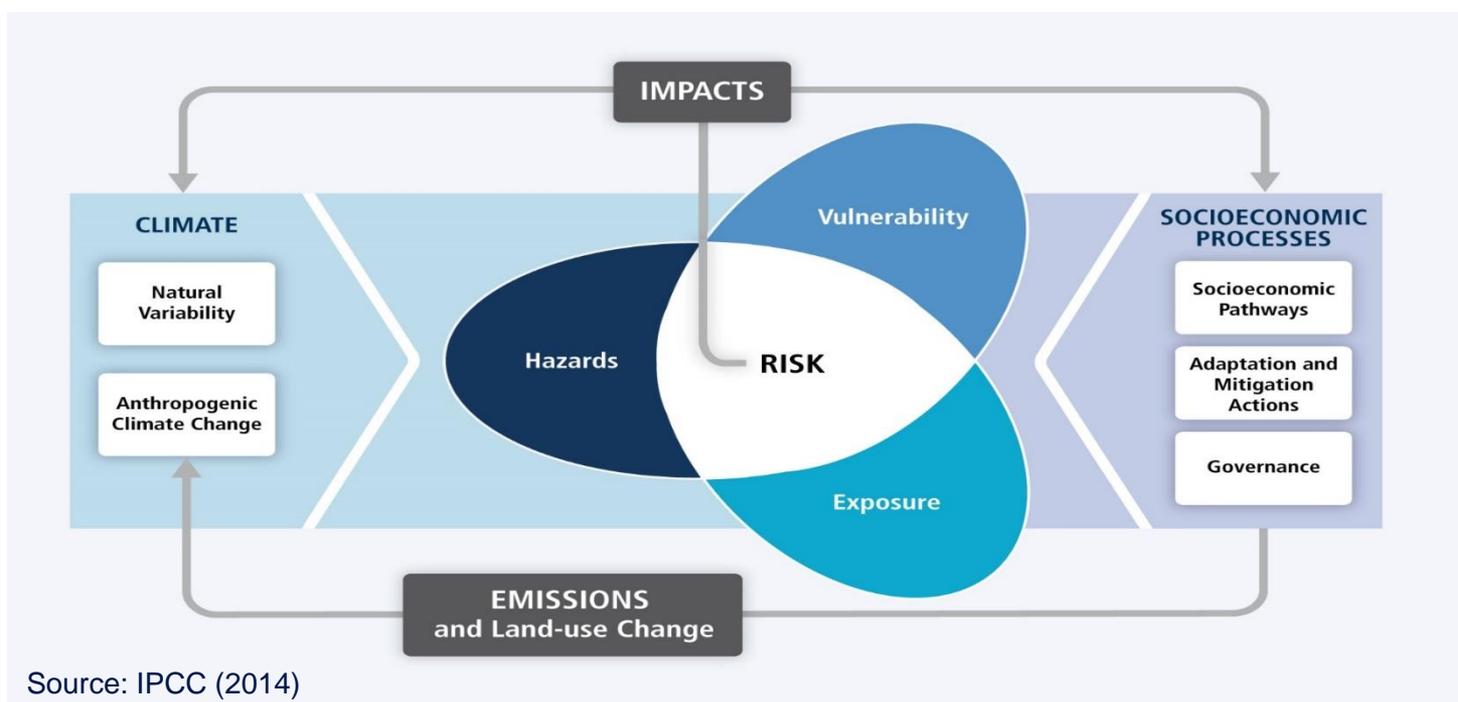
# Overview

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- What is social vulnerability?
- Social vulnerability in international frameworks and European policy
- National Adaptation Strategies
- Examples of local actions

# What is social vulnerability?

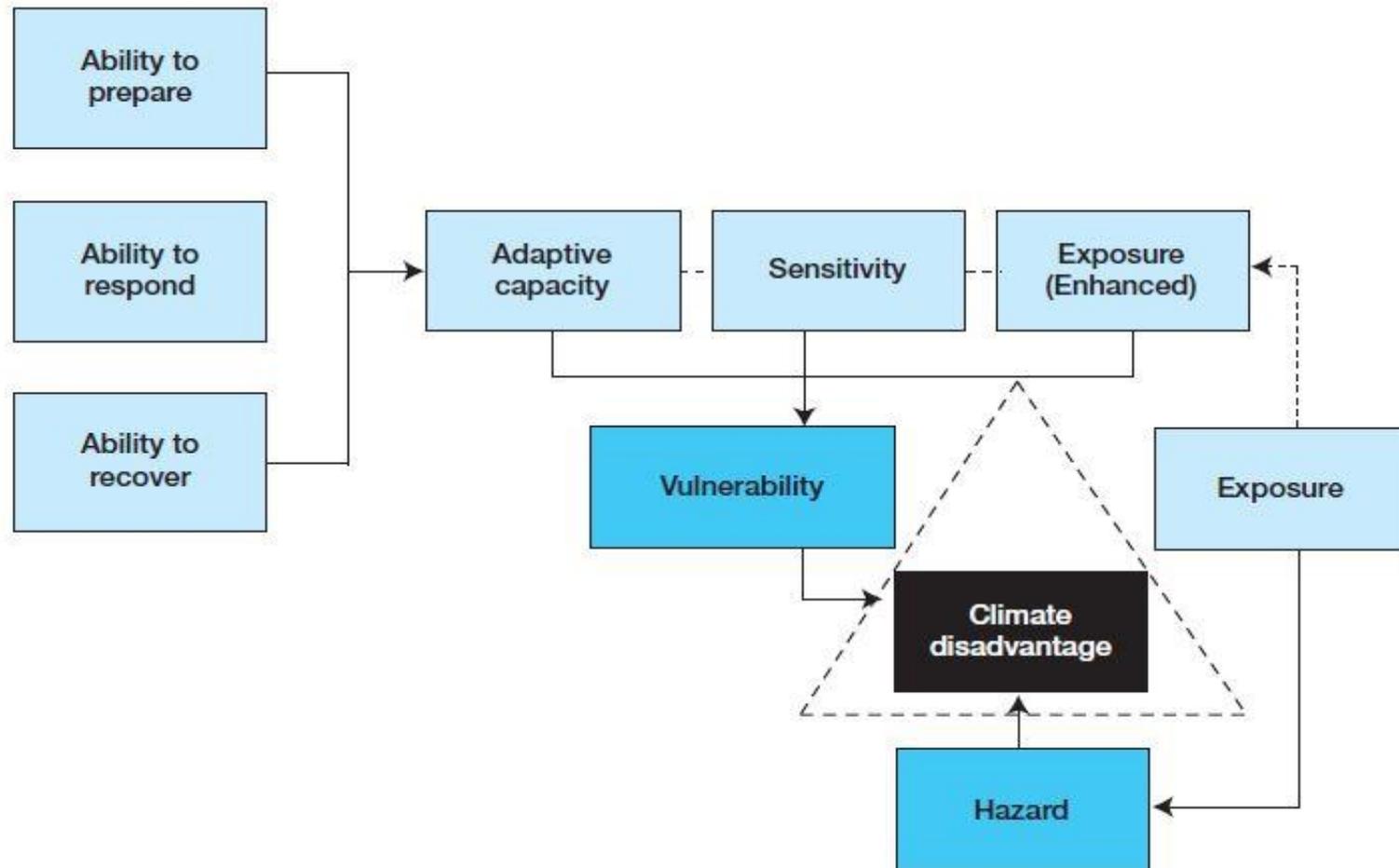
*Vulnerability - the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC AR5, 2014)*



Source: IPCC (2014)

# What is social vulnerability?

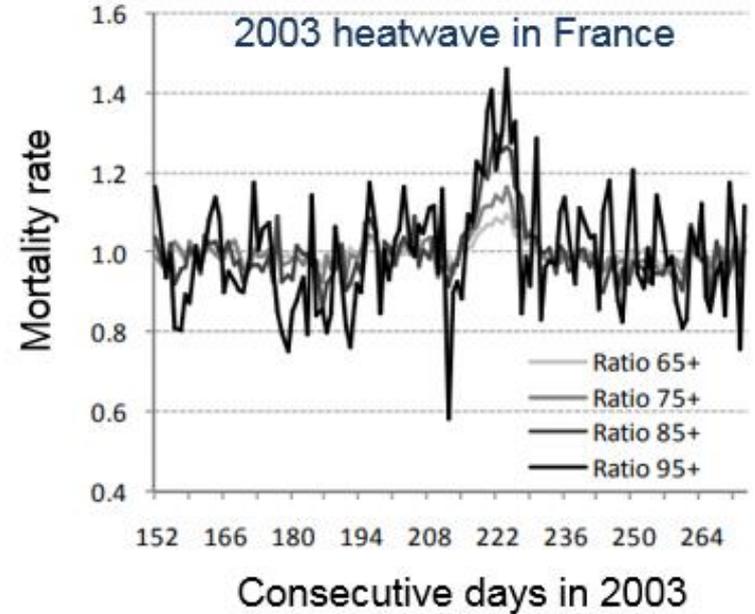
## Conceptual framework of climate disadvantage



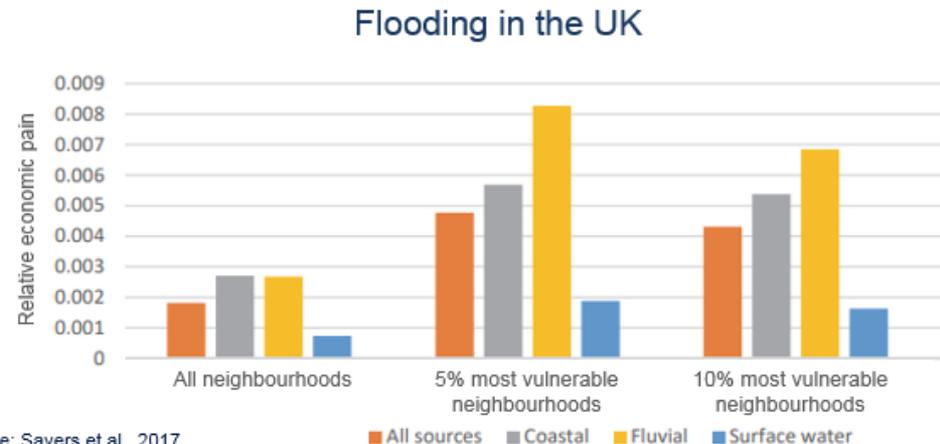
Source: Lindley et al. (2011)

# Who is affected by extreme weather?

- Unambiguous vulnerability of older people (and children)
- Pre-existing health conditions affect mortality
- Low income and education levels
- Crucial role of social networks
  
- Other vulnerability factors:
  - Gender
  - Migrants (language, culture)
  - Tenants
  - Crime levels and perception...



Source: Robine et al., 2007

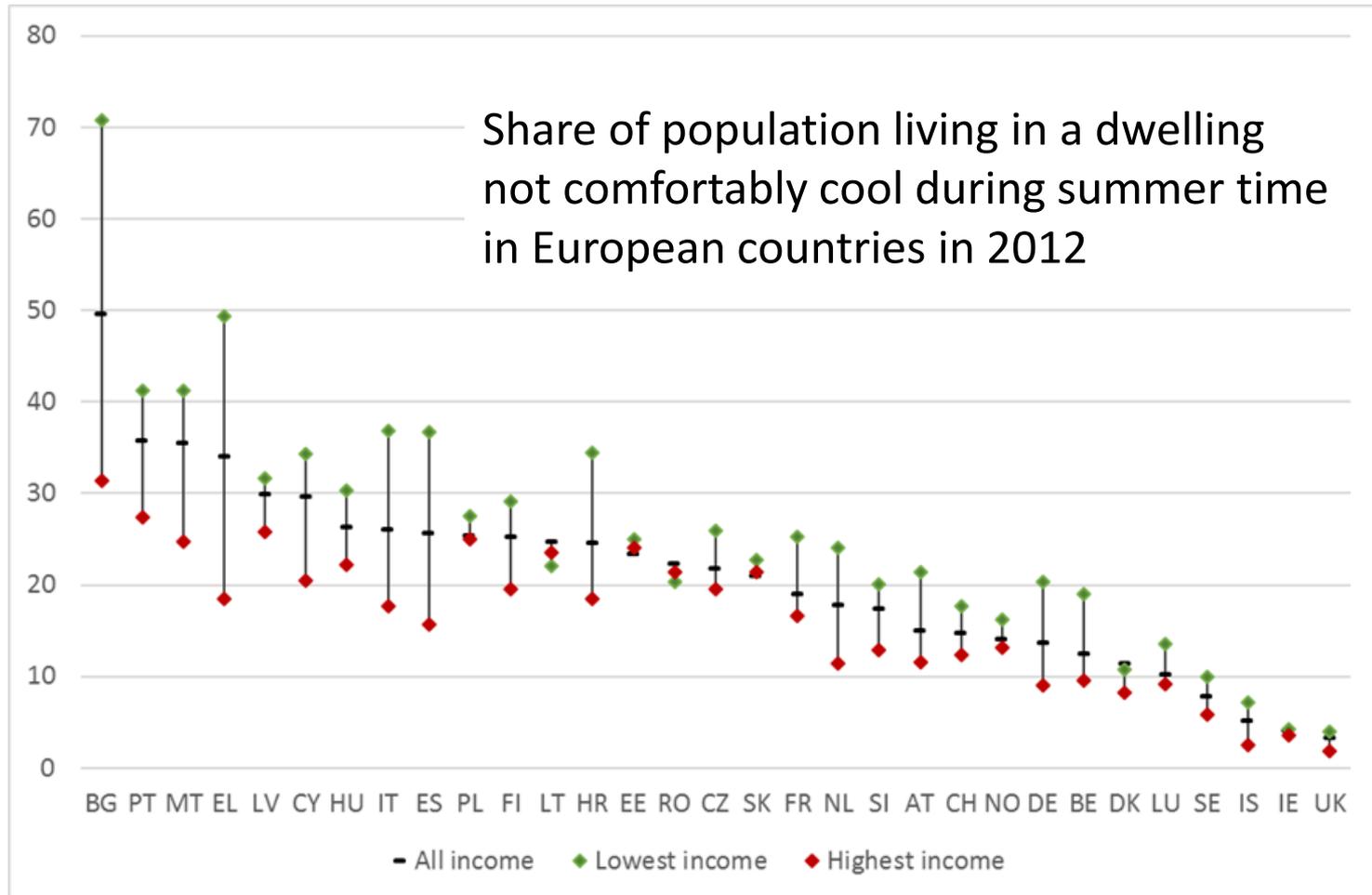


Source: Sayers et al., 2017

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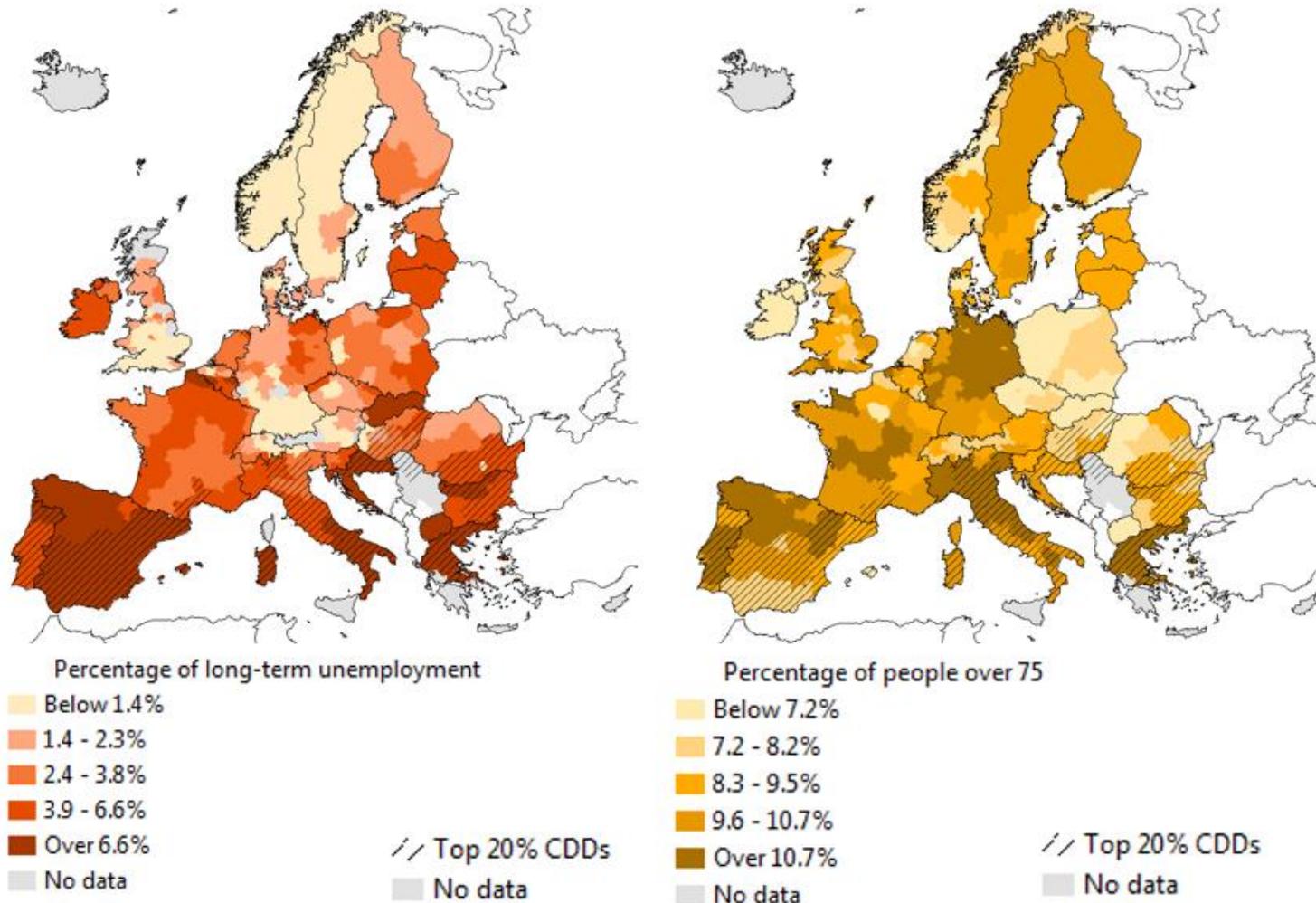
# Are vulnerable groups more exposed to climate-related hazards?

Across Europe, those on lower incomes tend to be more exposed to high temperatures in their homes



# Are vulnerable groups more exposed to climate-related hazards?

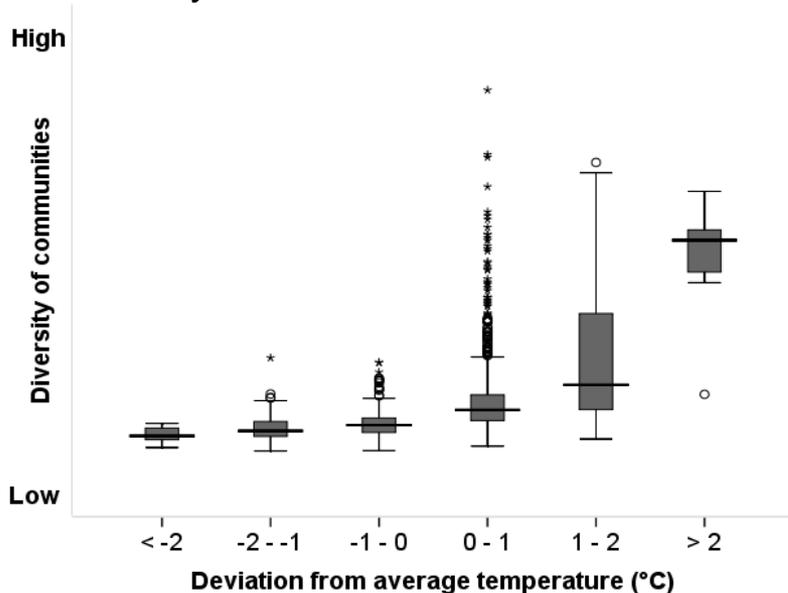
Across Europe, many regions with high rates of unemployment and high proportion of the elderly tend to be exposed to high temperatures



# Are vulnerable groups more exposed to climate-related hazards?

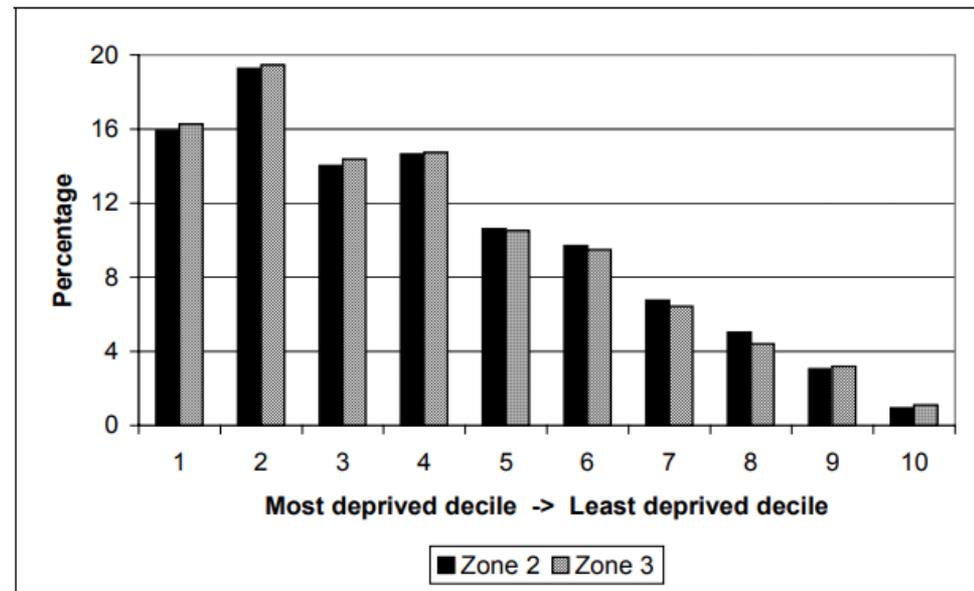
- Exposure of vulnerable groups is highly location specific
  - In many cities, materially deprived people tend to be more exposed to Urban Heat Island
  - But in other places affluent people choose to live in city centres or by the water

Urban Heat Island and cultural diversity in Greater Manchester, UK



Source: Kazmierczak, 2015

% population within sea flooding zones by deprivation decile in England



Source: Walker et al., 2006

# International frameworks

- **Paris climate change Agreement**

*‘adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration **vulnerable groups, communities** and ecosystems’ (article 7.5)*

- **Sendai Framework for Disaster Risk Reduction**

*calls for “...more dedicated action ... to be focused on tackling underlying disaster risk drivers, such as the **consequences of poverty and inequality**, climate change and variability, unplanned and rapid urbanization”*



# International frameworks

- **Sustainable Development Goals**

- Goal 1: End poverty in all its forms everywhere

- By 2030, build the resilience of **the poor and those in vulnerable situations** and reduce their exposure and **vulnerability** to climate-related extreme events and other economic, social and environmental shocks and disasters*

- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters (...), with a focus on **protecting the poor and people in vulnerable situations***

# European policies and guidance

- **EU strategy on adaptation to climate change**

*‘climate change impacts are expected to widen **social differences** across the EU’*

special attention needs to be given to *‘social groups and regions which are most exposed and **already disadvantaged** (e.g. through poor health, low income, inadequate housing, lack of mobility)’*

- The 2016 **Urban Agenda for the EU** considers urban poverty and climate adaptation among 12 priority themes



# National Adaptation Strategies

- 2014: 6 out of 21 NAS explicitly addressed climate change as a social justice issue (*Boeckmann and Zeeb, 2014*)
- National climate change risk and vulnerability assessments:
  - 2015: few countries in Europe had assessed current social vulnerabilities (poverty/wealth, education, social capital); only four countries had developed future socio-economic projections (*Downing 2017*)
  - 2017: Human health covered in 20 out of 25 national climate change risk and vulnerability assessments (*EEA, 2018*)

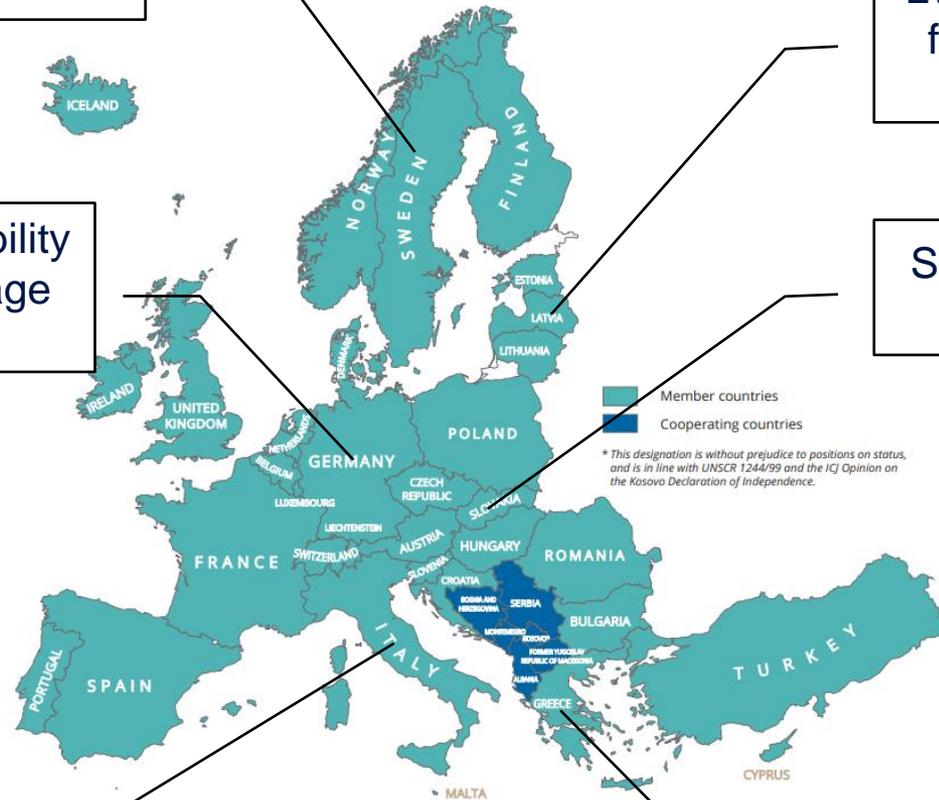
# National Adaptation Strategies - examples

SE: focus on social capital and not disfavouing any social group

LV: adaptation measures for different vulnerable groups (draft)

DE: national vulnerability analysis considers age structure

SK: social inequalities in dense urban areas



IT: social conditions and quality of life in urban areas

EL: Mapping vulnerable groups; safe shelters



# Towards equitable local adaptation

- Lack of knowledge on social impacts slows down adaptation (Mayors Adapt survey 2015)
- Limited guidance on the identification of vulnerable groups, procedural justice or monitoring of social outcomes of adaptation (ETC/CCA, 2018)
- Poland: Ministry of Environment coordinates project on adaptation planning for 44 largest cities, also providing guidance on vulnerable groups

Development of Urban Adaptation Plans for cities with more than 100,000 inhabitants in Poland

44 Polish cities, in cooperation with the Ministry of the Environment, participate in the project aimed at adapting them to the observed and prognosed climate changes.

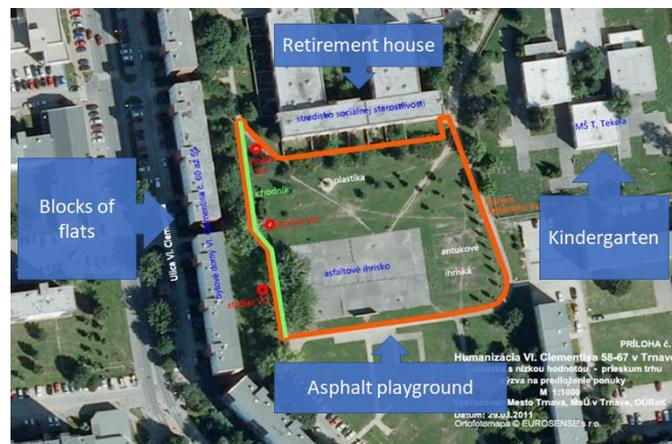
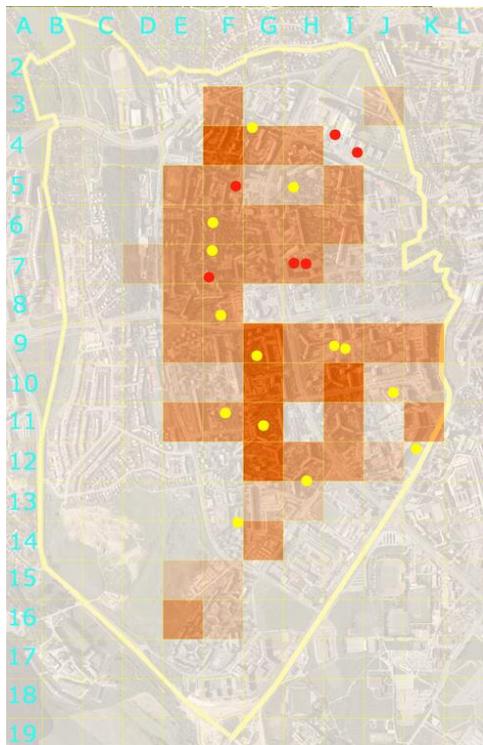
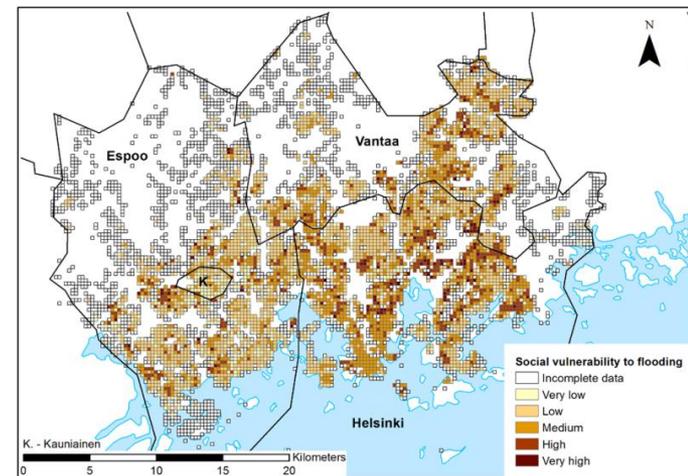
[LEARN MORE ABOUT THE PROJECT](#) >



# Equitable local adaptation - examples

## Identification of vulnerable areas

- Helsinki
- Trnava and Kosice, Slovakia



# Equitable local adaptation - examples

## Heatwave action plans focussed on vulnerable groups

- Botkyrka: care routines for the elderly
- Kassel, Germany: [Heat Hotline Parasol](#) – free warnings and advice for the elderly



Botkyrka: Mapping of addresses where vulnerable people live. The colours and shapes correspond with different reasons for vulnerability.

# Equitable local adaptation - examples

Reduction of exposure to flooding and heat through improvements to housing and neighbourhoods

- [Malmö: Urban storm water management in Augustenborg](#)
- [London: Climate-Proofing Social Housing Landscapes](#)

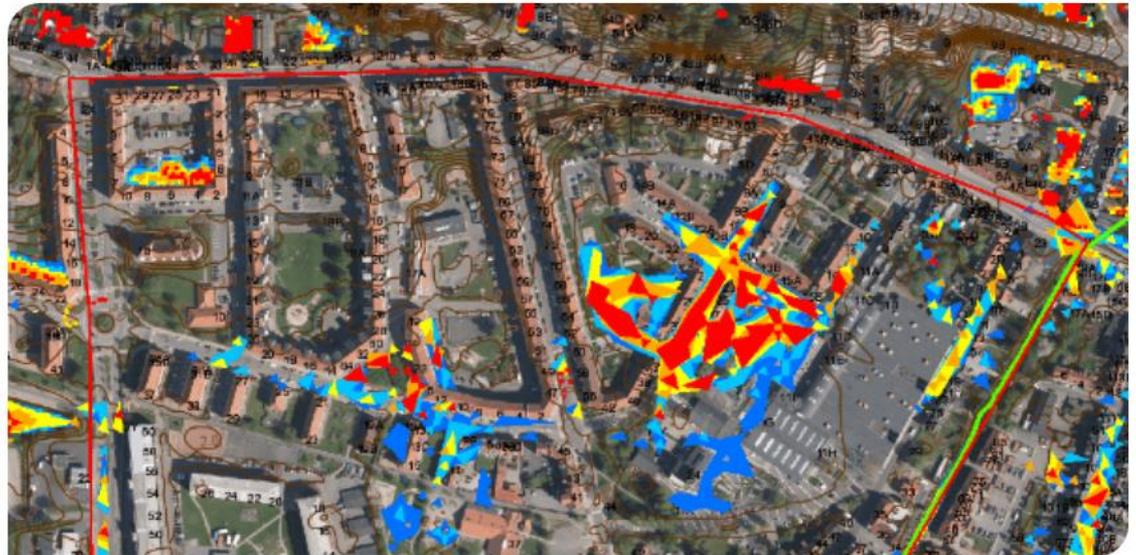


# Examples of equitable local adaptation

- Community-led activities
  - Bologna: volunteers supporting vulnerable individuals during heatwaves
  - Scottish Borders: community-led identification of vulnerabilities and Community Resilience groups
  - Vejle: co-creation of solutions to flooding

PROJECTS

Transparent  
Urban  
Waterways



# EEA publications and products of interest

- ETC/CCA technical paper 2018/1: [\*Social vulnerability to climate change in European cities – state of play in policy and practice\*](#)
- [Climate-ADAPT](#) case studies
- Upcoming reports:
  - Unequal exposure and unequal impacts: Social vulnerability to air pollution, noise and extreme temperatures in Europe (Jan 2019)
  - Health and Environment report (2019)
  - Urban Adaptation in Europe (2020)

ETC/CCA Technical Paper – ETC/CCA 2018/1

**Social vulnerability to climate change in European cities – state of play in policy and practice**



**Thank you**

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