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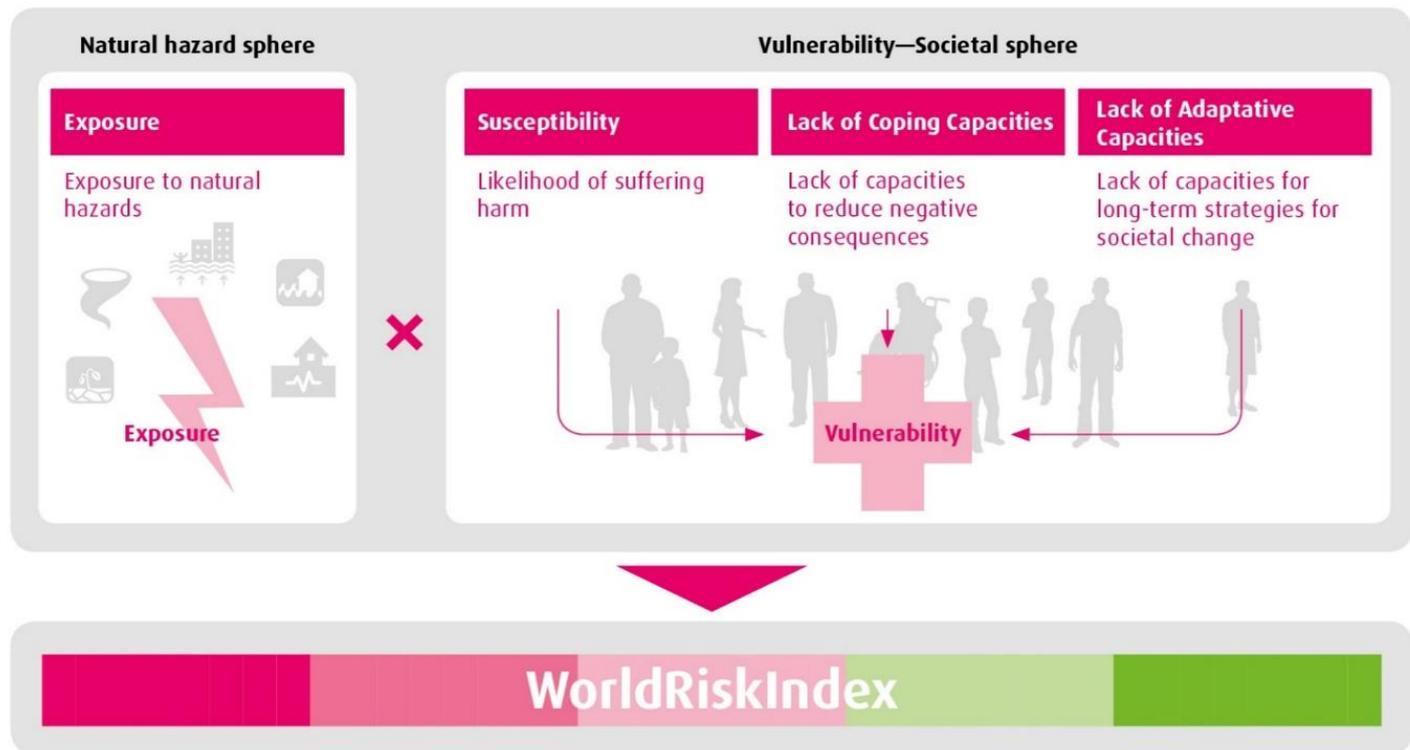
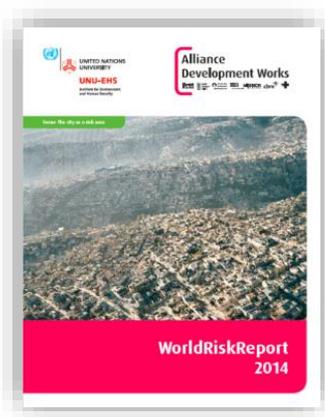
# Strengthening the links between vulnerability assessment and early warning designs

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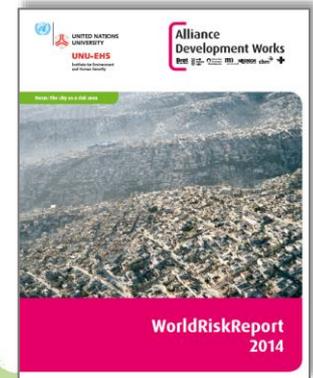
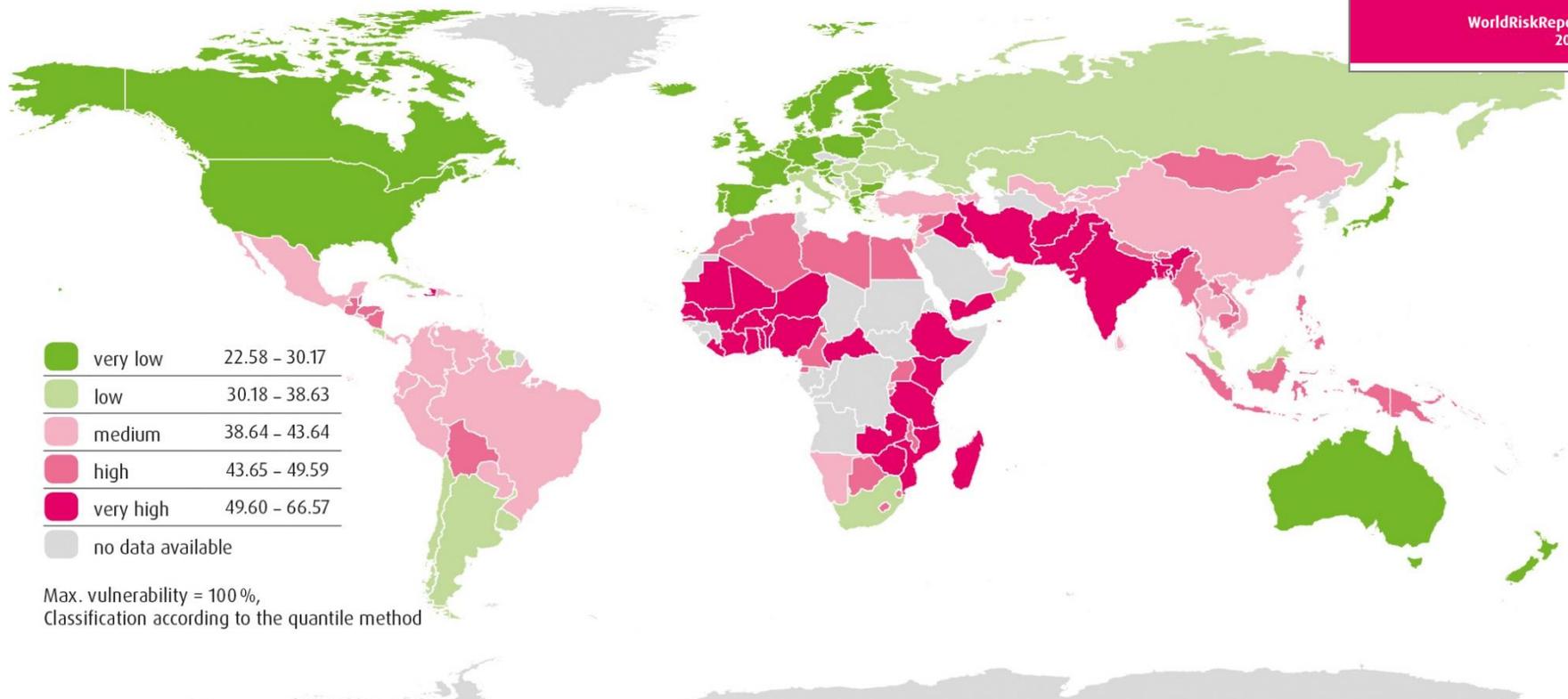
# Identifying patterns of risk: The World Risk Report



# Urban vulnerability

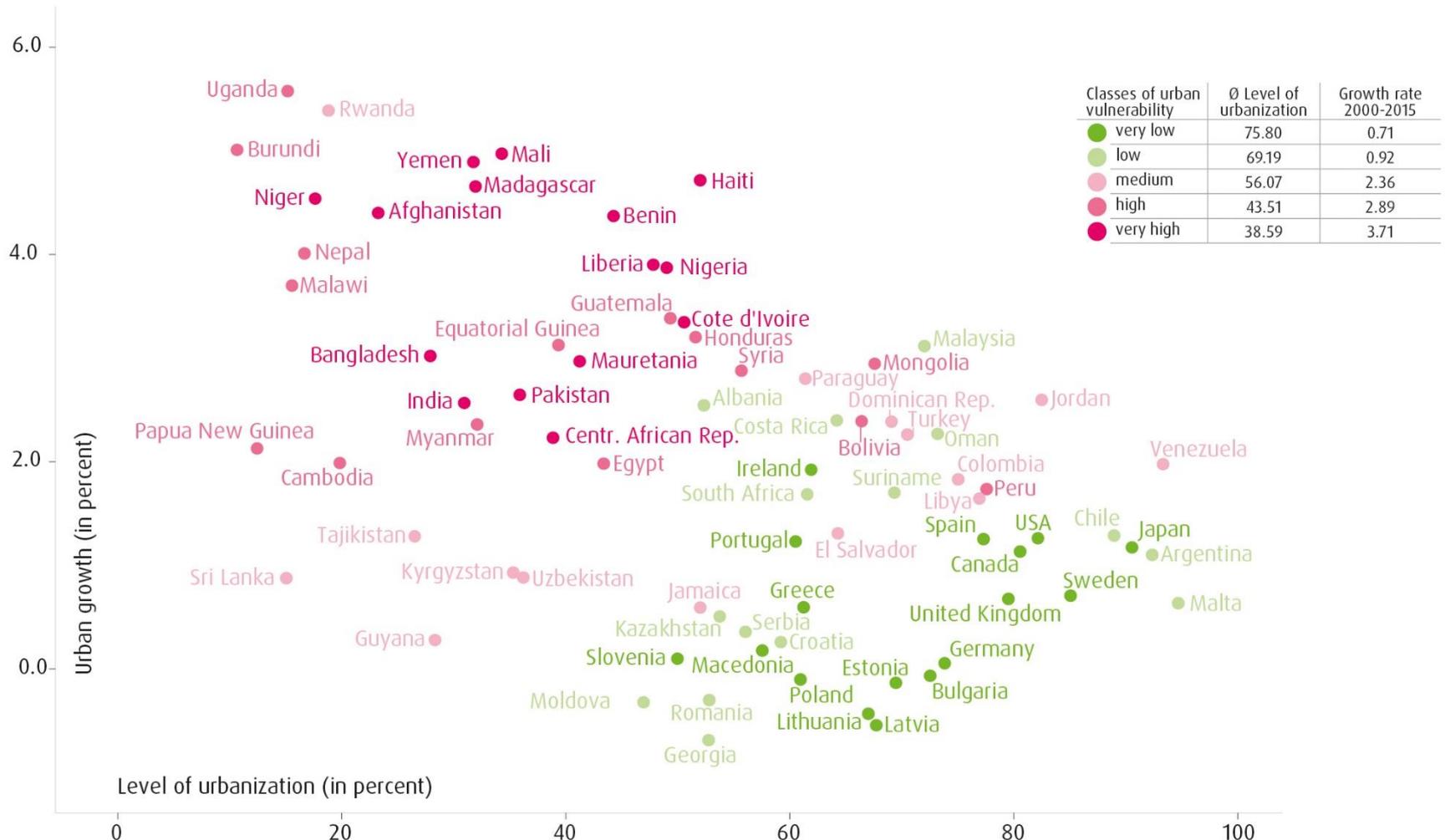
## Vulnerability

Vulnerability of society in urban areas as the sum of susceptibility, lack of coping capacities and lack of adaptive capacities



# Where high vulnerability meets rapid urban growth

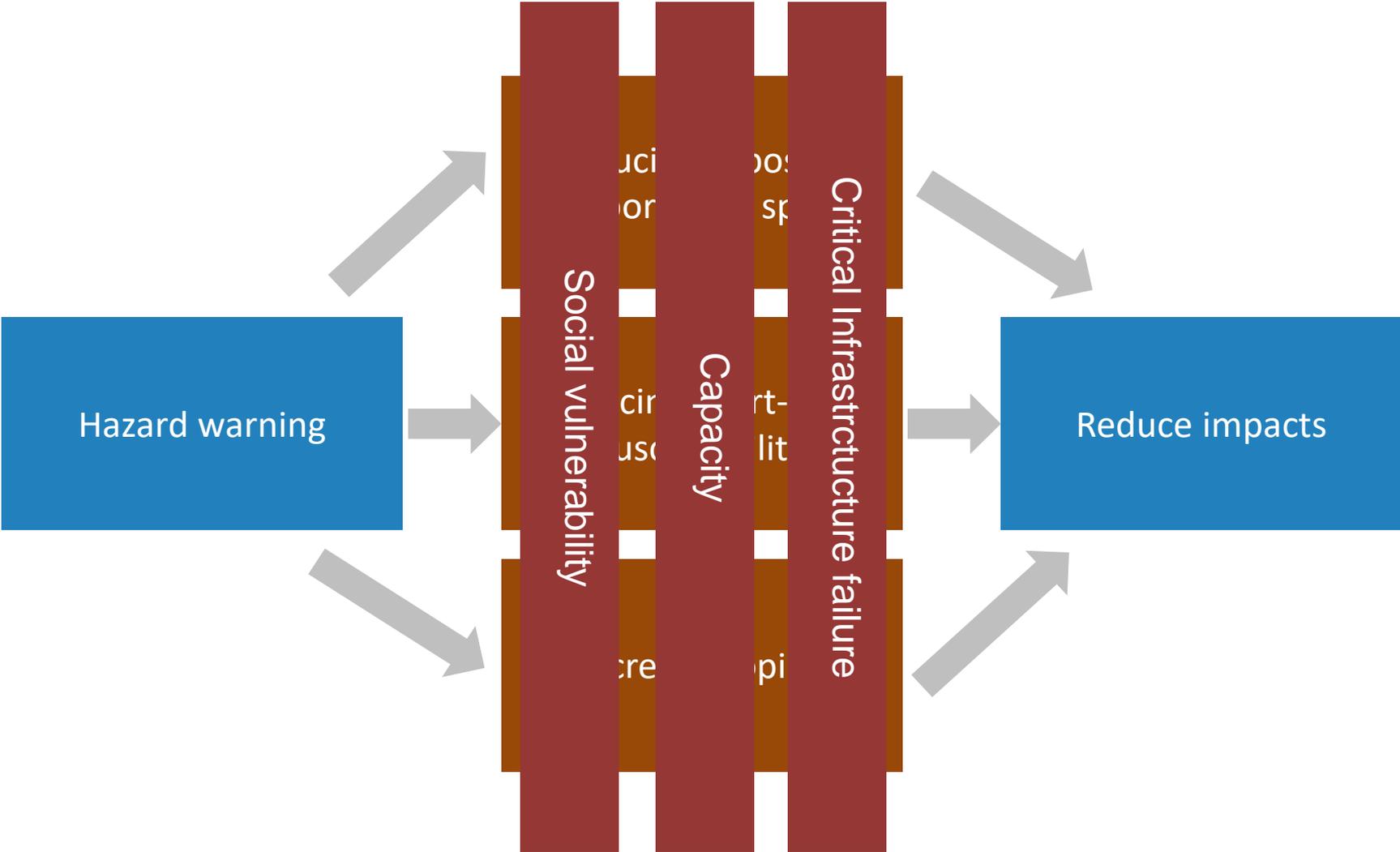
## Where rapid growth faces high vulnerability



Data: Source UNU-EHS based on UN DESA (2012)

Source: Welle et al. in *World Risk Report 2014*

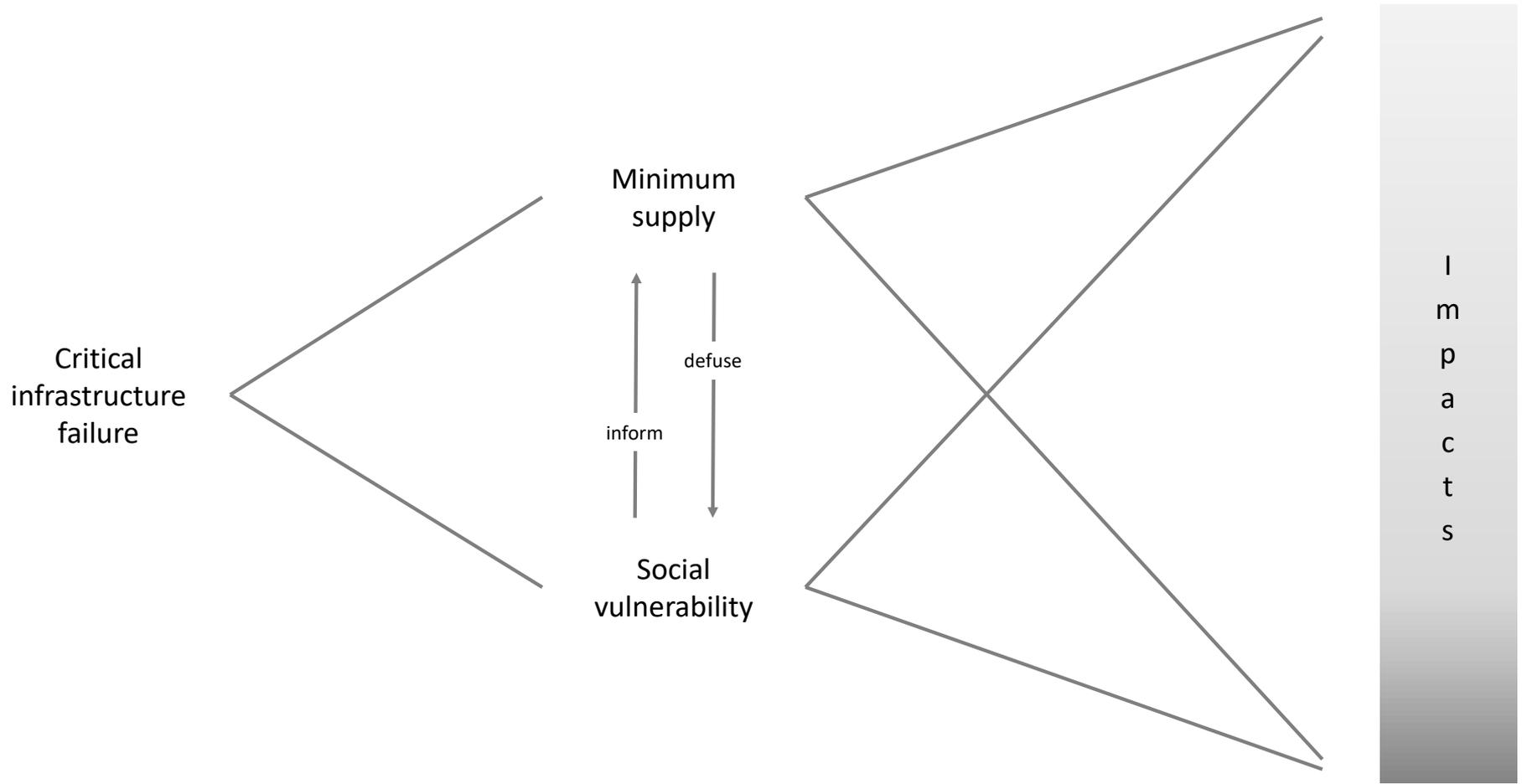
# Effectiveness of early warning in cities



# Key gaps

- How to benefit from new technologies for EW whilst including those vulnerable parts of the society without access to these technologies?
  - e.g. elderly single households with people suffering from dementia or other challenges
- How to include not only the direct hazard impacts but also secondary impacts through, for example, critical infrastructure failure?
- How to get providers of critical infrastructure in engage in early warning, e.g. potential black-outs or water shortages
- How to use EW insight to also inform minimum supply requirements and the provision of such minimum supply?

# Linkages and ways forward



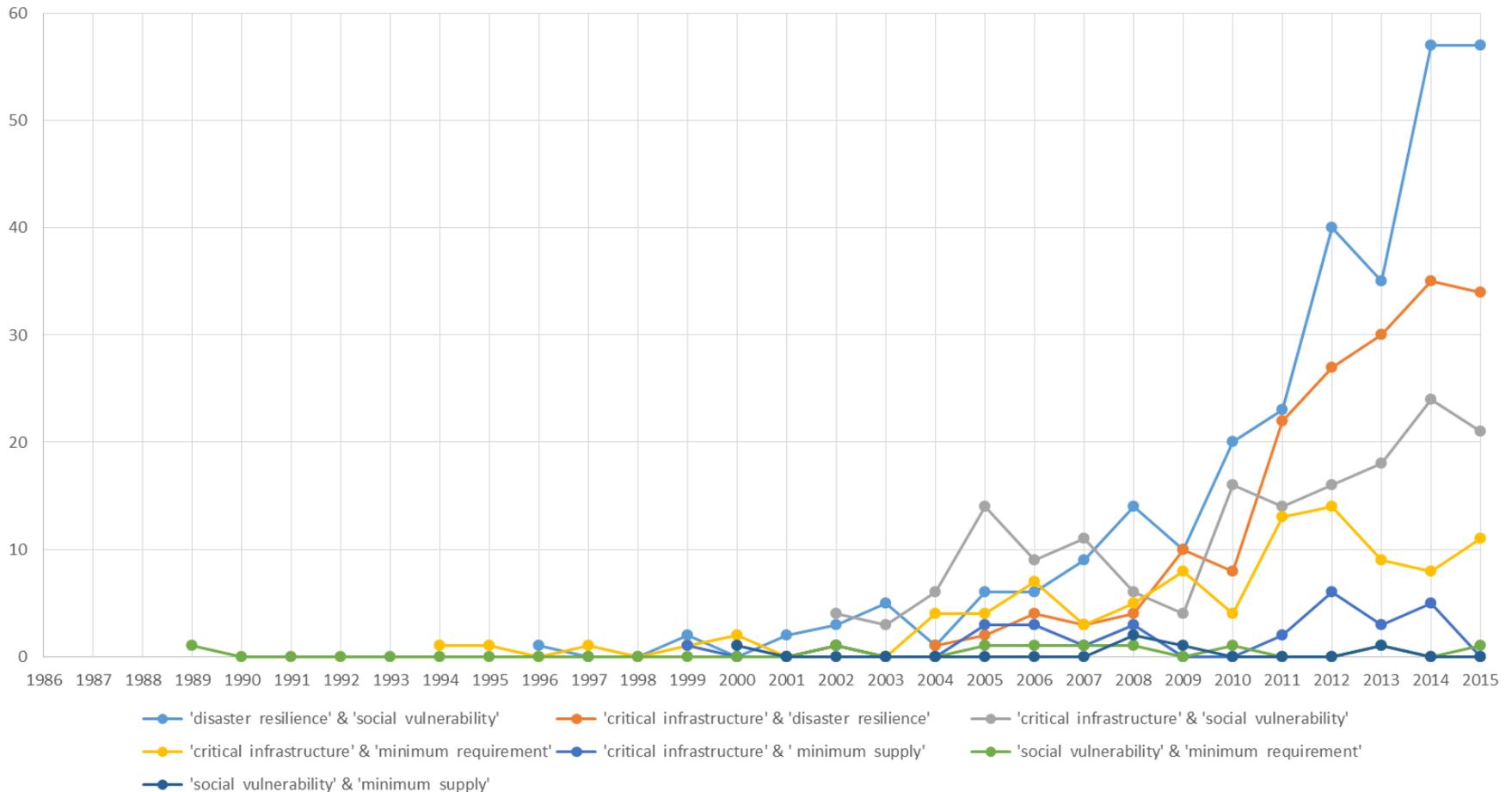
# Political challenges

Resilience:

„maintain key functions in a system despite disturbance and stress such as from natural hazards“

# Current knowledge gaps

SCOPUS indexed literature



# Thank you very much for your kind attention!

Acknowledgements to the entire VARMAP team:

Head



Senior Researchers



PhD Students



Research Assistants

