DISCC.at

Assessing the **DIS**tributional effects of **C**limate **C**hange impacts and adaptation in **AusT**ria, for just, targeted and efficient adaptation

Gabriel Bachner, Wegener Center for Climate and Global Change, University of Graz

klima+ energie fonds

Wegener Center | UNI GRAZ | International Institute for Applied Systems Analysis — IIASA www.iiasa.ac.at | IVM Institute for Environmental Studies | MEDIZINISCHE UNIVERSITÄT WIEN | umweltbundesamt ENVIRONMENT AGENCY AUSTRIA | 10 REDUCED INEQUALITIES | 13 CLIMATE ACTION | 16 PEACE, JUSTICE AND STRONG INSTITUTIONS

PROJECT OVERVIEW

Objectives

To **inform** decision makers in Austria about **group-specific social vulnerabilities** to key climate risks as well as the within-country distributional effects of climate change impacts and adaptation on a national scale.

This will **enable the implementation of just and cost-effective adaptation** measures, including the strengthening of adaptive capacities where most needed.

Means

To reach the objective DISCC-AT follows **an inter- and transdisciplinary approach, combining qualitative and quantitative methods**, embedded in a broad stakeholder process.
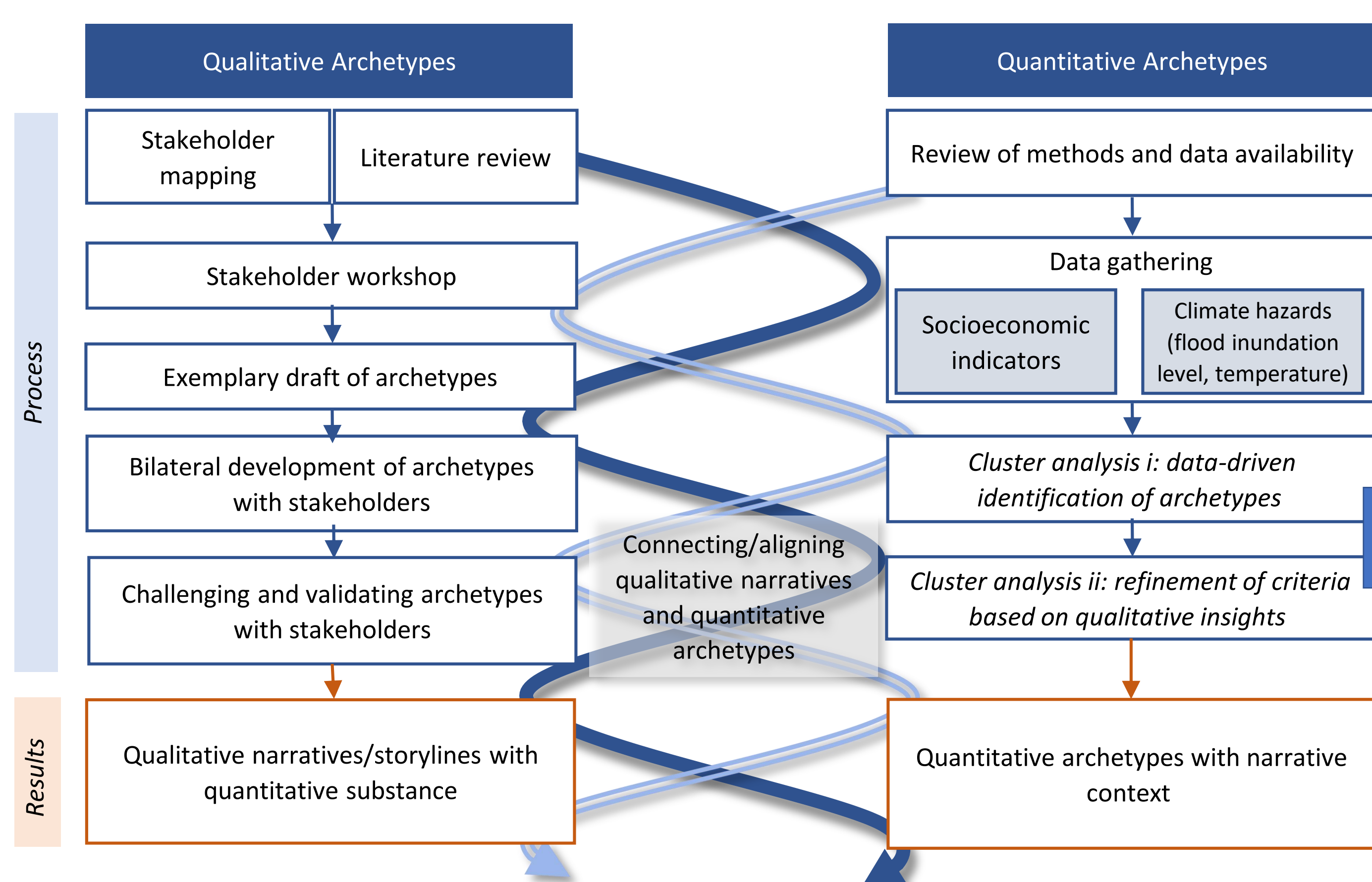
Focus

Flood and **heat**-related risks

METHODS

Mixed methods approach

- Stakeholder integration, interviews, workshops
- Literature review on the drivers of intersectional vulnerability
- Cluster analysis for identifying typical risk profiles ("Archetypes")
- Social flood risk modelling using the GLOFRIS model
- Health risk modelling using time series analysis
- Computable general equilibrium modelling for economy-wide assessment of distributional effects

Key research questions

#1
What are the **vulnerabilities** and therein particularly the adaptation capacities **for different societal groups** with respect to flood and heat related health risk?

#2
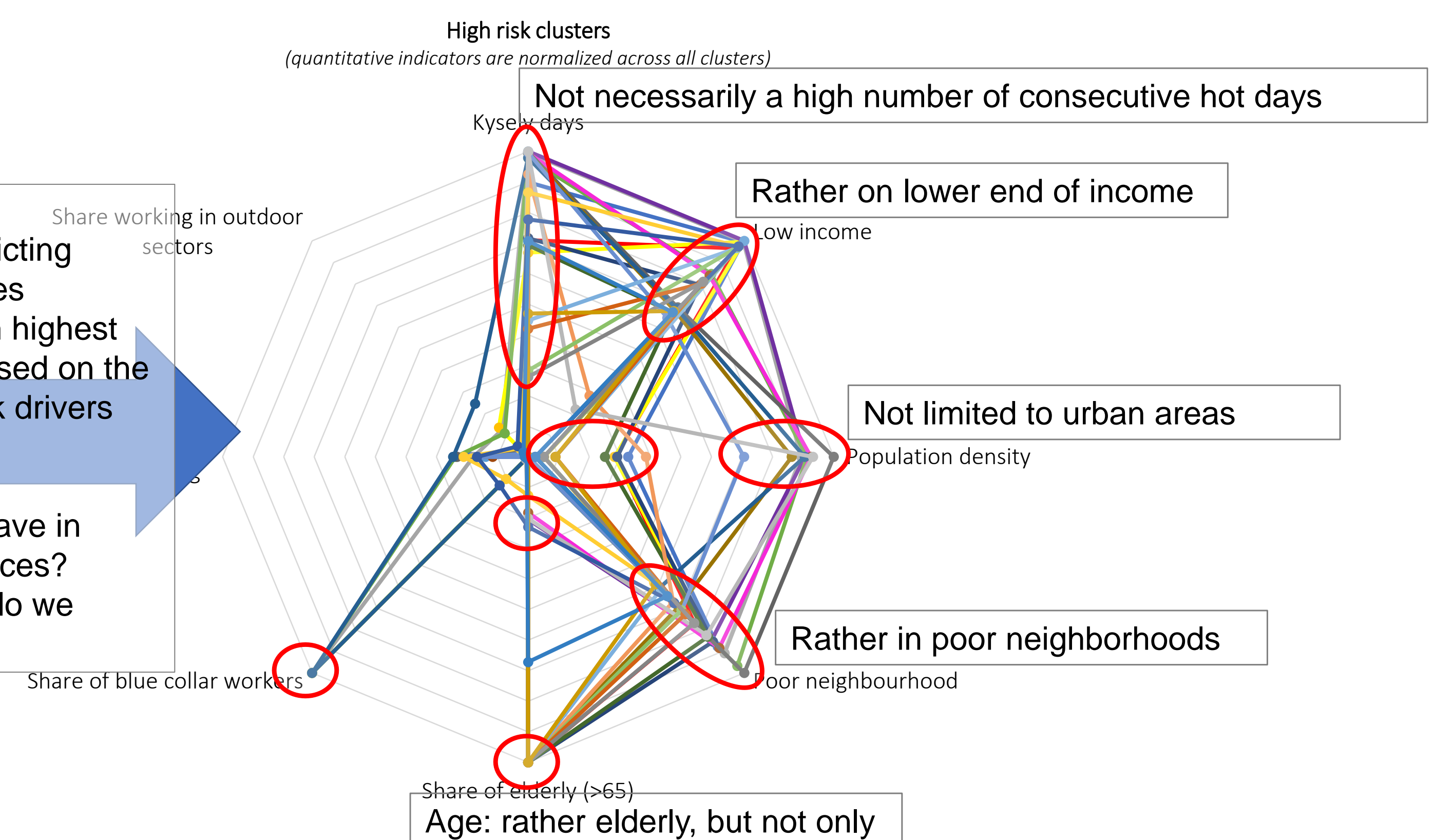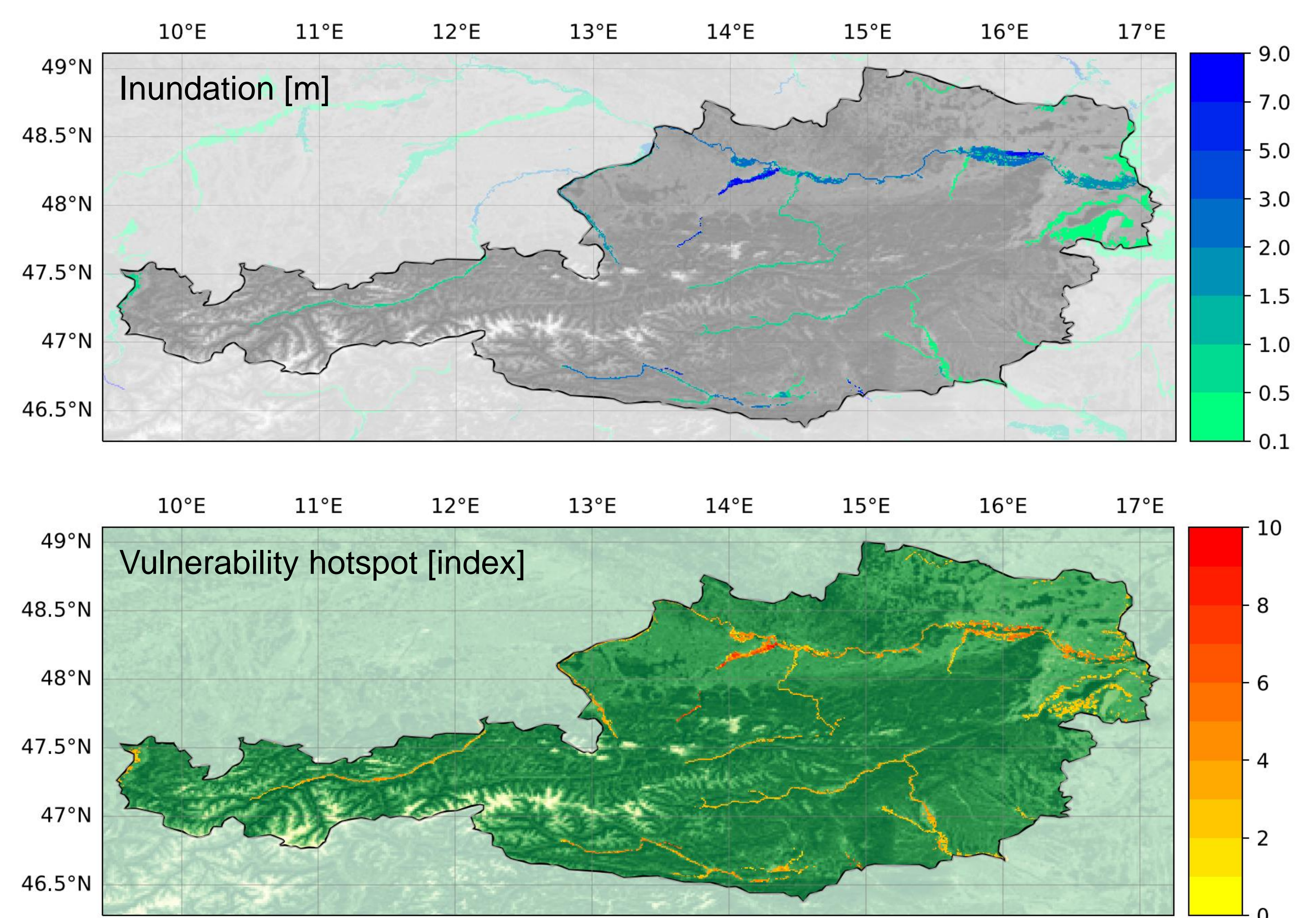How can the **public sector increase adaptation capacities** where most needed?

#3
Who bears the **welfare costs of climate change-induced flood and health impacts** in Austria and who benefits from public adaptation?

#4
What are ways forward for **mainstreaming just adaptation** in the existing transfer/social security/public insurance systems and in new policies?

SELECTED PRELIMINARY RESULTS

High risk clusters
(quantitative indicators are normalized across all clusters)

- Not necessarily a high number of consecutive hot days
- Rather on lower end of income
- Not limited to urban areas
- Rather in poor neighborhoods
- Age: rather elderly, but not only

Kysely days · Share working in outdoor sectors · Low income · Population density · Poor neighbourhood · Share of blue collar workers · Share of elderly (>65)

Qualitative Archetypes / Quantitative Archetypes

Example: Heat
→ 90 clusters depicting different risk profiles
→ Filter those with highest risk (H x E x V) based on the combination of risk drivers
→ 23 clusters

→ What do they have in common? Differences?
→ What patterns do we detect?

OUTLOOK

- 2nd stakeholder workshop in May 2024
- Heat-related labour productivity losses
- Macroeconomic modelling, based on archetypes
- Factsheets, policy briefs and journal publications

www.discc.at | **gabriel.bachner@uni-graz.at**