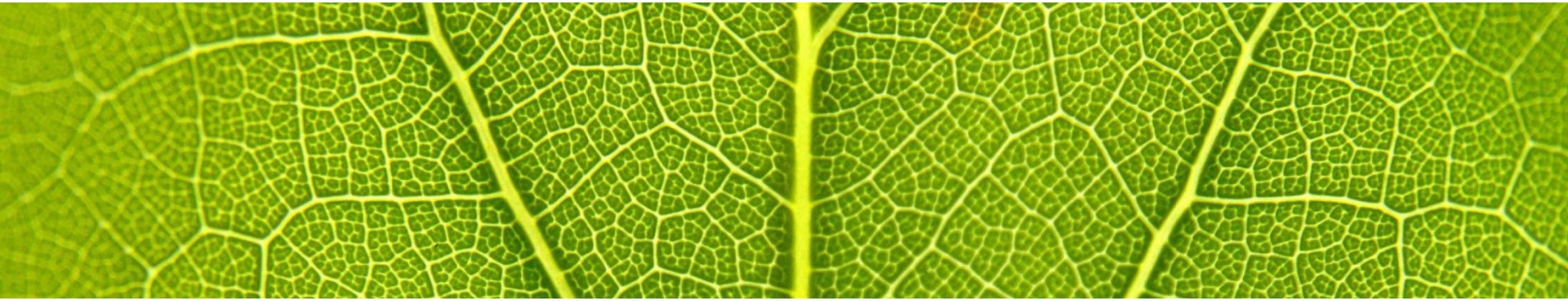
ECOFYS

sustainable energy for everyone



New research on the societal impact of unhealthy homes

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Introduction

- WHO definition (since 1948)
  - "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

- Maros Sefcovic (EU Commissioner for Energy), 22 June 2016:
  „People want to live in a healthy environment"
  Yet, the Commissioner is referring to **OUTDOOR** environment.

- BUT: 508 million European citizens (EUROSTAT, 2015) spend 80-90% of their time **INDOORS** (living and working).

➡ **Europe's buildings are having a major impact on Europeans' physical, mental and social well-being!**

New Research

- Research making the link between well-being and housing conditions is largely missing!
- A detailed study on „The relation between quality of dwelling, socio-economic data and well-being in EU28 and its Member States" just started.

➡ **The research is based on the revolving EU-wide survey „Income and Living Conditions in Europe" (EU-SILC)**

EU-Statistics on Income and Living Conditions (EU-SILC)

Issues related to indoor comfort (EUROSTAT, EU-SILC database)		**Affected number of Europeans** (2014)
Leaky roof, dampness, rot		80 million
Unable to keep dwelling warm in winter		50 million
Unable to keep dwelling cool in summer		100 million
Environmental pollution in neighbourhood		70 million
Daylight		30 million

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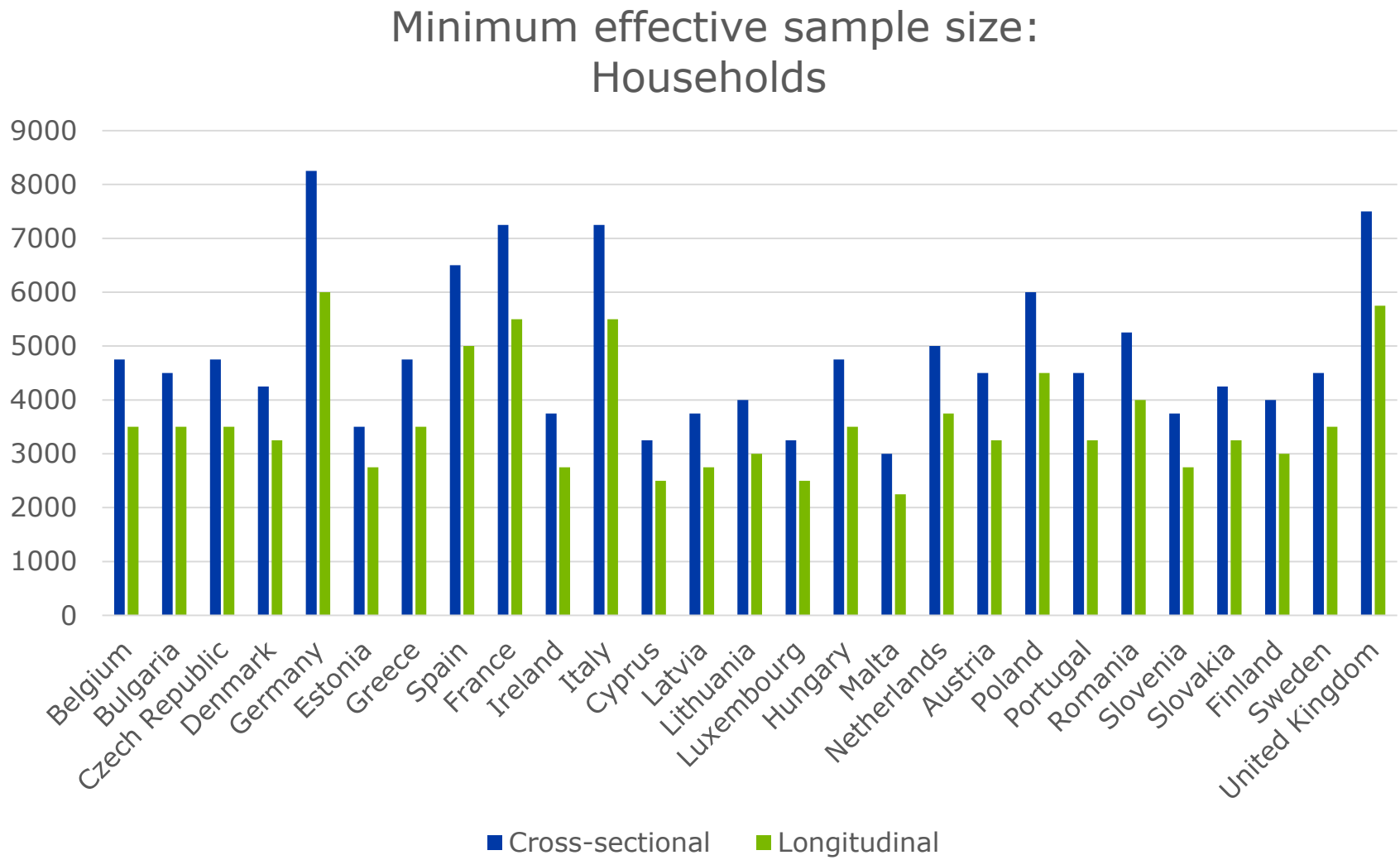
EU SILC: General data structure

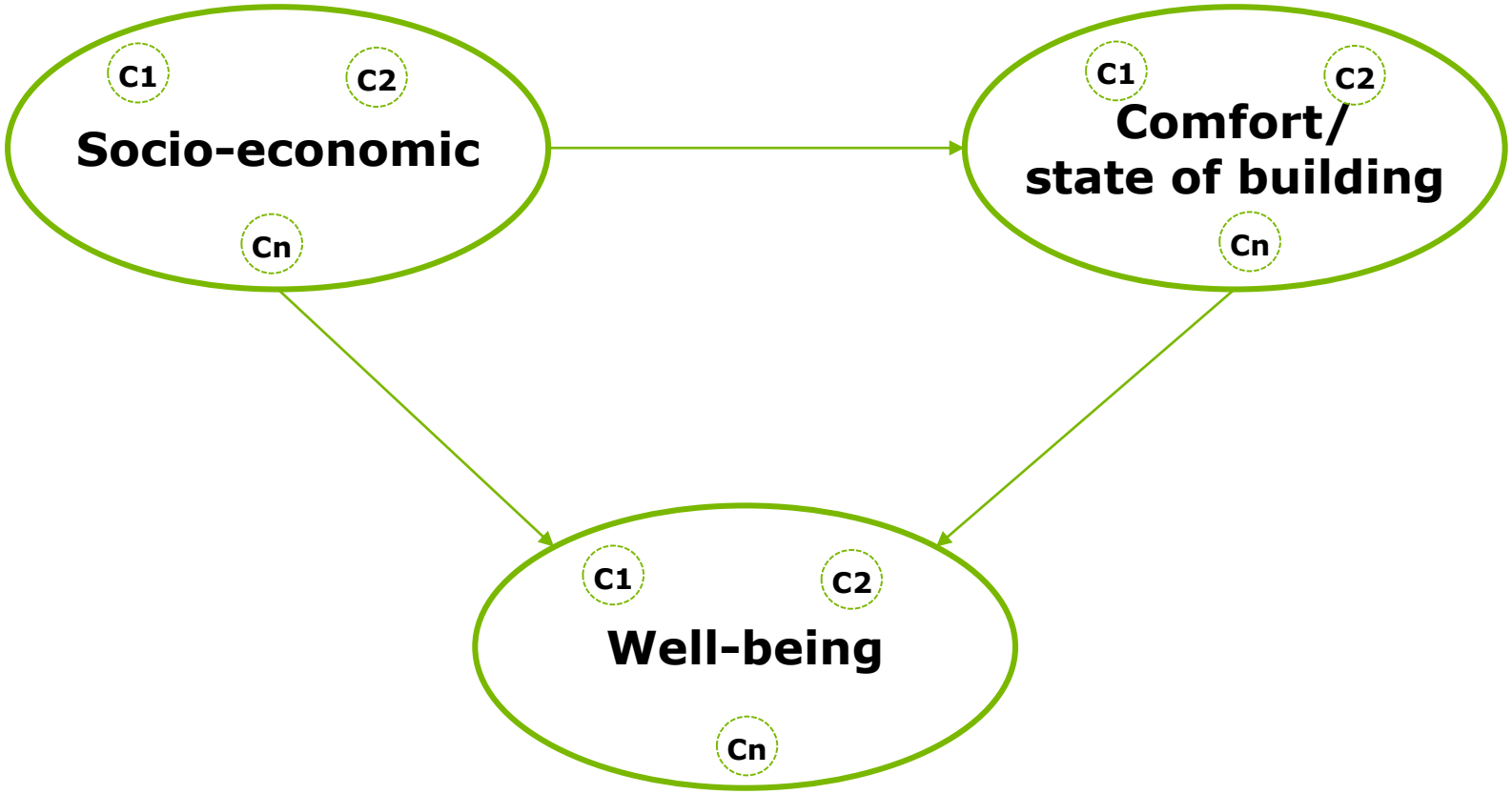
Type of data	Description	Domains	Number of households	Number of persons (age +16)
Cross-sectional	data pertaining to a given time or a certain time period	• **Income** • **Poverty** • **Social exclusion** • **Housing** • **Education** • **Labour** • **Health**	Min. 130.000	Min. 270.000
Longitudinal	data pertaining to individual-level changes over time, observed periodically over a four-year period.		Min. 100.000	Min. 200.000

Data are collected on „household" and „person" level

EU SILC: Adequate sample size for smaller countries



Areas of interest and organisation of EU-SILC data for study

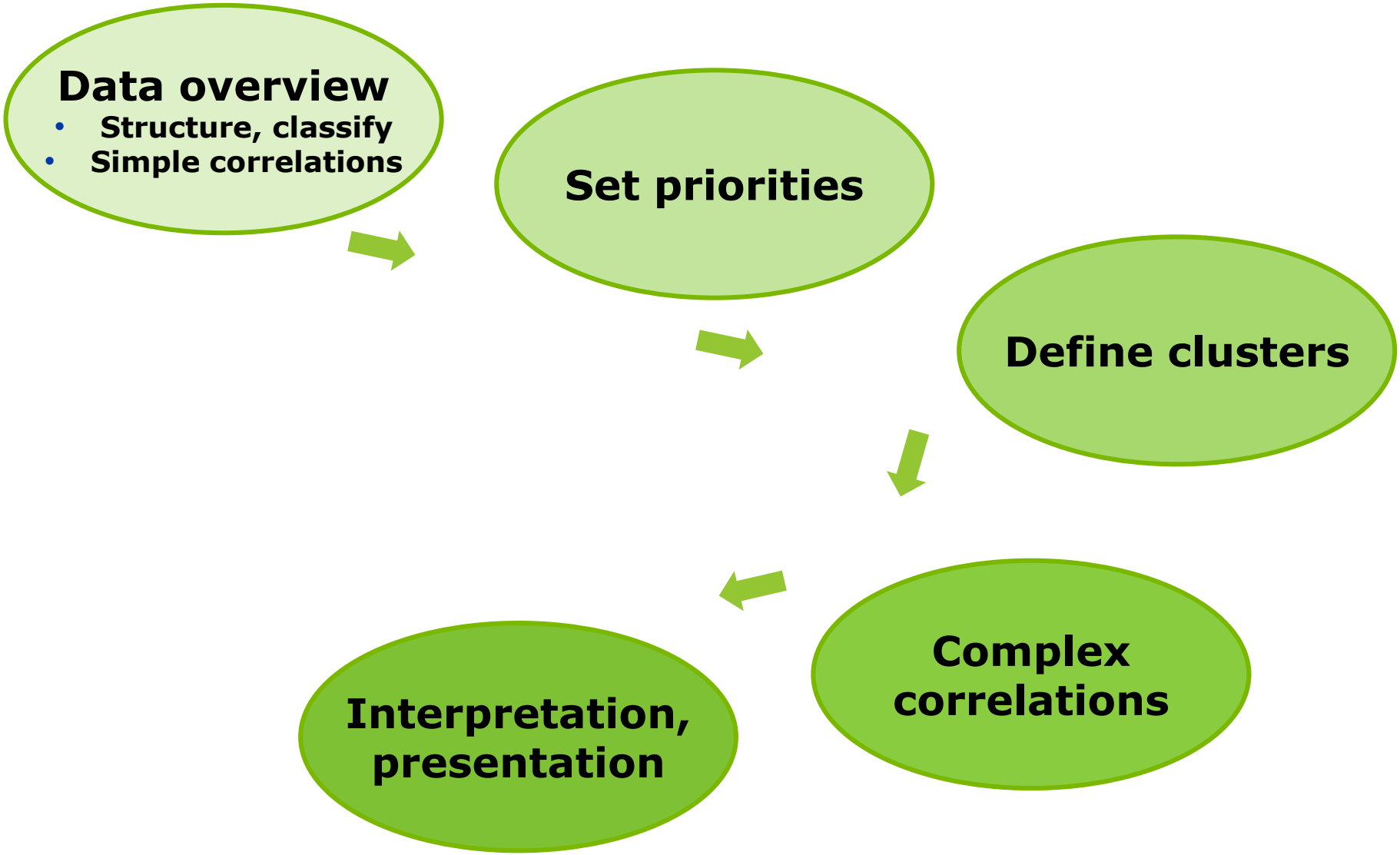


C = Cluster within each area

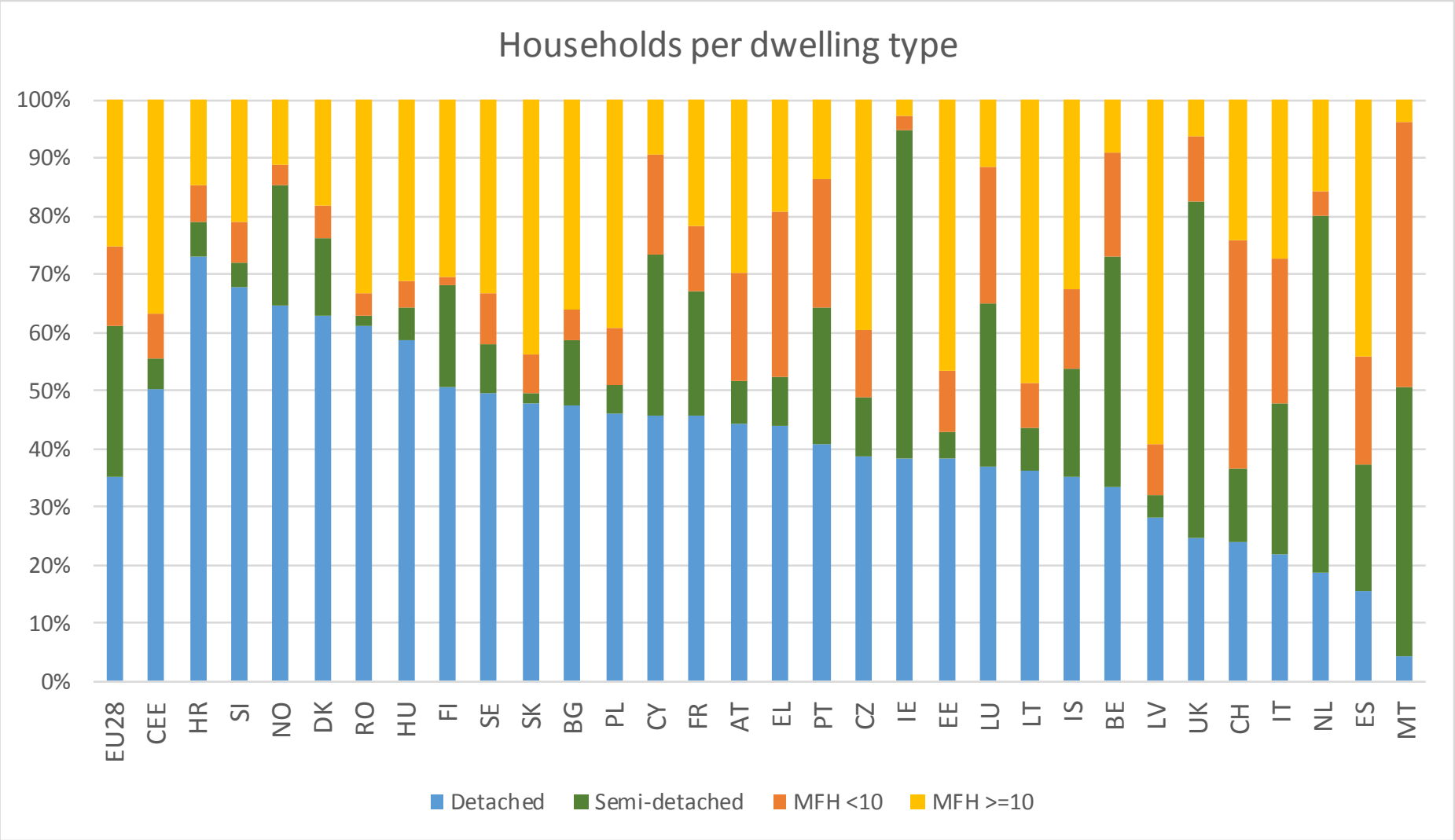
Examples of relevant variables in each area

Variables related to socio-economic	Variables related to well-being	Variables related to state of building
Total household gross income	Feeling downhearted/depressed	Type of building (SFH, RH, MFH)
Number of persons/household	General Health	Floor area
Monthly net income of household	Suffer from chronic illness	Number of rooms
Owner or tenant	Feeling down in the dumps	Leaky roof, dampness or rot in window frames
Arrear on utility bills	Feeling calm and peaceful	Satisfaction with accomodation/ dwelling
Pressure caused by living cost	Being Happy	Ability to keep home adequatley warm
What can household afford	Satisfaction with living environment	Dwelling to dark, not enough light
Occupation of person with highest income	…	Pollution in neighbourhood of building
…	…	…
…	…	…

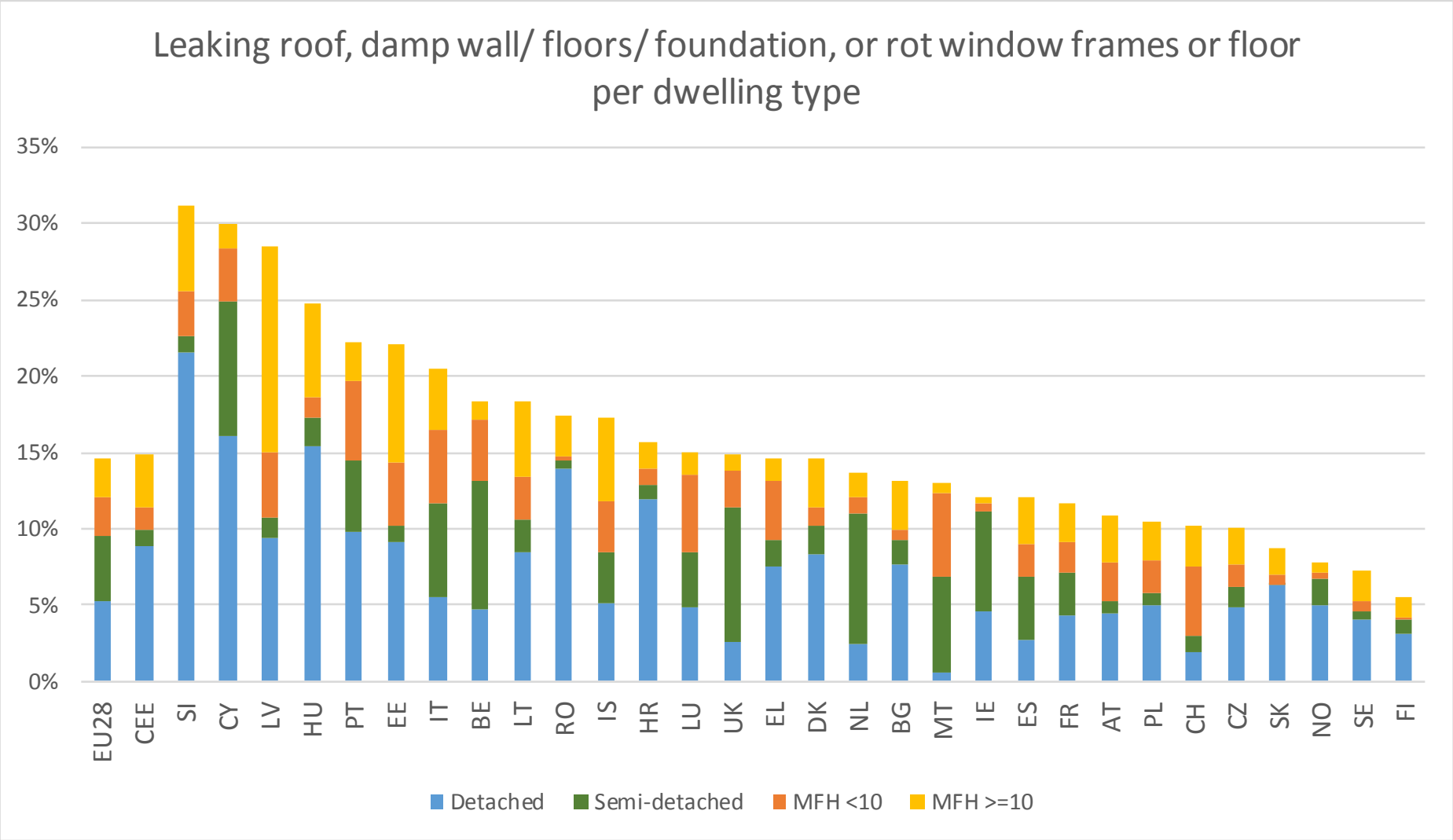
Research Steps



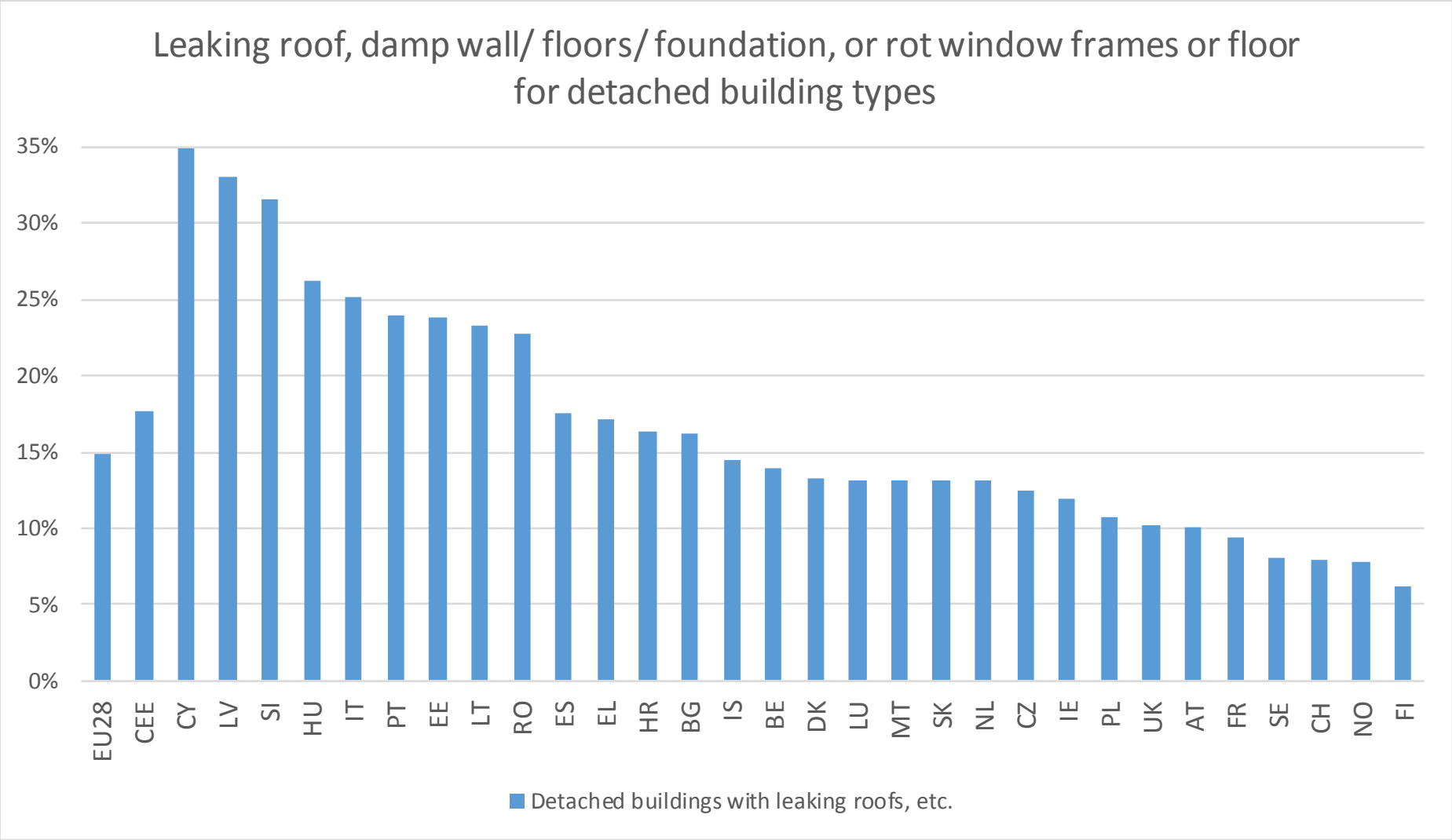
Draft results: Percentage of households by dwelling type



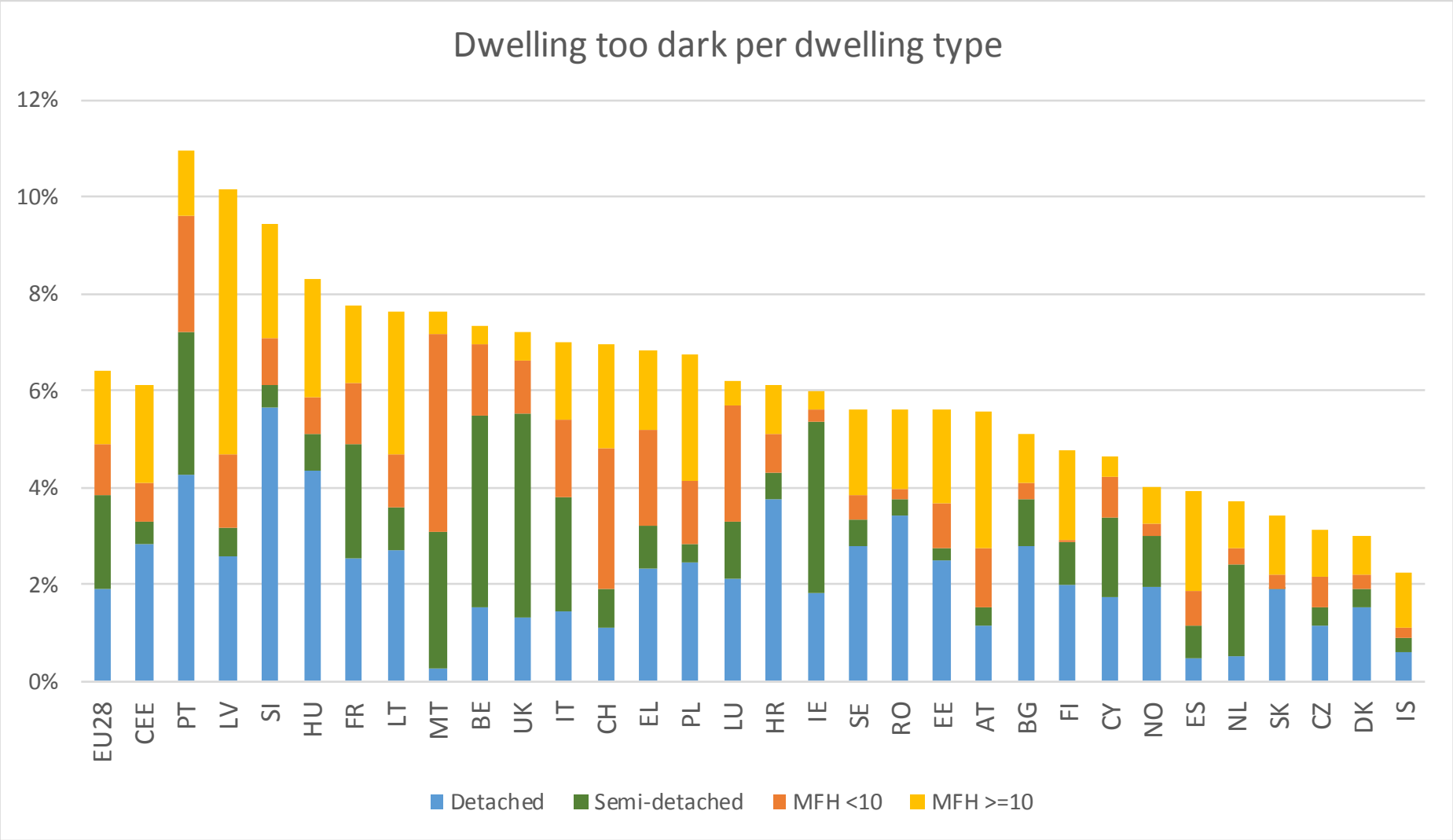
Draft results: Percentage of households reporting leaking roof, etc. by dwelling type



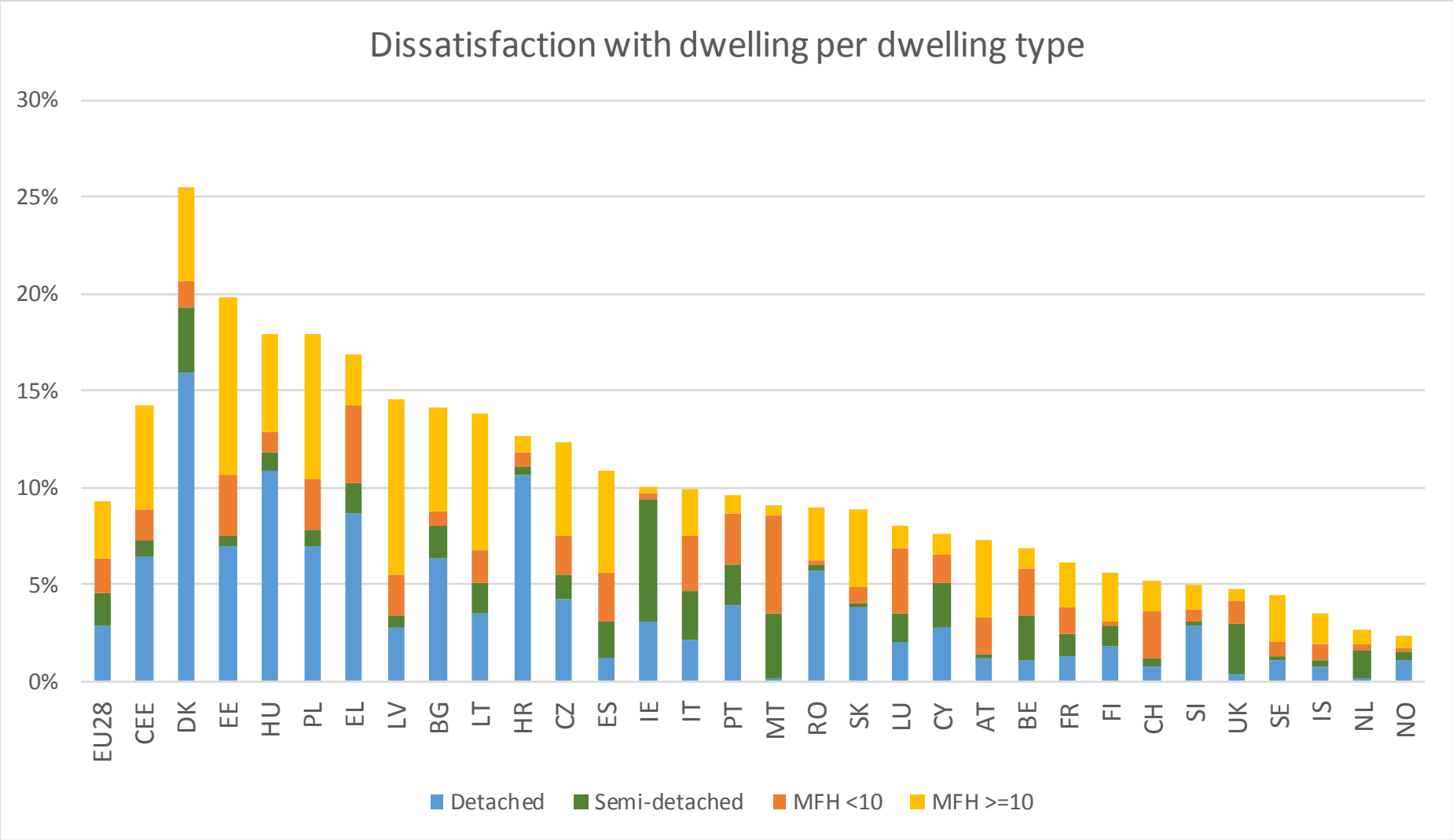
Draft results: Percentage of households living in detached buildings with leaking roof, etc.



Draft results: Percentage of households reporting „dwelling too dark, too little daylight" by dwelling type



Draft results: Percentage of households reporting dissatisfaction with dwelling



Conclusion

- **Climate targets require a dramatic energy efficiency improvement of Europe‘s building stock till 2050.**
- **We do not have buildings for the purpose of energy efficiency but for the purpose of having a secure, comfortable and healthy living.**
- **Therefore research needs to show the „alliance of and synergies between the two objectives *energy efficient* and *healthy* buildings“ in order to create a stronger motivation to meet climate targets for the sake of individual and societal well-being**
- **Going for the climate targets is a unique opportunity to move towards a more healthy building stock by 2050 at the same time.**
- **More results coming soon …**

Please contact us for more information

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sustainable energy

for everyone