

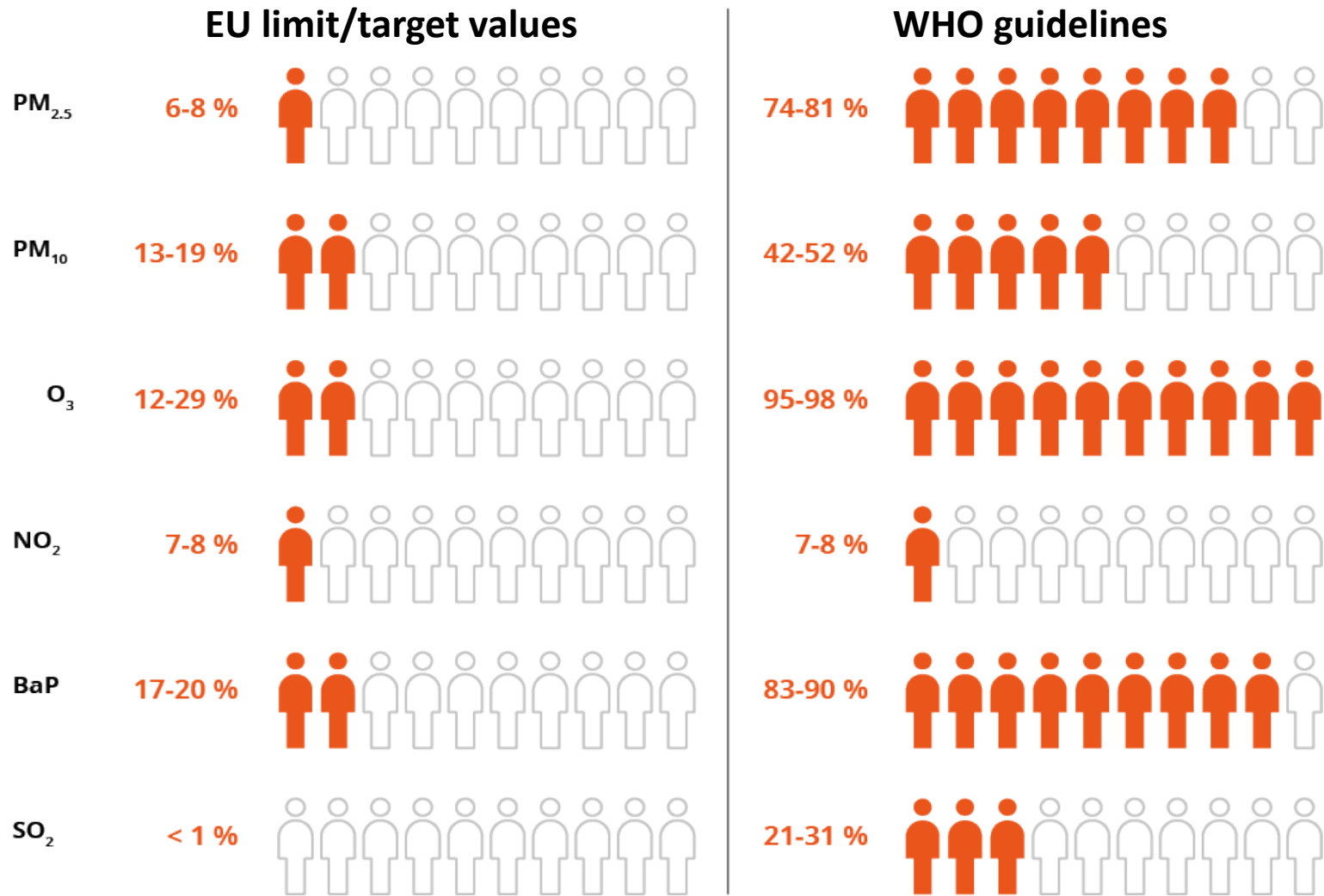
Air Quality in Europe 2020: Trends, impacts and policy



Dr Hans Bruyninckx | WHO/HEI/ISEE Air Pollution and Health | Brussels 22 January 2020

Many Europeans still exposed to harmful levels of air pollution

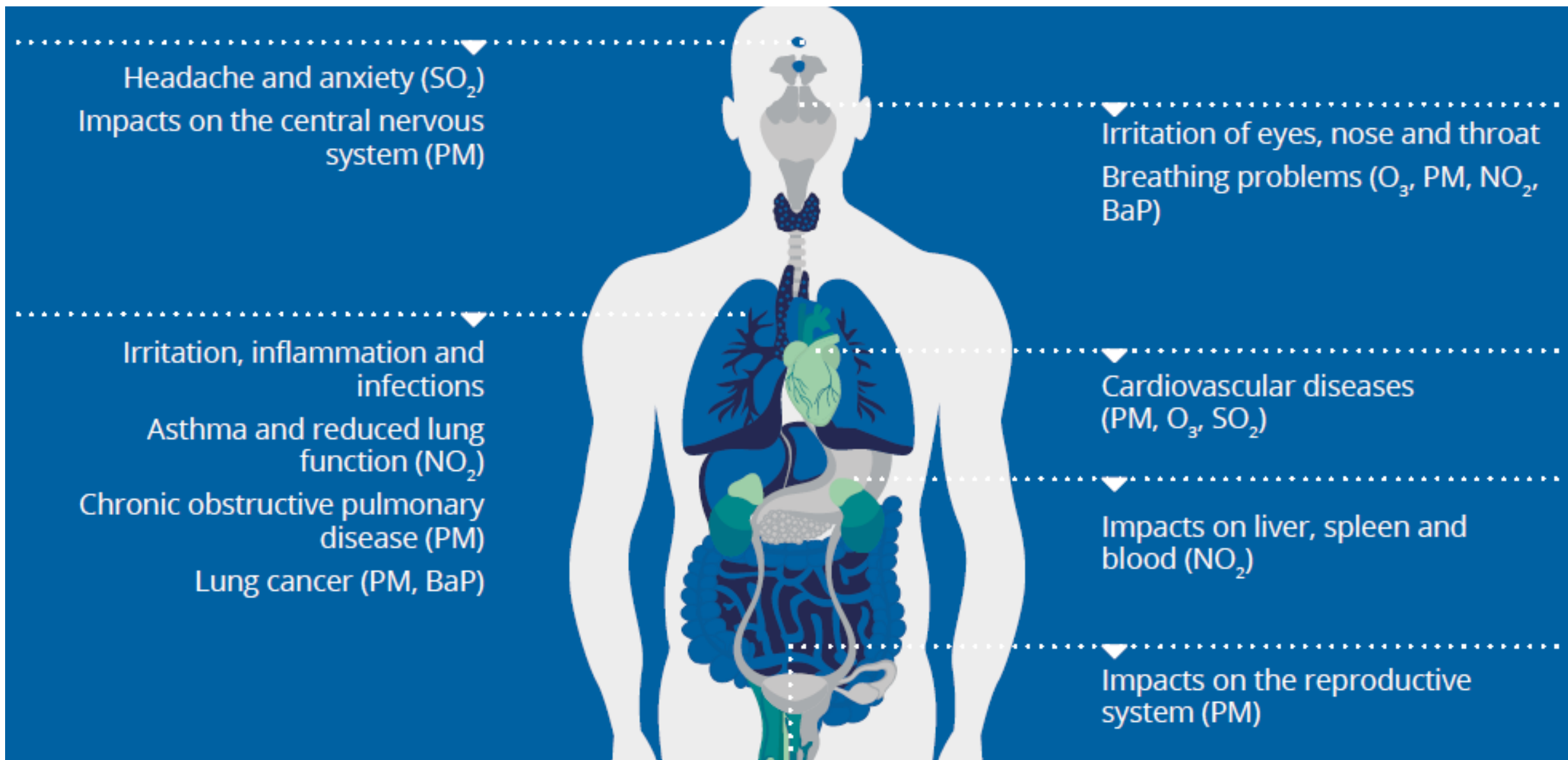
Share of EU urban population exposed to air pollutant concentrations above EU and WHO reference values in 2015-2017



Source: [CSI004](#)



Health impacts – illness and disease



Health impacts – premature deaths (2017)

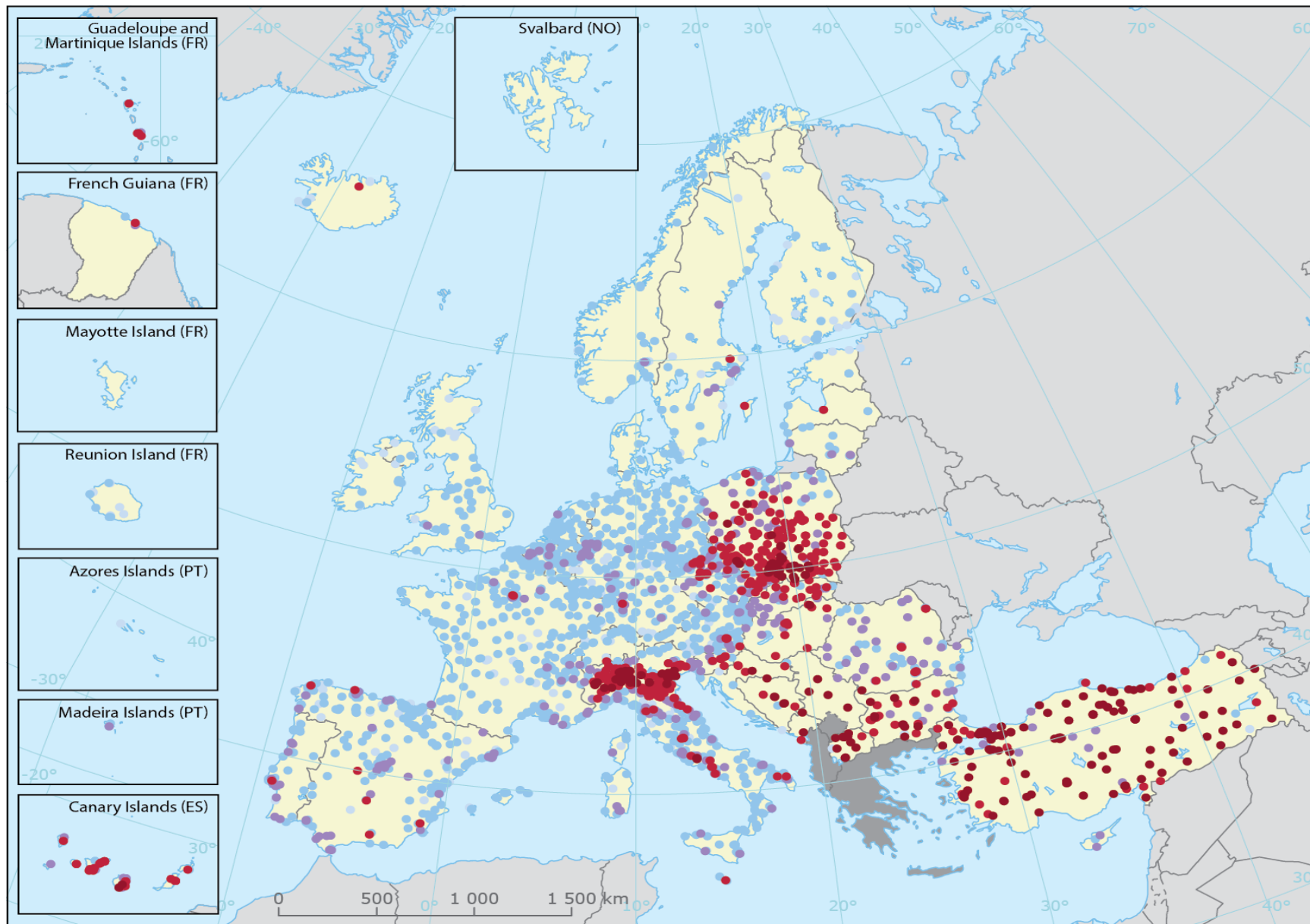
Premature deaths in Europe due to poor air quality:

- 423 000 due to exposure to PM_{2.5}
- 72 000 due to exposure to NO₂
- 16 300 due to exposure to O₃

At least 30 % of premature deaths from PM_{2.5} could be avoided if the WHO Air Quality Guideline was reached across Europe.



Particulate matter (PM₁₀) concentrations in Europe



90.4 percentile of PM₁₀ daily concentrations in 2017

µg/m³

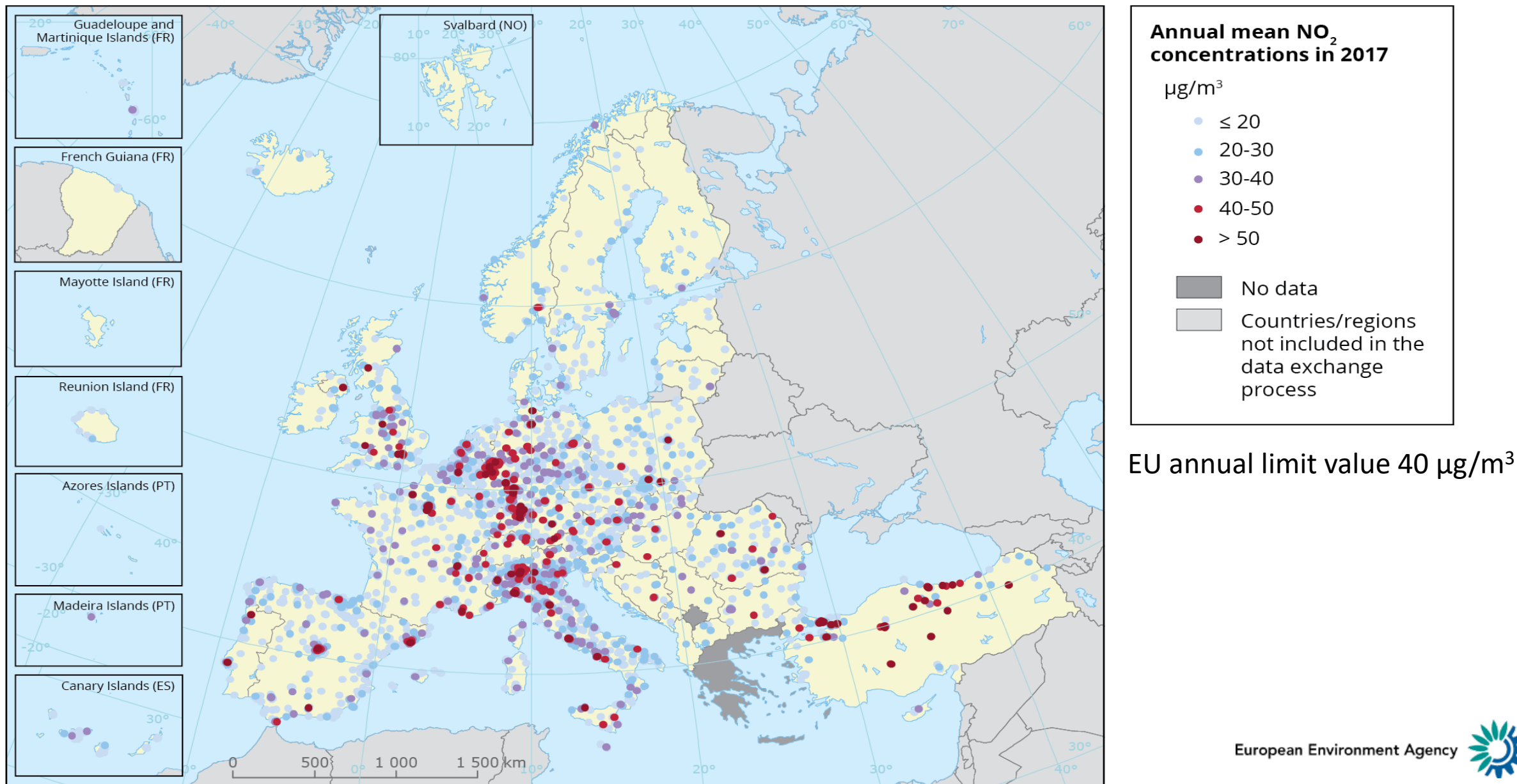
- ≤ 20
- 20-40
- 40-50
- 50-75
- > 75

- No data
- Countries/regions not included in the data exchange process

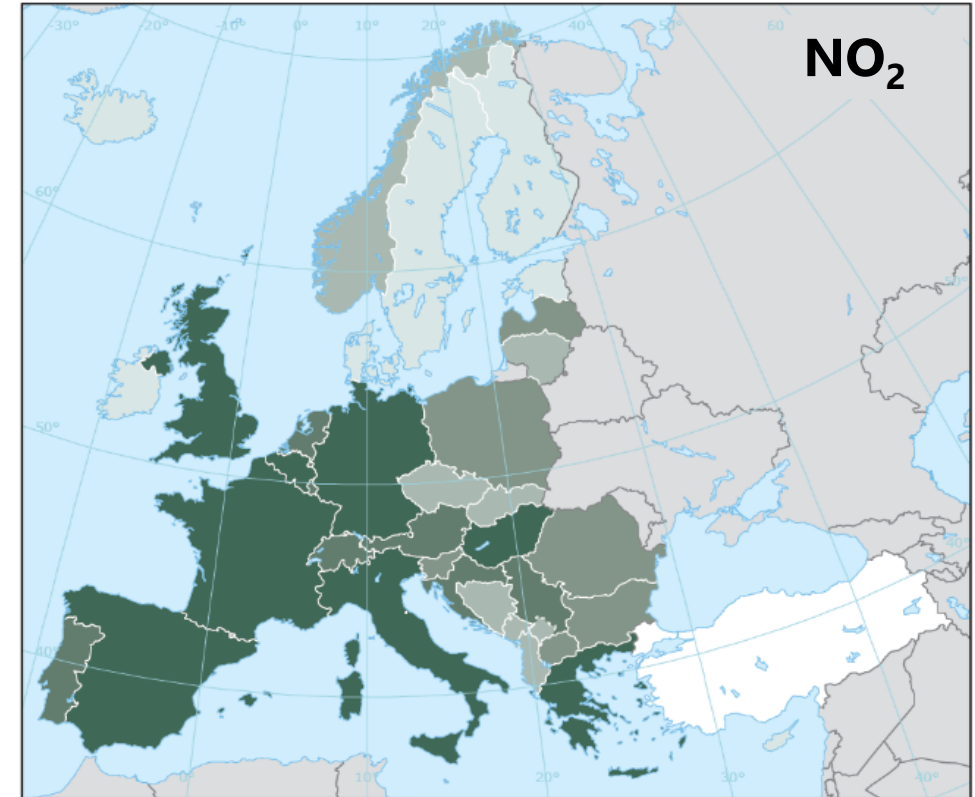
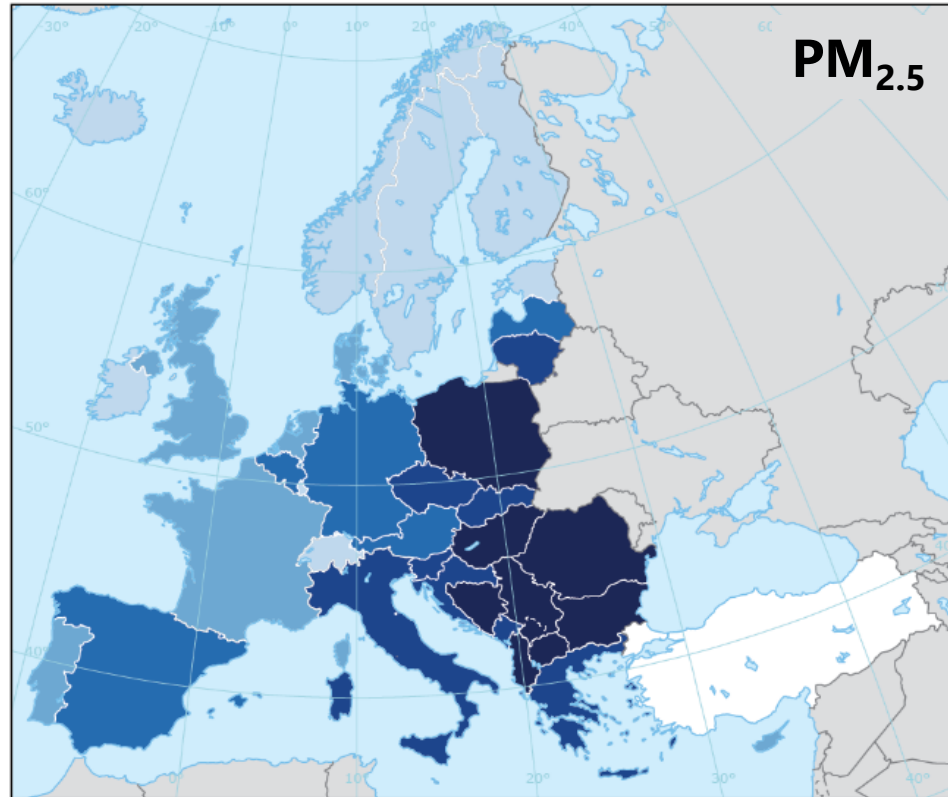
EU daily limit value 50 µg/m³



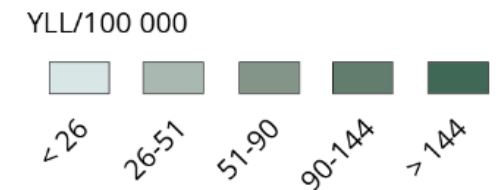
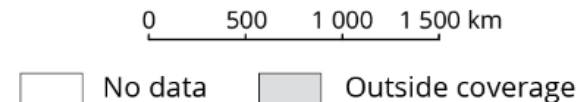
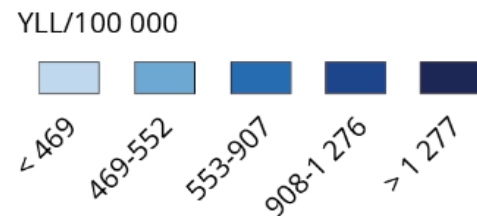
Nitrogen dioxide (NO₂) concentrations in Europe



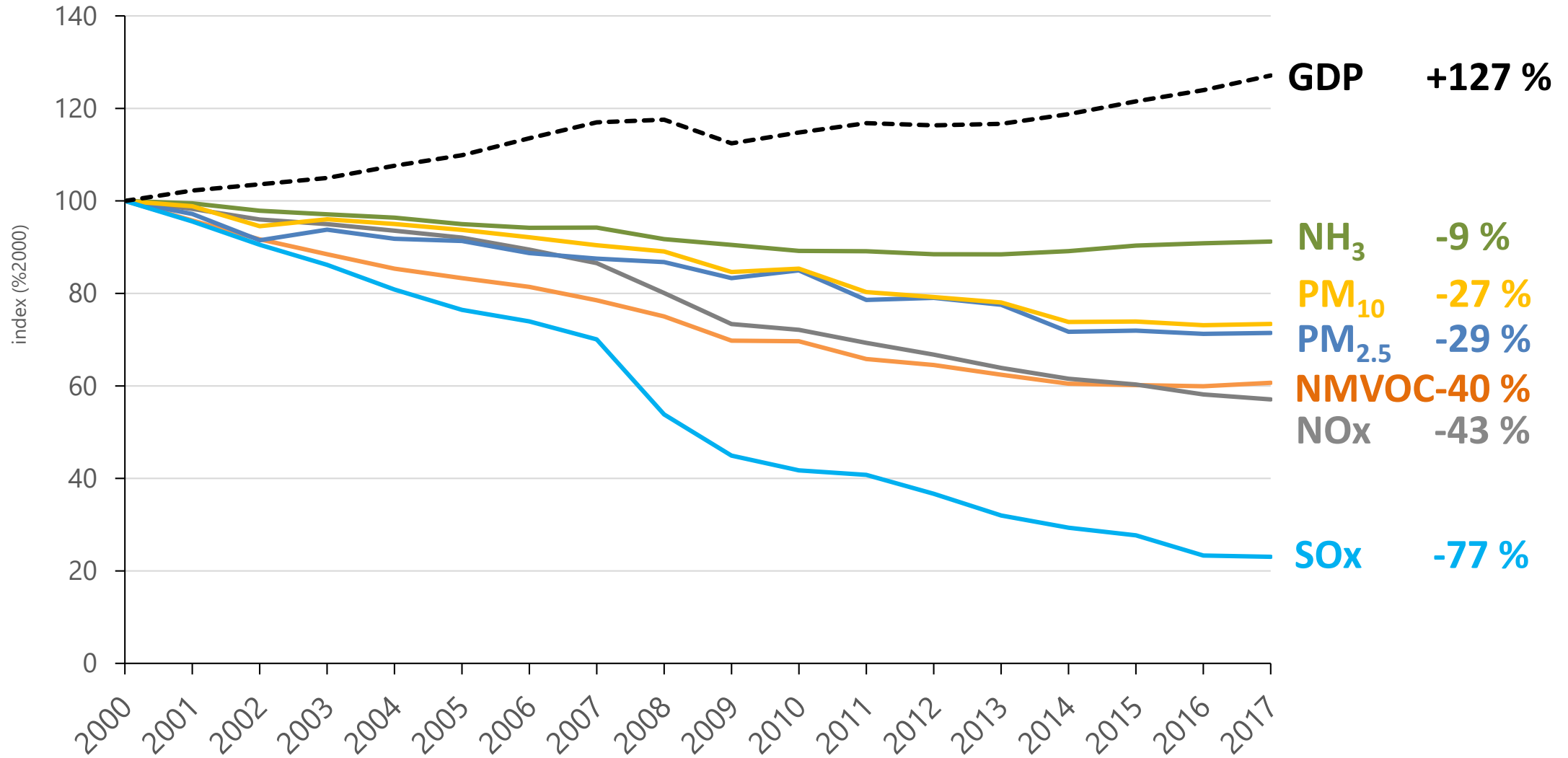
Health impacts of PM_{2.5} and NO₂ by geography



Years of life lost (YLL) per 100 000 population attributable to PM_{2.5} (2016 data) and NO₂ (2015 data)

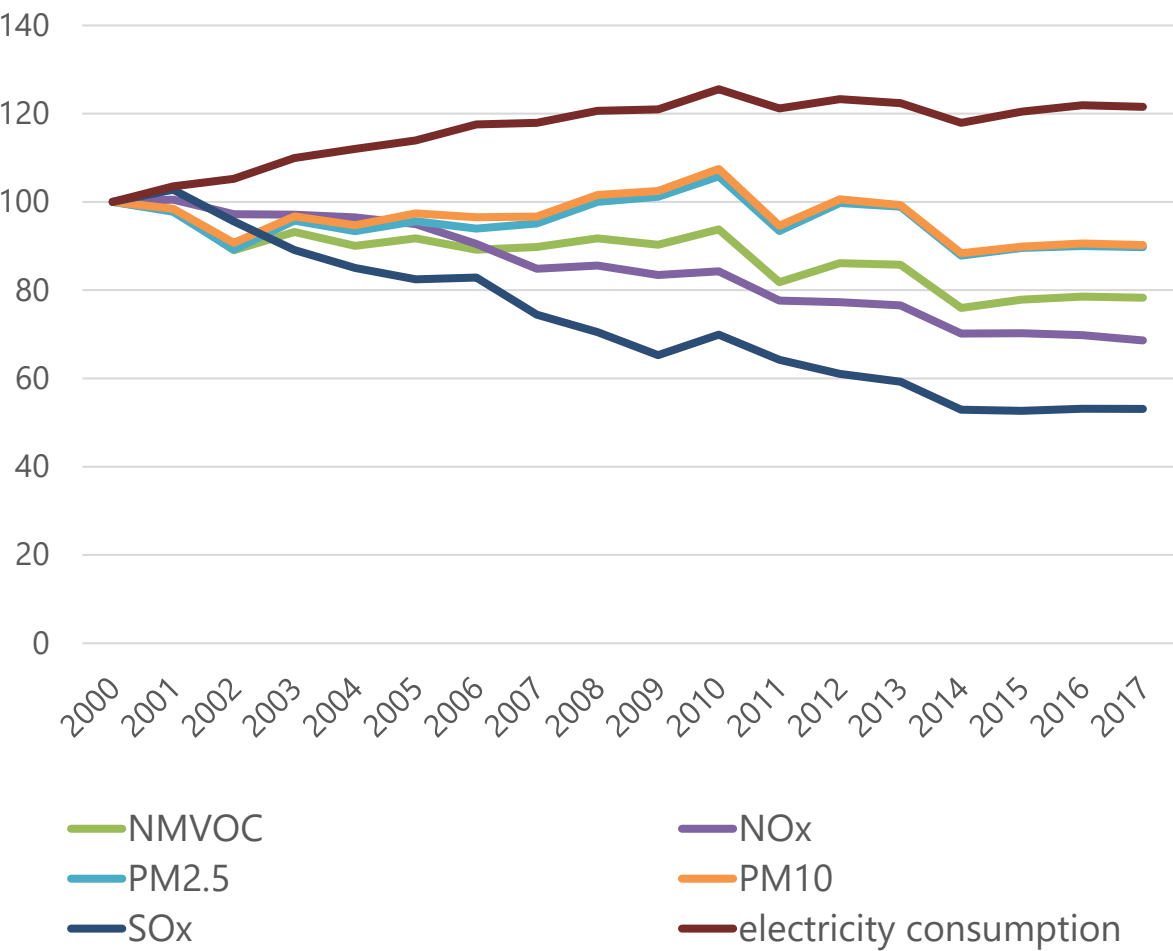


Emissions have decreased...



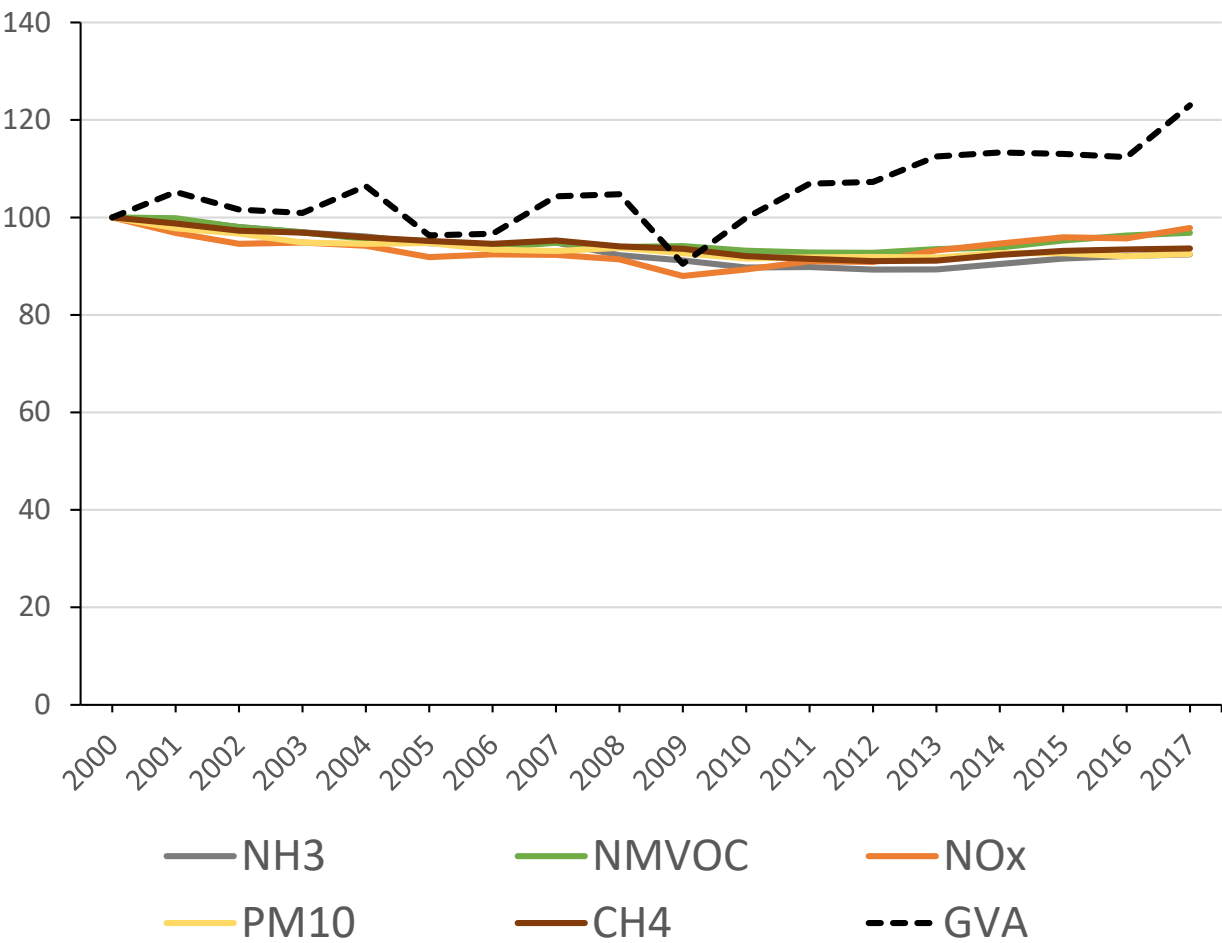
...but not equally across all sectors

Commercial, institutional and residential energy use



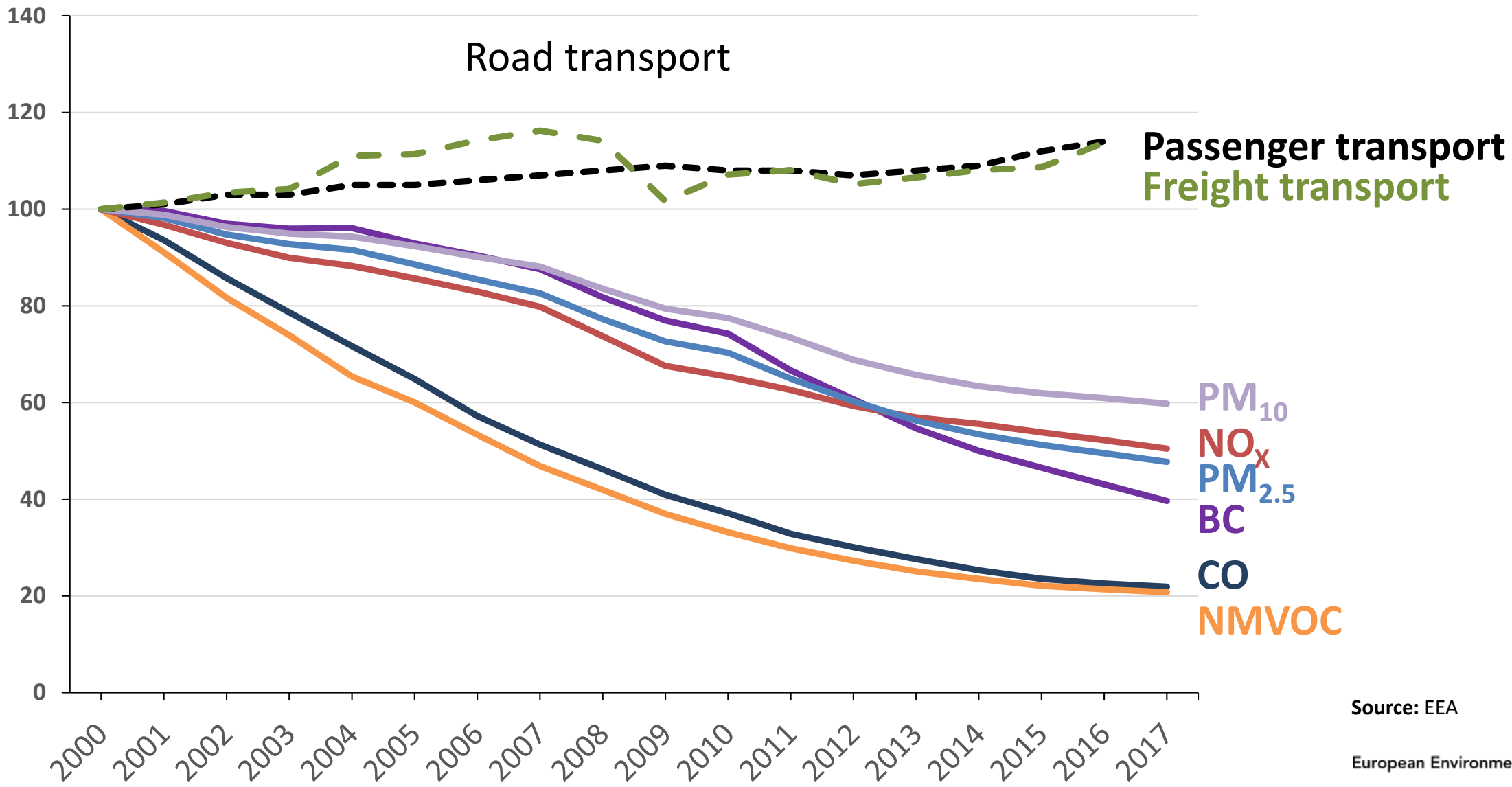
EU Member States (2000-2017)

Agriculture



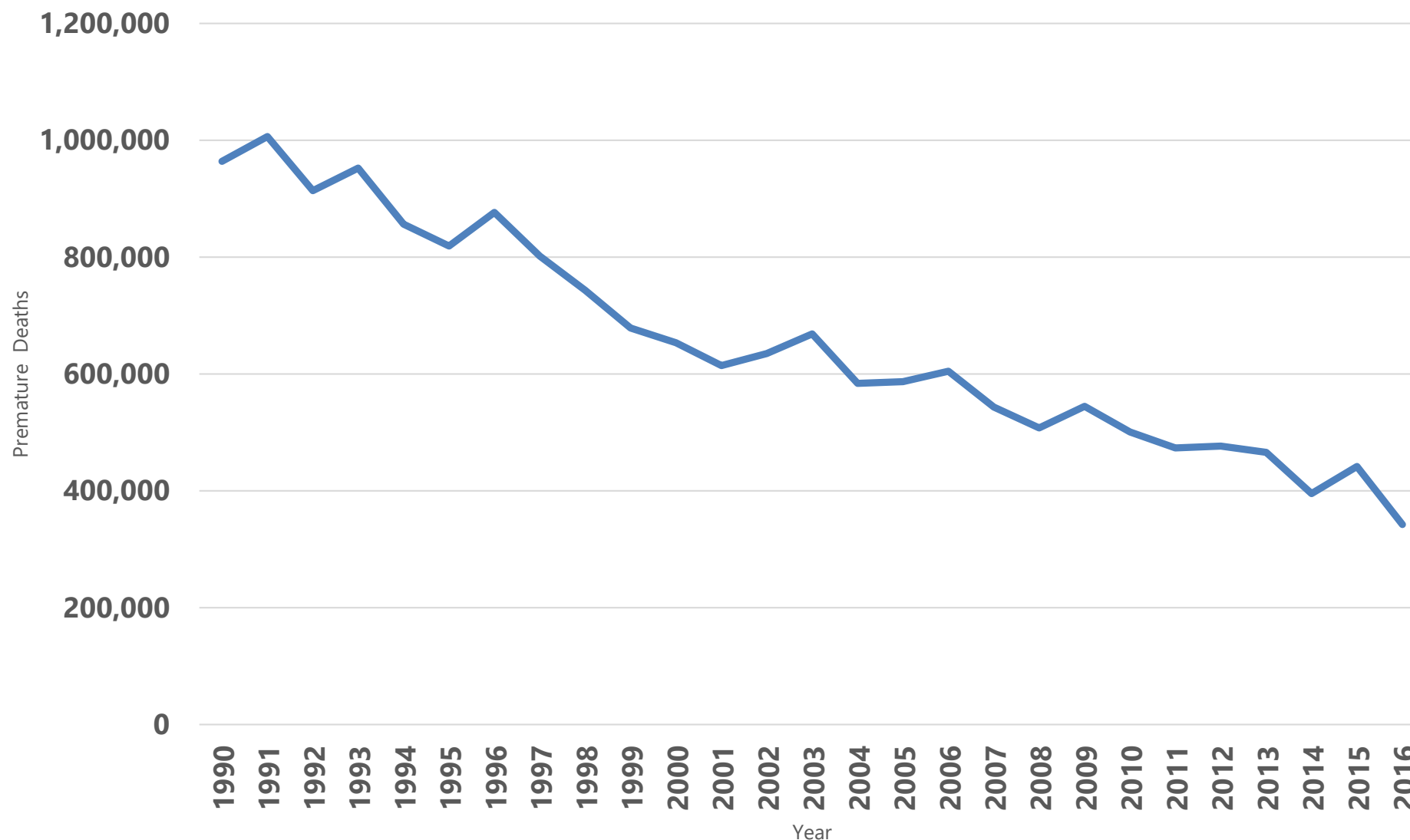
Source: EEA

Road transport emissions have declined, but now flattening



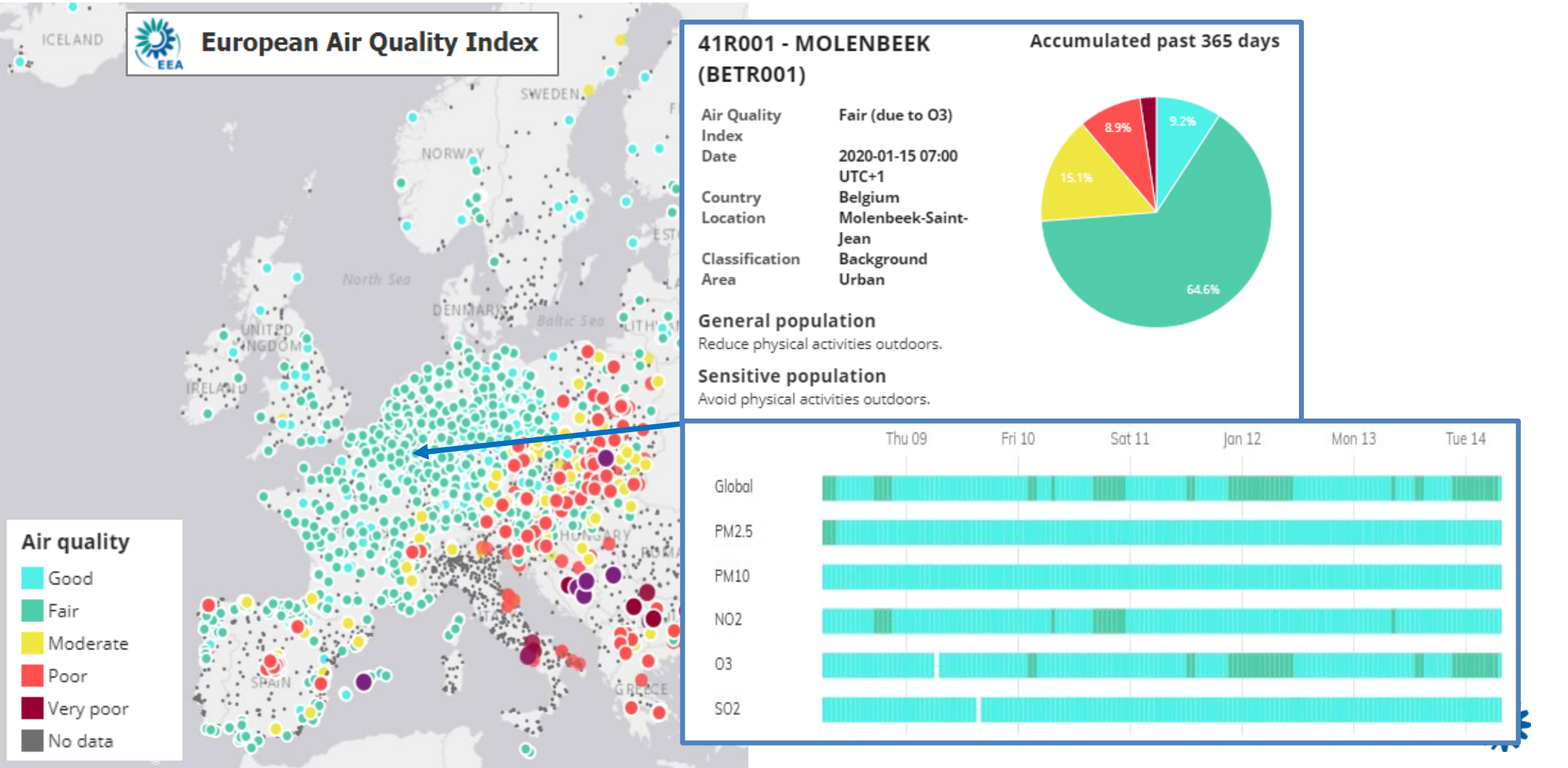
Policy success: deaths from PM_{2.5} declining

Premature deaths associated with PM_{2.5} exposure in Europe 1990-2016

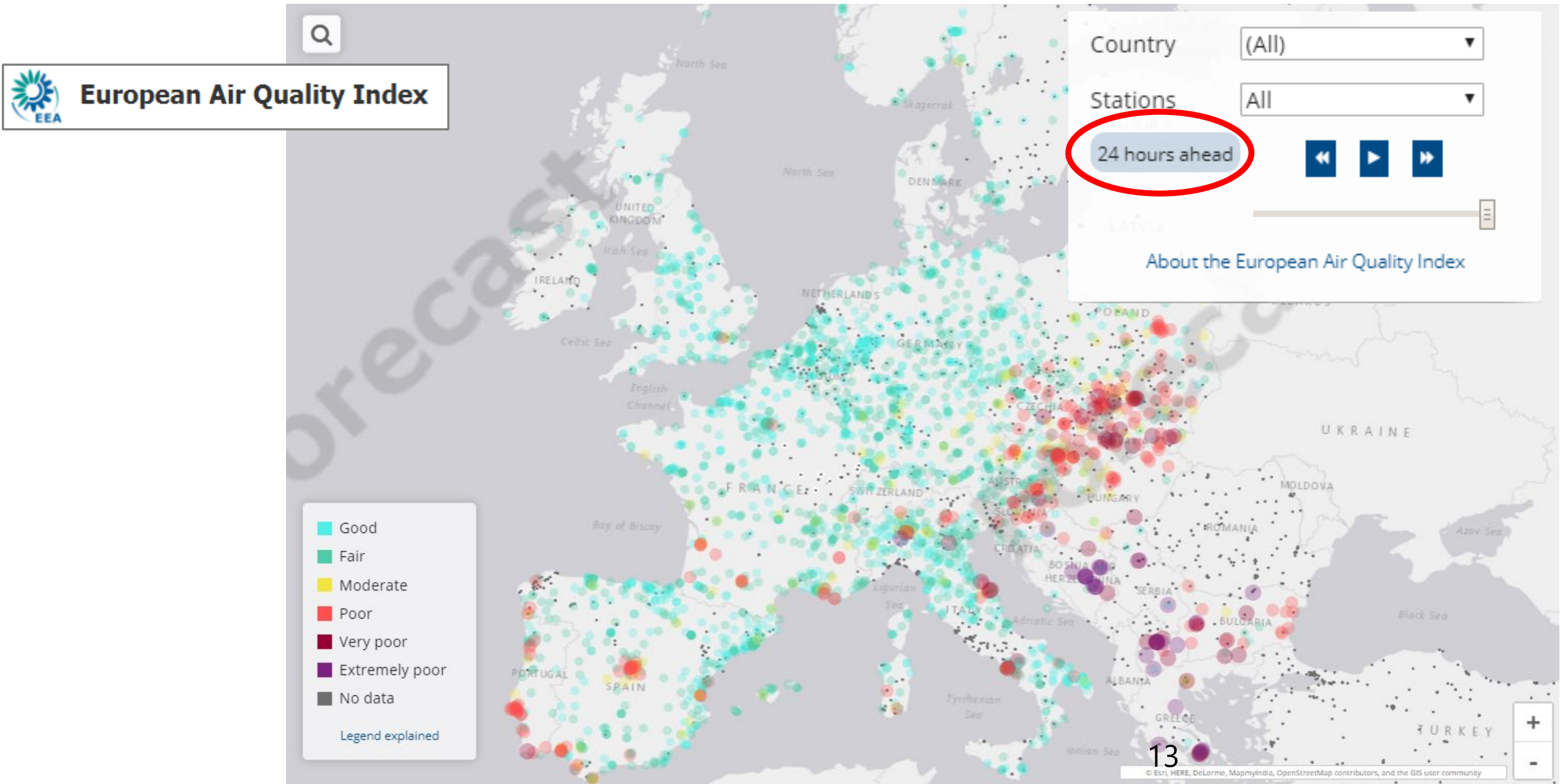


Source: Based on EEA

Europe's air quality and implications for health (real-time)



Europe's air quality: forecast



Air quality and urban implementation

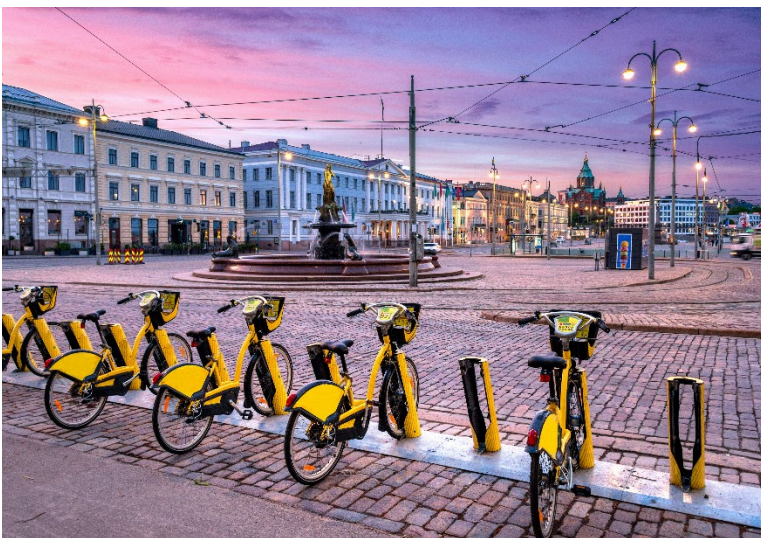


Exploring solutions to urban air pollution

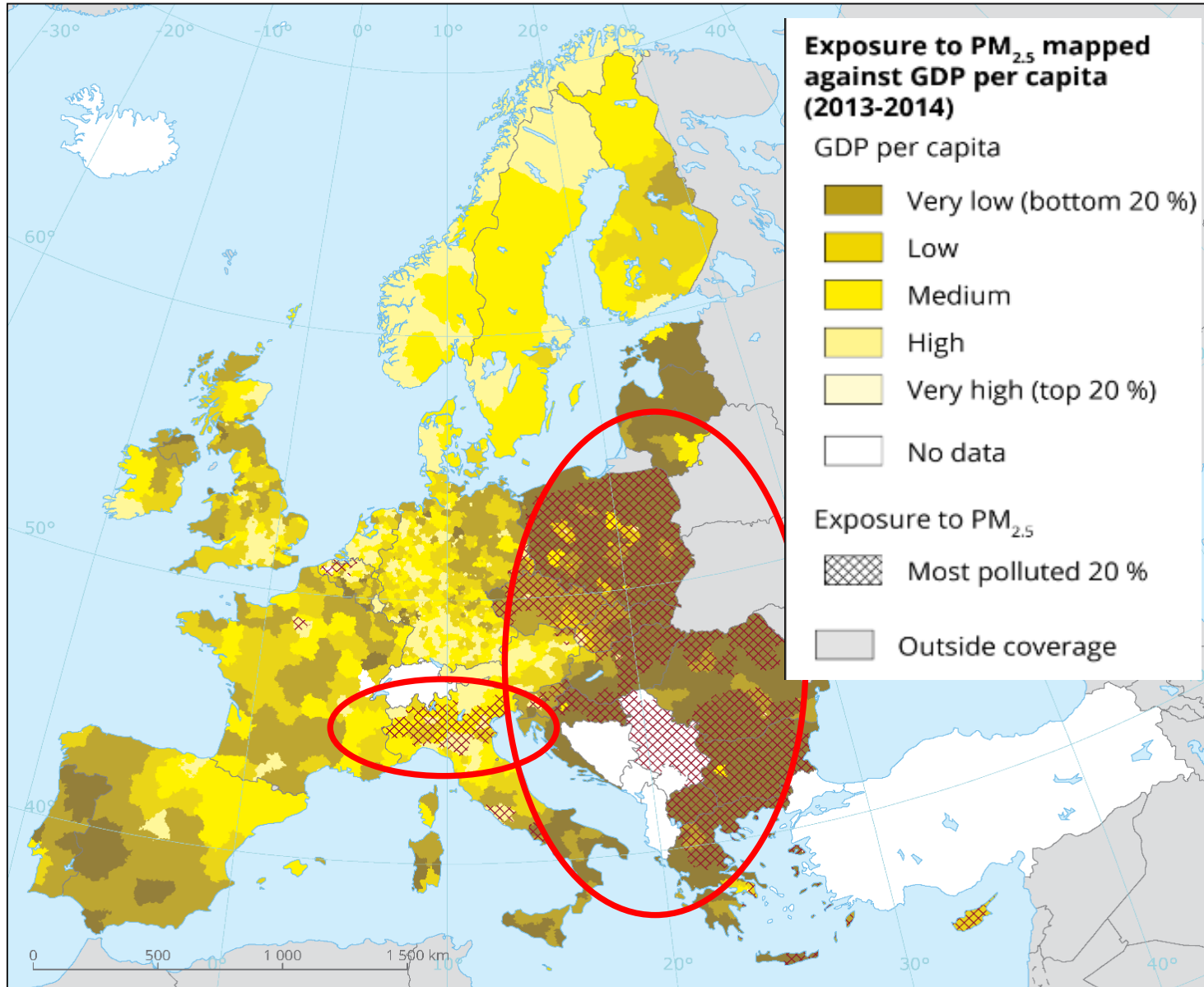


Air pollution mitigation measures in pilot cities:

- Energy-efficient buildings
- Industry relocation out of cities
- District heating
- Clean fuel for domestic heating/cooking
- Electric buses, trams, etc.
- Promotion of cycling
- Congestion charges/low-emission zones
- Cleaner fuels for shipping in port areas

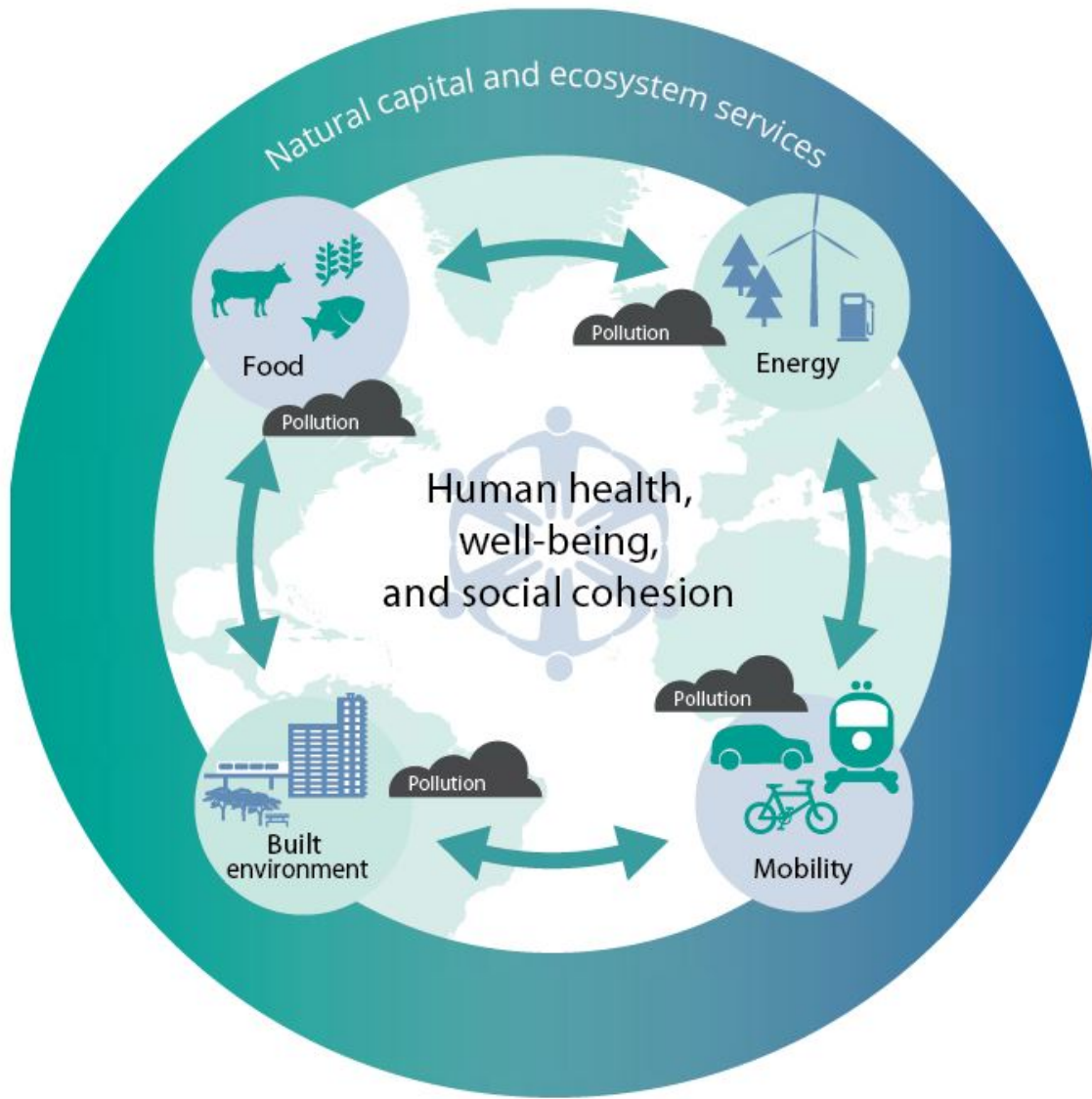


Social vulnerability: poorer regions have worse air quality



Source: EEA

Systems thinking and the European Green Deal



- First **climate-neutral** continent
- **Biodiversity** Strategy 2030
- New **Circular Economy** Action Plan
- **Zero pollution** strategy
- **Farm to fork** strategy
- **Just transition**
- **Sustainable** European **Investment** Plan
- Future ready economy – new **industrial strategy**

A photograph of a smokestack at night, emitting a large, thick plume of smoke that rises into the dark sky. The smokestack is illuminated with red and white lights at its base. The background is a deep blue night sky.

Thank you

Dr Hans Bruyninckx | WHO/HEI/ISEE Air Pollution and Health | Brussels 22 January 2020