

# Climate change, environment and public health

A man with a backpack, wearing a blue jacket and dark pants, is walking from left to right in the foreground. Behind him is a light-colored wall with a large, stylized cutout of a tree. The cutout is filled with a dense, vertical, wood-grain-like texture. The man's shadow is cast on the wall to his left. The overall scene is brightly lit, suggesting a sunny day.

Catherine Ganzleben | 9 October 2020 | Public Health and Climate Change

# Resilient cities: health benefits of green and blue spaces



Parklife: Health and social cohesion

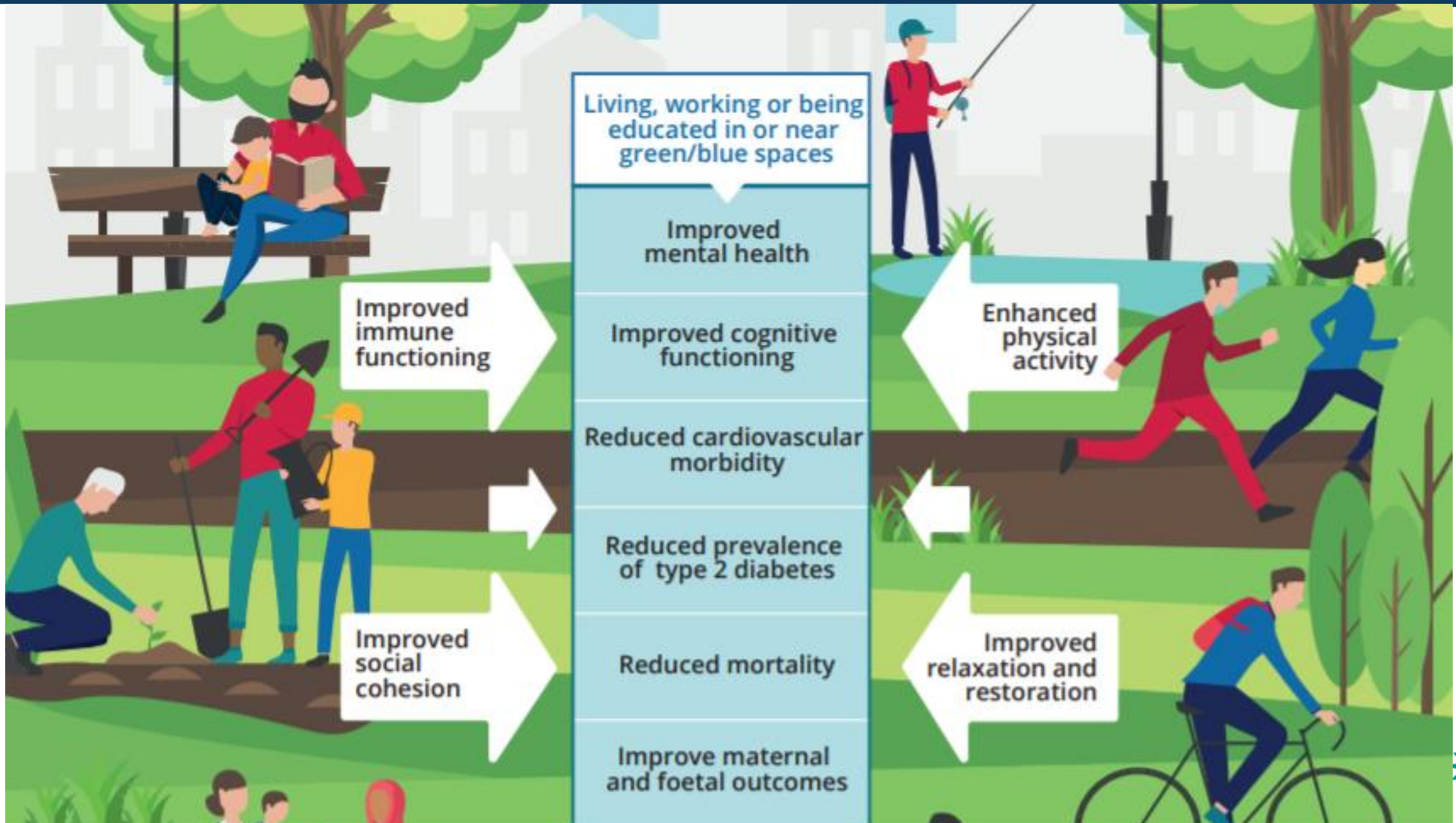


Roof garden: Water management

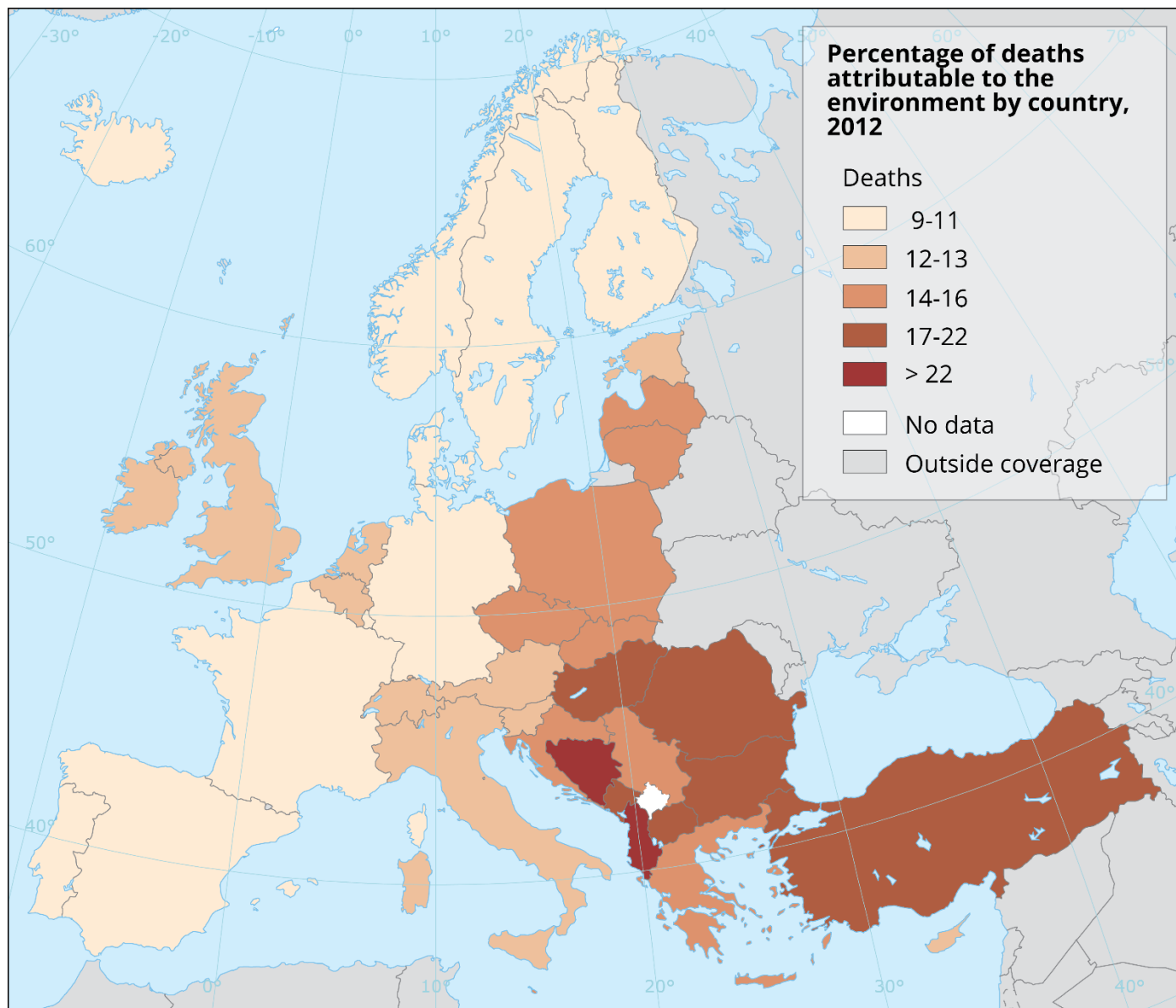


Blue space: Leisure and cooling

# Direct health benefits of green and blue spaces

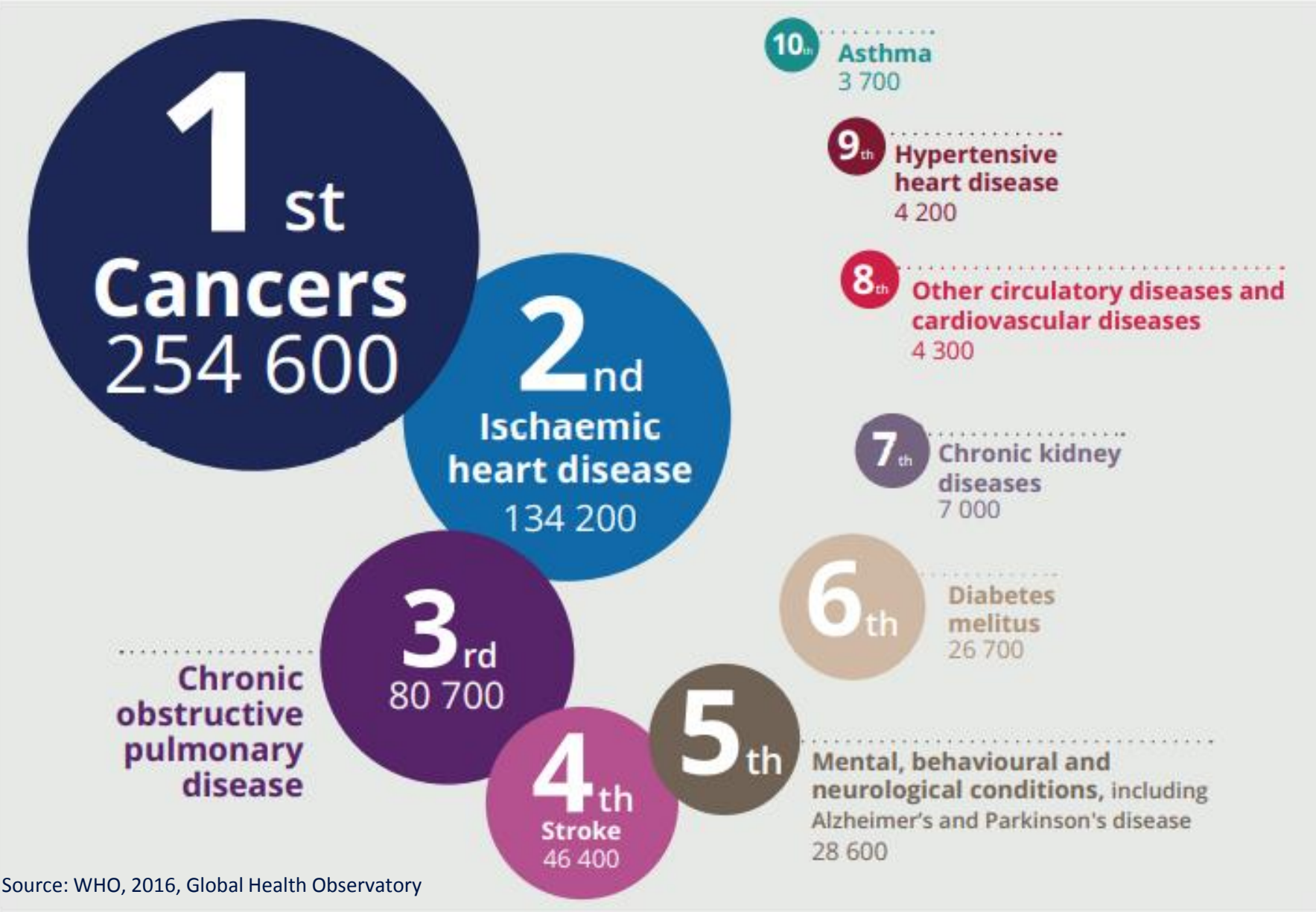


# Deaths driven by environmental pollution



- 1 in 8 deaths is driven by environmental pollution in Europe – 13 %
- Difference across Europe: East and West
- Pollution drives
  - 19 % of deaths in Romania
  - 10 % in Denmark and Sweden
  - And beyond the EU... 27 % in Bosnia and Herzegovina

# 90 % of EU deaths attributed to the environment: non-communicable disease



Top 10 non-communicable diseases driven by environmental pollution

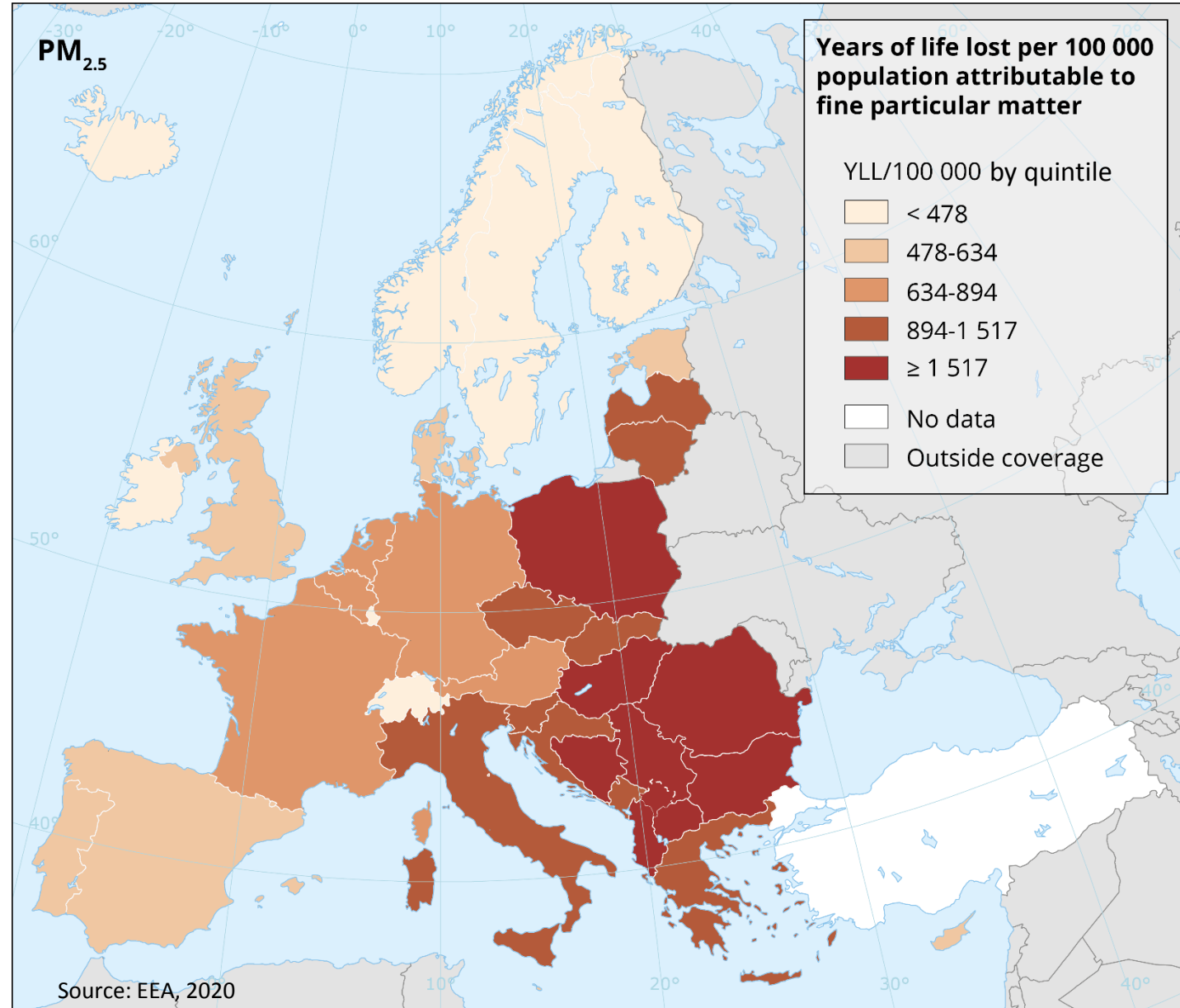
Source: WHO, 2016, Global Health Observatory

# No 1. environmental risk - air pollution

400 000 premature deaths per year in Europe in 2018

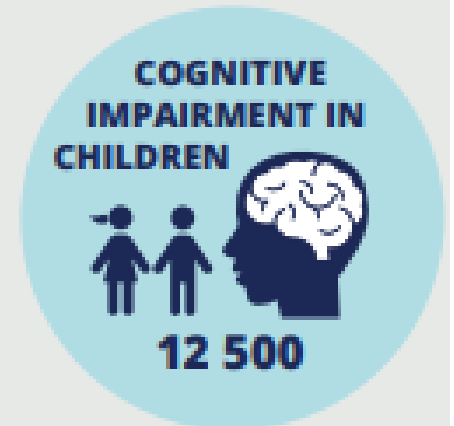
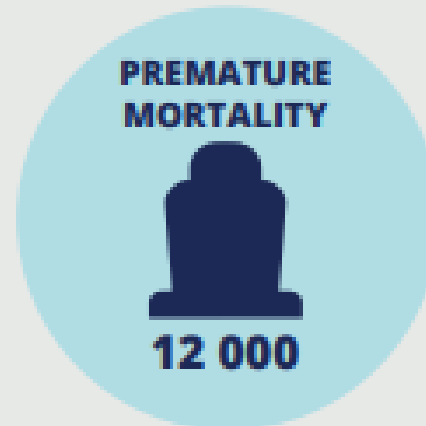
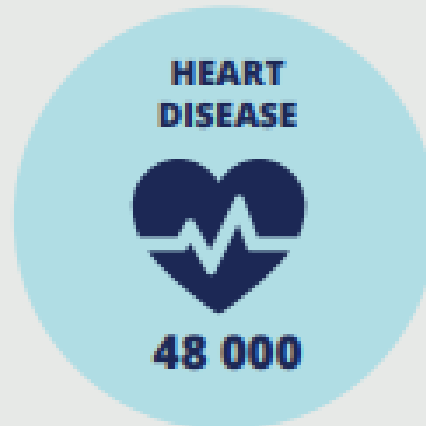
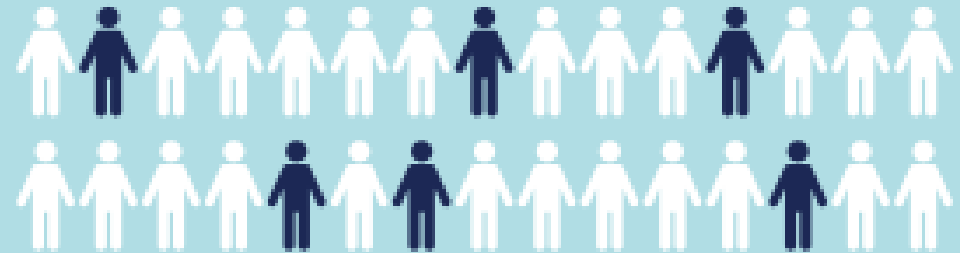
Air pollution responsible for:

- 17 % of deaths from lung cancer
- 12 % of deaths from ischaemic heart disease
- 11 % of deaths from stroke

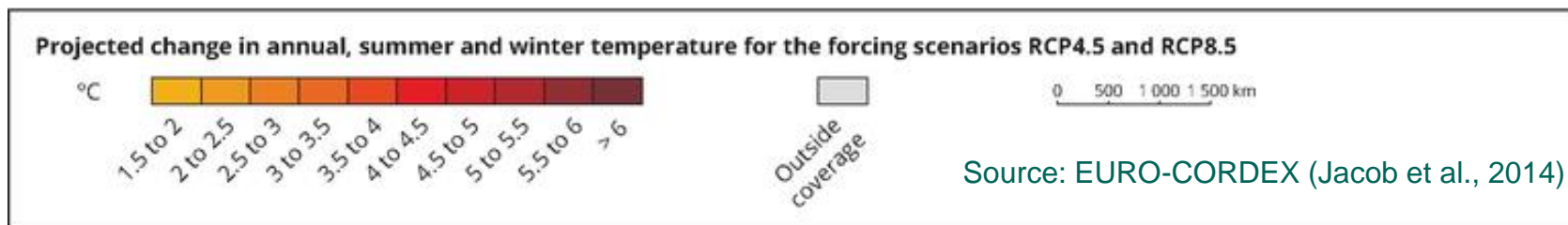
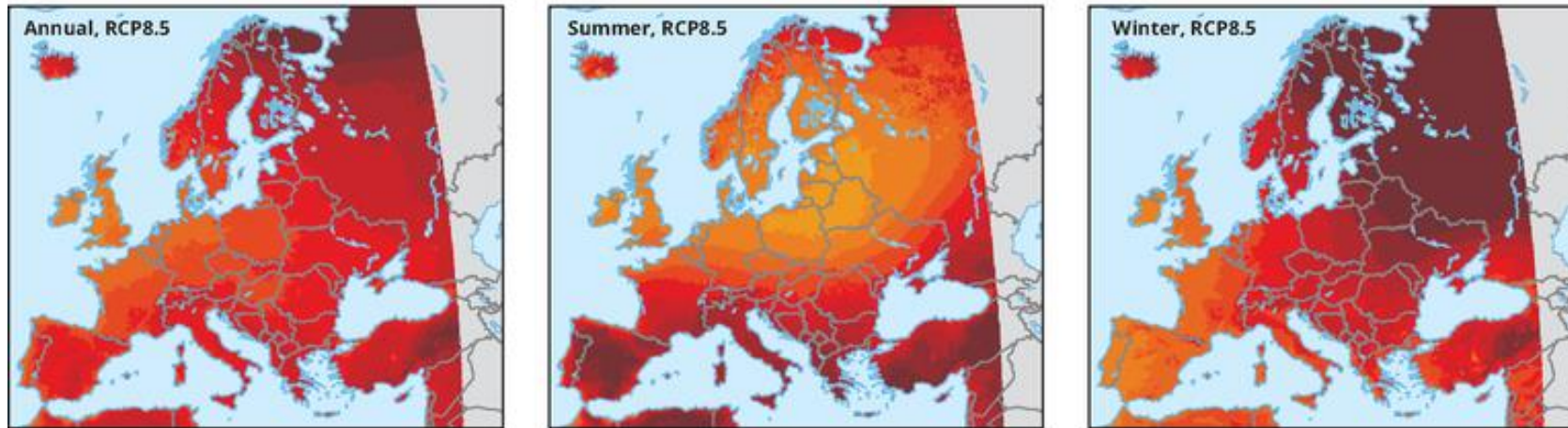
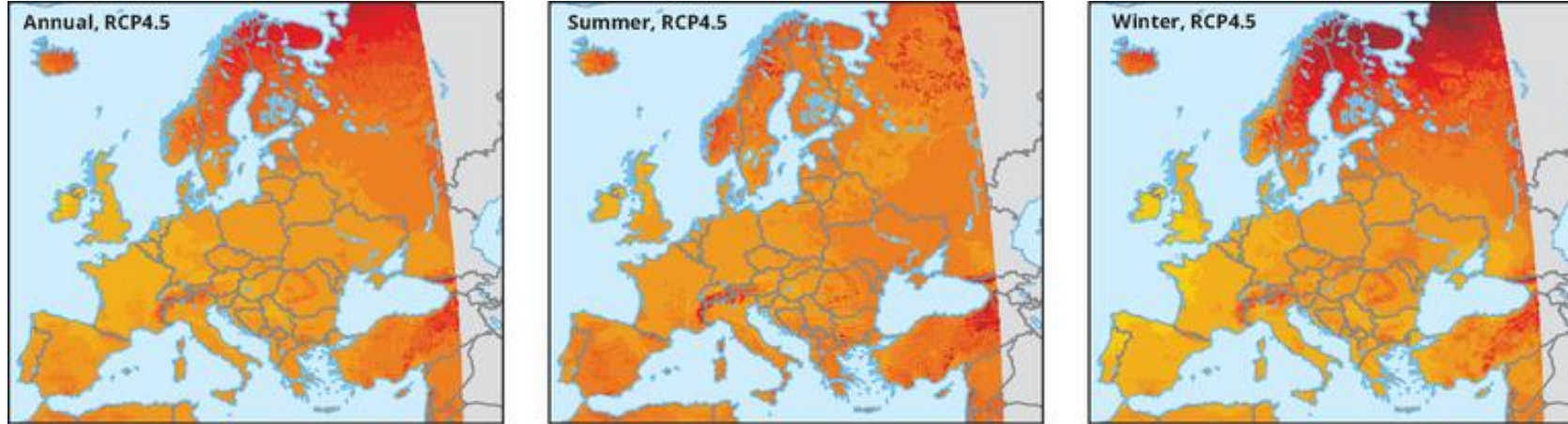


# No. 2 environmental risk - noise

20 % of the EU population — one in five people — live in areas where noise levels are considered harmful to health.



# Climate change means that Europe will get warmer...



Projected annual, summer and winter temperature change for the 2080s

Two scenarios:

Intermediate scenario RCP 4.5

- CO<sub>2</sub> emissions decline after 2045
- 2-3 °C rise at global level

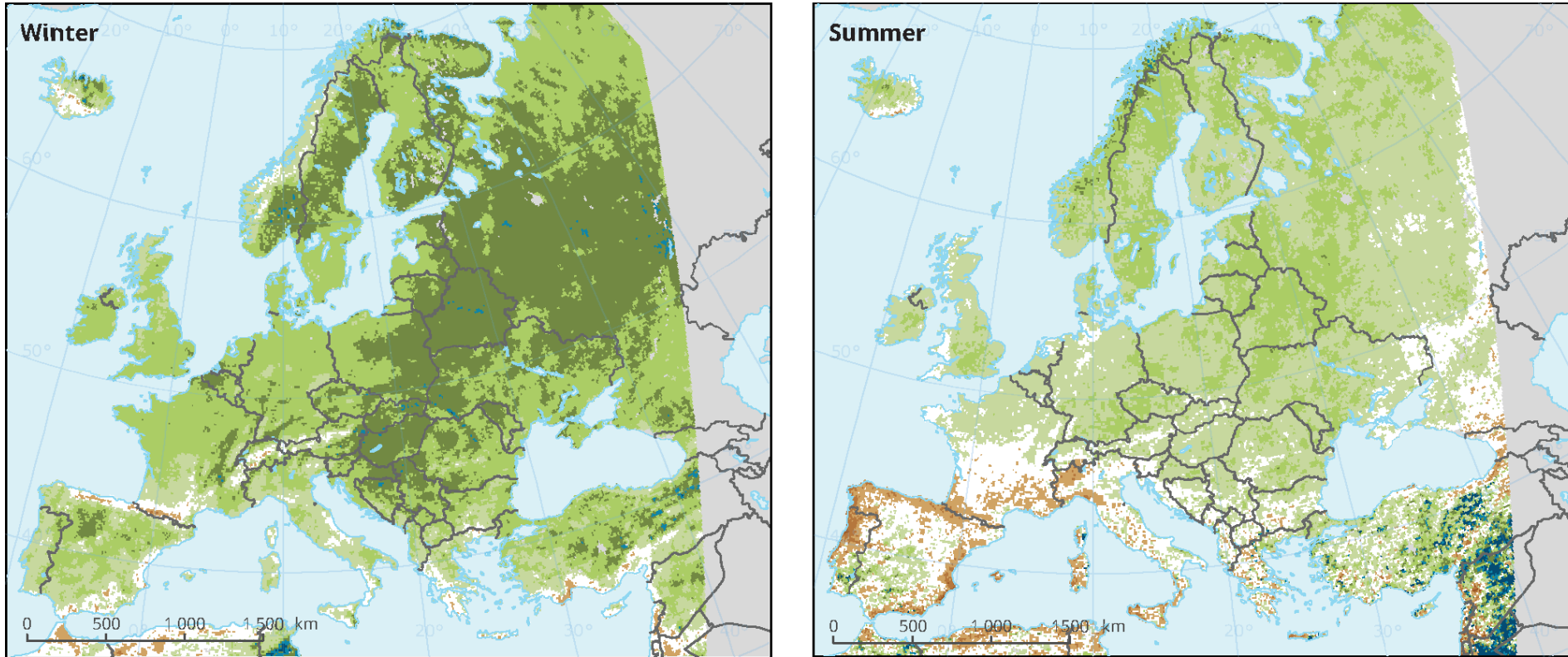
Worst case scenario RCP 8.5

- Emissions increase
- 3-5 °C rise at global level

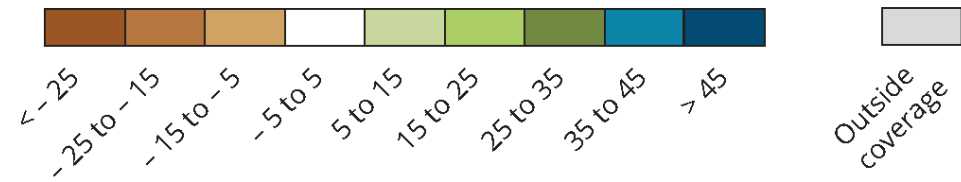


# ...and wetter

## Winter and summer heavy rain (projected change for 2080s, RCP8.5)



Heavy winter and summer precipitation change (%)



Source: EURO-CORDEX  
(Jacob et al., 2014)

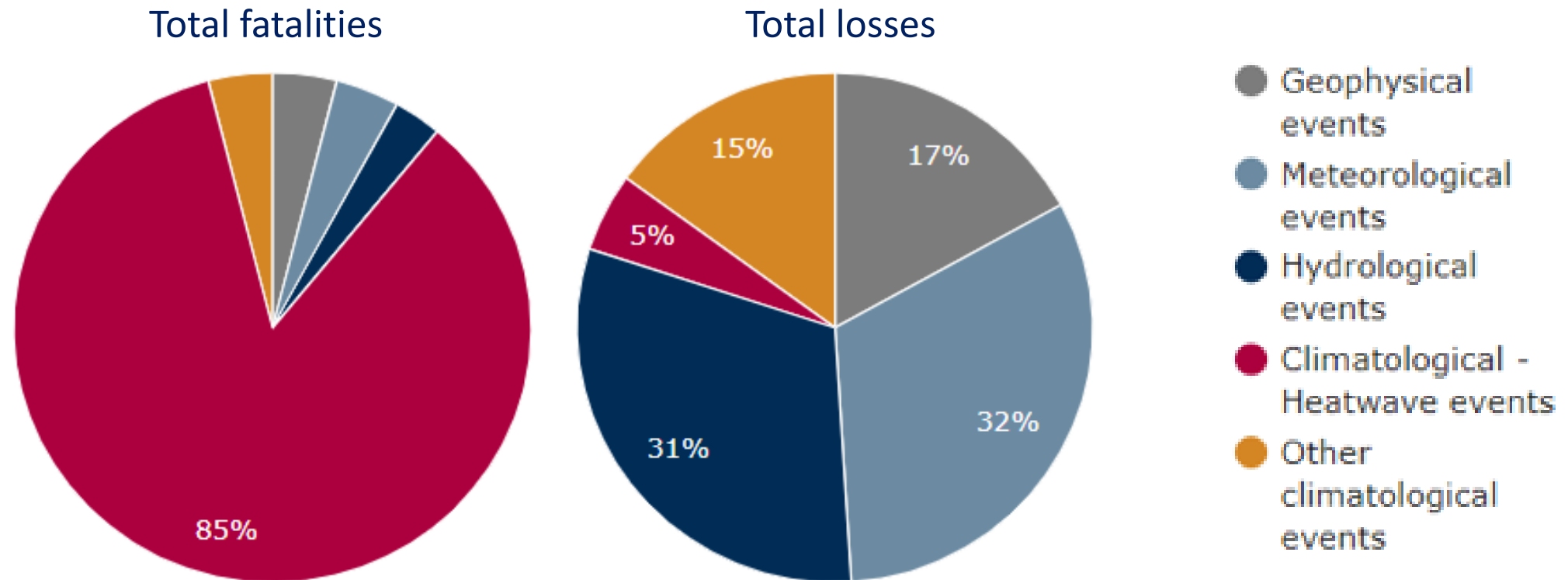
# Climate change impacts and vulnerability



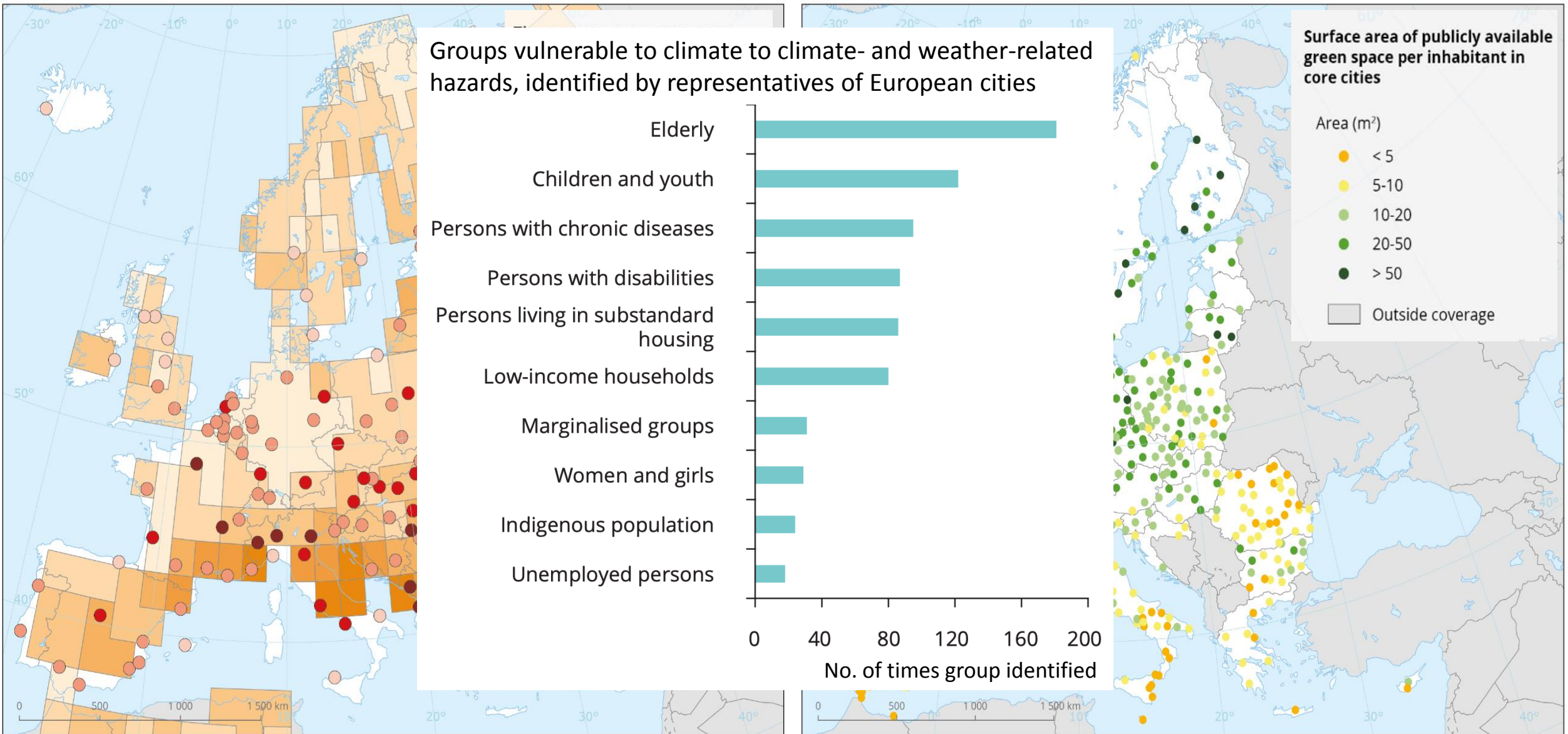
# Climate- and weather-related losses from 1980 to 2018

~90,000 climate- and weather- related fatalities in EU countries

€430 billion in economic losses – one third insured



# Urban adaptation and a just transition



# Health impacts of chemicals

- At global level chemicals linked to:
  - 2.7 % of the burden of disease
  - 1.7 % of total deaths
- Based on the few substances for which we understand exposure and hazard and therefore an **underestimate**
- Estimates of the annual cost of health impacts of exposure to:
  - **Endocrine disruptors** €157 billion
  - **PFAS** € 52-84 billion



## Chronic disease

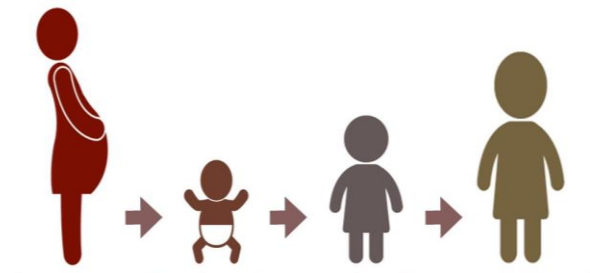
### Vulnerable groups

**Workers: highest exposure levels in occupational settings**

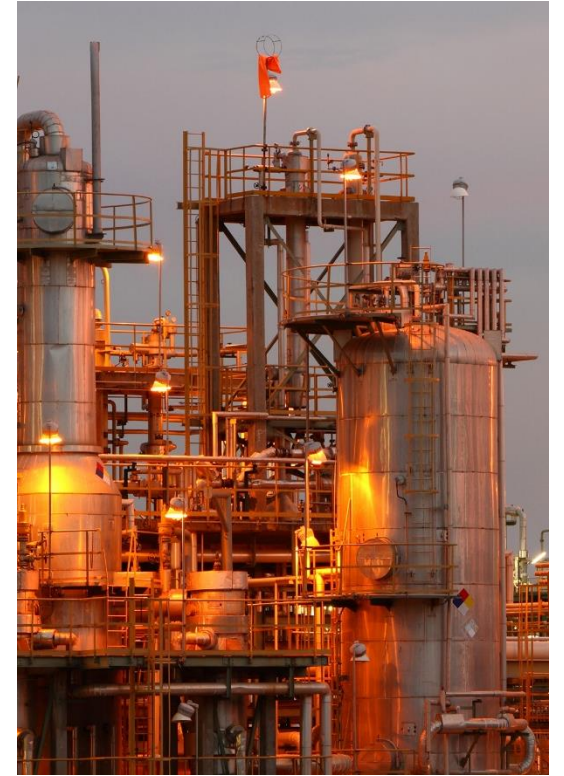
**Children and pregnant women: more vulnerable to health impacts...**

**...exogenous chemicals found in blood and urine of over 90 % of pregnant women and children in six European countries**

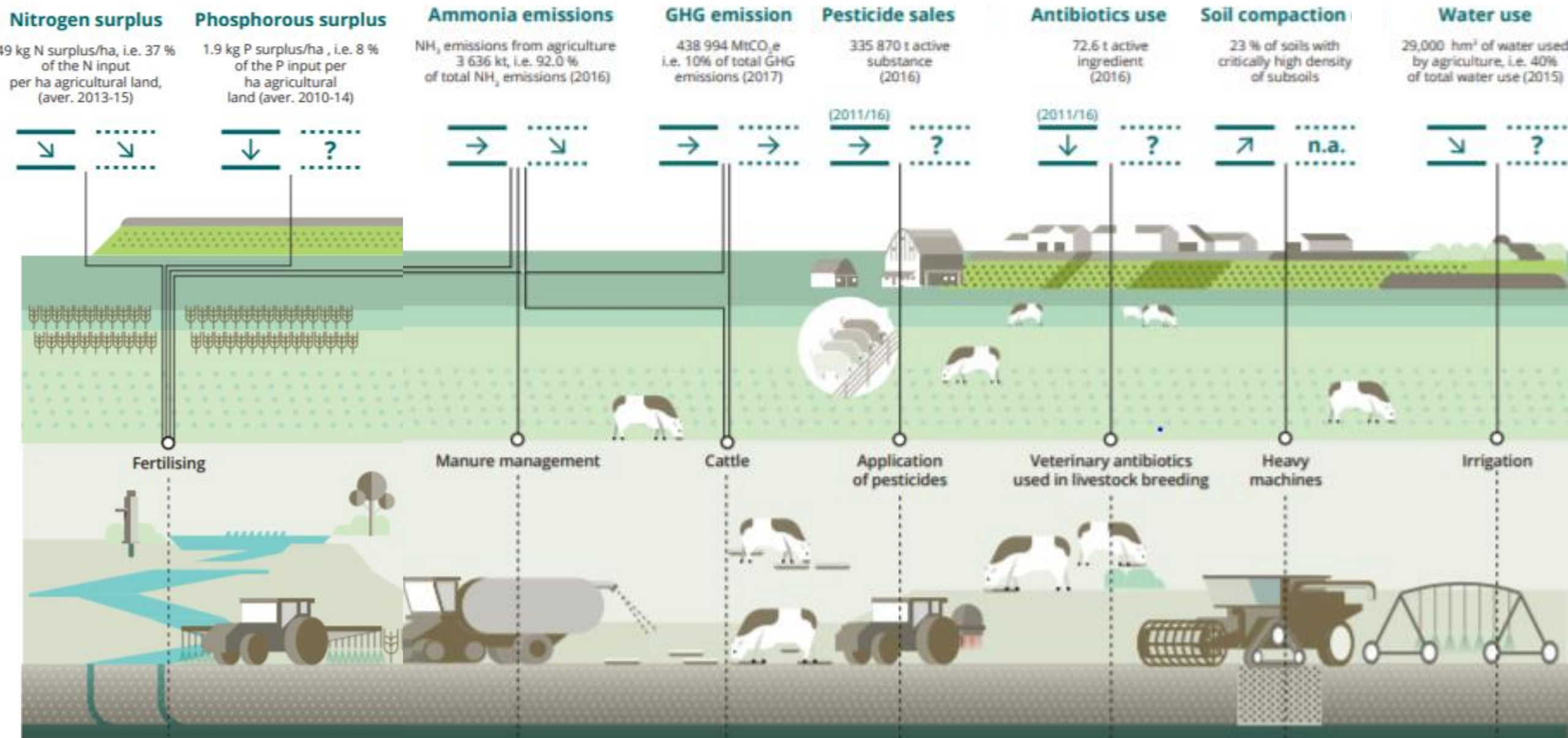
**Severe and irreversible developmental effects**



# Upstream drivers in Europe's energy, food, mobility and industrial systems

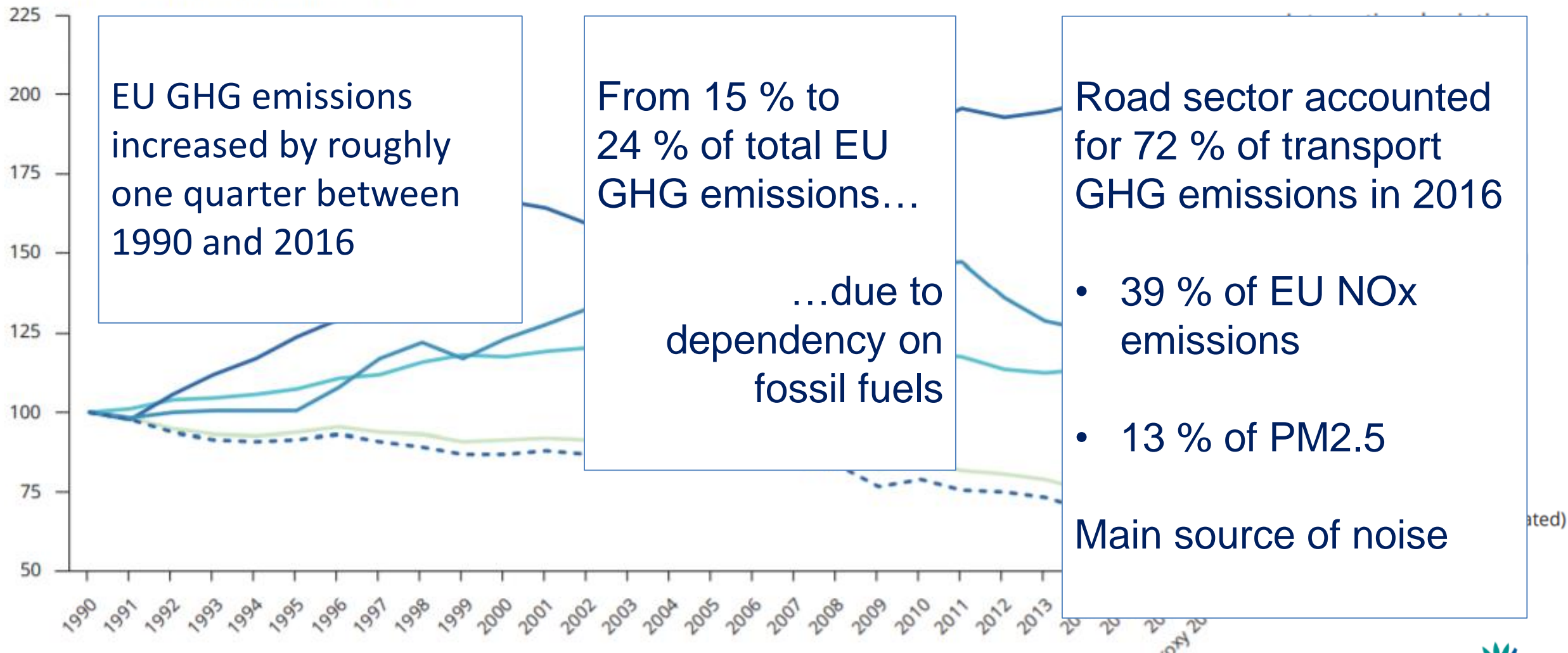


Source: EEA, 2019



# Greenhouse gas emissions from transport

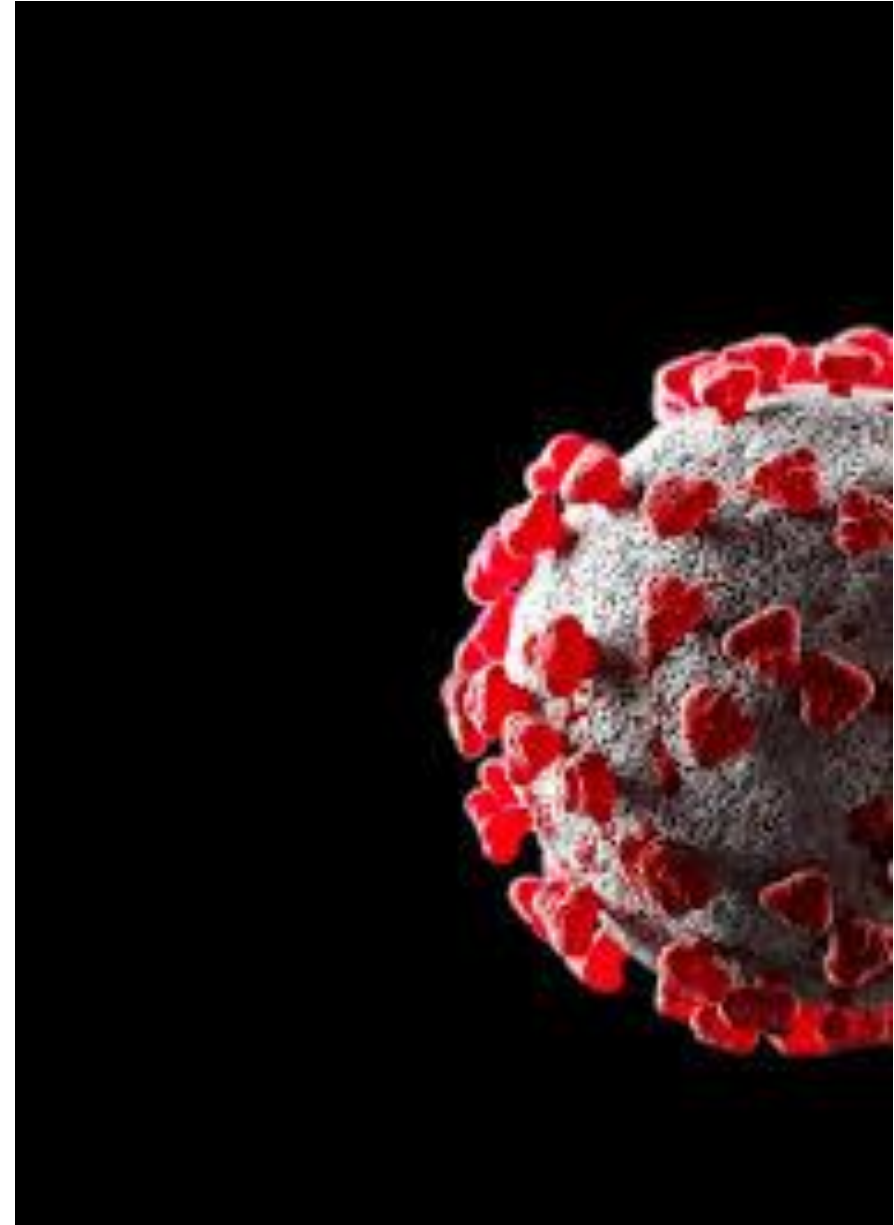
Evolution of EU GHG emissions (1990 = 100 %)





# COVID-19 and environmental health

- Zoonotic disease
- Air pollution may be linked to a higher death rate from COVID-19
- Double burden of ill health and air pollution in disadvantaged communities
- Critical role for WASH – water, sanitation and hygiene
- Waste water monitoring for COVID-19 RNA
- PPE - increase in single use plastic and waste



# Lessons from lockdown....

Short term..

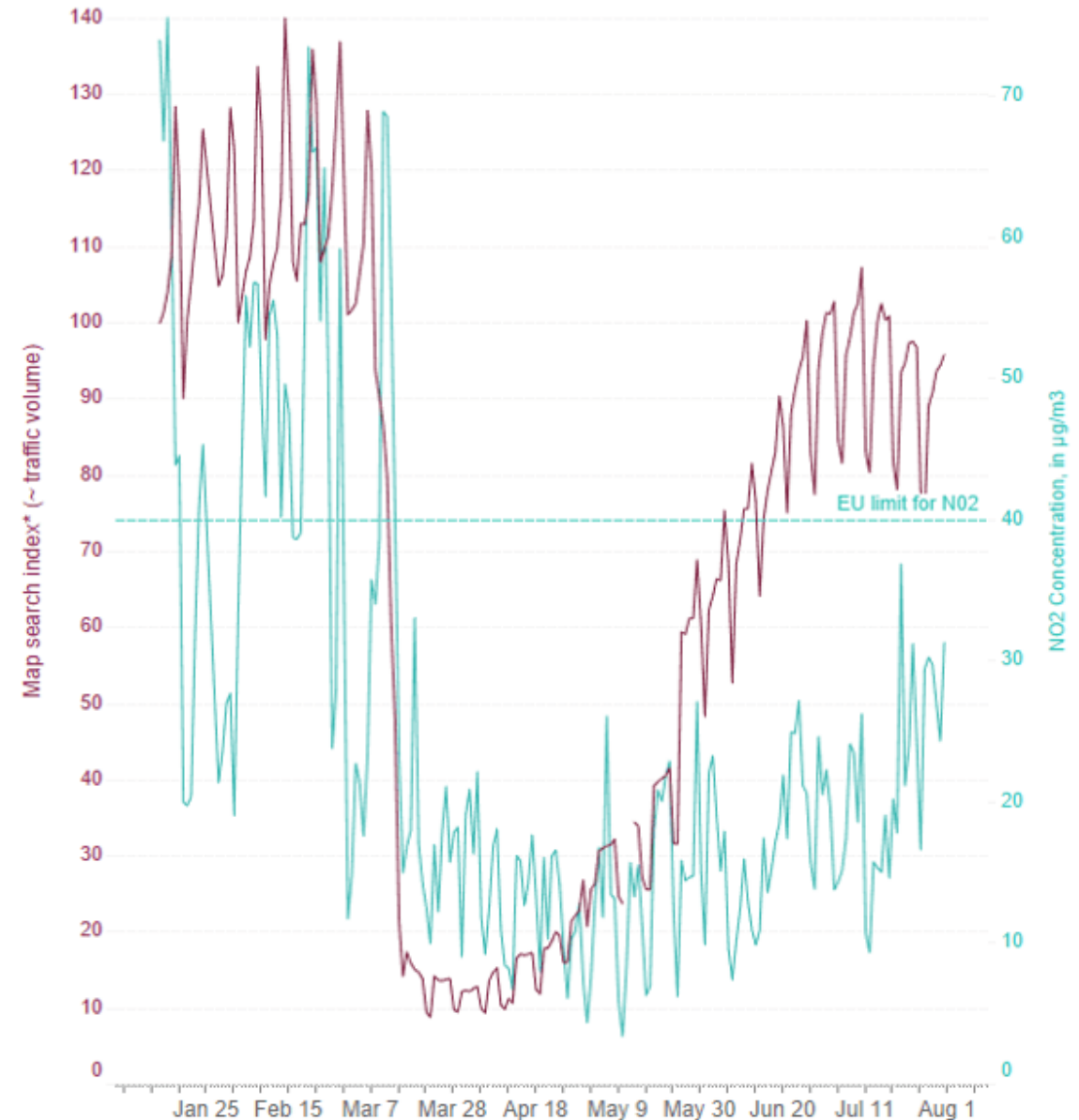
- Falls in traffic volume
- Better air quality & less noise
- Access to green space

Longer term...

- Teleworking changing mobility patterns
- Impacts on demand for housing in cities
- Fears around using public transport

<https://www.tableau.com/about/blog/2020/9/traffic-and-air-quality-during-lockdown>

Car Traffic and Air Pollution in Madrid



# A new policy context: European Green Deal

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

**Forthcoming...**

**Zero pollution** strategy

**Chemical strategy** for sustainability



A scenic view of a city in autumn. The foreground shows a person walking on a path through a grassy area with scattered fallen leaves. The middle ground is filled with trees in various shades of orange, yellow, and brown, interspersed with buildings. In the background, a large body of water stretches across the horizon under a hazy sky. The overall atmosphere is peaceful and picturesque.

**Thank you**

**Catherine Ganzleben | 9 October 2020**