



The European environment – state and outlook 2020

Knowledge for the transition to a sustainable Europe

Dr Hans Bruyninckx | Czechia Launch | 2 December 2020

The SOER 2020 marks the 25th anniversary of state of environment reporting at the European Environment Agency



1995



1999



2005



2010



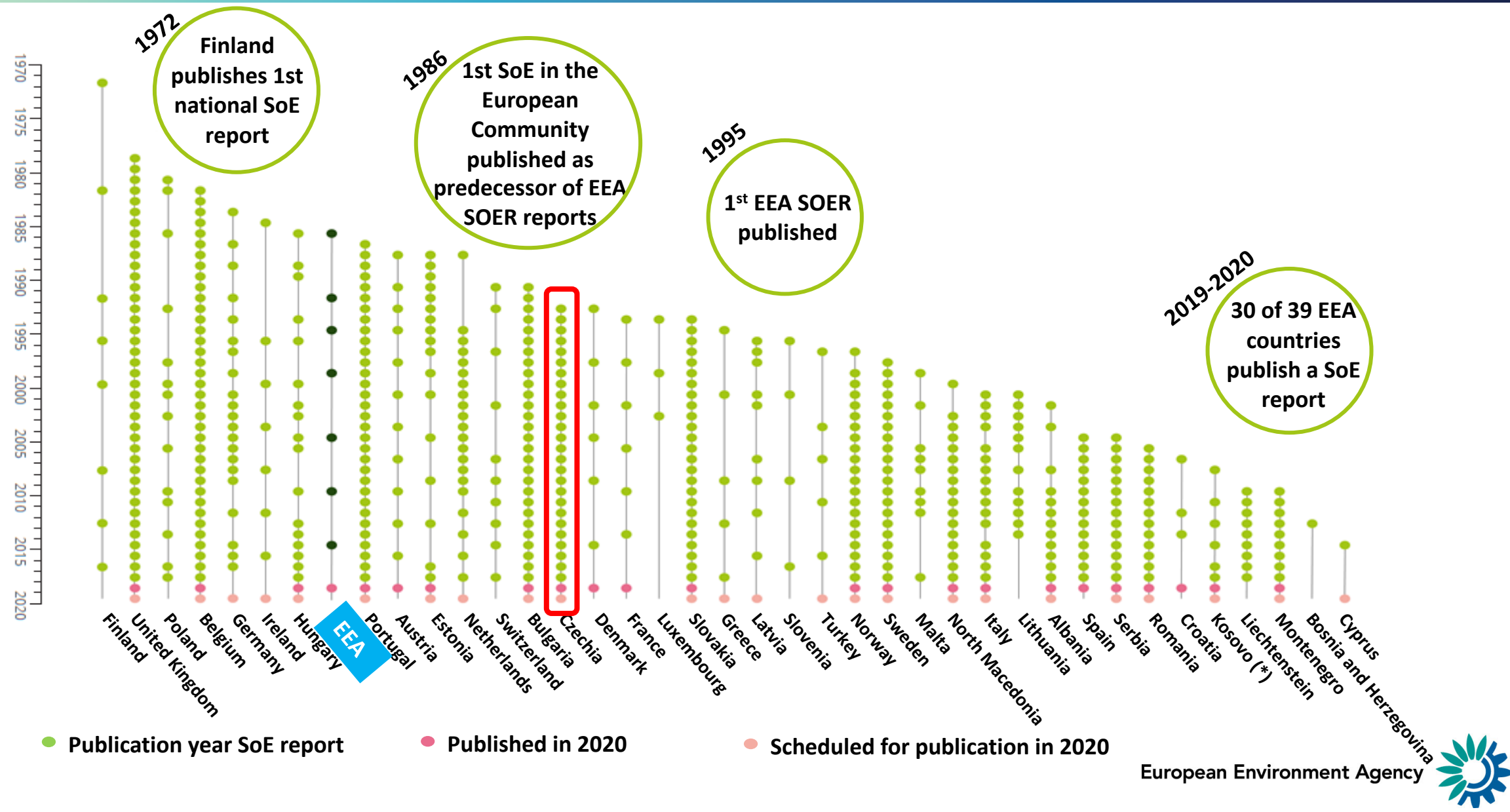
2015



2020



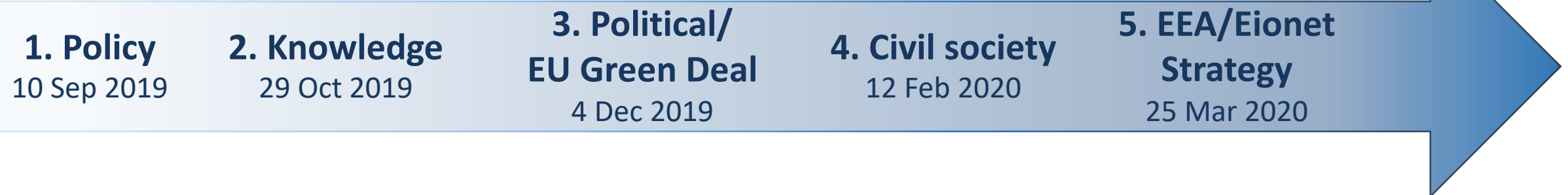
SoE reporting is a European tradition





- Political engagement
- Policy support
- Stakeholder interaction process

Stakeholder interaction events



- 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**



Themes



Sectors



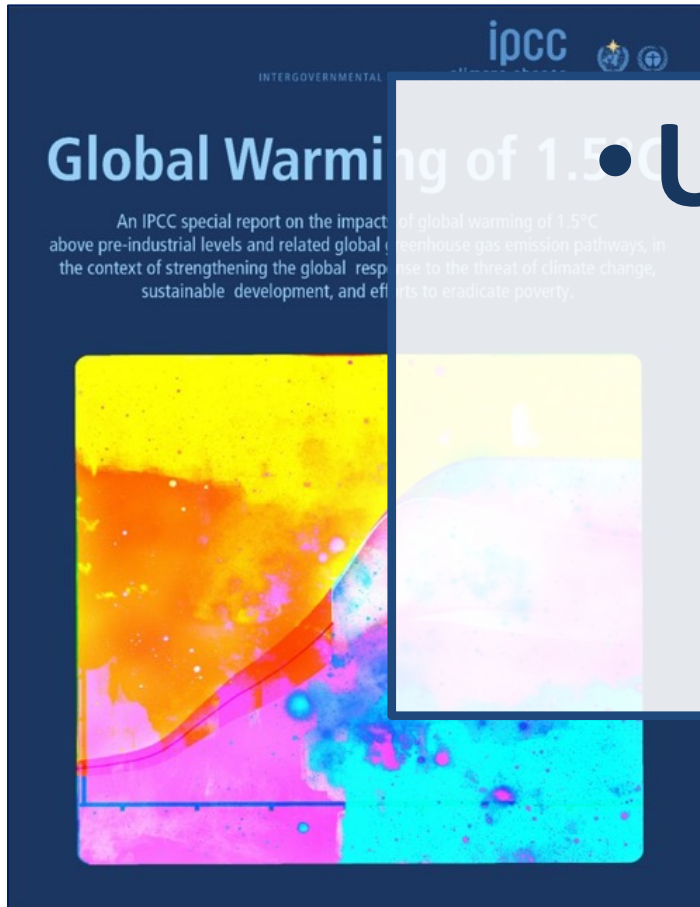
Systems and sustainability transitions



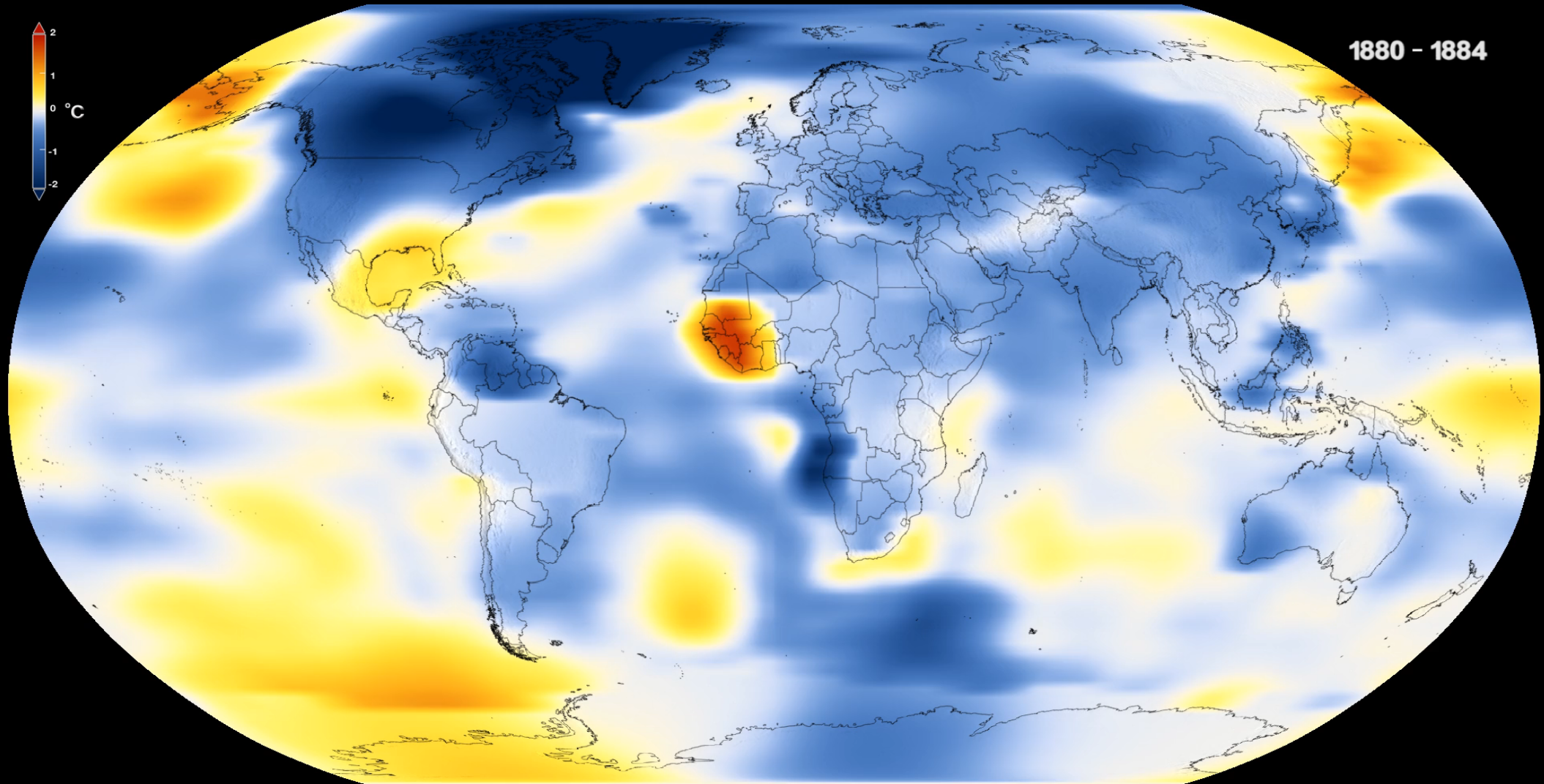
1. IPCC report on global warming of 1.5°C

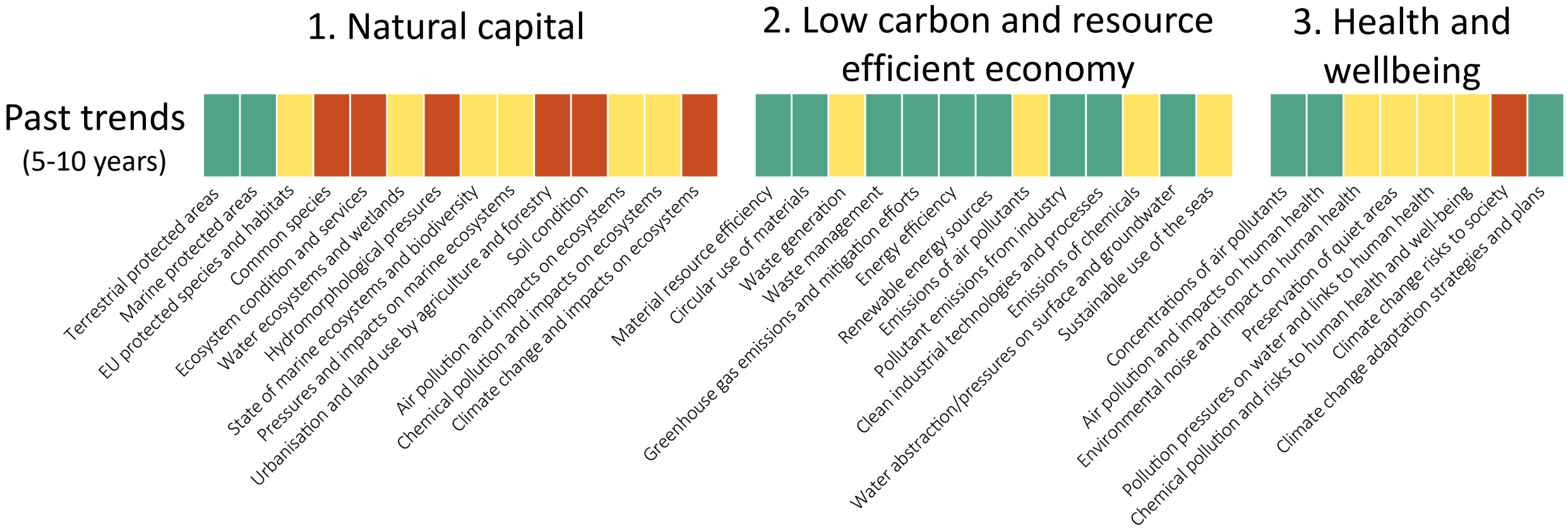
2. IPBES global report on biodiversity and ecosystem services

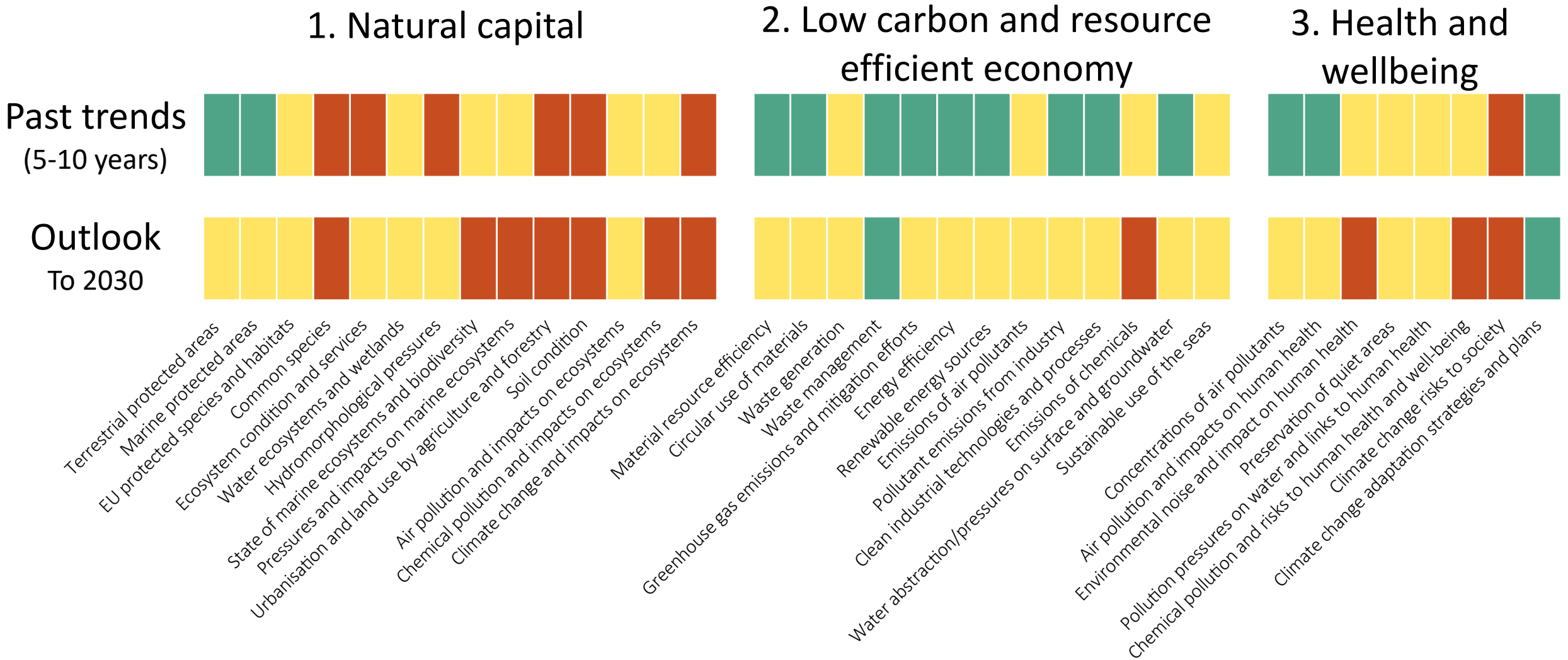
3. International Resource Panel global outlook 2019



- Urgent action needed
- Irreversibilities
- Tipping points
- Interconnected







1

Natural capital

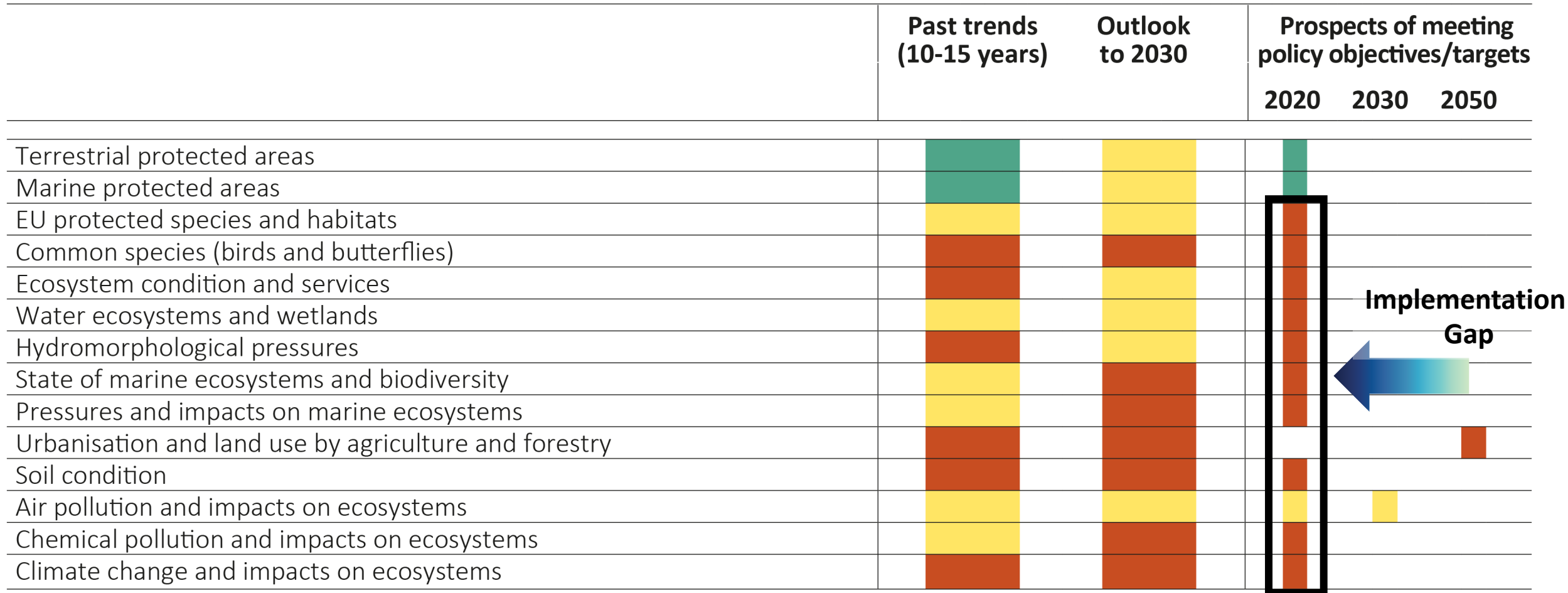
*“ The impact
of Europe’s
alarming rate
of biodiversity loss
is as catastrophic
as climate change ”*

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1. Protecting, conserving and enhancing natural capital

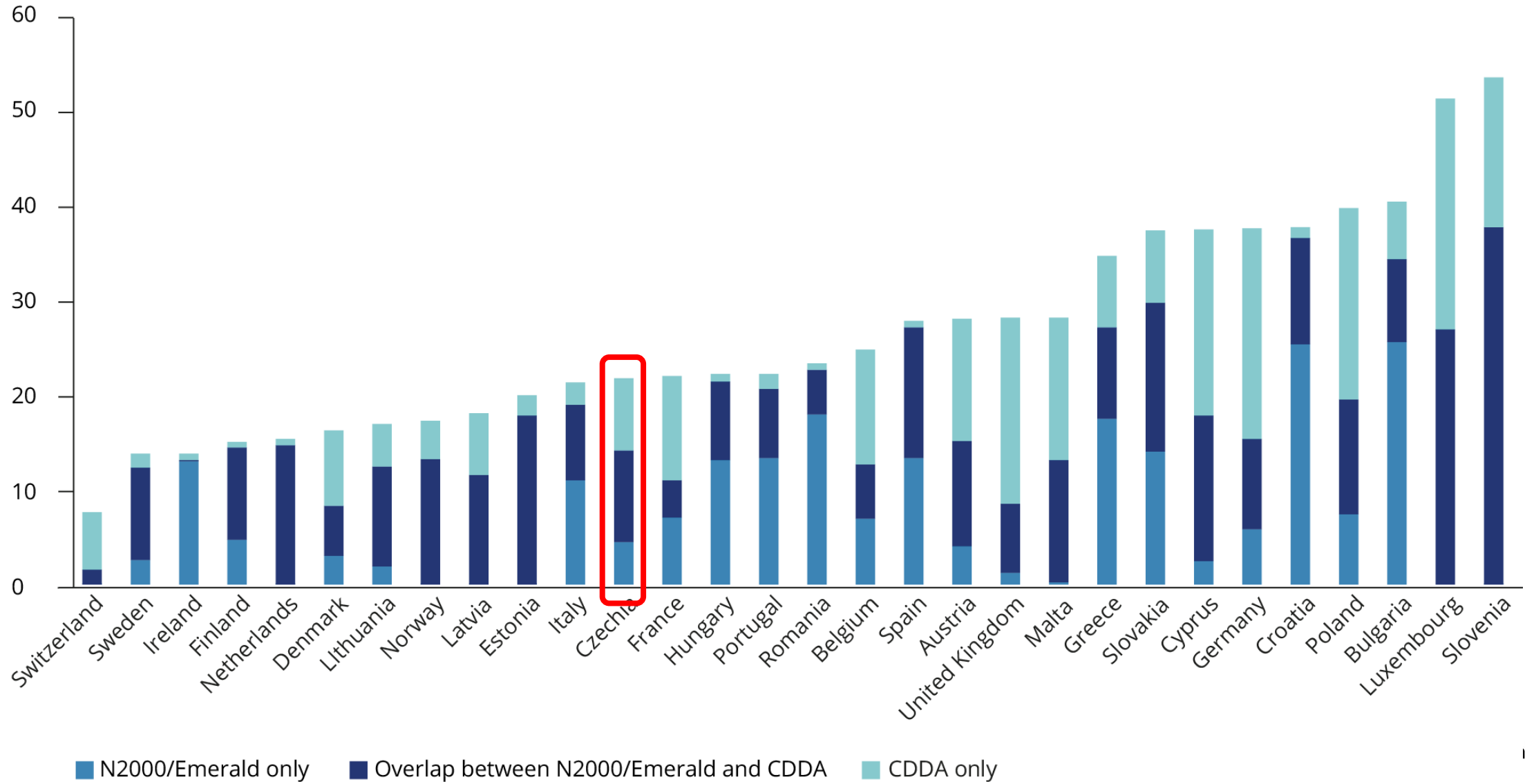
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Share of country designated terrestrial protected areas

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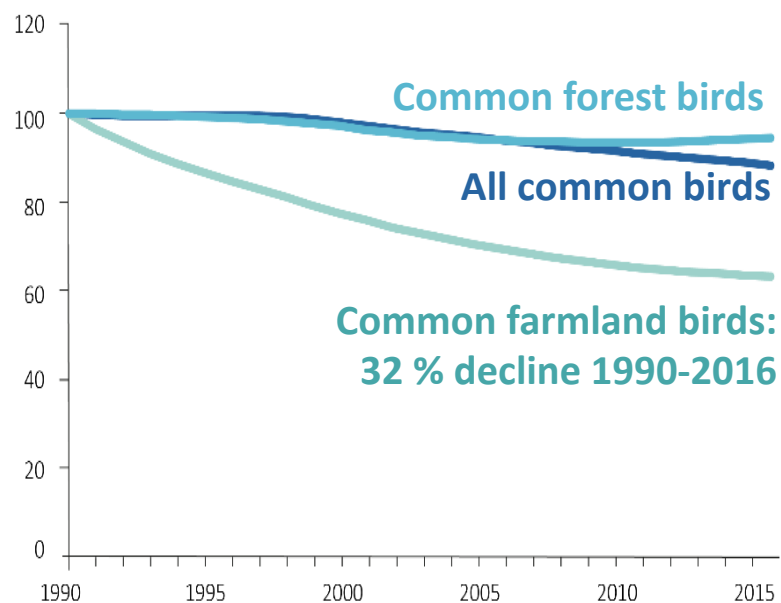
% terrestrial area



But species and habitats still being lost

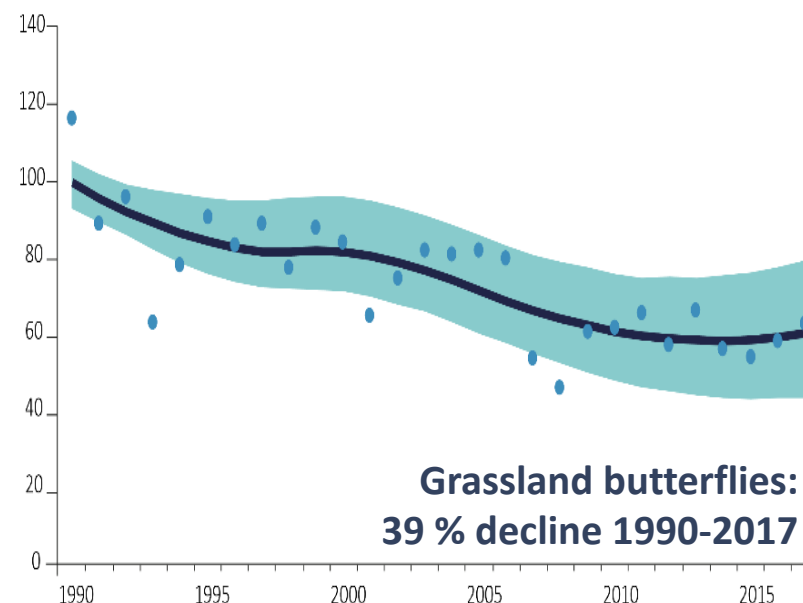
Birds in decline

European population index
(1990 = 100)



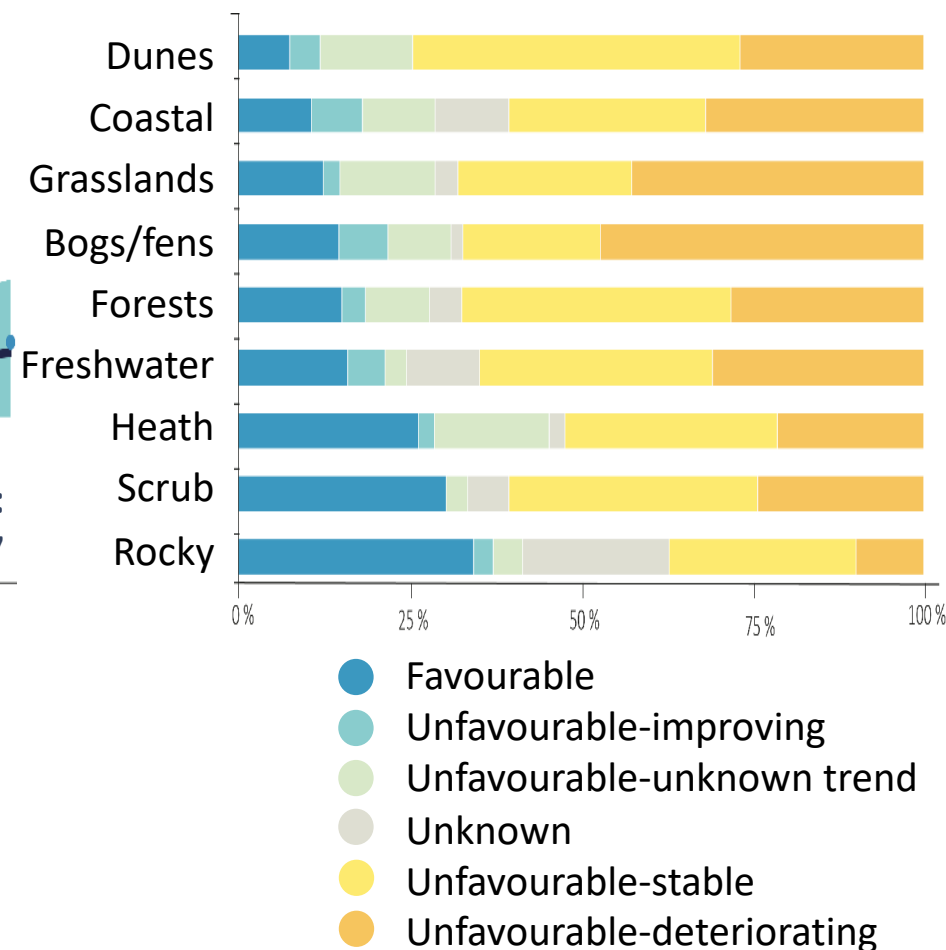
Pollinators in decline

Grassland butterflies: population
index (1990 = 100)

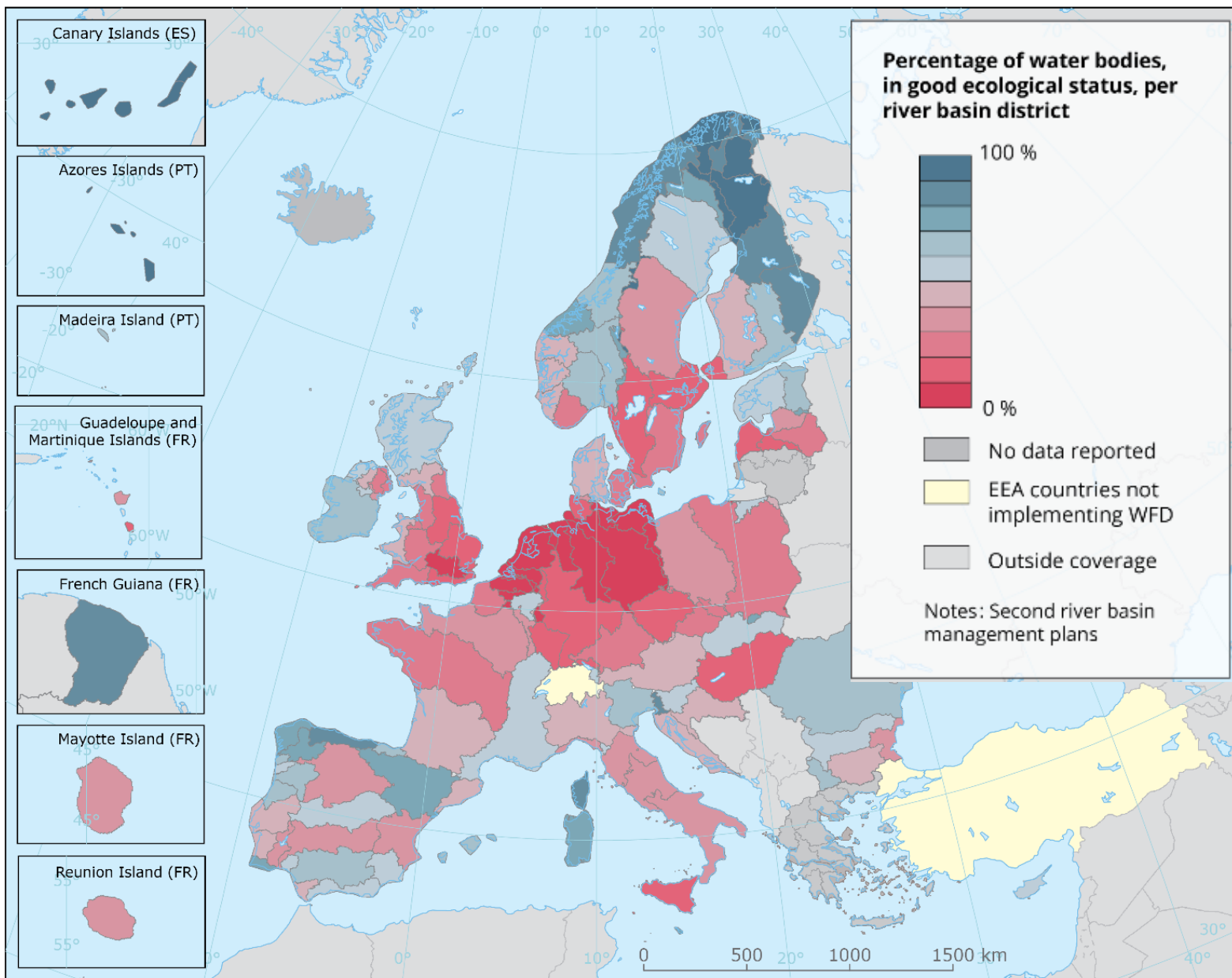


Habitats: unfavourable status

Trends in conservation status of
assessed habitats at EU level



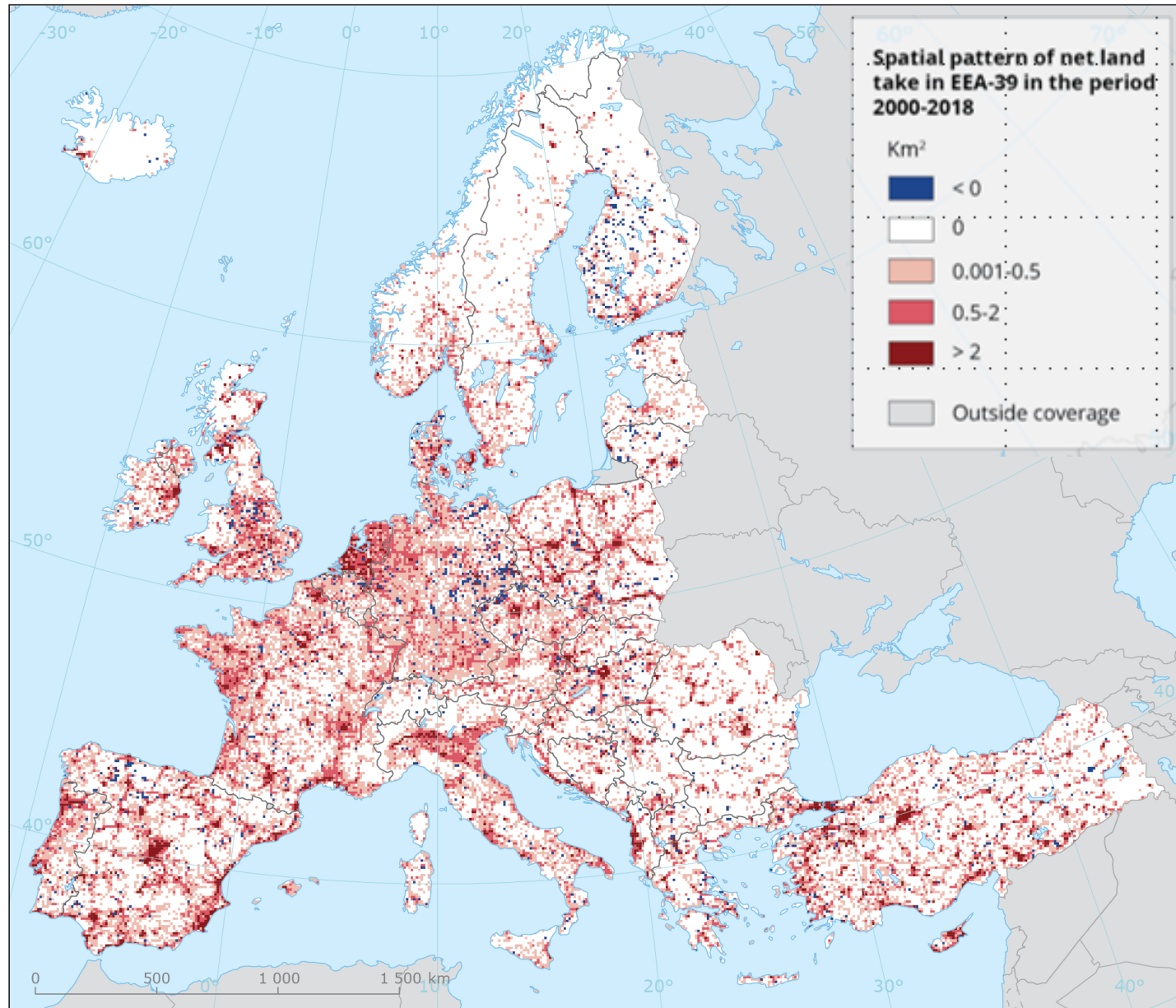
Water bodies: poor ecological status



- Pollution
- Abstraction
- Hydrological pressures and physical changes

Land and soil

*“There may be
as many as
2.8 million
contaminated
sites in the EU”*
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- Urban sprawl
- Infrastructure
- Landscape fragmentation
- Soil degradation and contamination

2 Resources

*“ Resource efficiency
in the EU is expected
to improve, albeit
with an increase
in material use ”*

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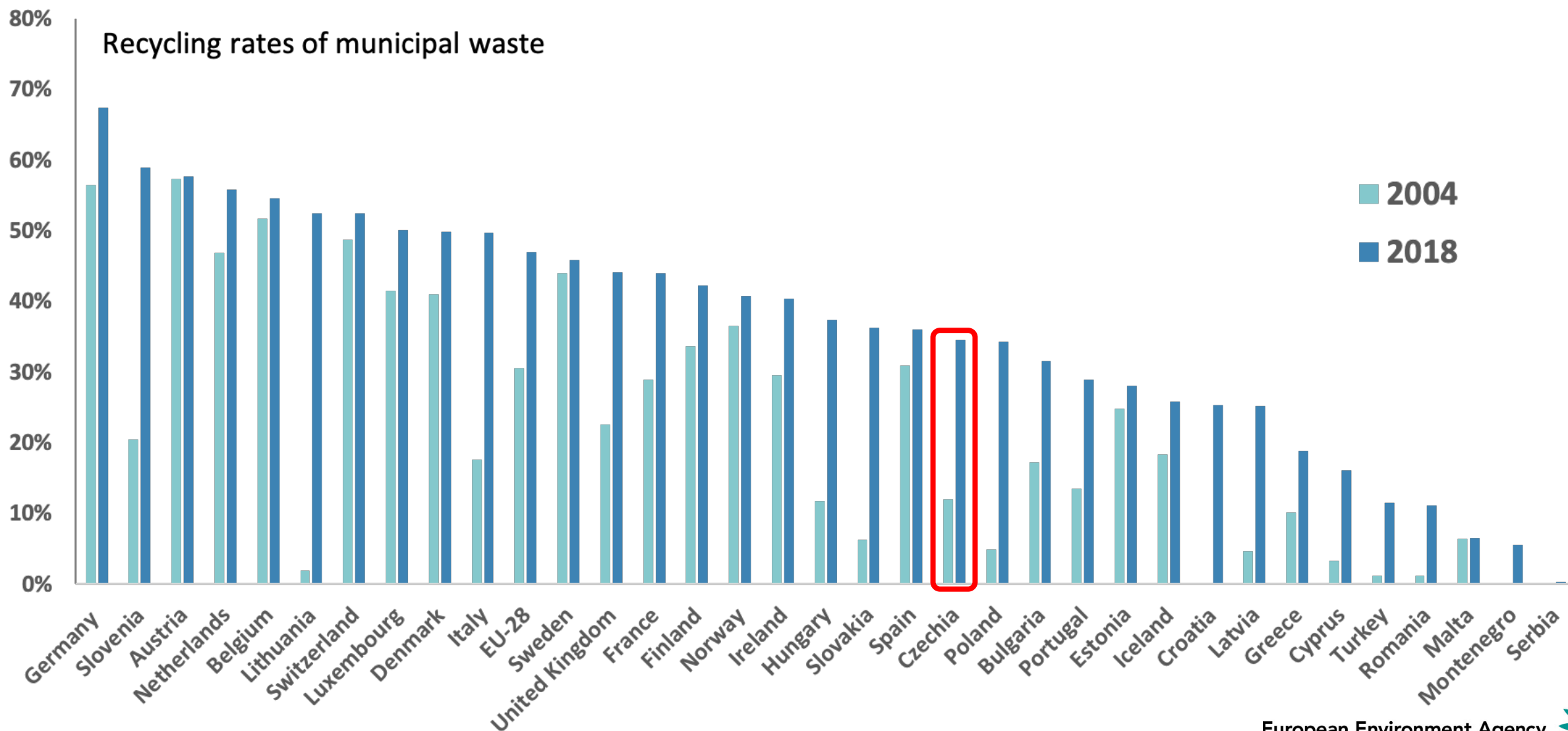
2. Resource-efficient, circular and low-carbon economy

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| | Past trends (10-15 years) | Outlook to 2030 | Prospects of meeting policy objectives/targets | | |
|--|------------------------------|--------------------|---|------|------|
| | | | 2020 | 2030 | 2050 |
| Material resource efficiency | | | | | |
| Circular use of materials | | | | | |
| Waste generation | | | | | |
| Waste management | | | | | |
| Greenhouse gas emissions and mitigation efforts | | | | | |
| Energy efficiency | | | | | |
| Renewable energy sources | | | | | |
| Emissions of air pollutants | | | | | |
| Pollutant emissions from industry | | | | | |
| Clean industrial technologies and processes | | | | | |
| Emissions of chemicals | | | | | |
| Water abstraction and its pressures on surface and groundwater | | | | | |
| Sustainable use of the seas | | | | | |

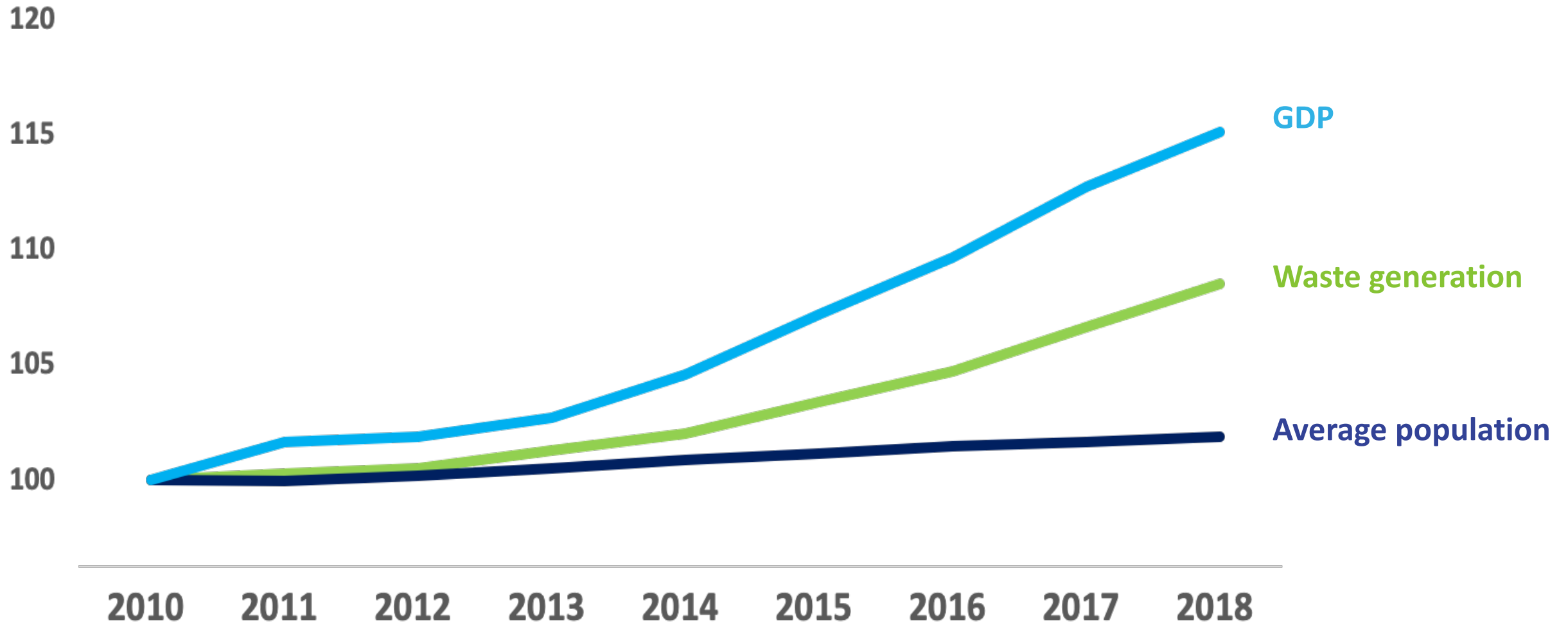


Recycling rates are generally improving...



But waste generation is still increasing

Trends in waste generation, economic development and population, EEA-33



Resource efficiency is improving

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Euro (chain-linked volumes 2010)/kg DMC



Europe: 40 % increase 2000-2017

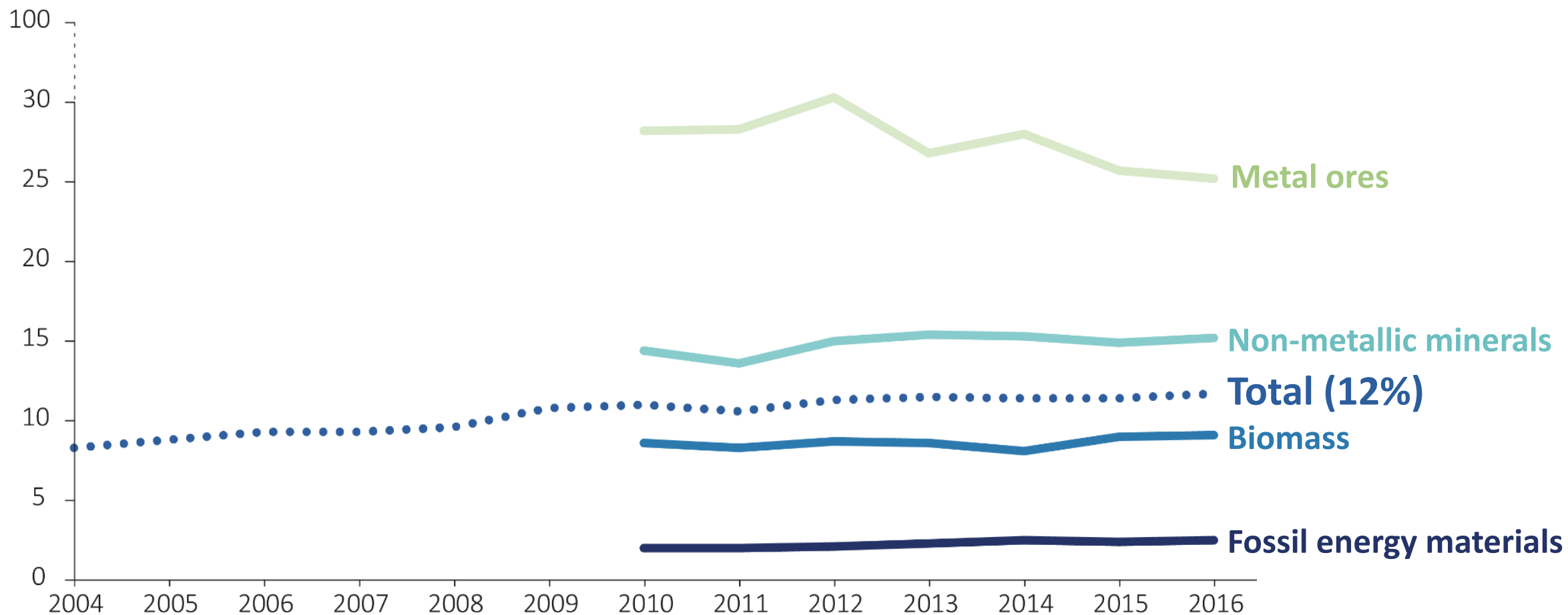
European Environment Agency



And circular use of materials is still low

Trends in the circular material use rate, EU-28

Circular material use rate (%)



Climate change

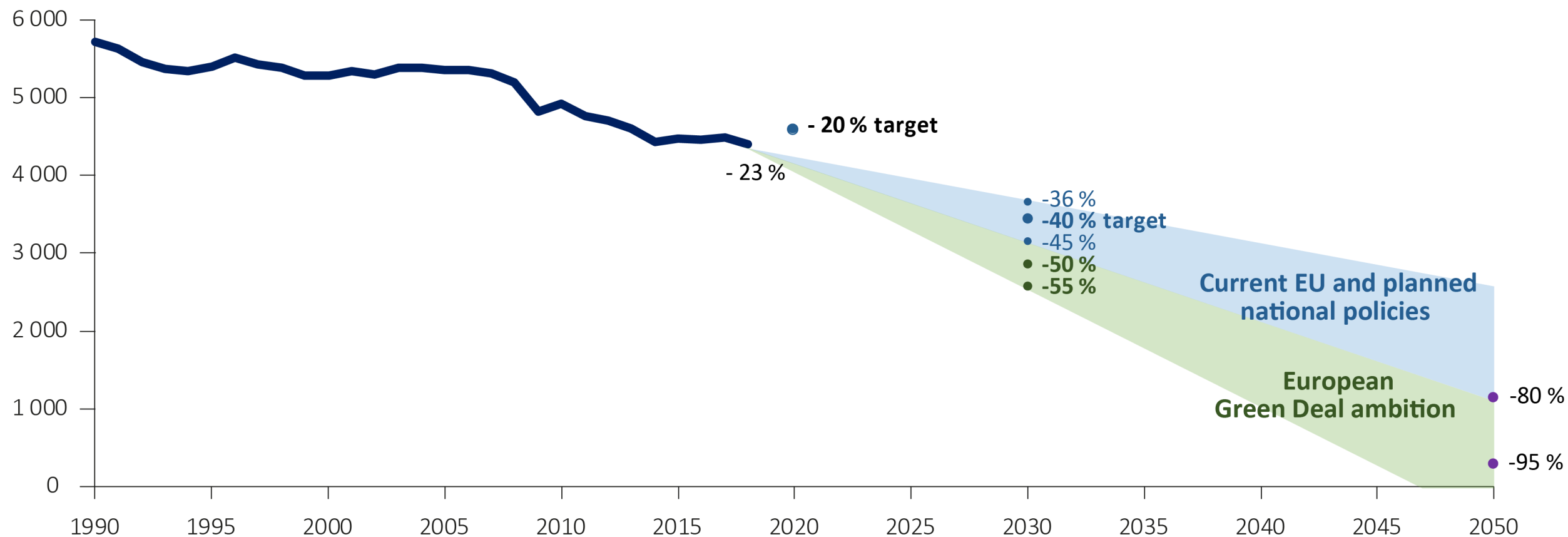
*“18 of the 19
warmest years
on record
globally have
occurred since
2000 ”*

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GHG emission trends and projections in the EU-28, 1990-2050

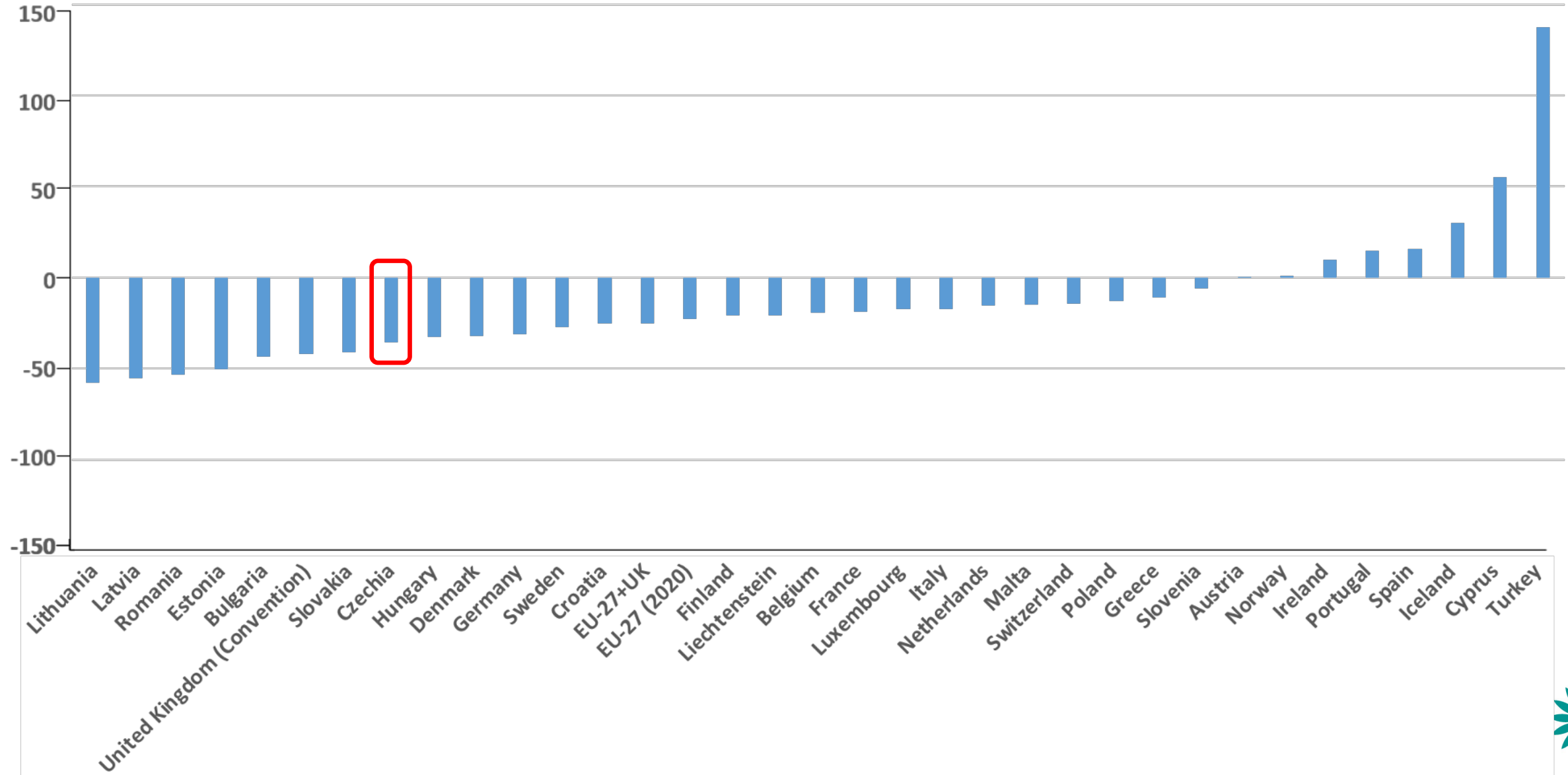
Million tonnes of CO₂ equivalent (MtCO₂e)



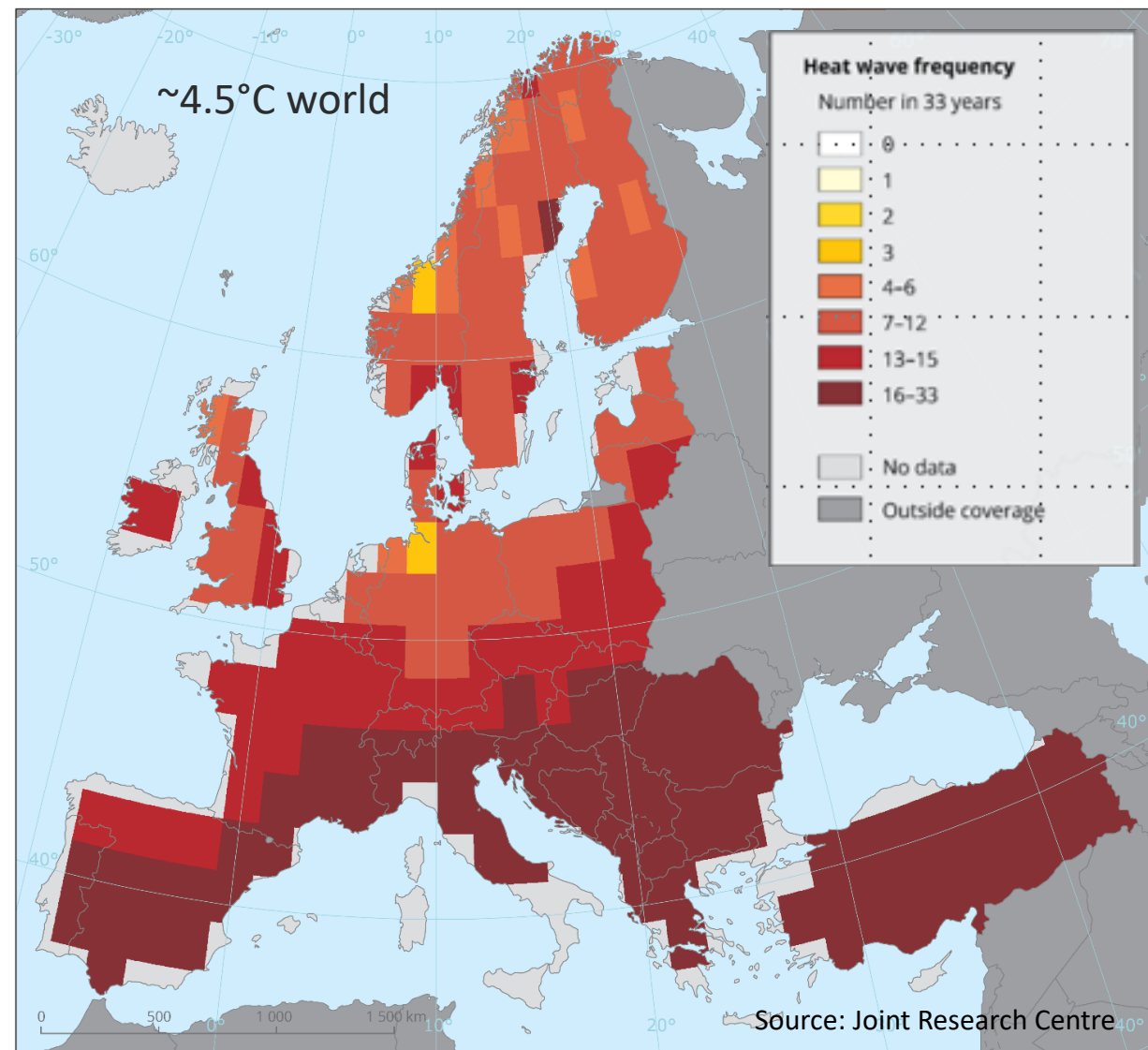
Climate change: national GHG emissions

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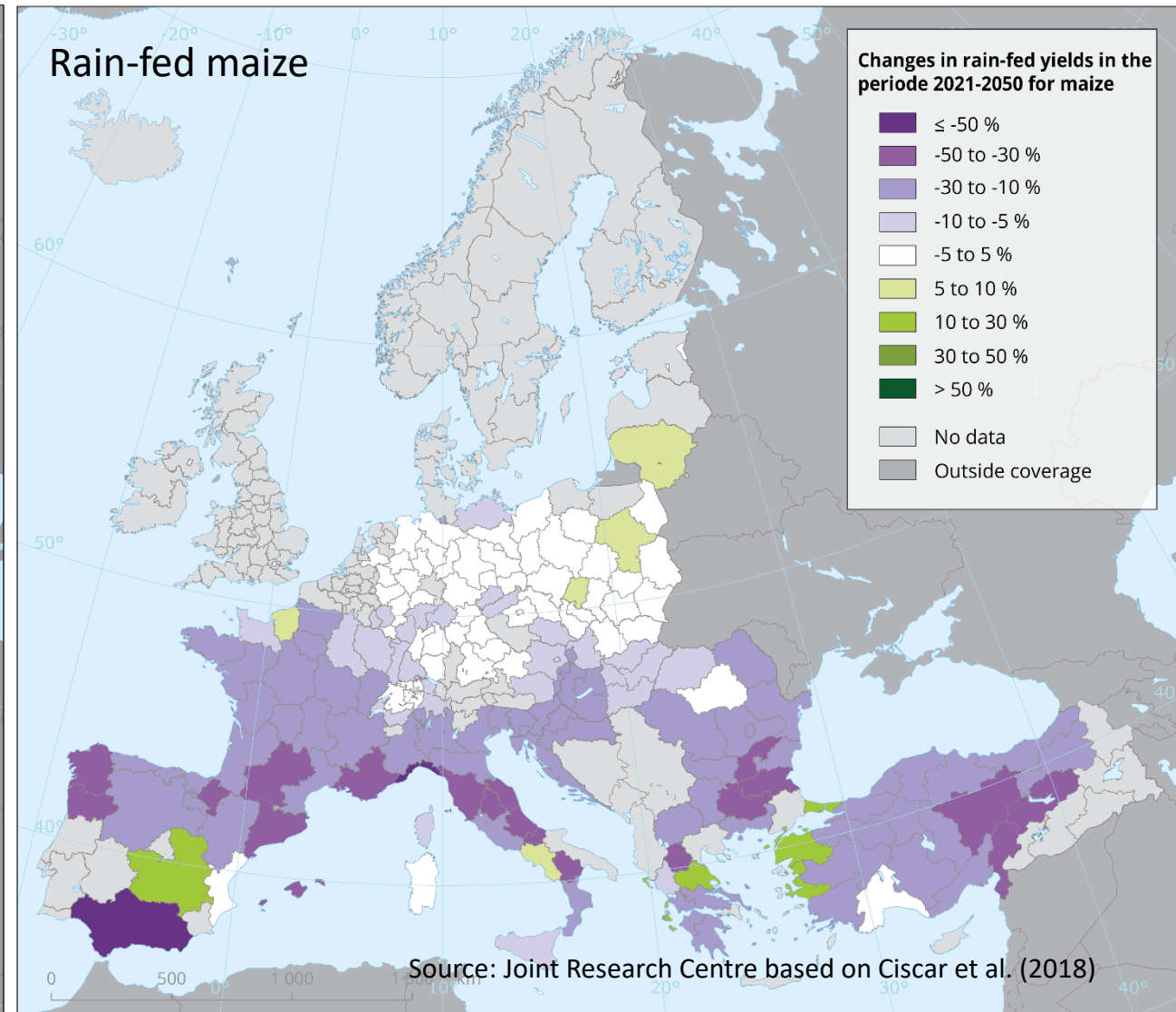
Change (%age) in total greenhouse gas (GHG) emissions 1990-2018



Extreme heatwave frequency, projection 2100



Projected change in yield 2021-2050 vs 1981-2010



3














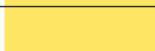
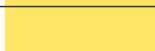

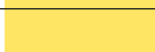








Health and well-being

*“ Air pollution
is the single largest
environmental
risk to the health
of Europeans ”*

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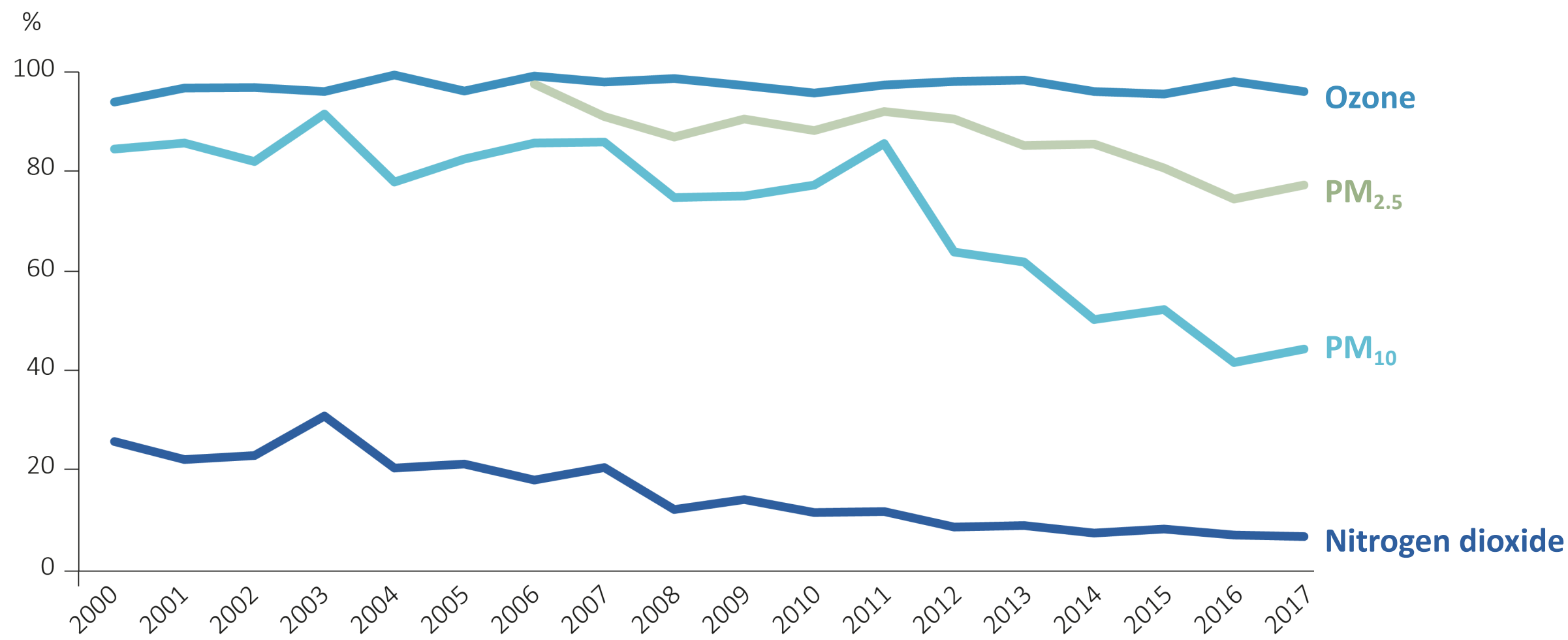


3. Environmental risks to health and well-being

| | Past trends (10-15 years) | Outlook to 2030 | Prospects of meeting policy objectives/targets | | |
|--|---|---|---|---|------|
| | | | 2020 | 2030 | 2050 |
| Concentrations of air pollutants |  |  |  |  | |
| Air pollution impacts on human health and well-being |  |  | |  | |
| Population exposure to environmental noise and impacts on human health |  |  |  | | |
| Preservation of quiet areas |  |  |  | | |
| Pollution pressures on water and links to human health |  |  |  | | |
| Chemical pollution and risks to human health and well-being |  |  |  | | |
| Climate change risks to society |  |  |  | | |
| Climate change adaptation strategies and plans |  |  |  | | |

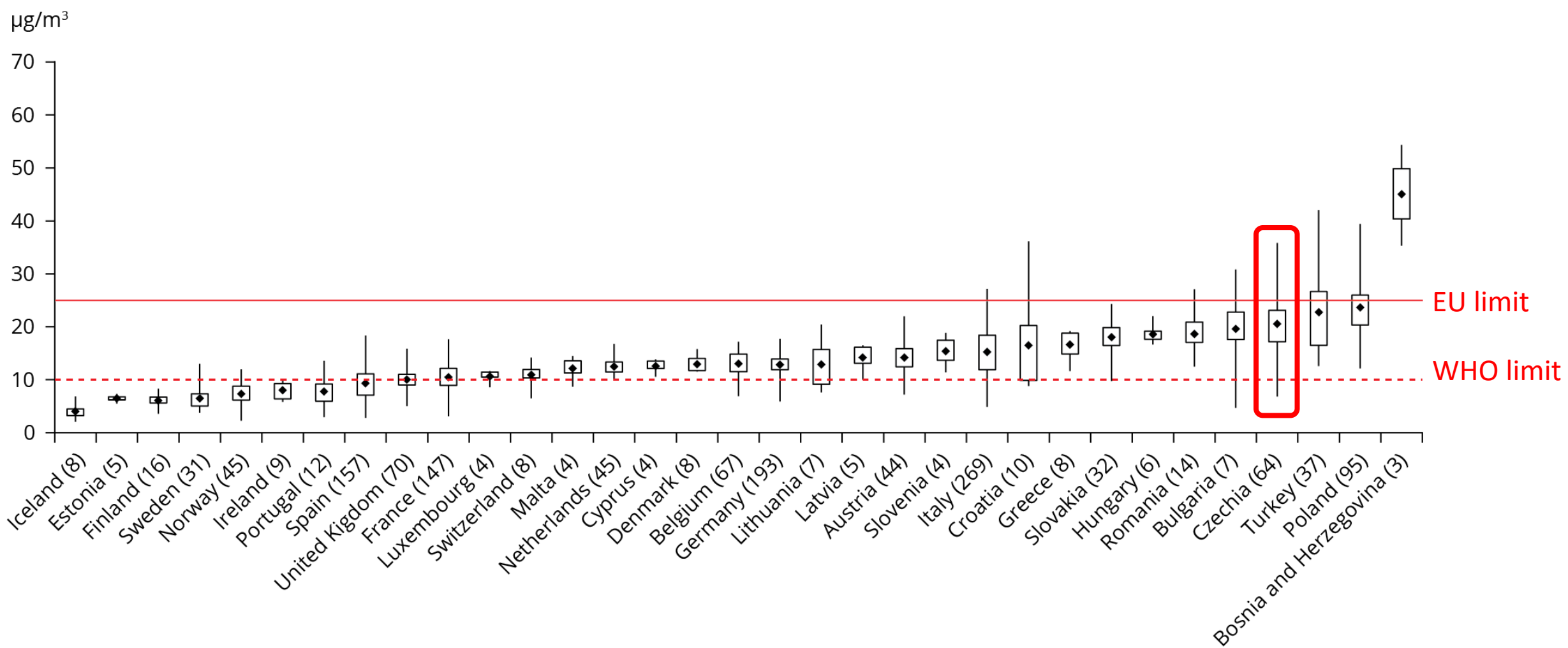
Environmental risks: air pollution is still a big problem

EU urban population exposed to air pollutant concentrations above selected **WHO** air quality guidelines

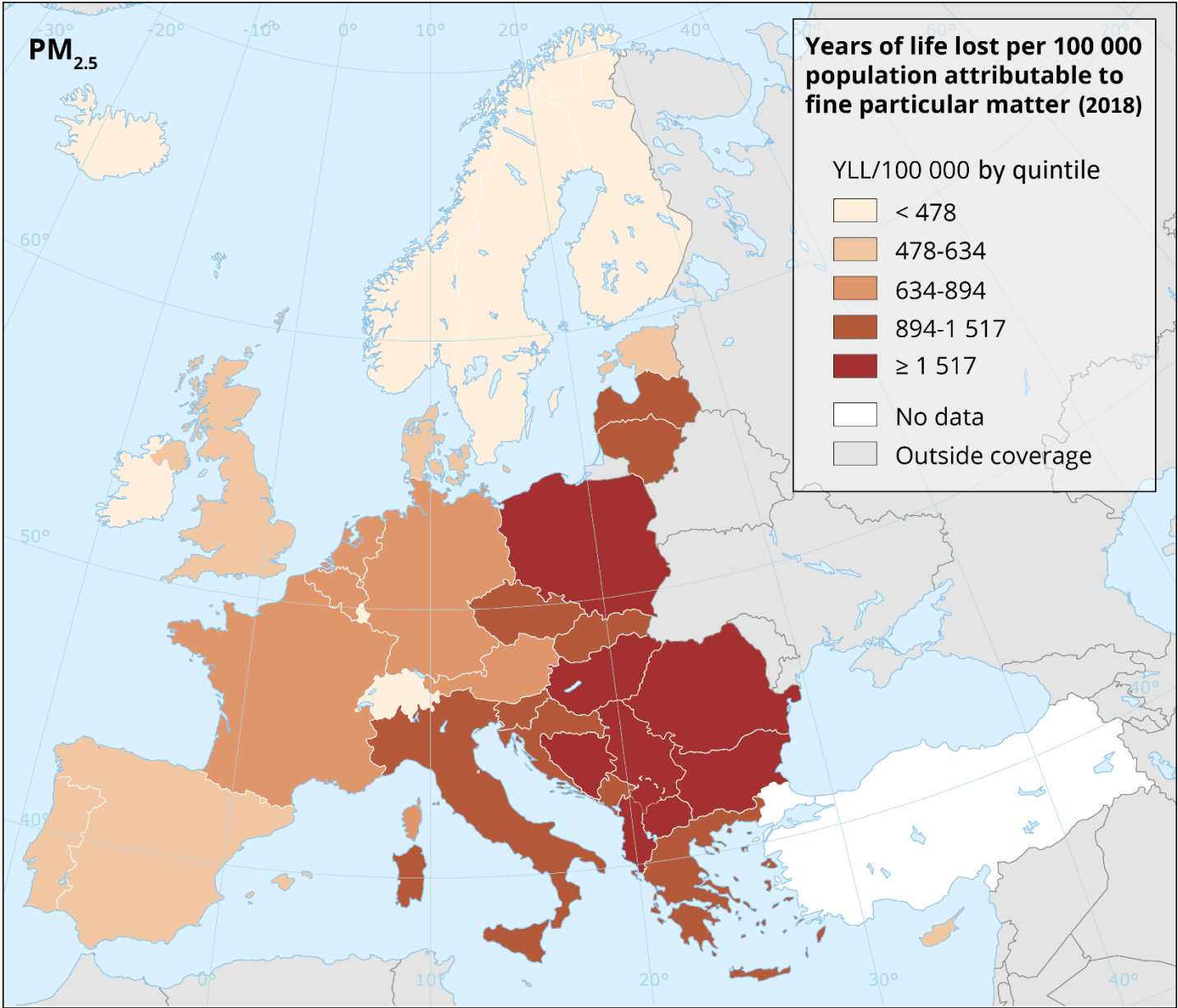


Particulate matter is of concern

PM2.5 concentrations in the EEA countries 2018



Risks for human health are considerable



~ 100 000 chemicals
on the market

~ 22 600 chemicals
with a use over
1 tonne per year

~ 4 700 chemicals
with a use over
100 tonnes per year
prioritised in
hazard characterisation
and evaluation

~500 chemicals
extensively characterised for
their hazards and exposures

~10 000 chemicals
fairly well characterised for
a subset of their hazards and exposures

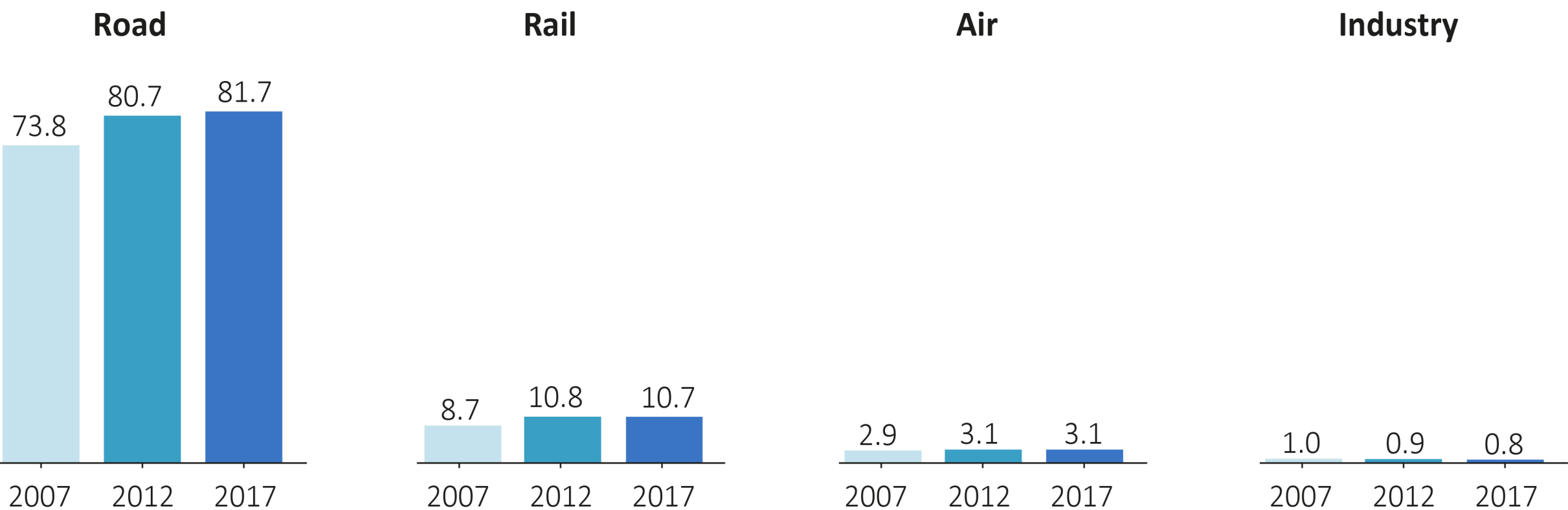
~20 000 chemicals
with limited characterisation for
their hazards and exposures

~70 000 chemicals
with poor characterisation for
their hazards and exposures



Number of people (millions) exposed to ≥ 55 decibels (day-evening-night level)

In urban areas

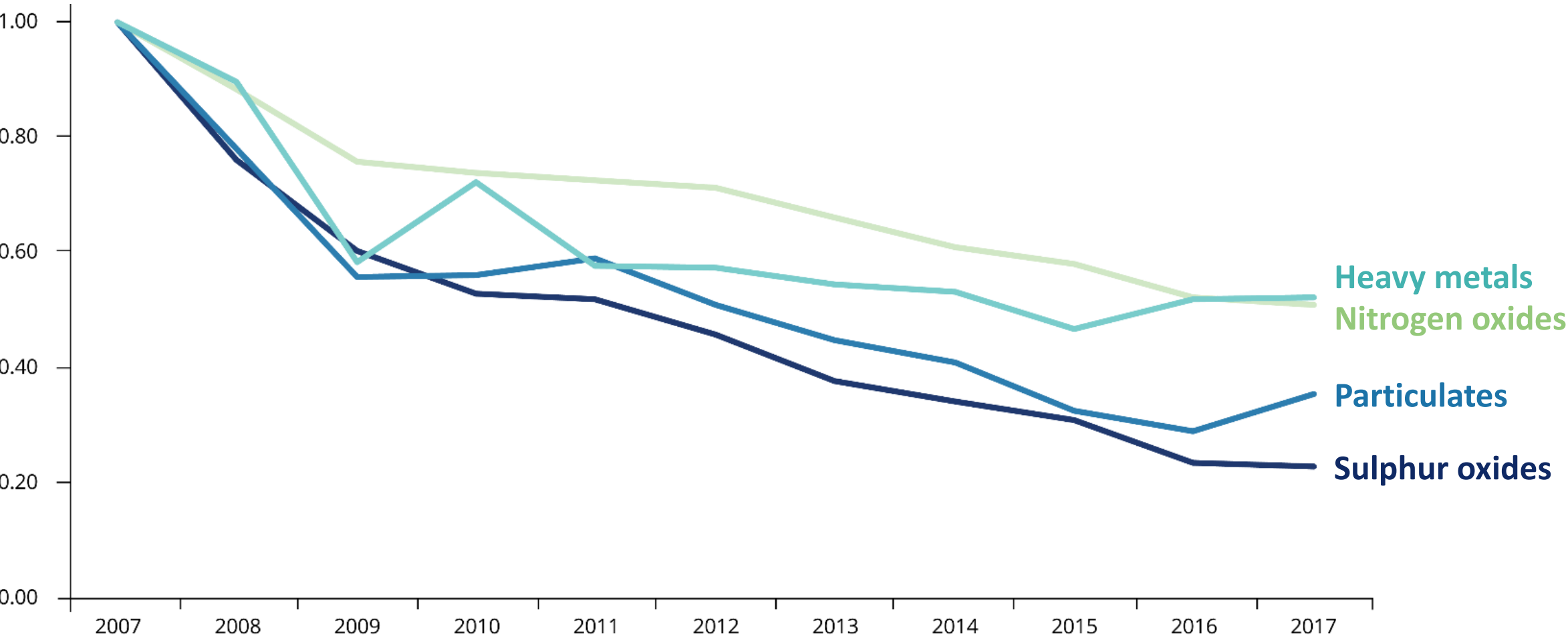


Industrial pollution



*“18 % of surface water
bodies in the EU are
affected by chemical
pollution from industrial
and wastewater sources”
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Emissions of key industrial pollutants, EEA-33



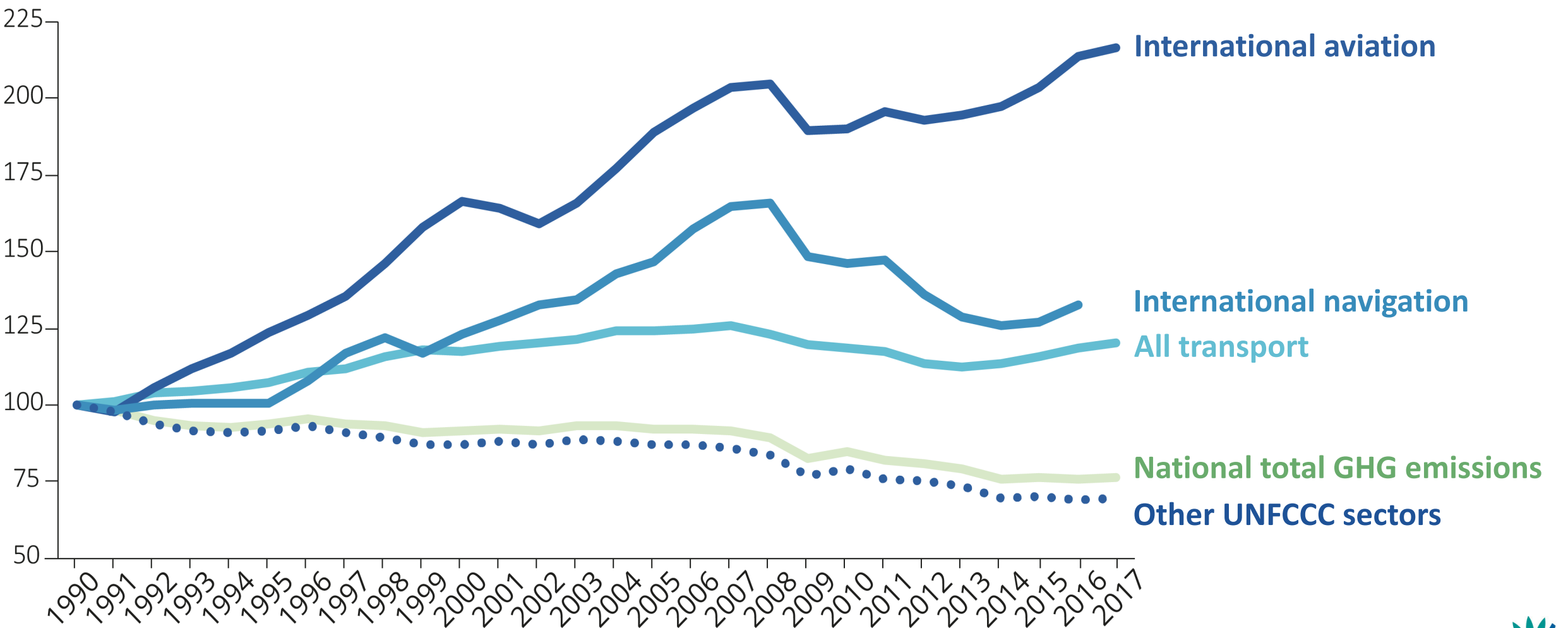
Environmental policy integration

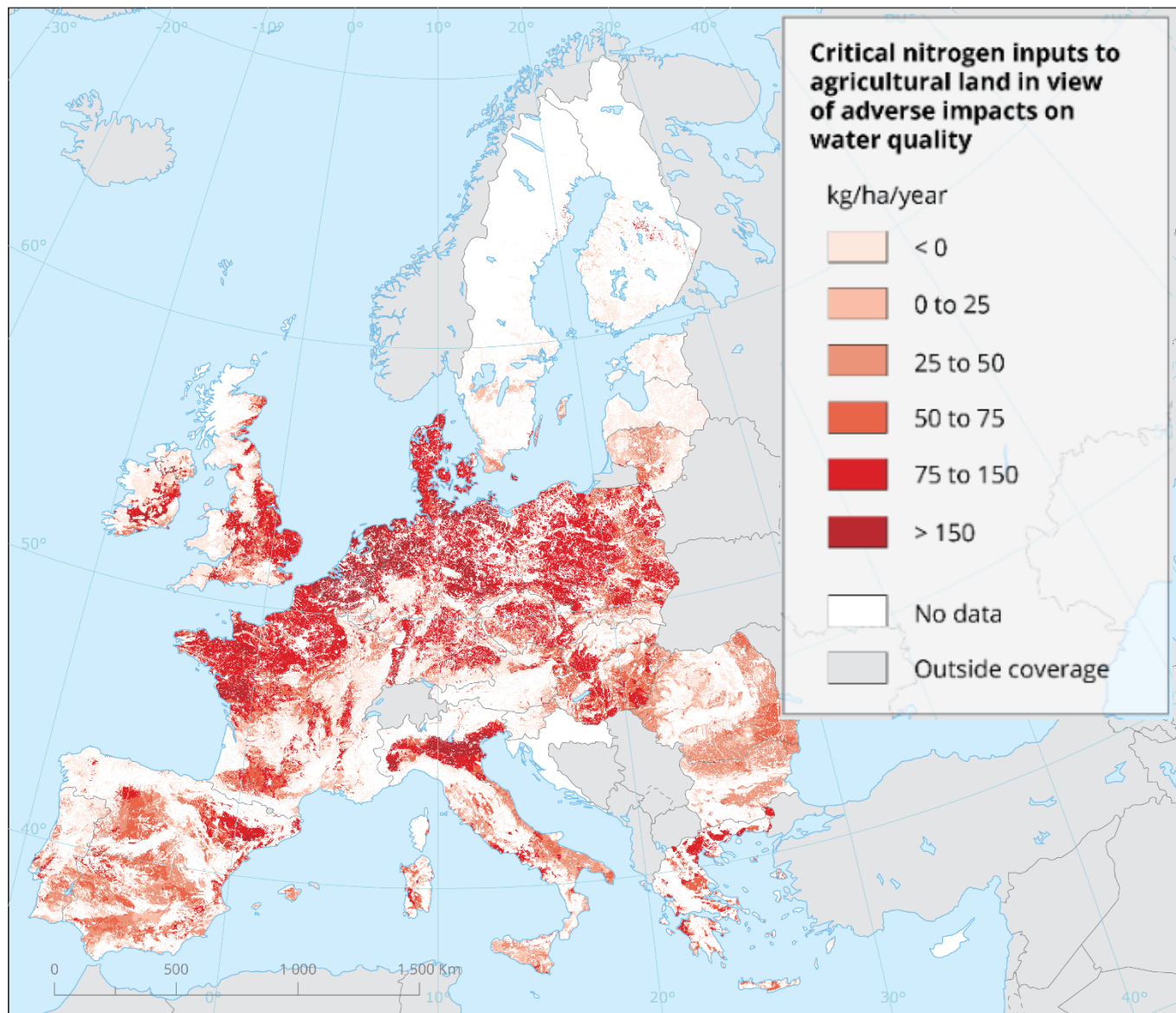
“Policy needs to consider environmental, economic, social and governance dimensions and their synergies and trade-offs”
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Policy integration largely unsuccessful: transport

EU GHG emissions in the transport sector, 1990-2017 (1990 = 100%)





- Unsustainable agriculture still main threat to biodiversity and natural capital in Europe
- Pollution of soil, water, air and food
- Over-exploitation of natural resources
- **Greening of the CAP shown to be ineffective**



Example: climate mitigation vs air pollution

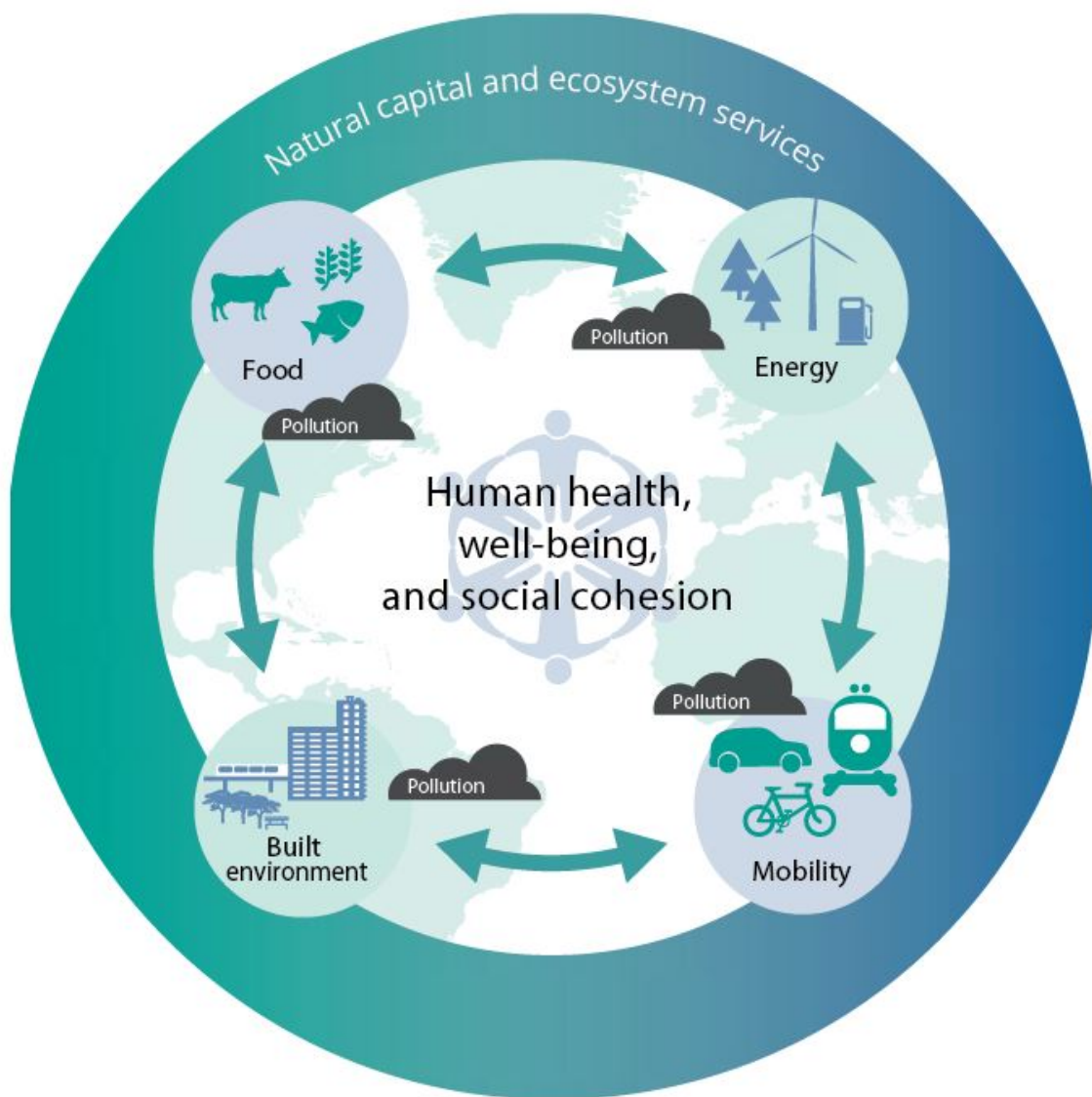
- **Synergies:** decarbonisation of transport also reduces air pollution
- **Trade-offs:** promoting diesel vehicles and biomass increases air pollution





“Diffusion of clean technologies and the transformation of entire production-consumption systems will require huge shifts in investments”
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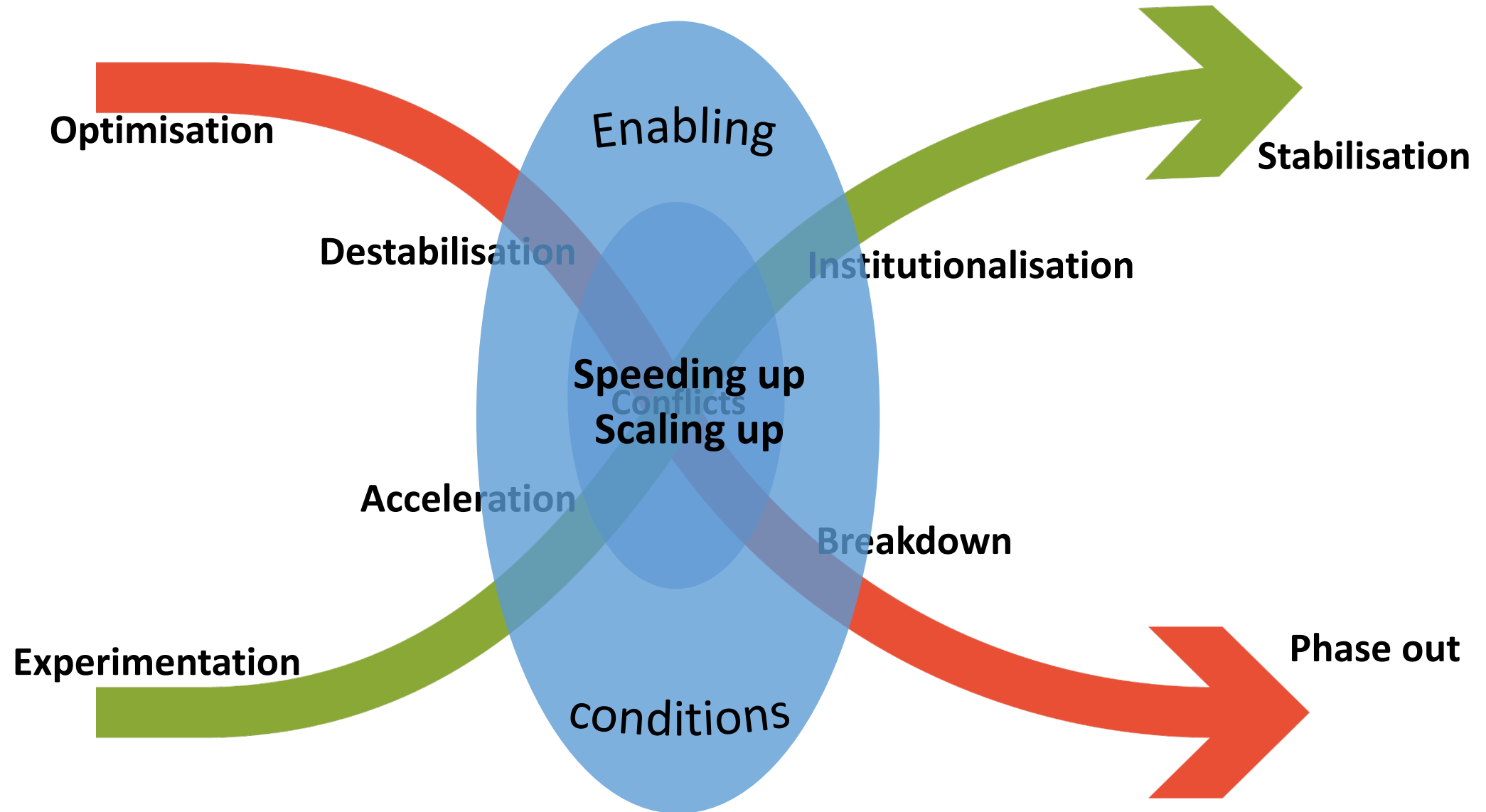
Transitions towards sustainability



- Recognise fundamental **drivers** and system **interlinkages**
- Adopt transformative **policy frameworks**
- Fill crucial **policy gaps**:
 - Food
 - Land and soil
 - Chemicals
- Leverage the power of **cities, businesses and communities** for society-wide action

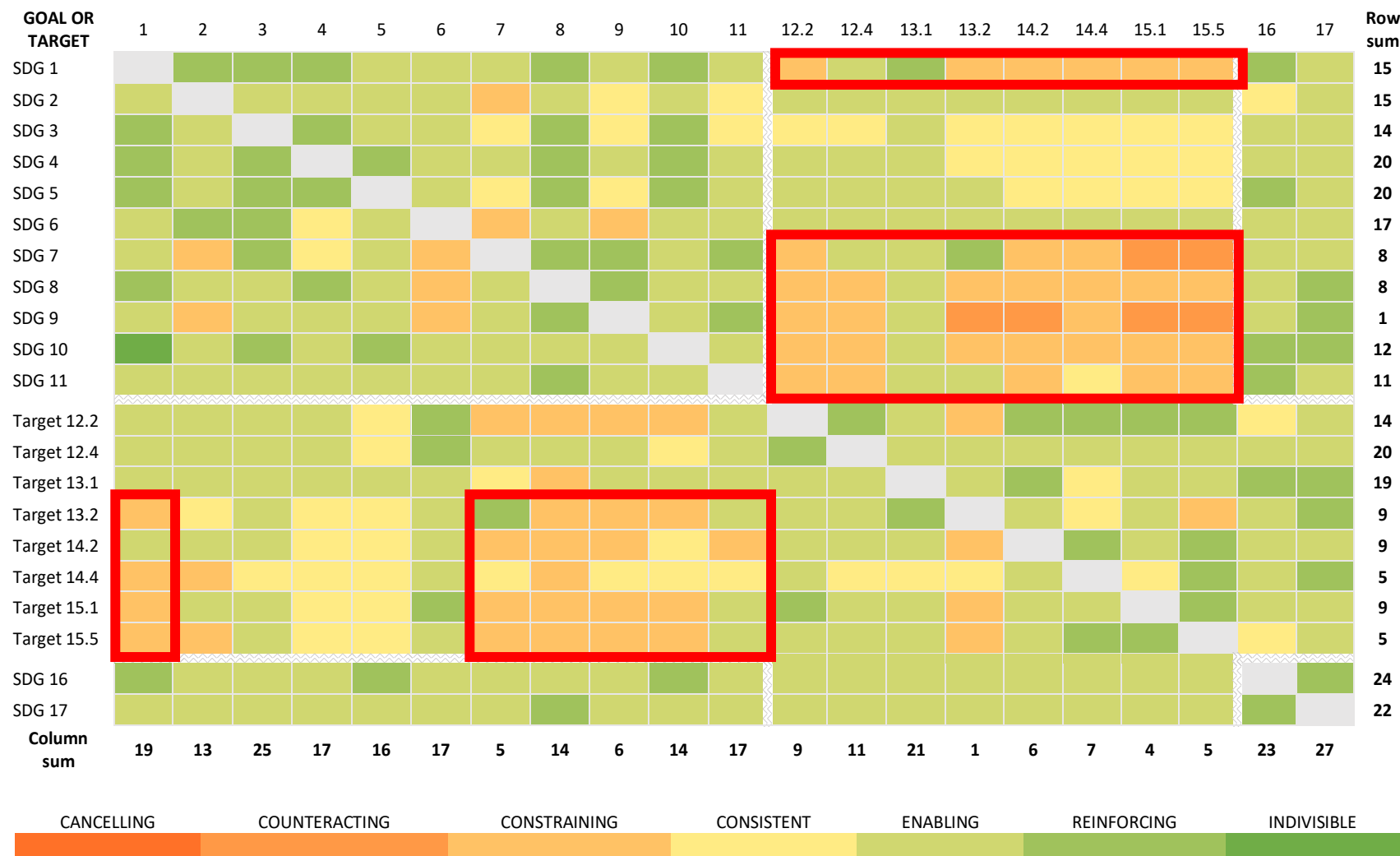
Systemic change is disruptive: the 'x-curve'

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Trade-offs between sustainability outcomes

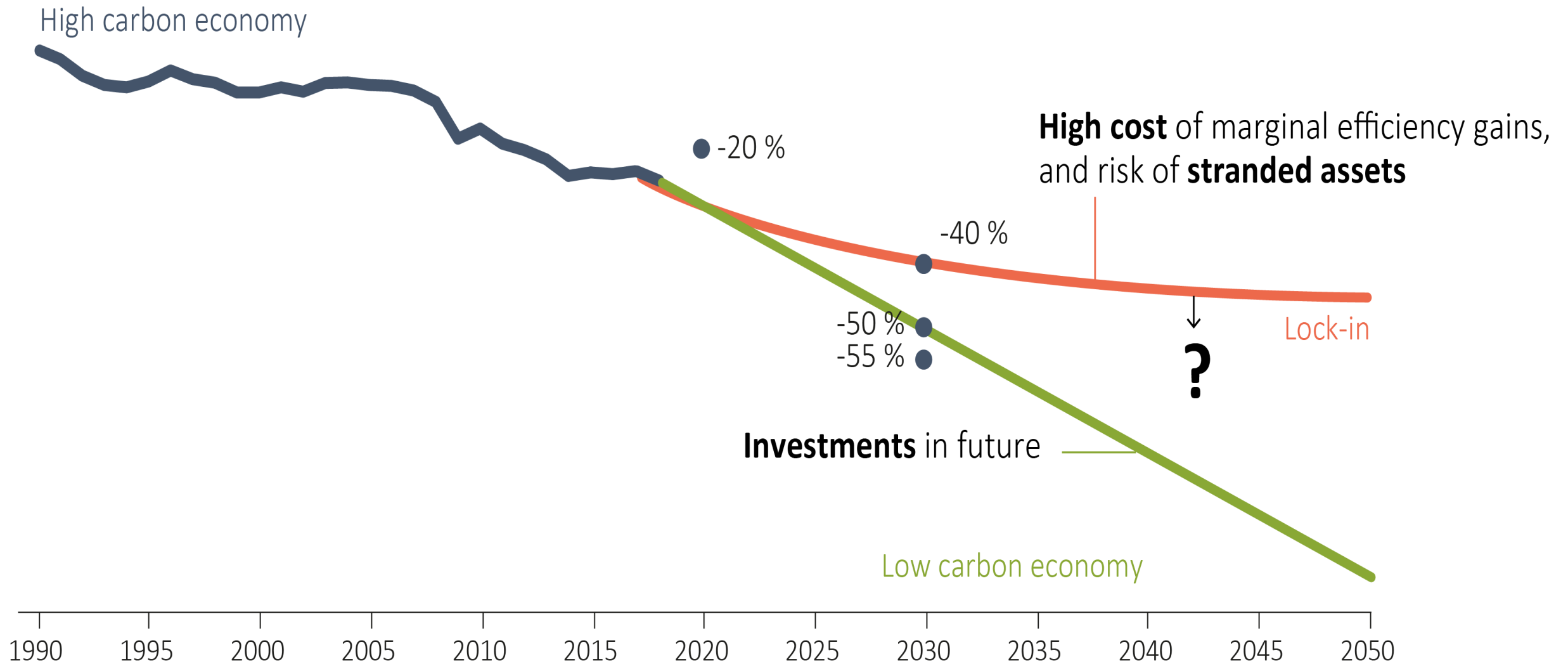
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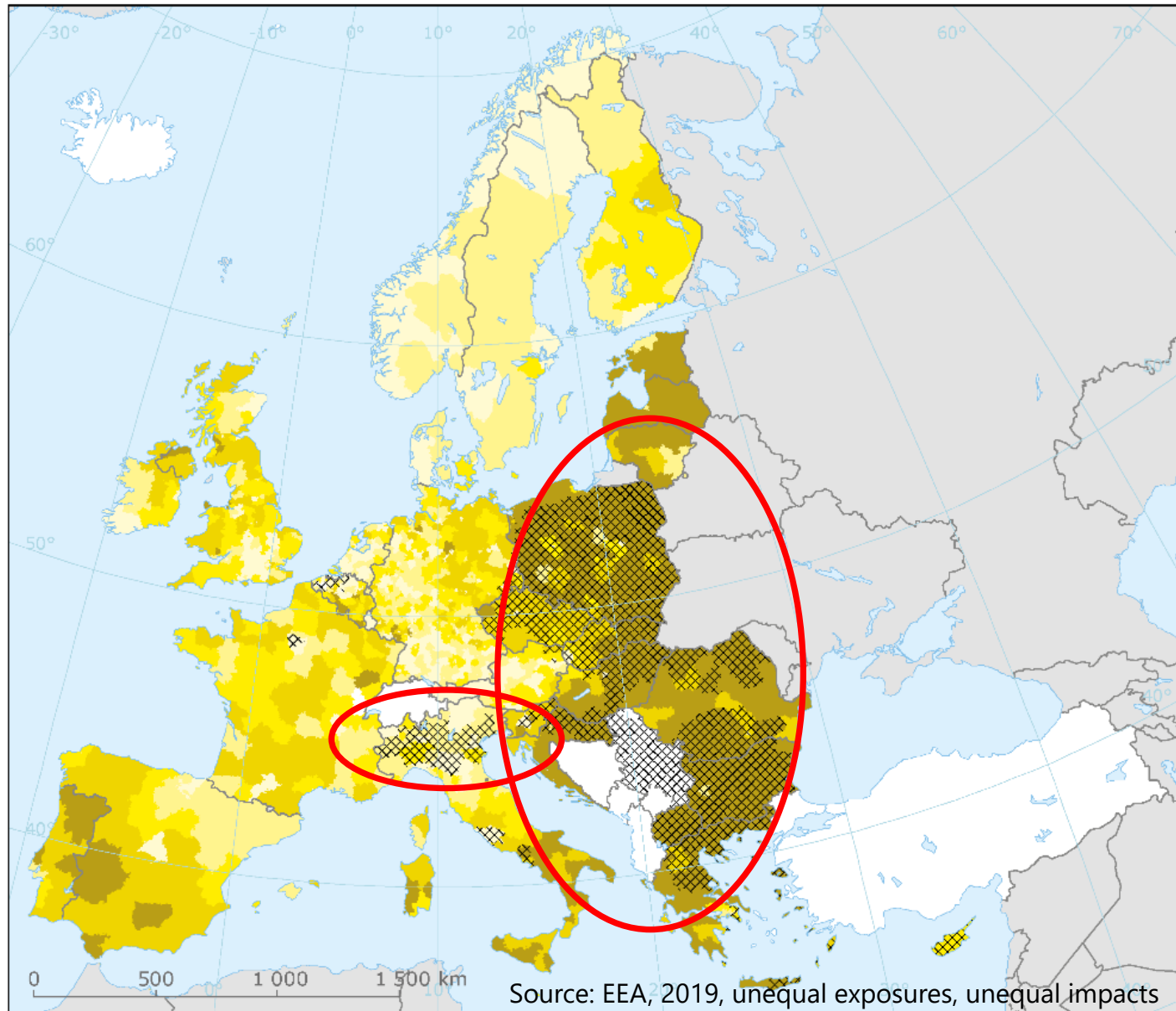


Source: EEA and SEI (2019)

Investing in sustainability, not dead-end streets

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Exposure to PM_{2.5} mapped against GDP per capita (2013-2014)

GDP per capita

- Very low (bottom 20 %)
- Low
- Medium
- High
- Very high (top 20 %)
- No data

Exposure to PM_{2.5}

- Most polluted 20 %
- Outside coverage

The window is closing: bold action is needed

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1. **Implementation:** we should do things better
2. **Sustainability as guiding principle:** we should do things differently
3. **The right investments:** transformative initiatives; not marginal efficiency gains
4. **Fostering innovation:** throughout society





Thank you

Dr Hans Bruyninckx | Czechia Launch | 2 December 2020