OLLI Study Group 395

Climate Policies: what works, what doesn't.

Miria Pigato

Class #1: Introduction

https://creators-images.vice.com/content-images/contentimage/no-slug/1294ec7ac8f2e218d2fcc0c48129cd3b.jpg?crop=1xw:0.6969026548672567xh;center,center&resize=1200:*

Bassano del Grappa, my home town

https://media.tacdn.com/media/attractions-splice-spp-674x446/06/e5/af/4f.jpg

https://happyfrogtravels.com/photos-bassano-del-grappa-italy/

https://www.urbanabroad.com/wp-content/uploads/2022/01/piazza-liberta-bassano-del-grappa.jpg

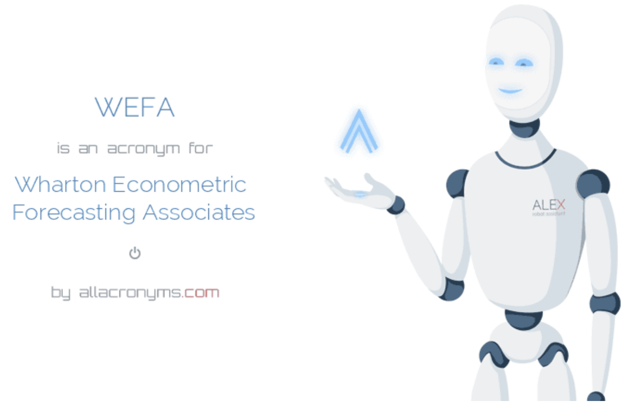
My Life Map

Università Ca'Foscari Venezia

UNIVERSITY OF LONDON

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

UCL

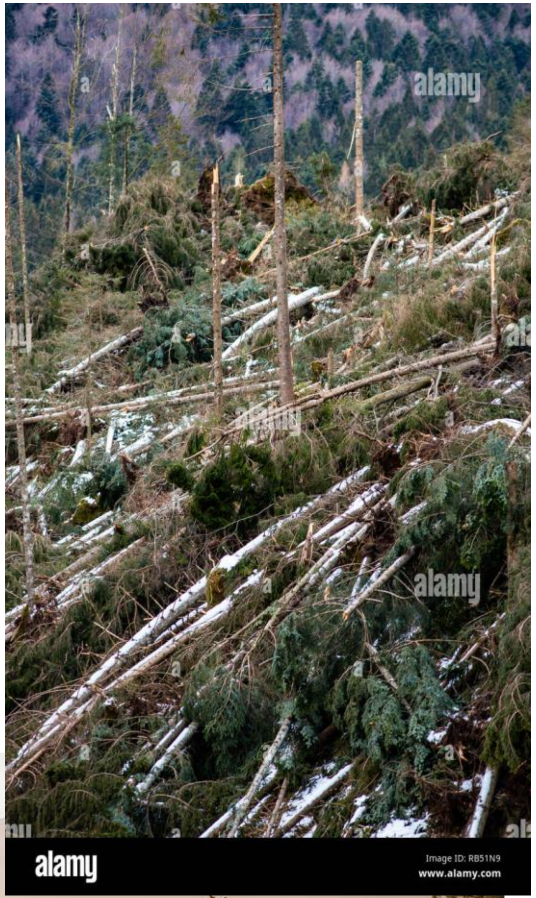


The World Bank

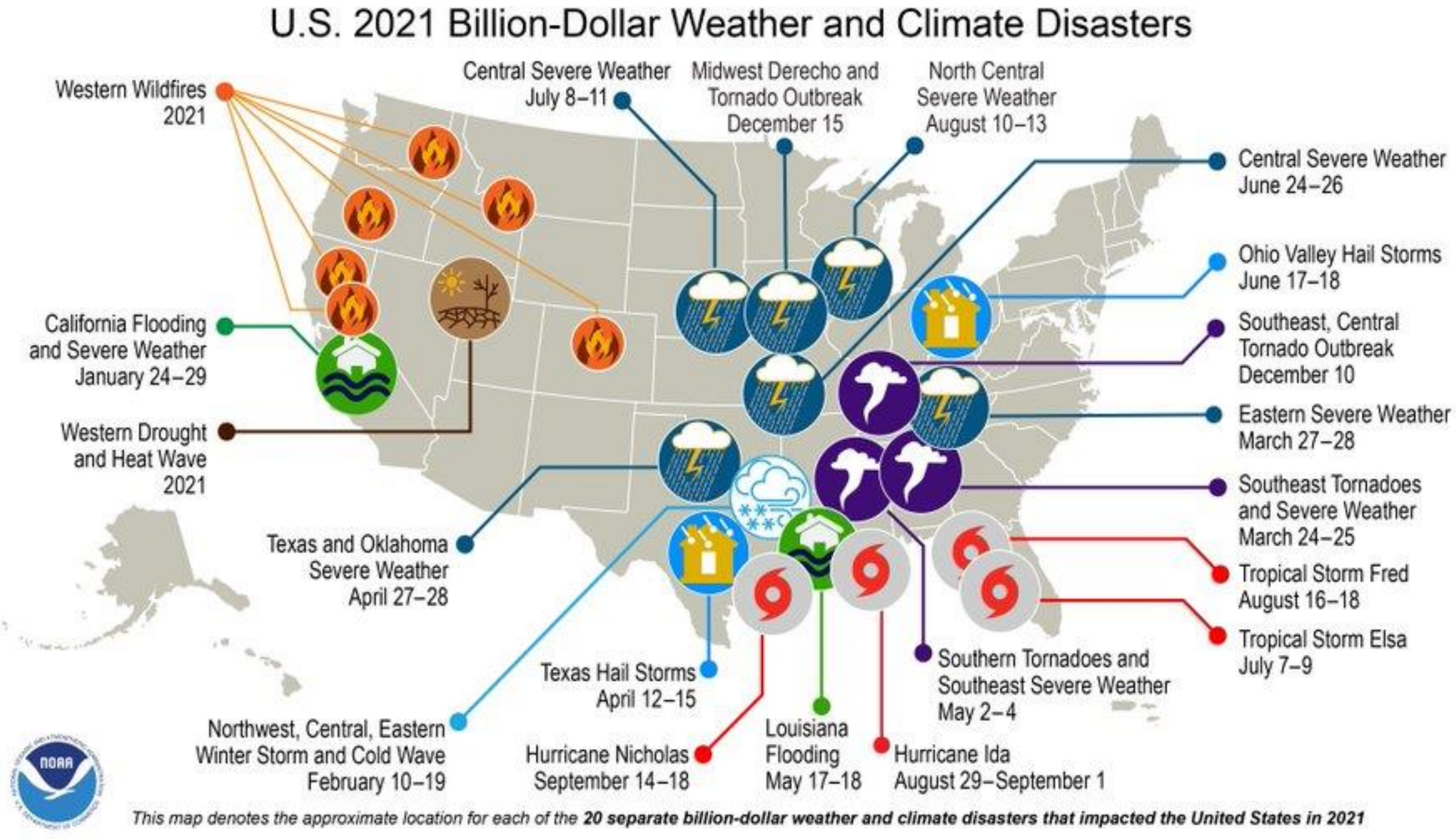
The Dolomites, my mountains

https://www.laughtraveleat.com/wp-content/uploads/2019/11/tre-cimi-hike-dolomites-italy-laugh-travel-eat.jpg

The storm Vaia, October 28, 2018



Source: https://www.mountlive.com/tempesta-vaia-tre-anni-dopo-energie-e-cuore-per-la-ricostruzione/



Source: NOAA NCEI (National Centers for Environmental Information)

Outline

- Climate Change as a global economic problem
  - Evidence
  - Predicted impacts
  - Responsibility for climate change
- Findings of the 2021 IPCC report
- Air Pollution
- The Clean Air Act.

Different Economic Perspectives on Climate Issues

- **Environmental economics** applies standard economic thinking to environmental issues, e.g. it studies how society should allocate (manage) scarce environmental resources.
  - It recognizes that the environment has value – and has developed techniques to measure it monetarily. It assumes that natural, produced and human capital can be substituted to a great extent.

- **Ecological economics** argues that humans, social and ecological systems, are bound together. It is a relatively new "trans-discipline" that incorporates insights from the biological, physical, and social sciences. It advocates that the overall level of natural capital/natural systems must be maintained over time . Different types of natural capital may be considered substitutes, but only if important ecological functions can be adequately maintained.

Climate change is a global economic problem

- **The causes of environmental problems are economic** – side-effects of market activity. And the consequences have important economic dimensions.

- **Climate change is a global problem presenting a classic free-rider problem:** benefits from taking action are global and delayed while costs are up- front, and higher than the benefits. It is a “problem from hell”, presenting **pervasive dilemmas:**
    - Acting now or in the future, together or separately
    - Choosing the instruments: public or market-based
    - Who pays? Climate justice, just transitions.

https://www.theguardian.com/environment/2022/jun/28/climate-change-heatwaves-droughts-study-weather

What is climate change? Why is climate changing?

- **Weather** describes the conditions outside right now in a specific place**. Climate** describes the average weather conditions that are expected in a region at a particular time of year. **Climate change** describes a change in average conditions — such as temperature and rainfall in a region/country over a long period of time.
- **Global climate change** refers to the long-term changes in global mean temperature, as well as the effects of global warming, such as rising sea levels, shrinking mountain glaciers, ice melting etc.
- Earth's climate has constantly been changing — but climate is changing faster today than ever before.

- Overwhelming scientific consensus that **burning fossil fuels and deforestation** are responsible for the rise of **greenhouse gases in the atmosphere and global warming.** GHG concentrations in the atmosphere have increased by 40 percent over pre-industrial levels.
- Burning of fossil fuels also produces pollutants that reduce air quality and harm life.

This is an excellent short summary on climate change: https://public.wmo.int/en/media/press-release/united-science-we-are-heading-wrong-direction

Greenhouse gases' contributions to rising temperature

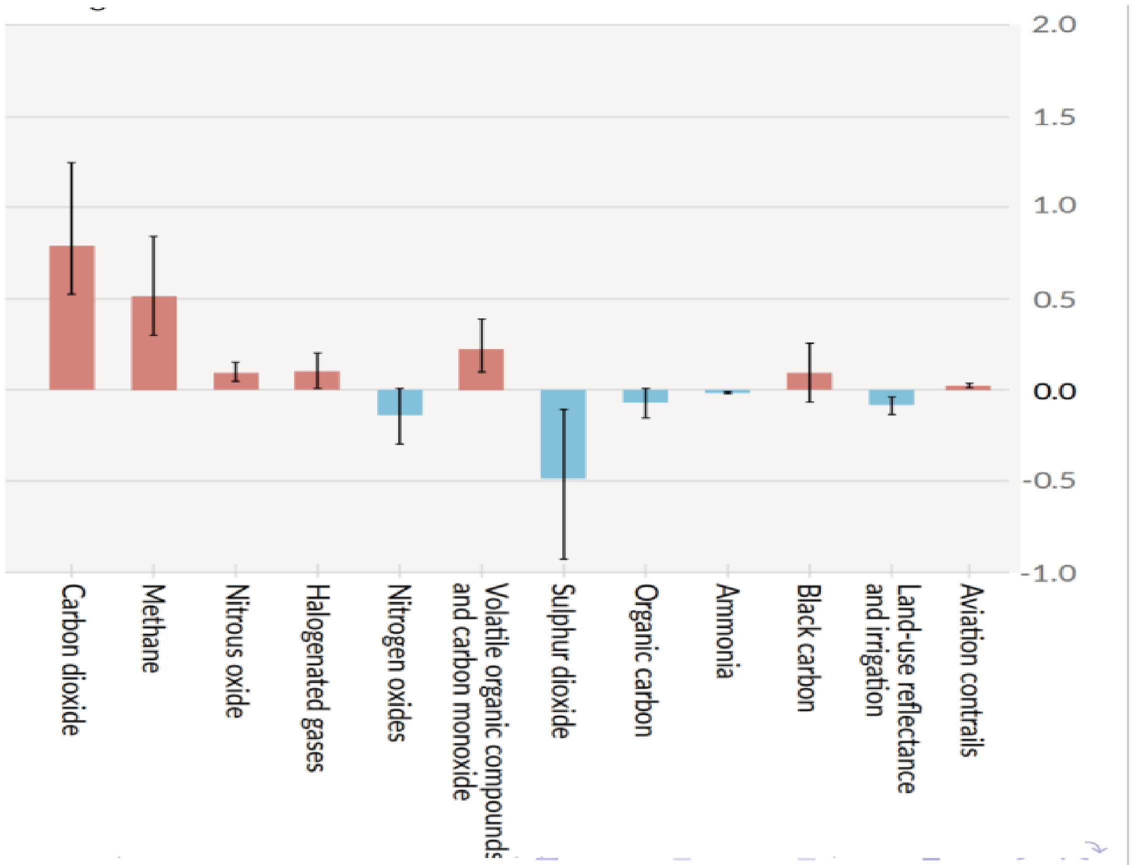
Carbon dioxide (CO_2): Carbon dioxide derives from the burning of fossil fuels. Some of it is absorbed by plants as part of the biological carbon cycle and by oceans.

Methane (CH_4): It results from livestock, land use and from the decay of organic waste. Methane is emitted during the production and transport of coal, natural gas, and oil.

Nitrous oxide (N_2O): Nitrous oxide is emitted during agricultural, land use, industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater.

Fluorinated gases: Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic powerful gases that are emitted from a variety of industrial processes.

Water vapor (H_2O) : This is water in gas form. High in the atmosphere, it condenses back into rain back on Earth. As Earth heats up, more water vapor can trap more heat.



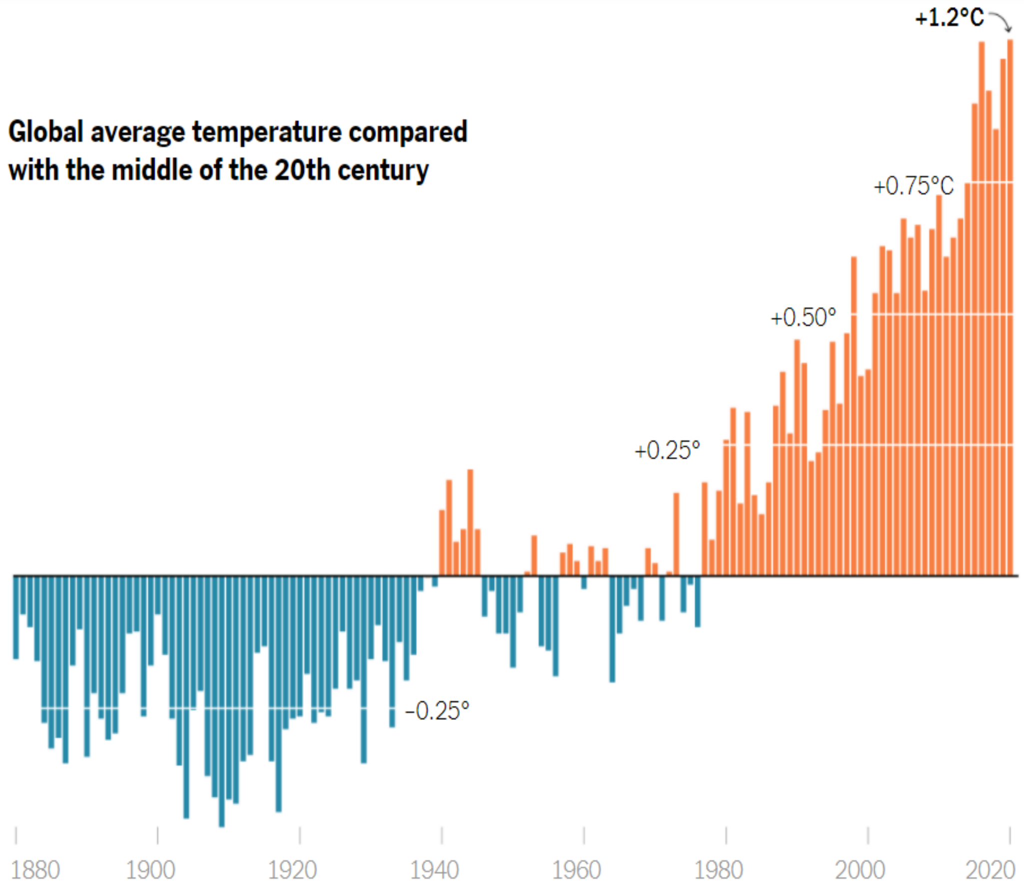
Source: IPCC Sixth Assessment Report

What’s the evidence?

- Temperatures as measured have consistently increased since 1980.
- The **amount** of warming appears to be outside natural variation. The **rate** of warming appears to be faster than natural variation
- Other direct indicators that warming has occurred: melting of glaciers, reduction of arctic ice, sea level rise, precipitation changes
- Indirect indicators of warming also consistent with warming: bird migration days / plant blooming days

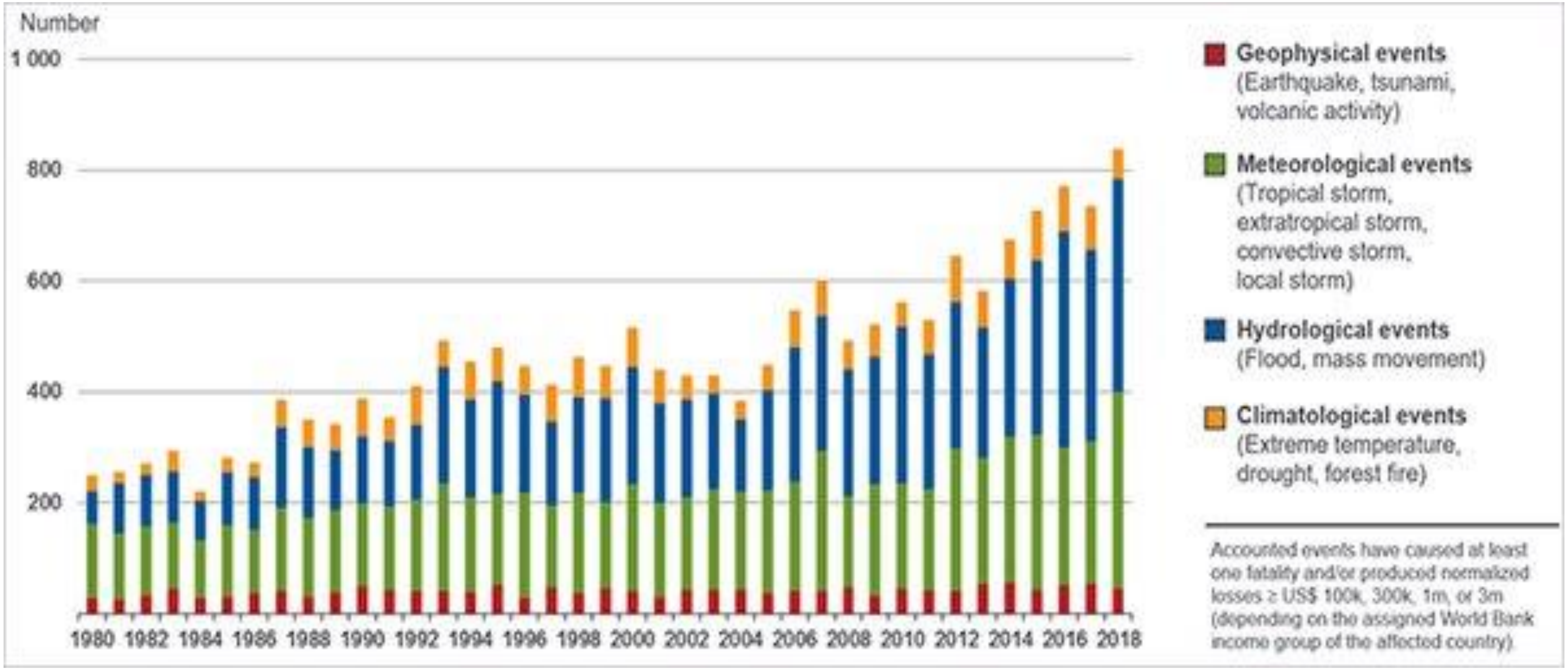
Current warming is at 1.2 ◦C above pre-industrial levels

- Source: IPCC Sixth Assessment Report, 2021.



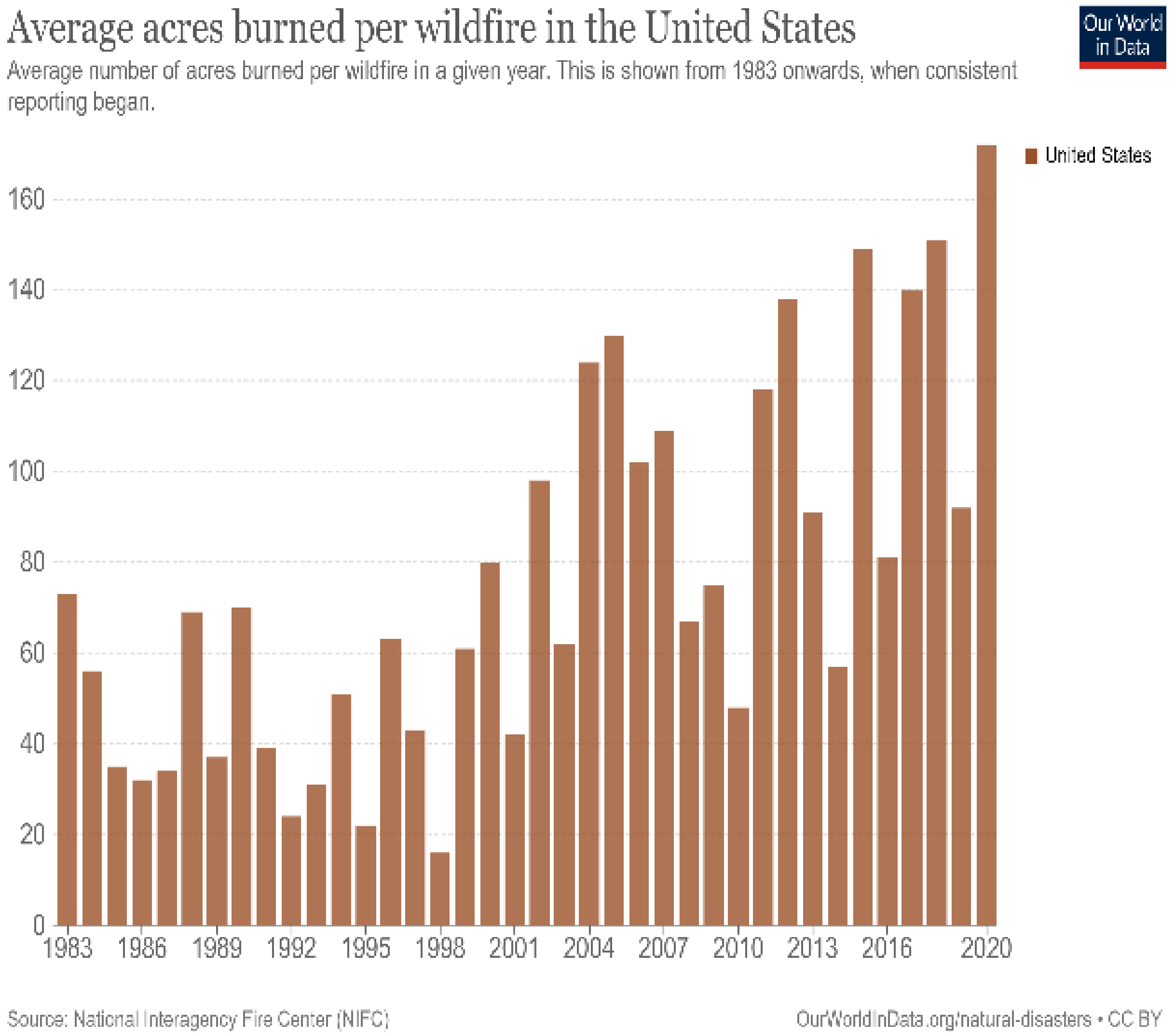
Source: NASA Goddard Institute for Space Studies

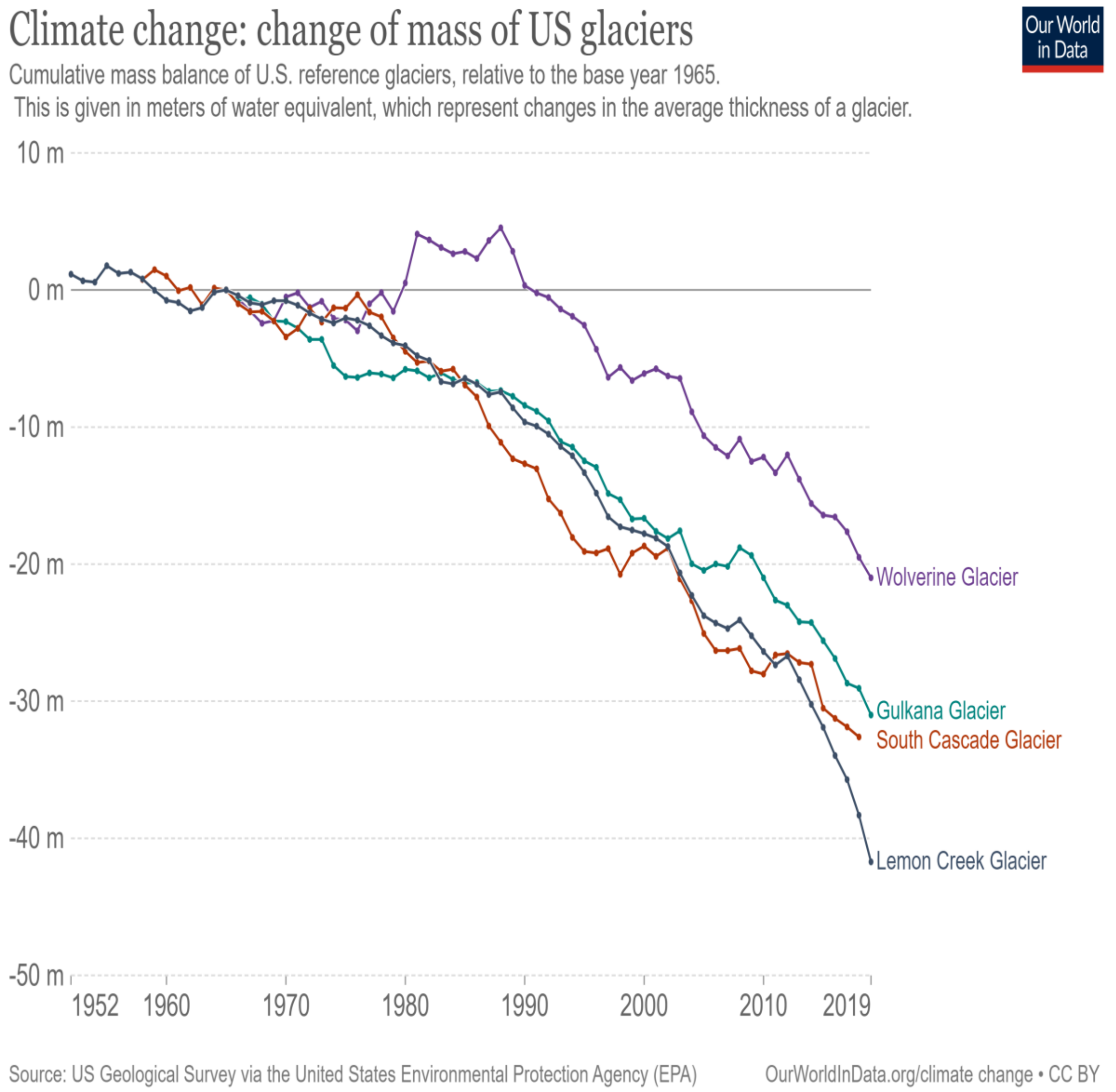
Global reported natural disasters are increasing



Source: https://www.researchgate.net/figure/Global-annual-reported-natural-disasters-by-type-

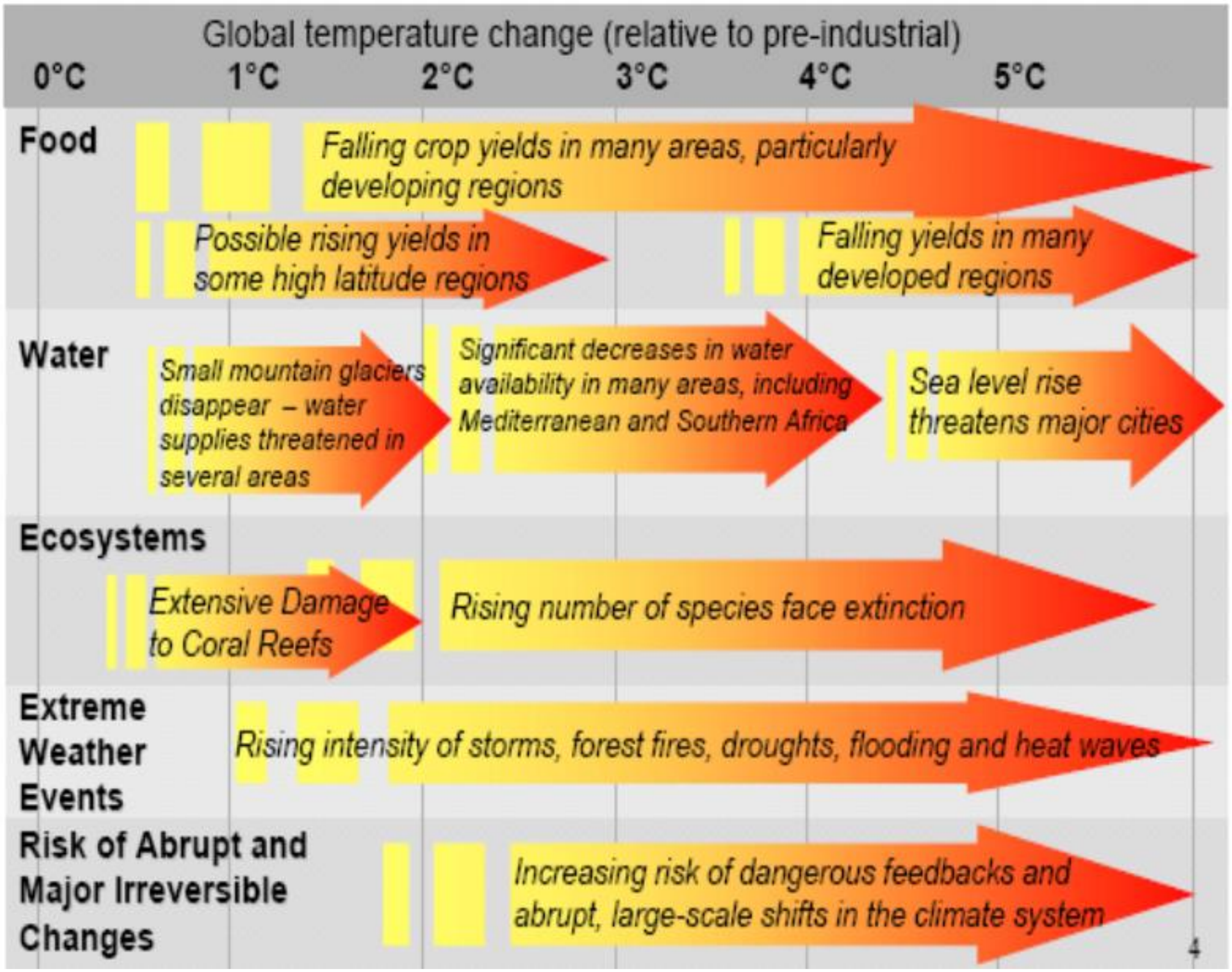
Climate change impacts in the US





Predicted impacts of climate change

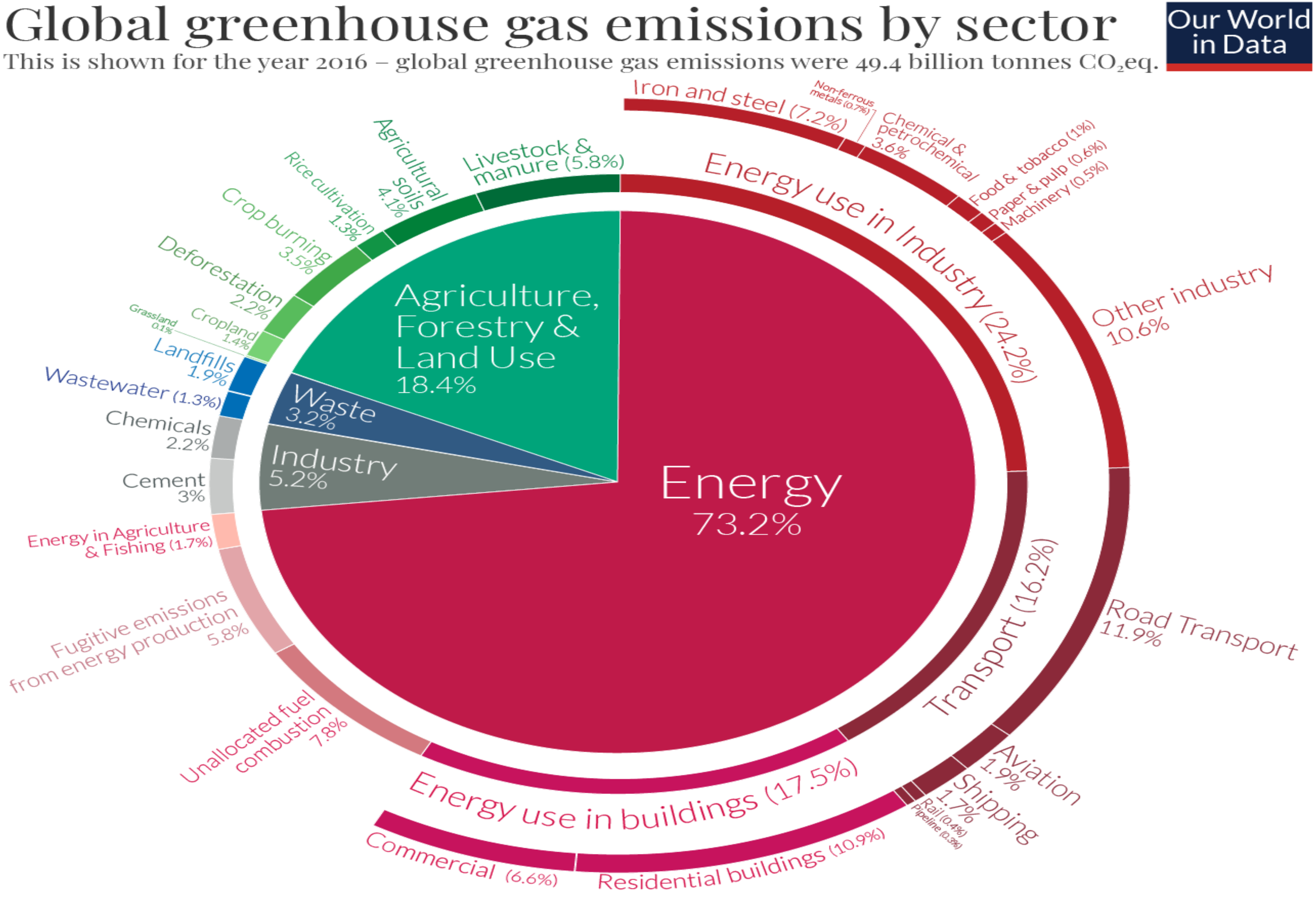
- Falling yields in agriculture
- Ocean acidification
- Forest degradation due to pests, lower precipitation, and temperature increases
- Invasive species changes
- Coral reef bleaching
- Species and biodiversity loss
- Many plants and animals will disappear as they cannot adapt or mutate quickly enough



Source: Stern Review, 2008.

Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO_2eq.



OurWorldinData.org – Research and data to make progress against the world's largest problems.
Source: Climate Watch, the World Resources Institute (2020)

Who is really to blame for climate change?

It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.

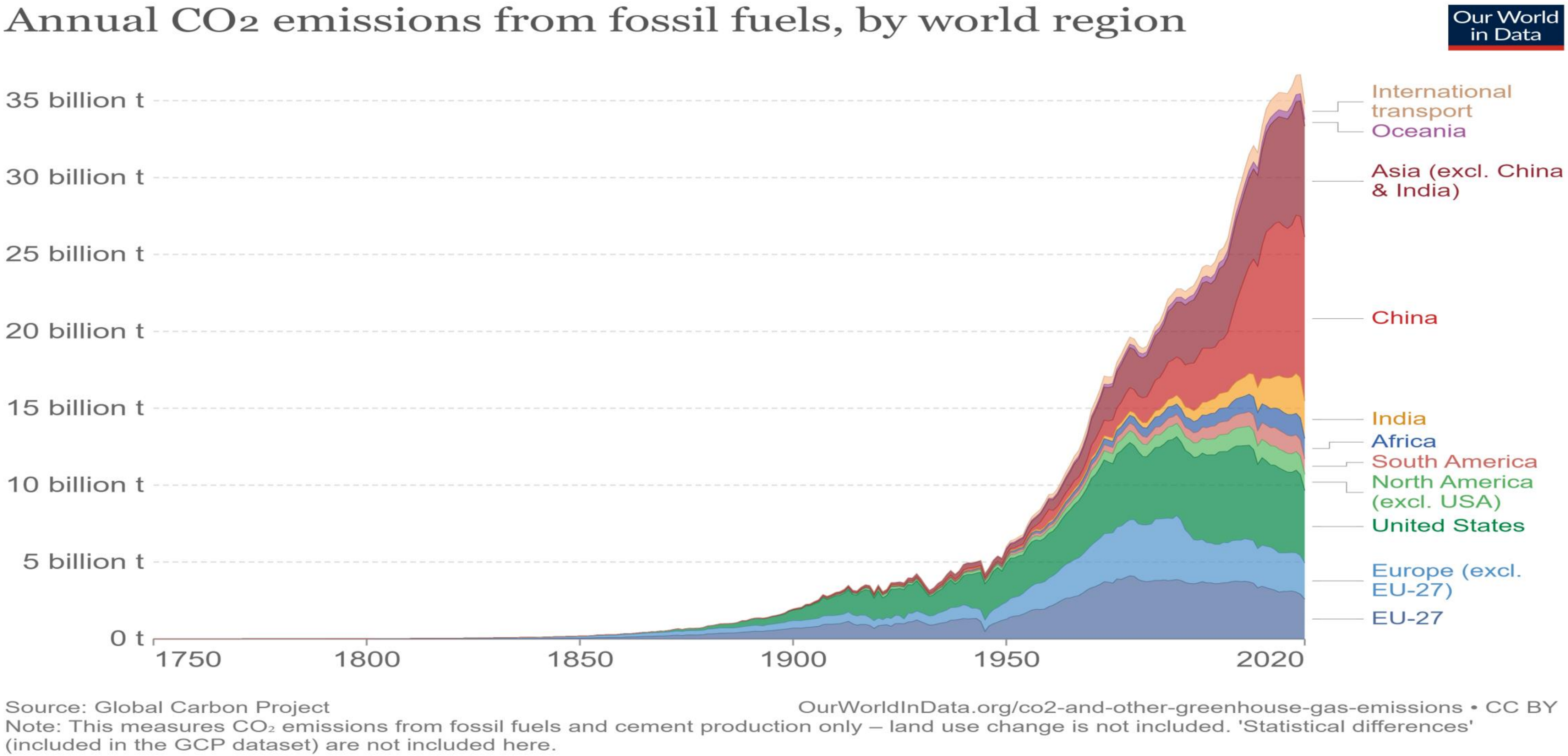
The Physical Science Basis, Working Group I, 2021
Sixth Assessment Report of the Intergovernmental Panel on Climate Change

Key findings of the 2021 IPCC Report

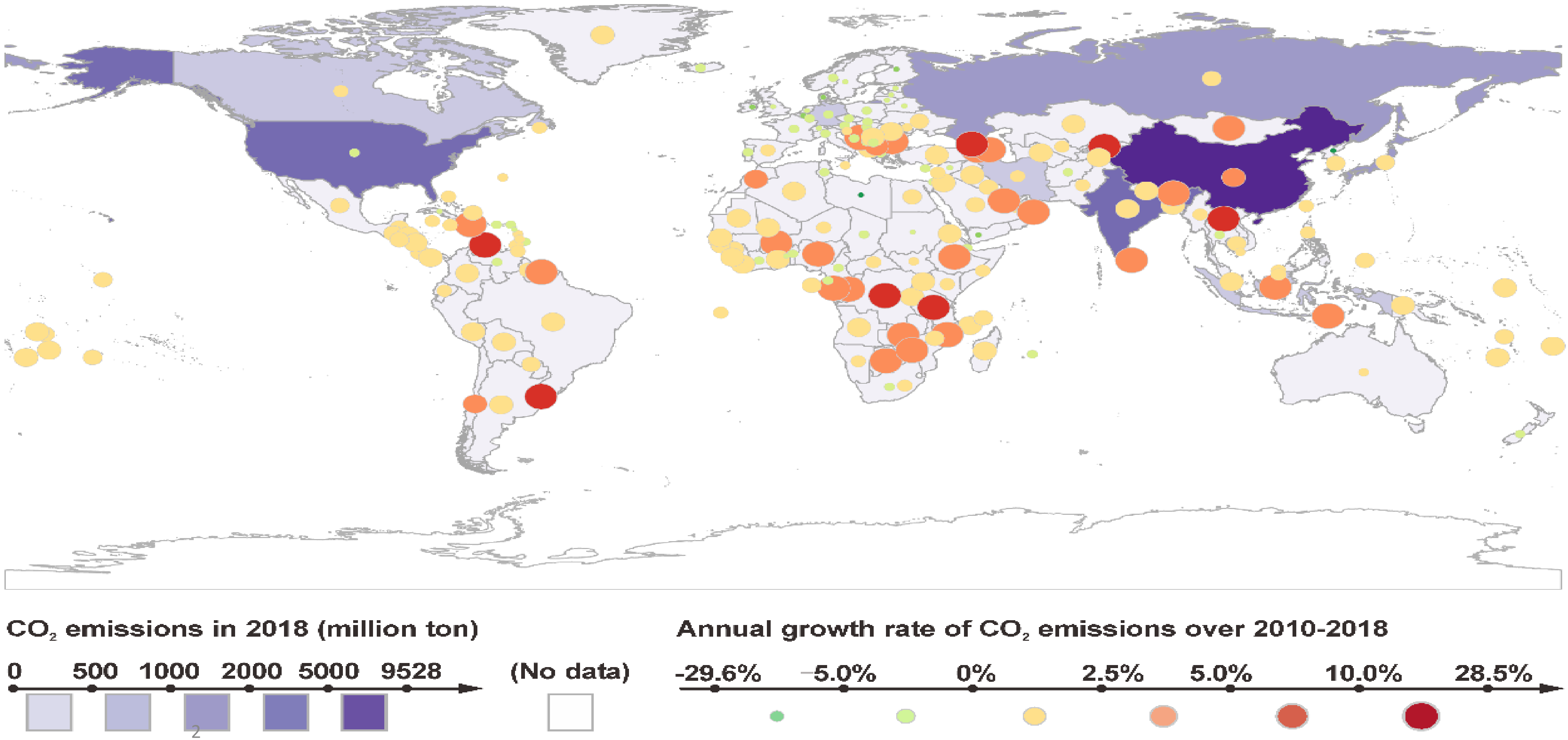
- **Existing country plans to reduce emissions are "insufficient"** to keep warming well below 2°C, the goal enshrined in the 2015 Paris Agreement.
- **The concentration of atmospheric carbon dioxide is higher than anytime in the last 2 million years**, and GHG are rising faster than anytime in the last 800,000 years. Arctic sea ice coverage levels are the lowest since at least 1850. Global mean sea level is rising, and the rate of rise is accelerating.
- **Climate change is happening faster than previously understood**, and the likelihood that the global temperature increase can stay within the Paris Agreement goal of 1.5°C is extremely slim.
- **For every doubling of atmospheric CO2, temperatures go up by about 3°C**.
- **Glaciers, polar sea ice, the Greenland ice sheet, and global permafrost are all rapidly melting**. Overall sea levels have risen about 20 centimeters since 1900, and the rate of sea level rise is increasing.
- **Cities will warm faster as a result of urbanization**. Global warming extremes in urban areas will be even more pronounced, especially during heatwaves.
- **While even 1.5°C of warming will make extreme events more severe, the intensity of extreme events is expected to at least double with 2°C of global warming** compared to today's conditions, and quadruple with 3°C of warming.

Source: https://www.ipcc.ch/report/ar6/wg1/

Annual Carbon Dioxide Emissions 1750-2020 by world region

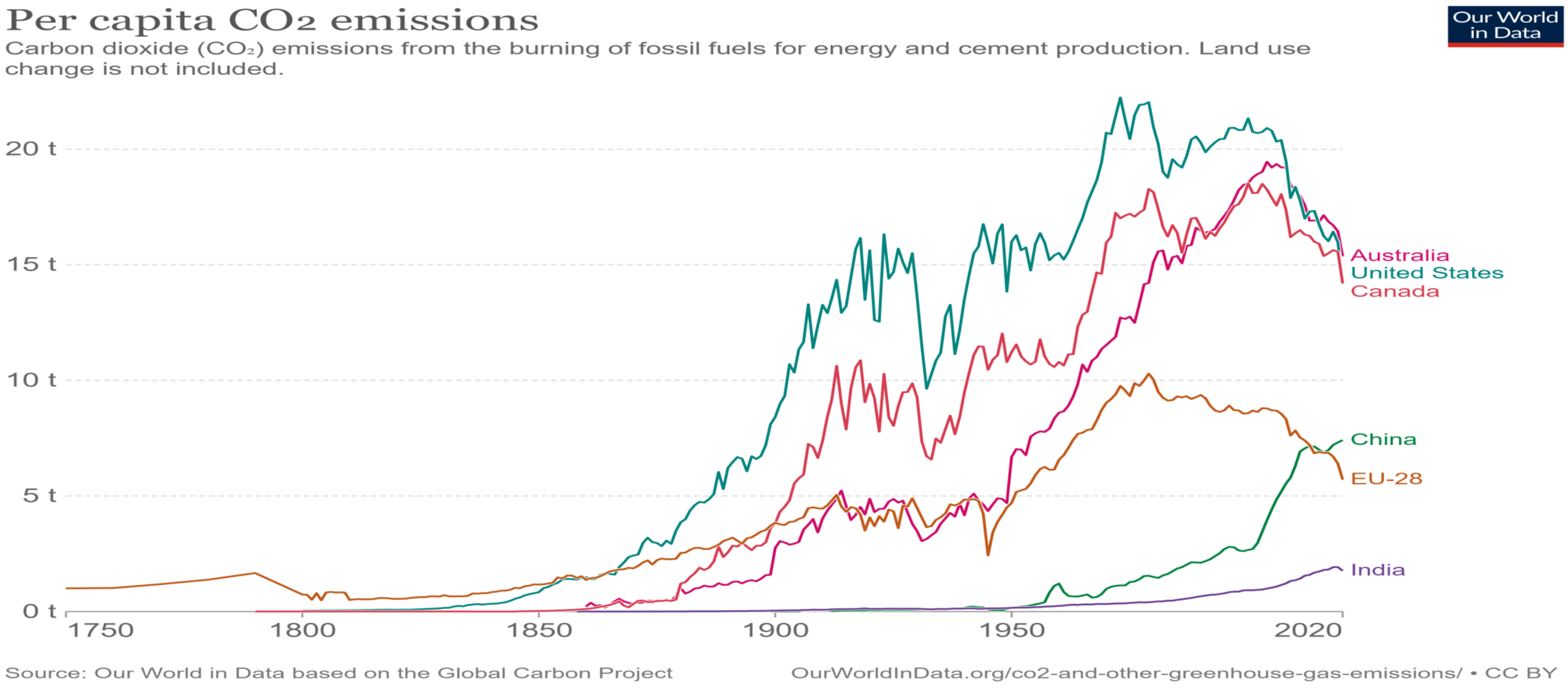


The biggest emitters are China, the US and India but several low-income developing countries have fast-growing CO_2 emissions.



Source:https://openknowledge.worldbank.org/bitstream/handle/10986/36294/9781464817700.pdf

Per capita emissions in selected countries



Drivers of emissions: the Kaya Identity

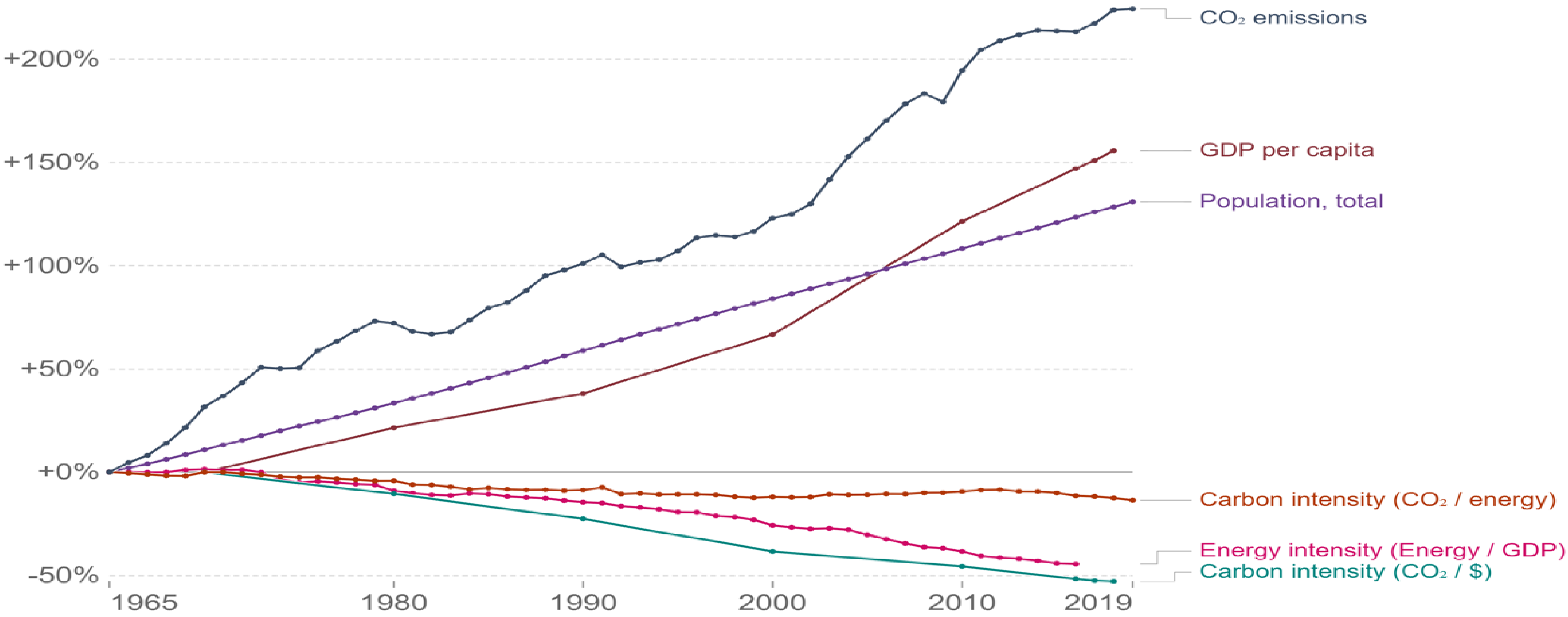
$$CO_2 \text{ Emissions} = \text{Pop.} * \frac{\text{GDP}}{\text{Pop.}} * \frac{\text{Energy}}{\text{GDP}} * \frac{CO_2}{\text{Energy}}$$

Global Population | *Economic Intensity (GDP per capita)* | *Energy Intensity* | *Carbon Intensity*

- **Population:** global number of people
- **GDP/Pop**: global GDP per capita – richer people tend to emit more CO_2
- **Energy intensity:** the amount of energy consumed per unit of GDP
- **Carbon intensity:** the amount of CO_2 emitted per unit of energy

Kaya identity: drivers of CO2 emissions

(percentage change in the four parameters of the Kaya identity)

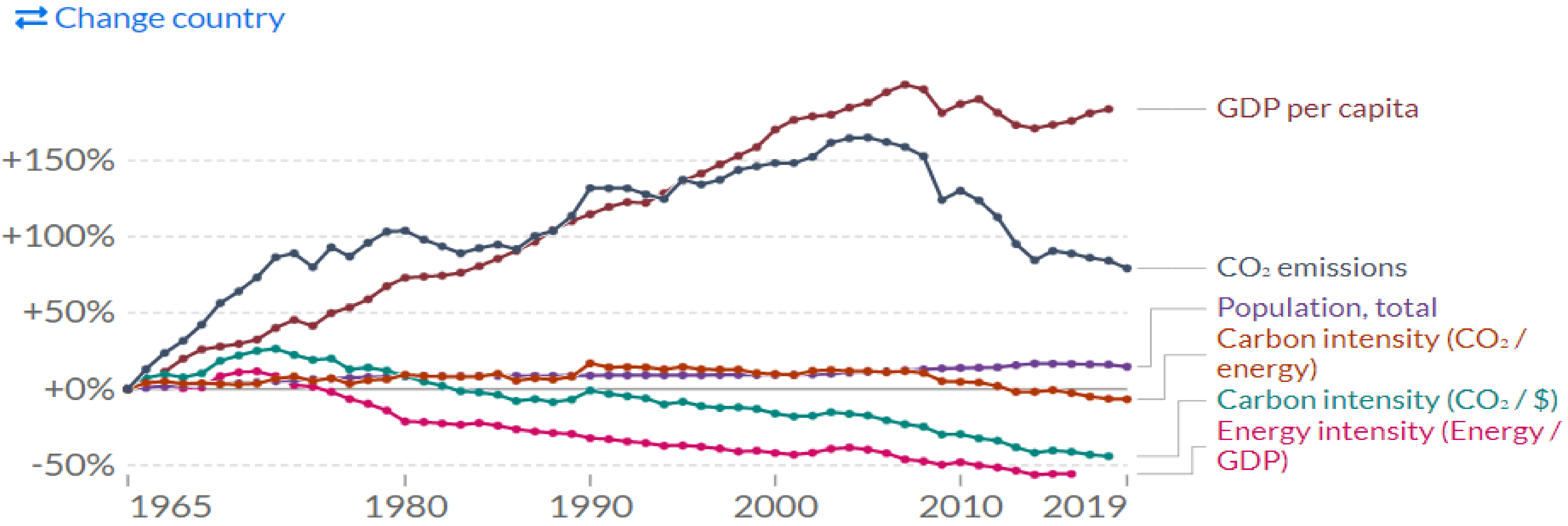


Source: Our World in Data based on Global Carbon Project; UN; BP; World Bank; Maddison Project Database
Note: GDP per capita is measured in 2011 international-$ (PPP). This adjusts for inflation and cross-country price differences.
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Kaya Identity: drivers of CO_2 emissions, Italy

Percentage change in the four parameters of the Kaya Identity, which determine total CO_2 emissions.

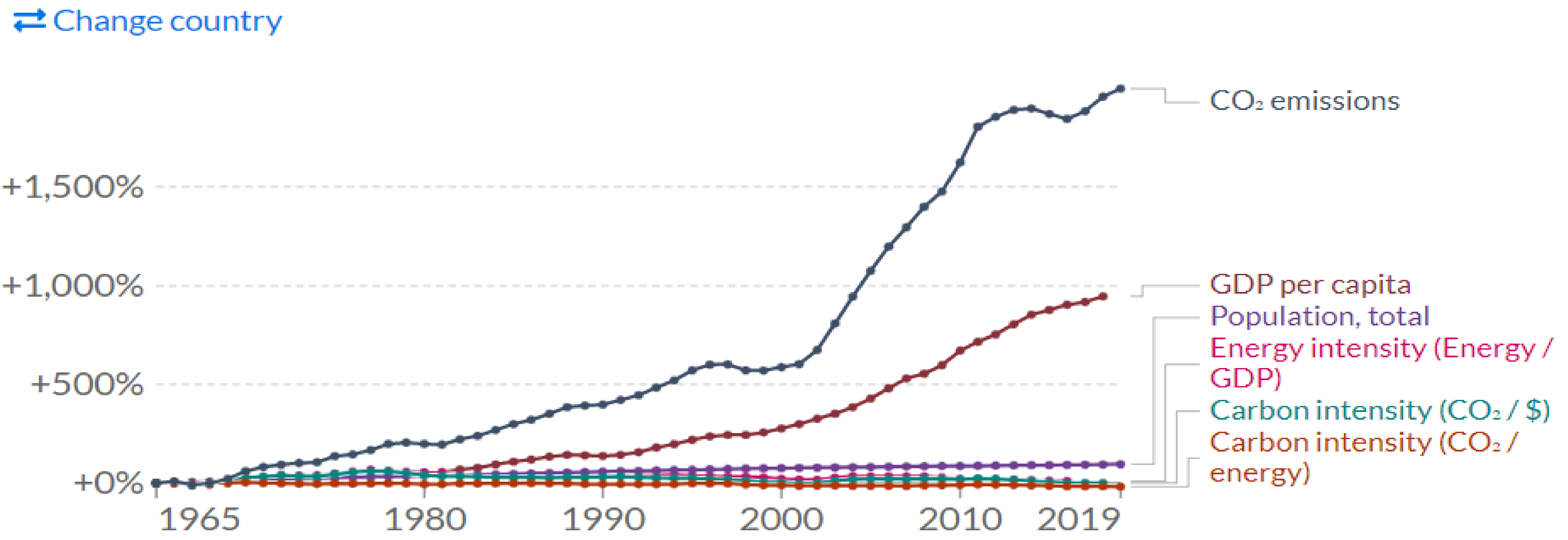
Our World in Data



Source: Our World in Data based on Global Carbon Project; UN; BP; World Bank; Maddison Project Database
Note: GDP per capita is measured in 2011 international-$ (PPP). This adjusts for inflation and cross-country price differences.
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions •

Kaya Identity: drivers of CO_2 emissions, China

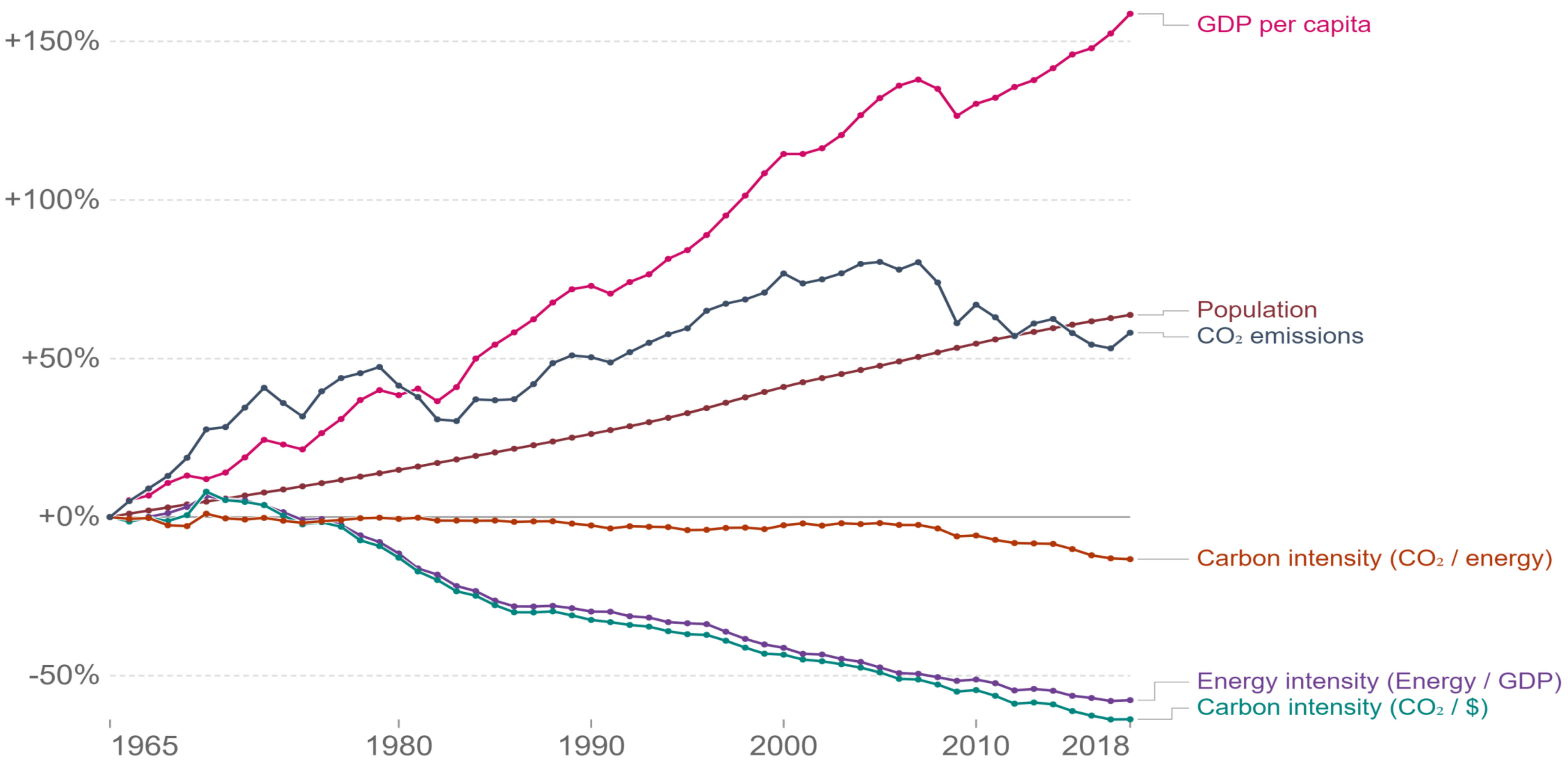
Percentage change in the four parameters of the Kaya Identity, which determine total CO_2 emissions.



Source: Our World in Data based on Global Carbon Project; UN; BP; World Bank; Maddison Project Database
Note: GDP per capita is measured in 2011 international-$ (PPP). This adjusts for inflation and cross-country price differences.

Kaya identity: drivers of CO_2 emissions, United States

Percentage change in the four parameters of the Kaya Identity, which determine total CO_2 emissions.



Source: Our World in Data based on Global Carbon Project; UN; BP; World Bank; Maddison Project Database

Note: GDP per capita is measured in 2011 international-$ (PPP). This adjusts for inflation and cross-country price differences.

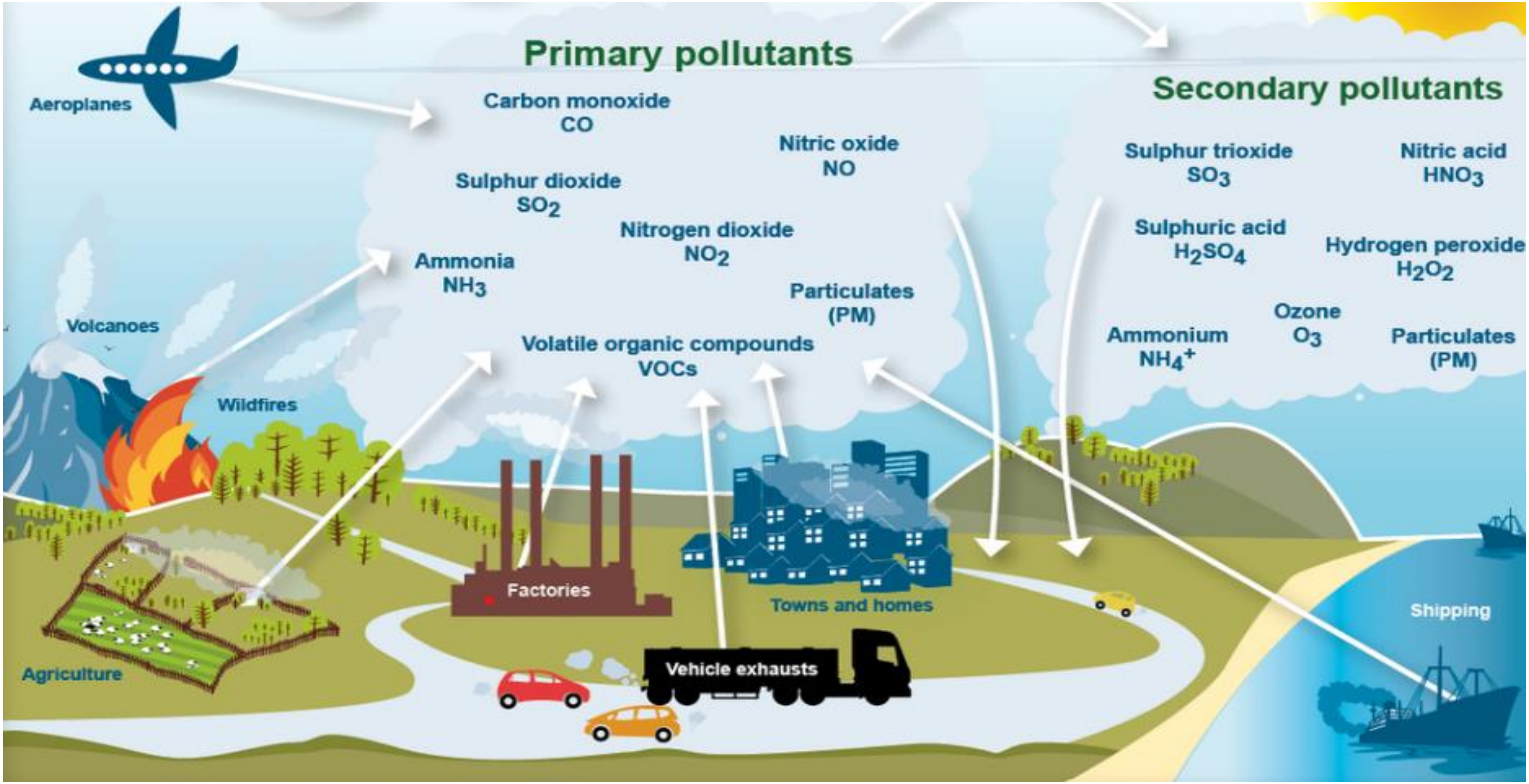
Air Pollution

Source: Tatiana Grozetskaya/Shutterstock

What is pollution?

- Pollution occurs when an amount of any substance or any form of energy is put into the environment at a rate faster than it can be dispersed or safely stored.
- Air pollution, water pollution, and land pollution are three major forms of environmental pollution. Pollution can also refer to excessive human activity, such as light and noise pollution, or to specific pollutants such as plastic or radioactive material.

Source: https://www.britannica.com/science/environmental-health



Source: https://energyeducation.ca/encyclopedia/Pollutant

Air Pollution and climate change

Impact of Pollutants on Local Human Health (through Air Pollution) and Climate Change

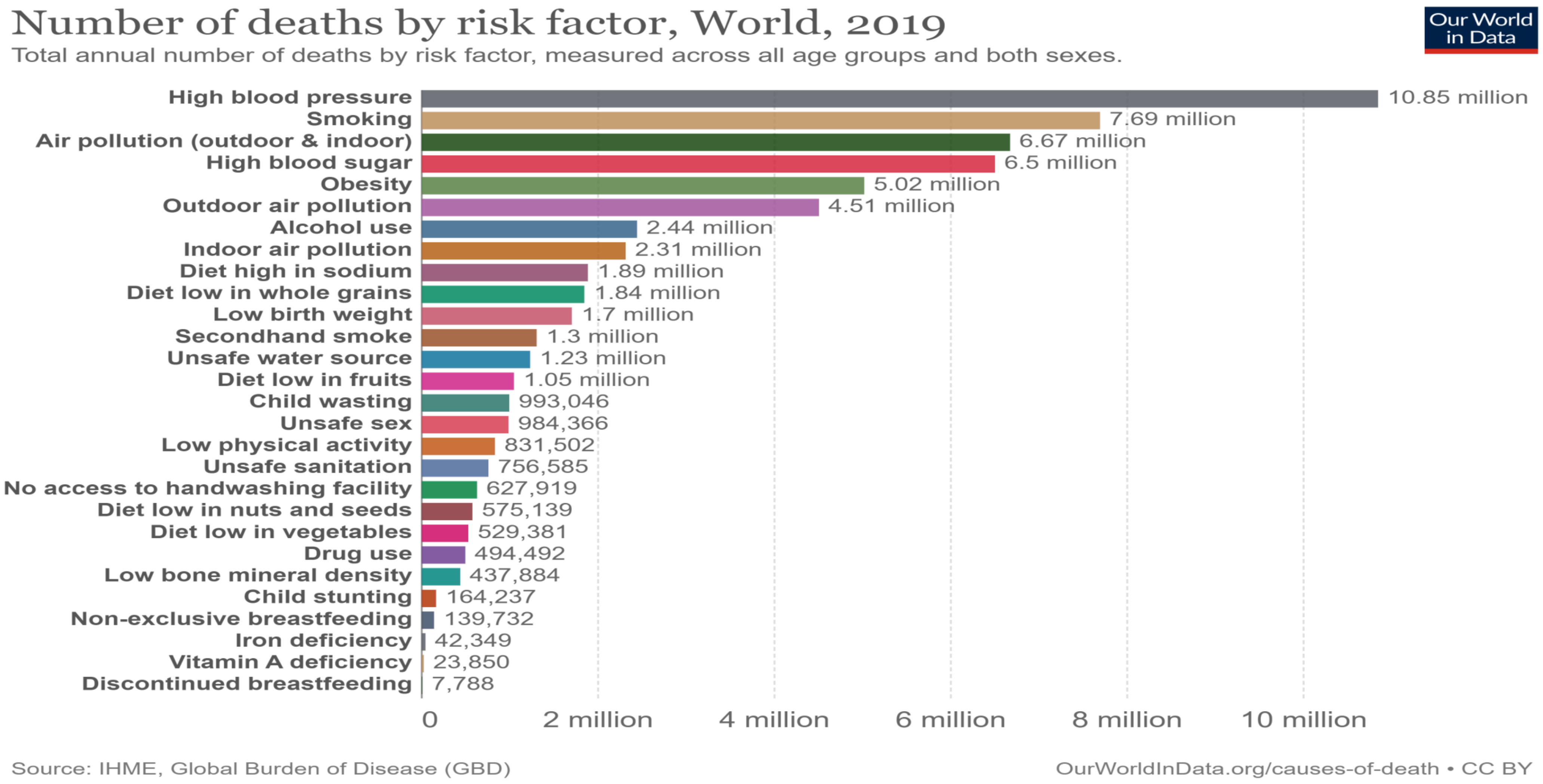
Pollutant	Local health impact	Climate-change impact	Co-benefits or discord between AP and CC
1. Black carbon (BC) – component of $PM_{2.5}$	*Harmful*	*Warming*	Air pollutants and short-term climate forcers (SLCPs)
2. Ground-level ozone (O_3)	*Harmful*	*Warming*	
3. Methane (CH_4)	*Harmful indirectly*	*Warming*	
4. Carbon monoxide (CO)	*Harmful*	*Warming*	
5. VoCs	*Harmful*	*Warming*	
6. Undifferentiated/unspecified PM_{10}, $PM_{2.5}$	*Harmful*	*Depends*	Air pollutants but climate coolants
7. Organic carbon (OC)	*Harmful*	*Cooling*	
8. Sulfur dioxide (SO_2)	*Harmful*	*Cooling*	
9. Nitrogen oxides (NO_x)	*Harmful*	*Cooling*	
10. Ammonia (NH_3)	*Harmful*	*Cooling*	
11. Secondary Inorganic aerosols (SIA)	*Harmful*	*Cooling*	
12. Heavy metals, benzo[a]pyrene, dioxins, and so on	*Harmful*	*Neutral*	
13. Carbon dioxide (CO_2)	*Neutral*	*Warming*	Long-term climate forcers, neutral for air quality
14. Chlorofluorocarbons CFCs	*Neutral*	*Warming*	
15. Hydrofluorocarbons (HFCs)	*Neutral*	*Warming*	
16. Nitrous oxide N_2O	*Neutral*	*Warming*	

Source: Grzegorz Petsko (2021), Air Pollution and Climate Change: From Co-Benefits to Policy Coherence July, World Bank Report

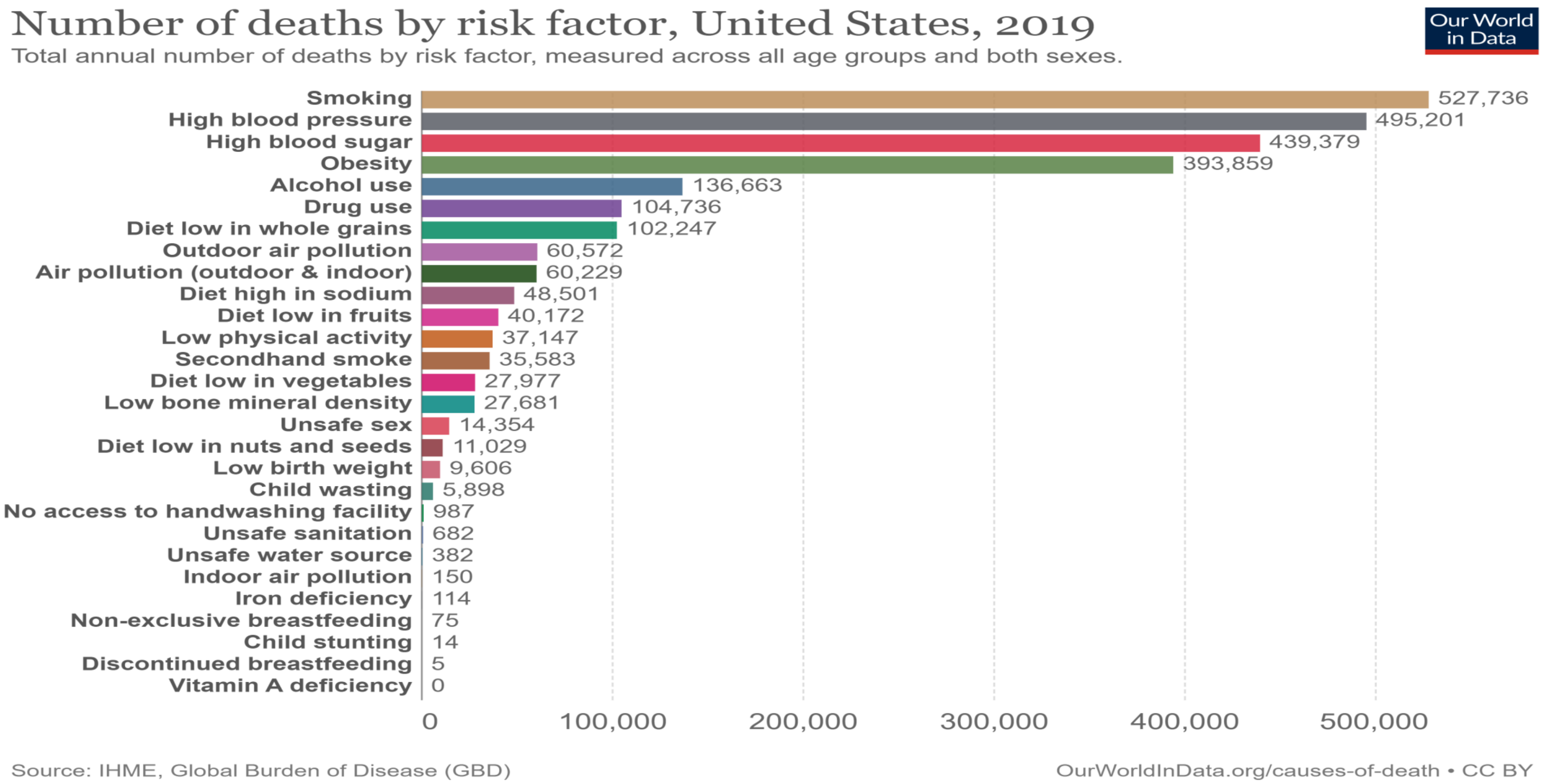
Priority measures for pollution and climate mitigation

- **Global and local pollutants are often co-emitted from the same sources**: transport, agriculture, and waste management. Measures for emissions and pollution reduction are shutting down the least-efficient obsolete plants, increasing energy efficiency, and better maintenance of polluting installations.
- **Quick reduction of CO2 emissions can be achieved by** closing large thermal industrial and power plants, decarbonizing long-distance transport, or switching to a plant-based diet.
- **Quick reduction of pollution would focus on small, dispersed emission sources**: household heating and cooking, artisanal boilers and stoves, open burning of municipal or agricultural wastes, and vehicles operating in densely populated areas.

In 2019, pollution killed 6.8 million people in the world



….including 60,572 Americans

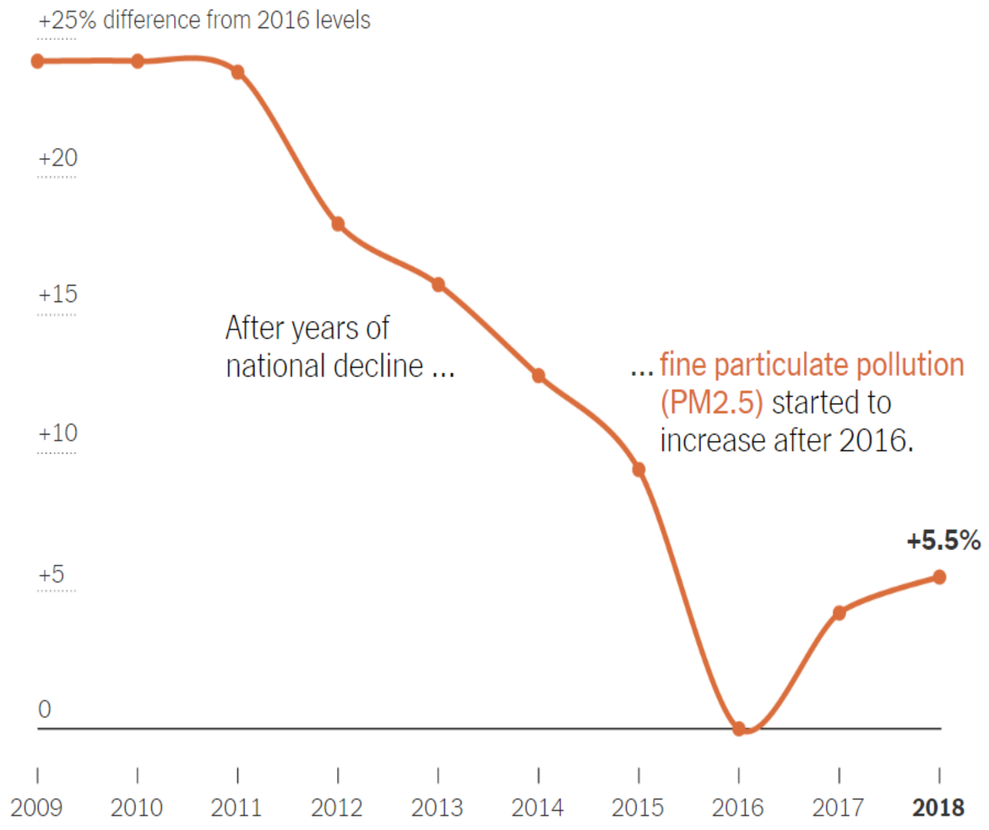


But pollution has increased during 2016-18

However, since 2016 annual average fine particulate matter (PM2.5) increased by 5.5%.

Possible causes:

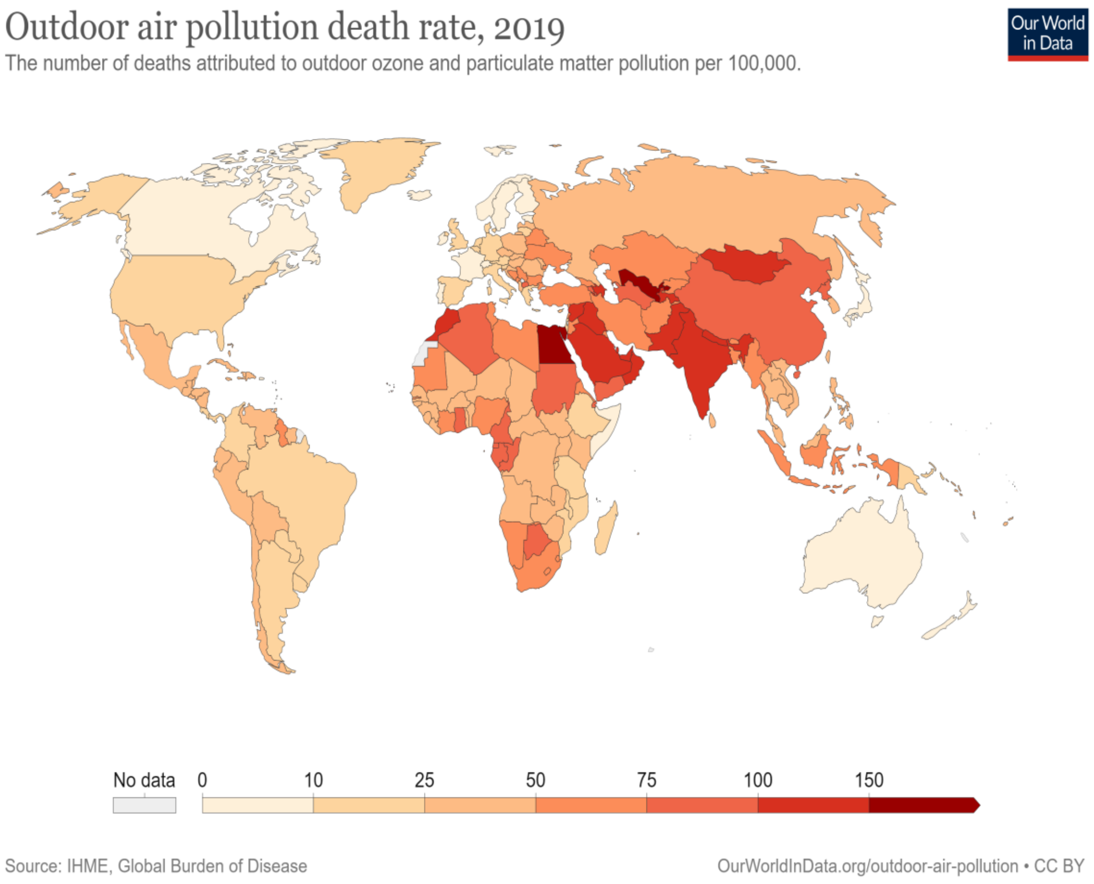
- Recent increases in driving and the burning of natural gas.
- In the West, wildfires contributed to the rise in particulate matter.
- Lack of enforcement of the Clean Air Act may have contributed to the recent rise in pollution.

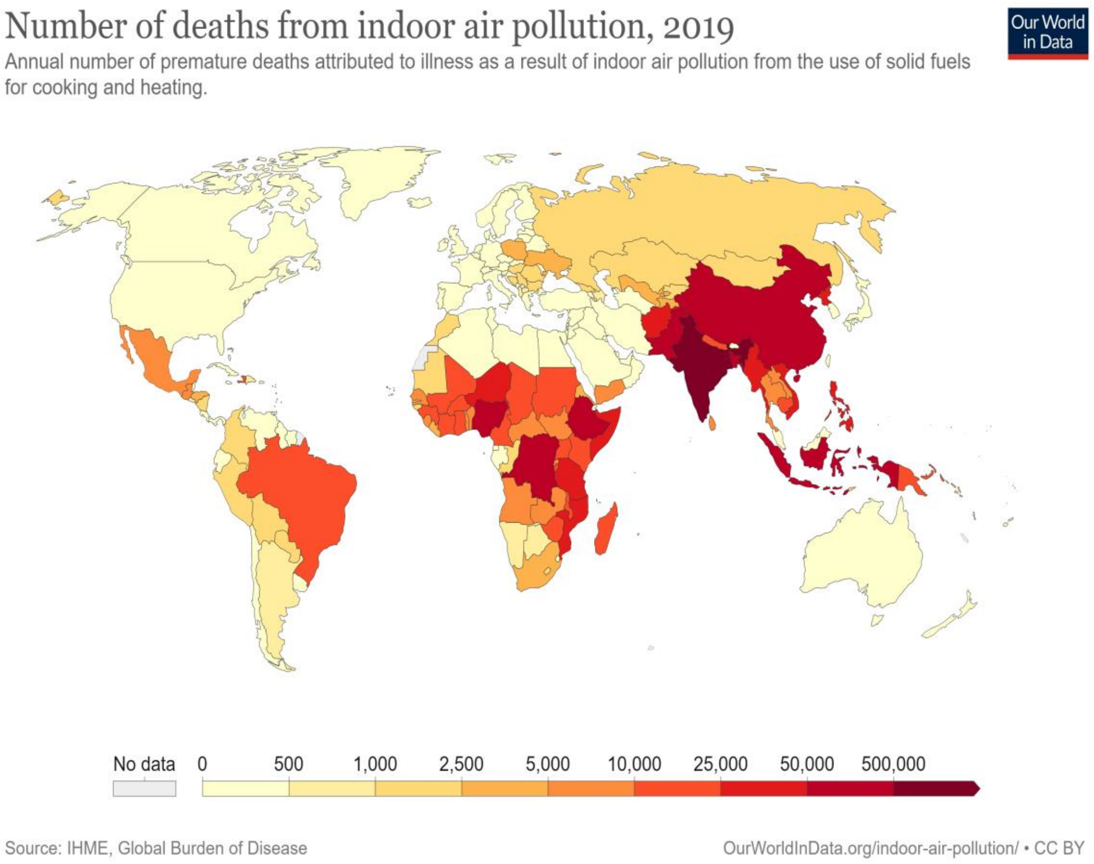


Source: National Bureau of Economic Research

Source: Karen Clay & Nicholas Z. Muller & Xiao Wang, 2021. "Recent Increases in Air Pollution: Evidence and Implications for Mortality," Review of Environmental Economics and Policy, vol 15(1), pages 154-162.

Developing countries are most affected by air pollution

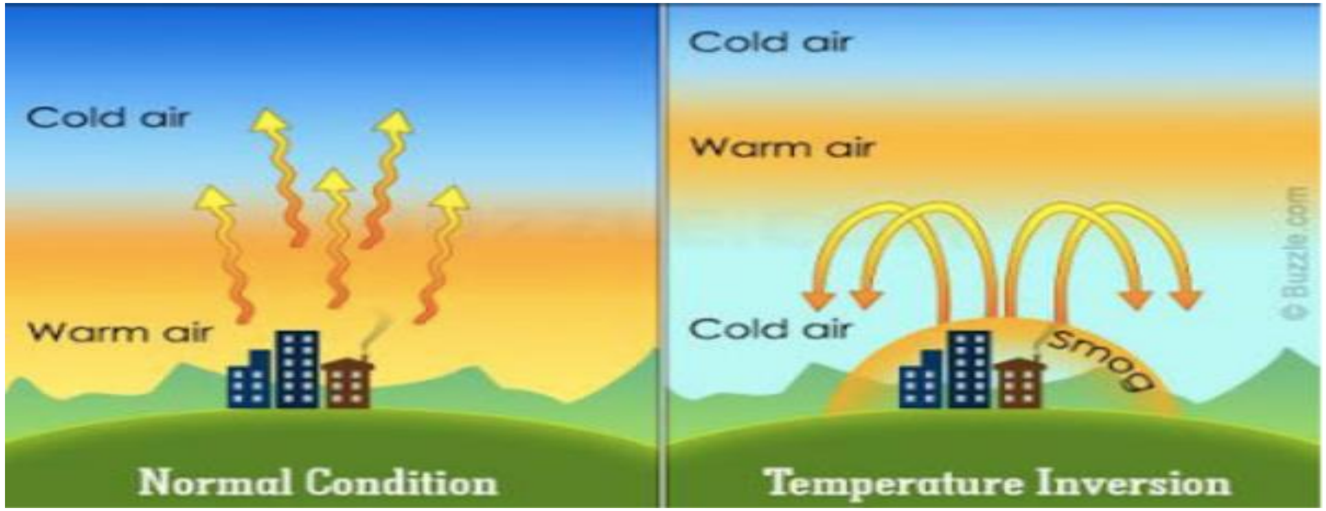




Donora smog, 1948

https://environmentthomasmertoncenter.org/2018/10/17/clean-air-started-here/

https://www.smithsonianmag.com/history/deadly-donora-smog-1948-spurred-environmental-protection-have-we-forgotten-lesson-180970533/



The great smog of London, 1952

https://www.history.com/news/the-killer-fog-that-blanketed-london-60-years-ago

Photo: Carl Mydans/the Life Picture Collection/getty Images. https://www.amusingplanet.com/2021/02/the-great-smog-of-1952.html

Contribution of the US embassy to curbing pollution in China.

https://4.bp.blogspot.com/-B5mY2kusbaM/WruMheJ4DyI/AAAAAAAAaXA/RDtegT4qQzUcbzZEo14N9DF1eulCrUqtgCLcBGAs/w1200-h630-p-k-no-nu/embassy-beijing-twitter.png

Buildings in Lianyungang, China,
are shrouded in smog on Dec. 8, 2013

https://shipandshore.com/economy-behind-clean-air/

The Clean Air Act

https://www.epa.gov/sites/default/files/2015-07/documents/summaryreport.pdf

https://www.epa.gov/sites/default/files/2015-07/documents/graphicsstack.pdf

The Clean Air Act, 1970

- **The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for six principal pollutants** (criteria air pollutants) which can be harmful to public health and the environment. EPA and States identified nonattainment areas (where standards were exceeded) and attainement area. States expected to prepare Implementation Plans (SIPs) to achieve the standards. It identifies two types of national ambient air quality standards:
  - Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly.
  - Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.
- **National Emission Standards for Hazardous Pollutants (NESHAPS)**: For pollutants causing mortality, severe illness. Initially, for asbestos, beryllium, mercury. List expanded in 1984.

- **Control of automobile emissions**: Required 90% reduction HCs, CO(g) by 1975 and NOx by 1979.

See: Clean Air Act: A Summary of the Act and Its Major Requirements Updated September 13, 2022, Congressional Research Service https://crsreports.congress.gov RL30853 https://sgp.fas.org/crs/misc/RL30853.pdf

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 μg/m³ [(1)]	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb [(2)]	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm [(3)]	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 μg/m³	annual mean, averaged over 3 years
		secondary	1 year	15.0 μg/m³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 μg/m³	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 μg/m³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb [(4)]	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

1990 Amendments to the Clean Air Act of 1970

- **Established tighter pollution standards for emissions from automobiles and trucks, to** reduce tailpipe emissions of hydrocarbons, carbon monoxide, and nitrogen oxides on a phased-in basis beginning in model year 1994
- **Introduced a nationwide approach to reduce acid pollution** by reducing emissions of sulfur dioxide (SO2) and oxides of nitrogen (NOx). A "cap and trade" system for SOx and NOx was created. Other similar operating permit programs that regulate various air pollutants were also established.
- Set requirements for the banning of chlorofluorocarbons and halons to **stop the depletion of earth' s ozone layer** and to comply with the Montreal Protocol.

In 1997, EPA issued the Benefits and Costs of the Clean Air Act 1970 to 1990: Retrospective study, following completion of a six-year process of study development and outside expert review. - In 1999, EPA issued the Benefits and Costs of the Clean Air Act, 1990 to 2010: First prospective study . Both studies found that the benefits of the programs and standards required by the 1990 Clean Air Act Amendments significantly exceeded costs.

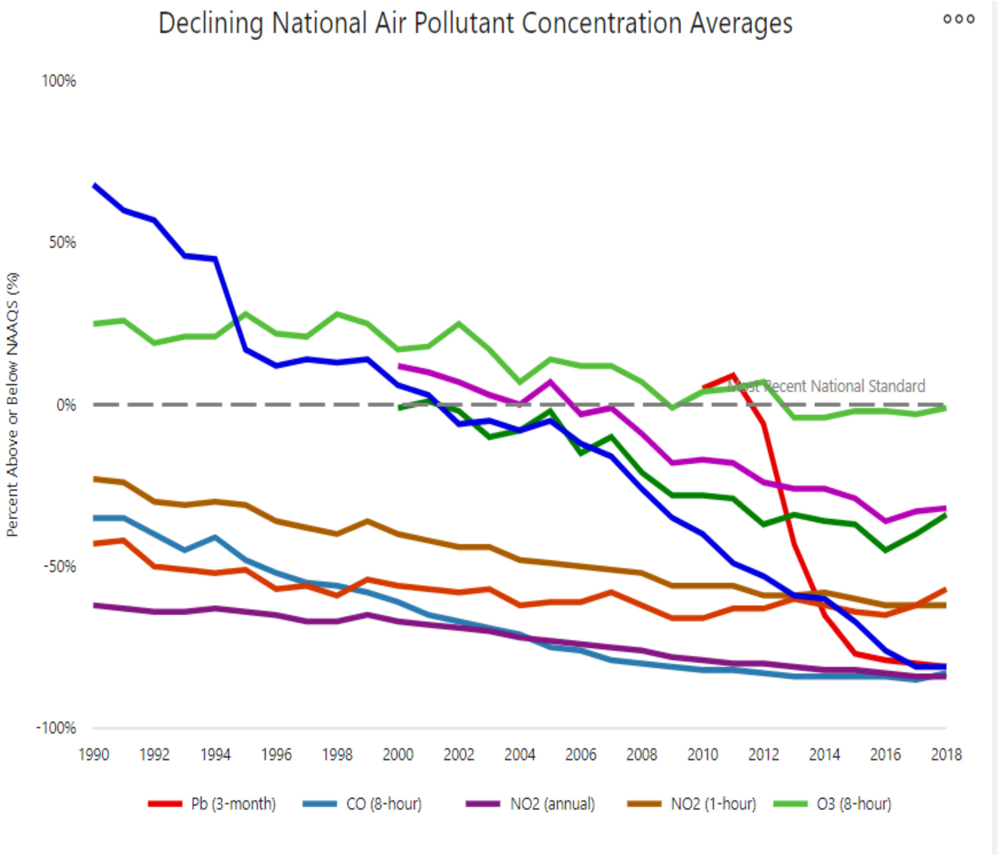
In 2011 EPA issued the Benefits and Costs of the Clean Air Act, 1990 to 2020: Second prospective study.

Source: https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act#milestones

Clean Air accomplishments

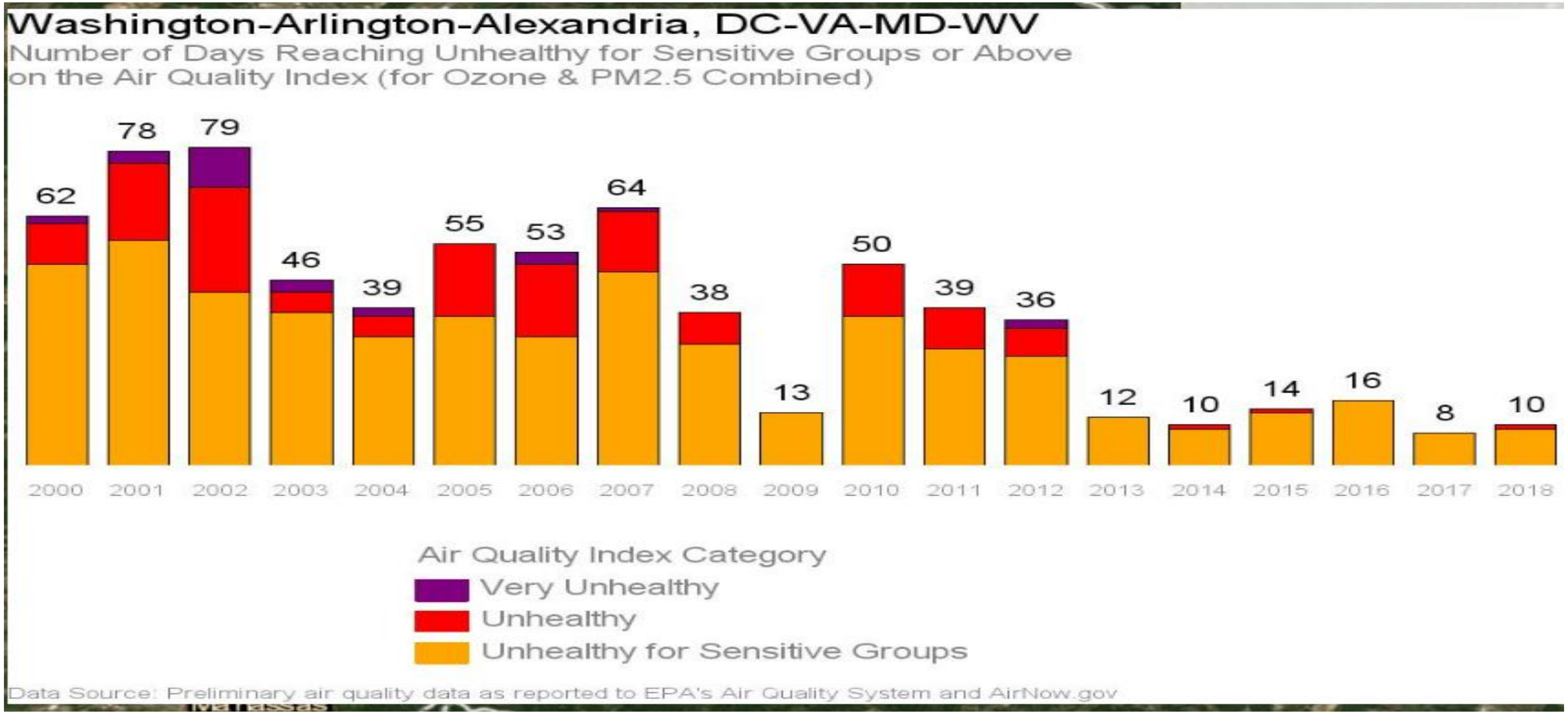
Concentrations of air pollutants have dropped significantly 1990-2018:

- Carbon Monoxide (CO) 8-Hour: - 74%
- Lead (Pb) 3-Month Average: - 82% (from 2010)
- Nitrogen Dioxide (NO_2) Annual: - 57%
- Nitrogen Dioxide (NO_2) 1-Hour: - 50%
- Ozone (O_3) 8-Hour: - 21%
- Particulate Matter 10 microns (PM_{10}) 24-Hour: - 26%
- Particulate Matter 2.5 microns ($PM_{2.5}$Annual: 39% (from 2000).
- Particulate Matter 2.5 microns ($PM_{2.5}$) 2-Hour: -34% (from 2000)
- Sulfur Dioxide (SO_2) 1-Hour : - 89%
- Numerous air toxics have declined with percentages varying by pollutant



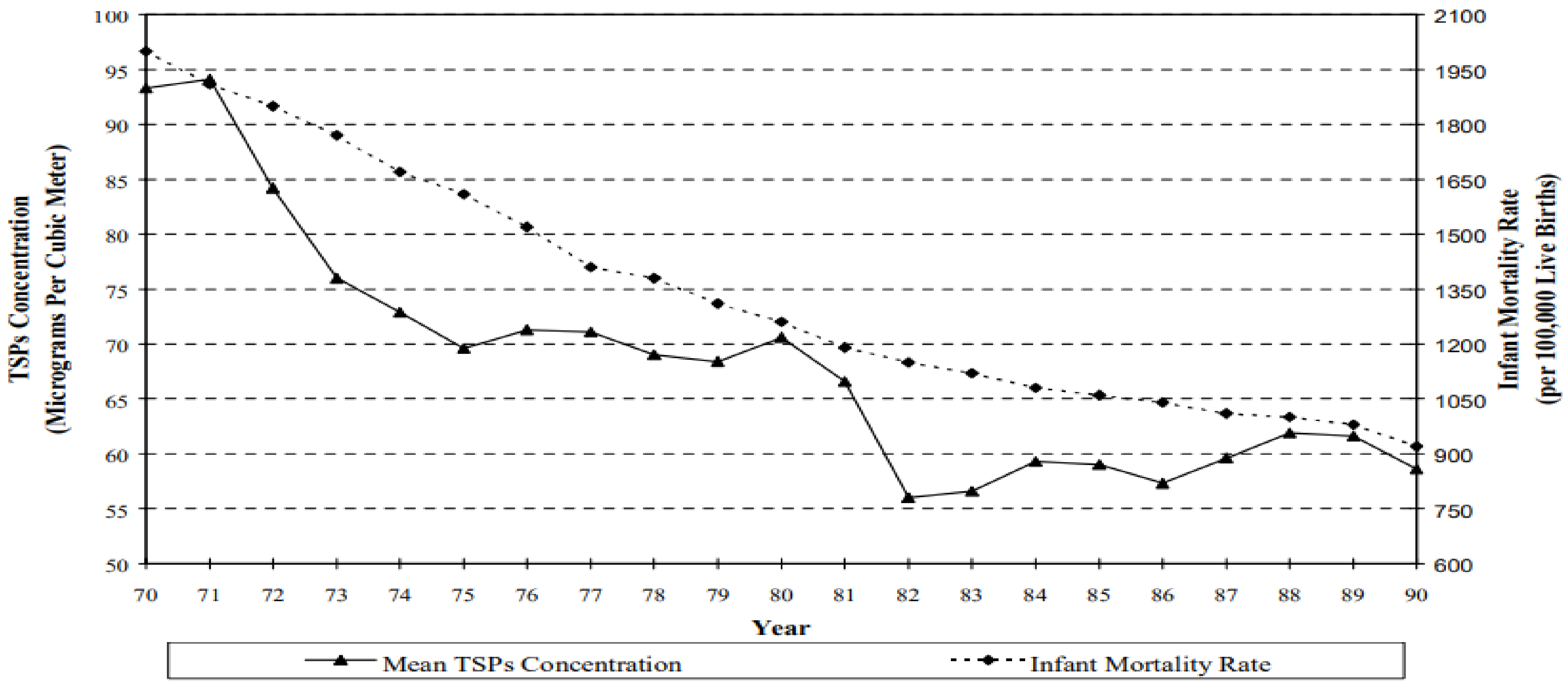
Source: https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-report-documents-and-graphics

Air quality improvements in Washington DC



https://gispub.epa.gov/air/trendsreport/2019/#home

National Trends in Total Suspended Particulates Air Pollution and Infant Mortality Rates



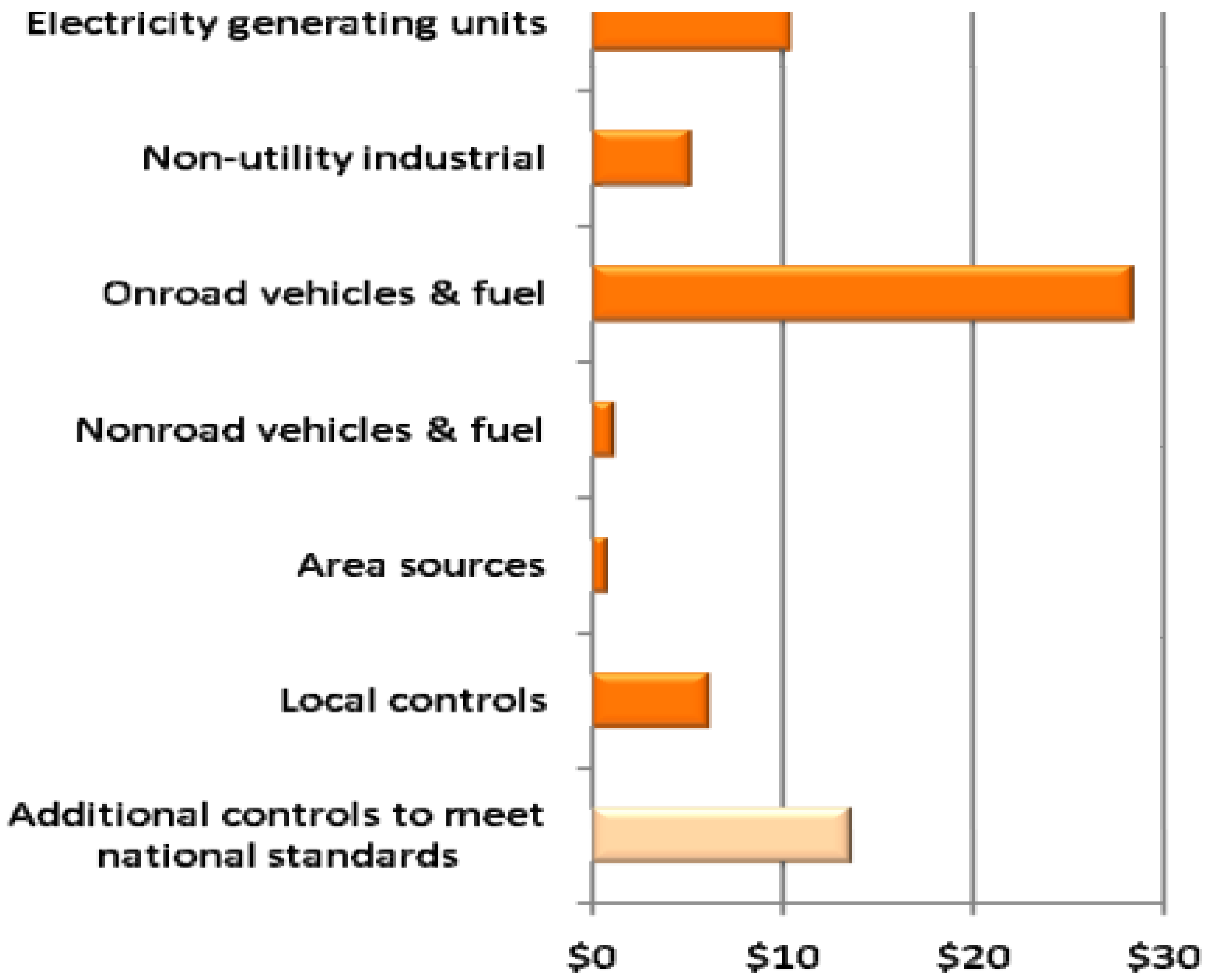
Source: Authors' tabulations from EPA's "Quick Look Reports" data file and U.S. National Center for Health Statistics.

K. Chay ,M. Greenstone Air Quality, infant mortality and the clean Air Act of 1970, NBR, Working Paper 10053 http://www.nber.org/papers/w10053

Year 2020 direct compliance costs by source category (In billions of year 2006 value dollars)

The five darker orange bars show how compliance costs compare for the five major categories of emissions source.

The lighter orange bar also reflects additional local controls

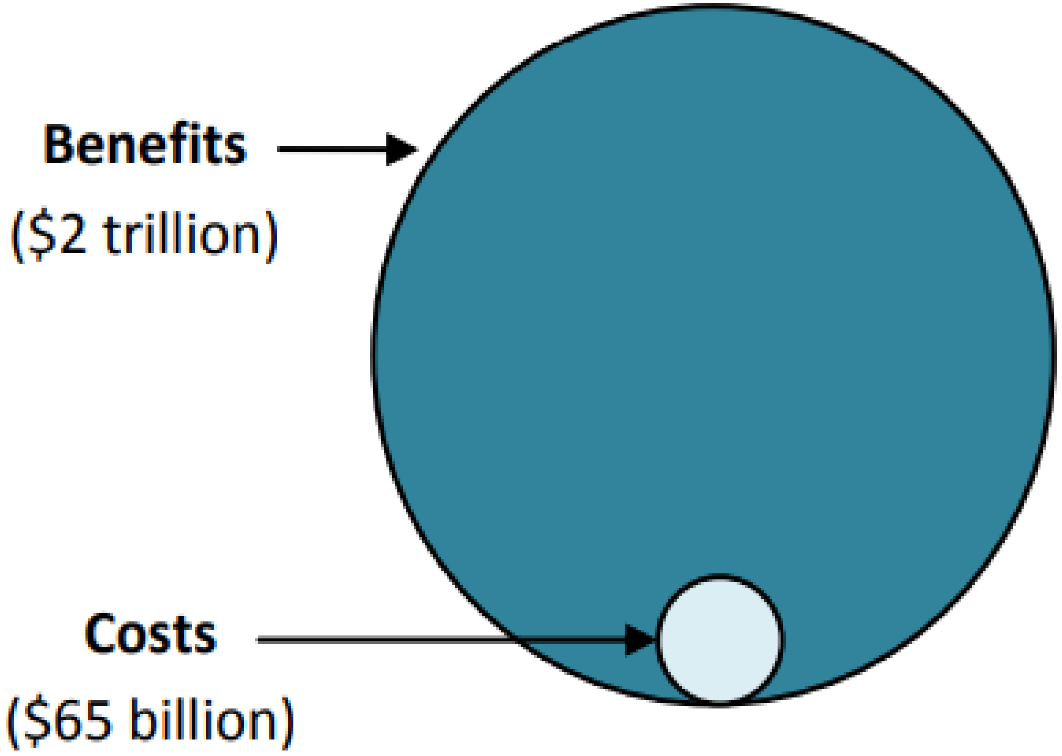


Source: https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-report-documents-and-graphics

The direct benefits of the 1990 Clean Air Act Amendments significantly exceeded the costs

230,000 deaths early deaths prevented by 2020

	Year 2010 (cases)	Year 2020 (cases)
Adult Mortality - particles	160,000	230,000
Infant Mortality - particles	230	280
Mortality - ozone	4,300	7,100
Chronic Bronchitis	54,000	75,000
Acute Myocardial Infarction	130,000	200,000
Asthma Exacerbation	1,700,000	2,400,000
Emergency Room Visits	86,000	120,000
School Loss Days	3,200,000	5,400,000
Lost Work Days	13,000,000	17,000,000



Source: https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-report-documents-and-graphics

Results of the EPA Prospective Study (2011)

The study projects the costs and benefits associated with the 1990 amendments to the Clean Air Act between 1990 and 2020.

- The benefits of the Clean Air Act (CAA) Amendments of 1990 reach approximately $2.0 trillion in 2020.
- These benefits will be achieved as a result of CAA Amendment-related programs and regulatory compliance actions costing an estimated $65 billion in 2020.

Outcomes by 2020:

- **230,000 fewer deaths** associated with exposure to PM and ozone than the alternative scenario.
- **Nonfatal heart attacks are projected to drop by 200,000,** 17 million fewer days of work will be missed, and emergency room visits related to asthma are projected to drop by 120,000 thanks to reduced exposure to pollutants.
- The majority of benefits are generated by reduced cardiac mortality associated with reductions in particulate matter pollution emissions.

Source: https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-report-documents-and-graphics

The Clean Air Act vs the Supreme Court (1)

2001: Whitman v. American Trucking

- **Several Industry groups challenged the** revised 1997 Ozone National Ambient Air Quality Standards, questioning the **EPA's constitutional ability to issue National Ambient Air Quality Standards under Sections** 108 & 109 of the Clean Air Act, but also arguing that the EPA should take economic costs into account when formulating its standards.

- The D.C. Circuit Court of Appeals sided with the groups and ruled that the EPA's interpretation involved an unconstitutional delegation of legislative power since it provided no intelligible principle to guide the agency's actions.
- The **Supreme Court** ruled unanimously that section 109(b)(1) of the Clean Air Act **did not represent an unconstitutional delegation of legislative power**. The text of §109(b), ………**unambiguously bars cost considerations from the NAAQS-setting process**, and thus ends the matter for us as well as the EPA. Further, it requires EPA to set standards "requisite to protect the public health," "allowing an adequate margin of safety."

The Clean Air Act vs the Supreme Court (2)

- 2007. Massachusetts v. EPA. Massachusetts and other states asked the **EPA to regulate emissions of carbon dioxide and other gases from new motor vehicles**. The EPA first denied the petition claiming that the Clean Air Act does not explicitly authorize the Agency to regulate greenhouse gas emissions, rather, it asks the agency to regulate pollutants that “endanger human health.” In 2007, the Supreme Court ordered the E.P.A. to determine whether carbon dioxide fit that description, and in 2009, the agency concluded that it did.
- 2022. West Virginia v. Environmental Protection Agency. The Trump administration repealed the 2015 Clean Power Plan, which established guidelines for states to limit carbon dioxide emissions from power plants, and issued in its place the Affordable Clean Energy Rule. However, the U.S. Court of Appeals for the D.C. Circuit vacated the ACE Rule as arbitrary. Then the **North American Coal Corporation, challenged the EPA’s authority to regulate greenhouse gas emissions**. The supreme court agreed with the Coal corporation that the U.S. Court of Appeals for the DC Circuit was wrong when it interpreted the Clean Air Act to give the EPA expansive power over carbon emissions. **It concluded that the EPA cannot put state-level caps on carbon emissions under the 1970 Clean Air Act.** The authority to decide how power is created in the U.S. must come from Congress.
  - The **Inflation Reduction Act** amends the Clean Air Act to define several greenhouse gases as air pollutants. So it will help the EPA as it plans future regulations. But it doesn’t specifically grant the EPA new authority to regulate power plants.

Source: Massachusetts v. Environmental Protection Agency." Oyez, www.oyez.org/cases/2006/05-1120. Accessed 18 Sep. 2022; 20-1530 West Virginia v. EPA (06/30/2022) (supremecourt.gov)

Issues for discussion

- Do you think the Clean Air Act is the most powerful environmental law in the world?
- Does the Inflation Reduction Act change the impact of the Supreme Court’s determination in West Virginia v. EPA?

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