

# Hogyan fenyegeti az éghajlatváltozás a civilizációnkat és miért nem tudunk ellene hatékonyan fellépni?



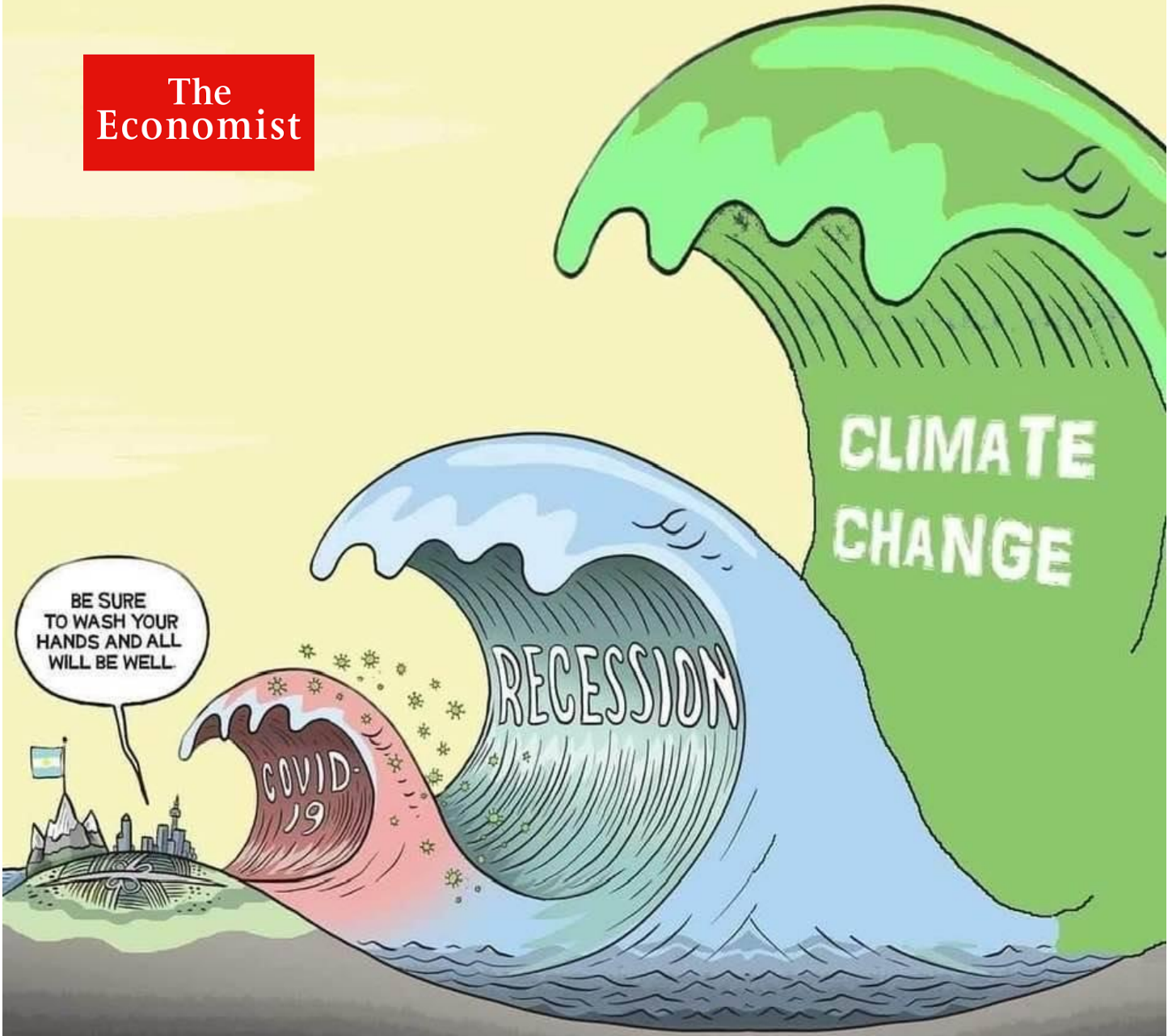
**Ürge-Vorsatz Diana**

*Department of Environmental Sciences and Policy*

*Central European University*

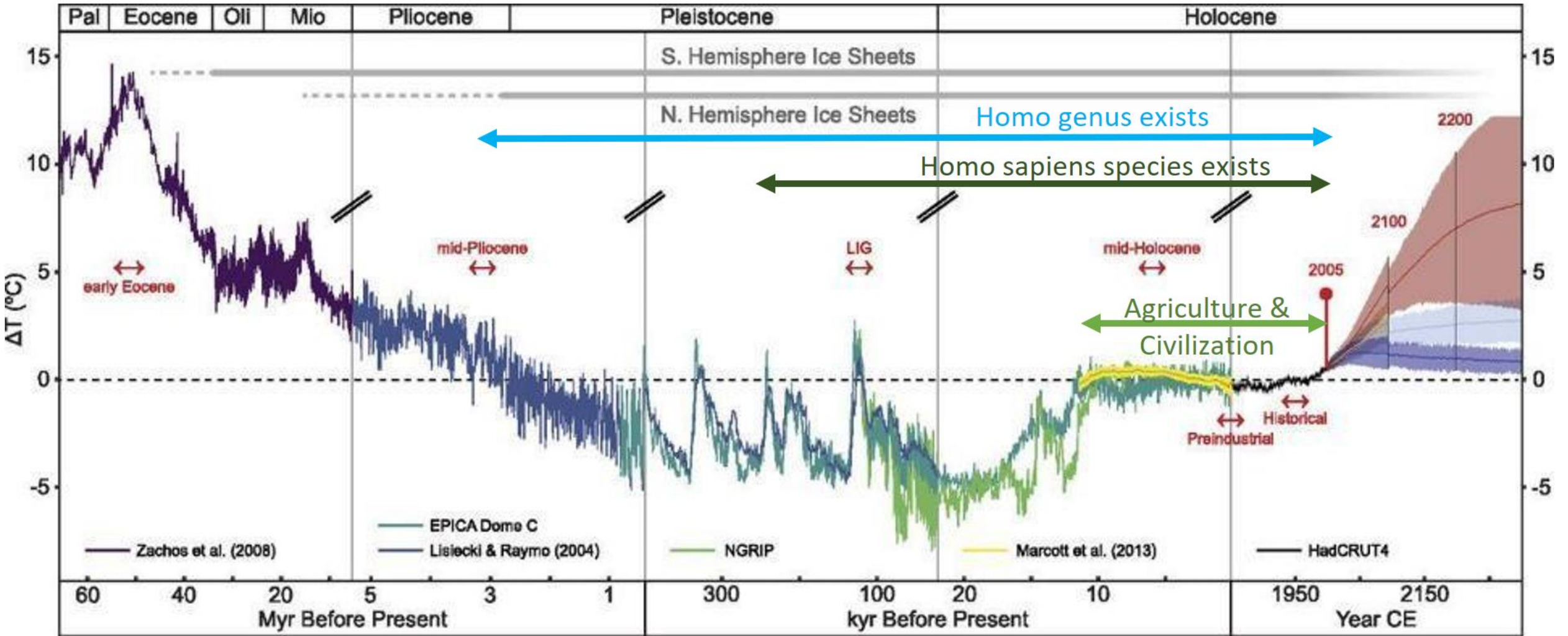
*Vice Chair, WGIII, IPCC*

The Economist





# Temperature trends for the past 65 Ma and potential geohistorical analogs for future climates



Pliocene and Eocene provide best analogs for near-future climates

K. D. Burke, et al PNAS Dec 2018, 115 (52)

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**IF BEES GO EXTINCT**



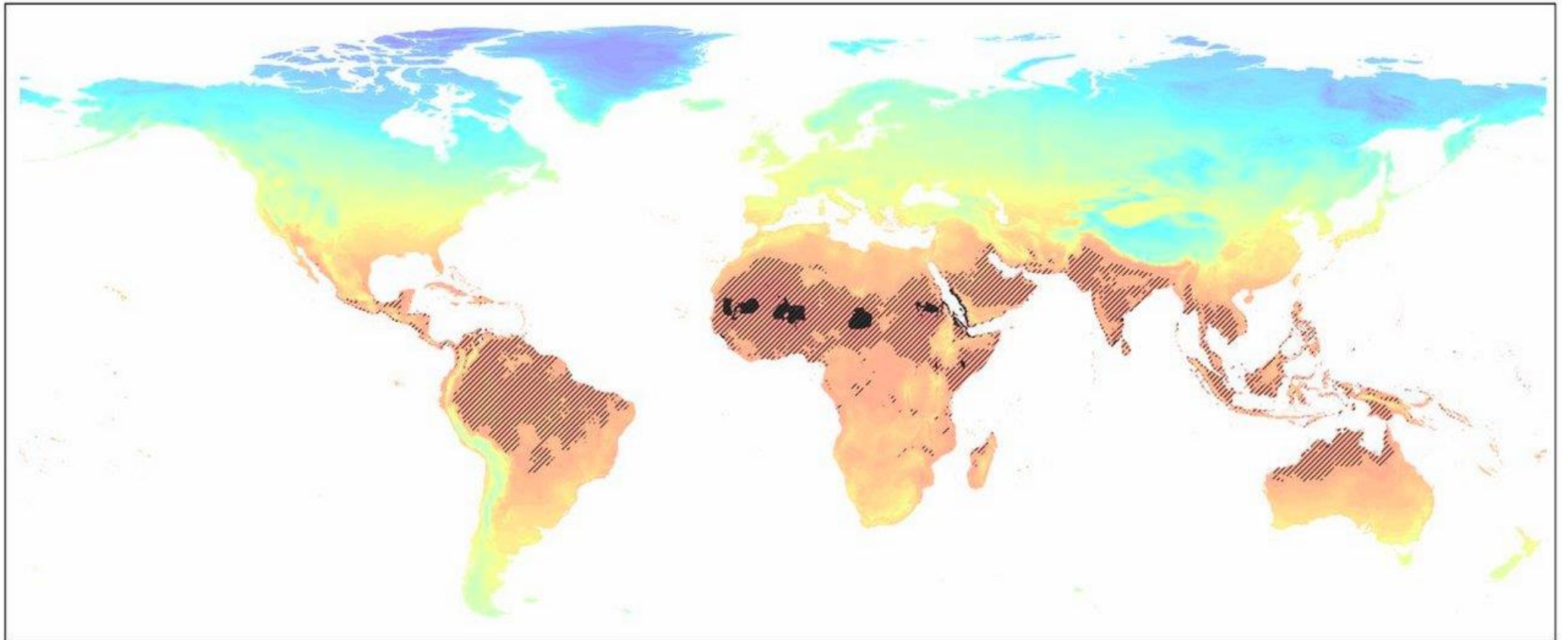




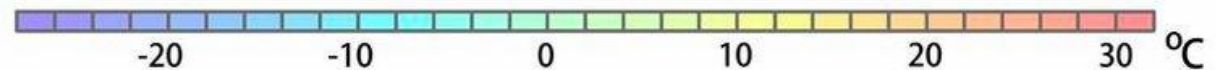


# The future of the human climate niche

- ❖ In a high-emissions scenario, 3.5 bn people on 19% of the globe (shaded area) in 2070 will experience temperatures currently only seen in the Sahara (black zone). Much of humanity's habitable climate will have gone.
- ❖ Future of the human climate niche Chi Xu, Timothy A. Kohler, Timothy M. Lenton, Jens-Christian Svenning, Marten Scheffer. Proceedings of the National Academy of Sciences May 2020, 201910114; DOI: 10.1073/pnas.1910114117



Mean annual temperature

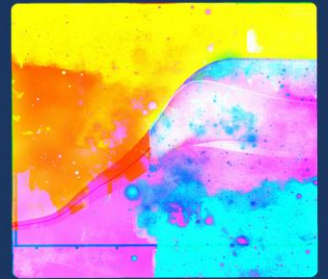


*“...a globális átlaghőmérséklet emelkedését jóval az iparosodás előtti átlaghőmérsékletnél 2 °C-kal magasabb hőmérsékletszint alatt tartva; egyúttal arra törekedve, hogy a hőmérsékletemelkedés az iparosodás előtti átlaghőmérséklet feletti 1,5 °C mértékre korlátozódjon”*

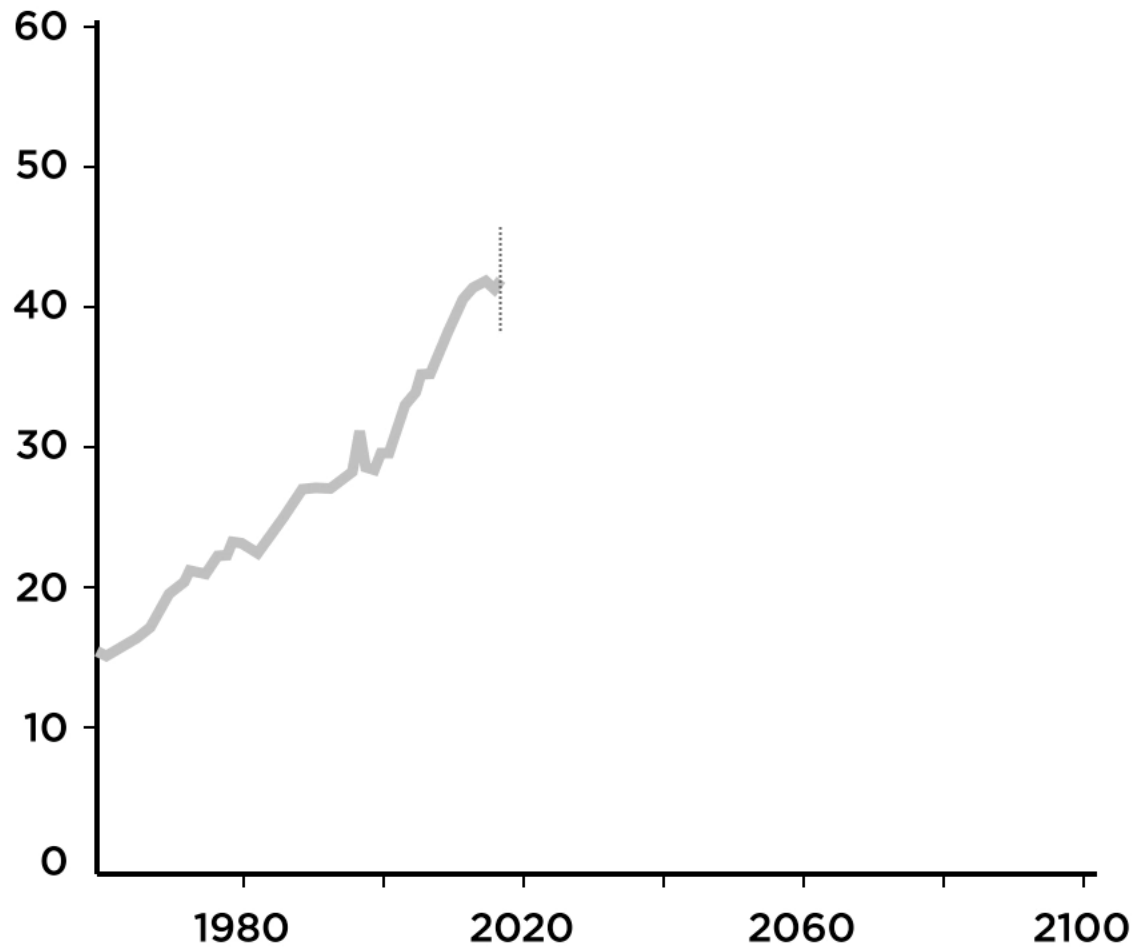


# Global Warming of 1.5°C

An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

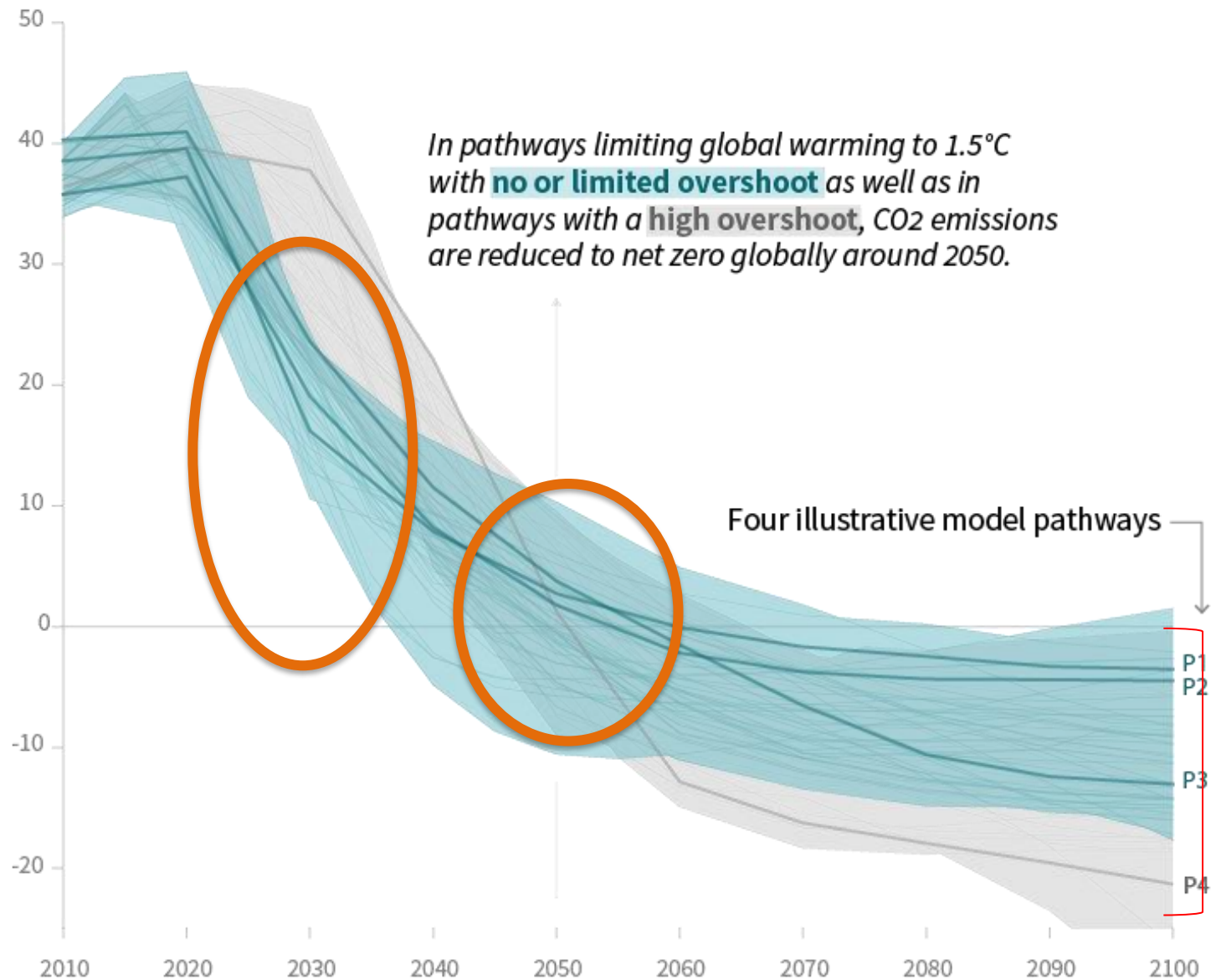






# Global total net CO<sub>2</sub> emissions

Billion tonnes of CO<sub>2</sub>/yr

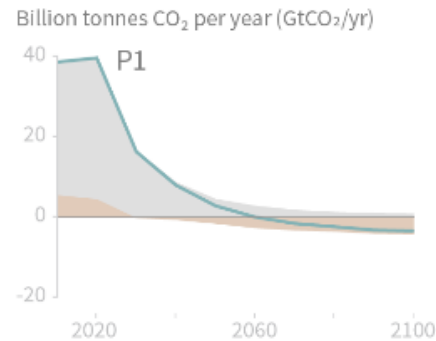




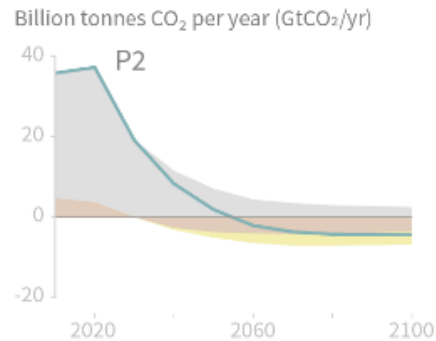
# Characteristics of four illustrative model pathways

## Breakdown of contributions to global net CO<sub>2</sub> emissions in four illustrative model pathways

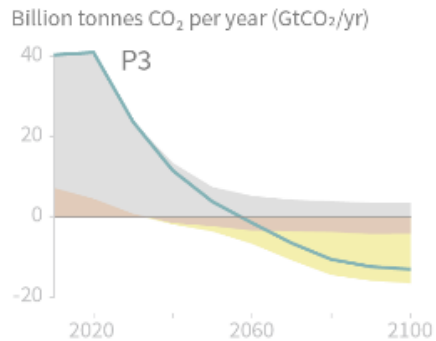
● Fossil fuel and industry ● AFOLU ● BECCS



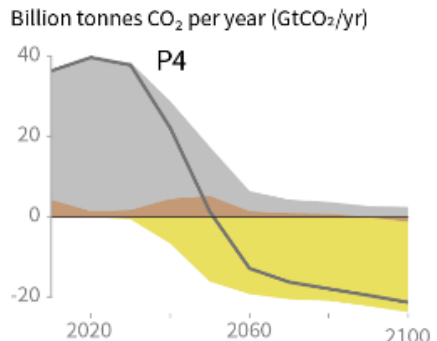
**P1:** A scenario in which social, business and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. A downsized energy system enables rapid decarbonization of energy supply. Afforestation is the only CDR option considered; neither fossil fuels with CCS nor BECCS are used.



**P2:** A scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS.



**P3:** A middle-of-the-road scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

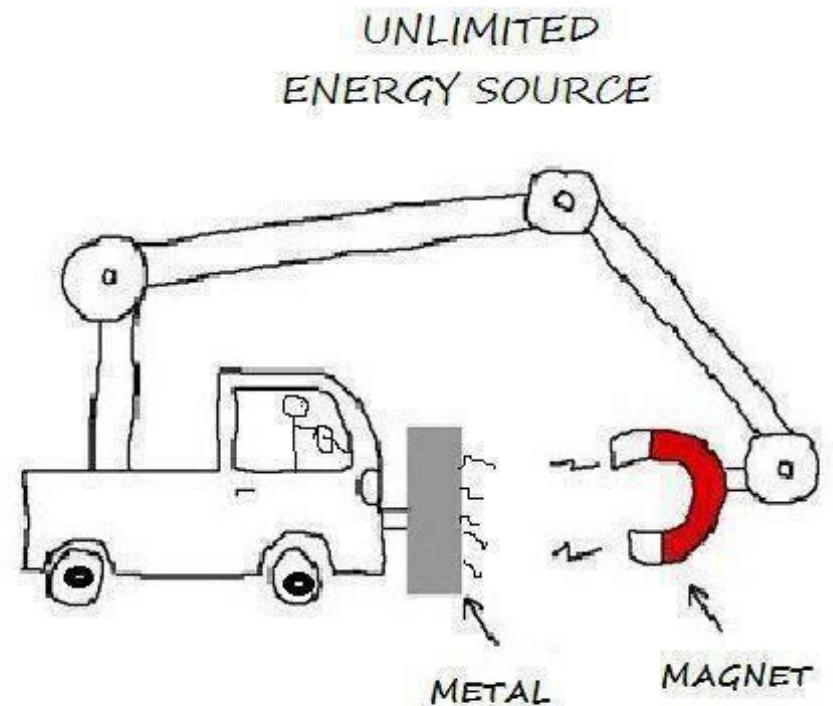
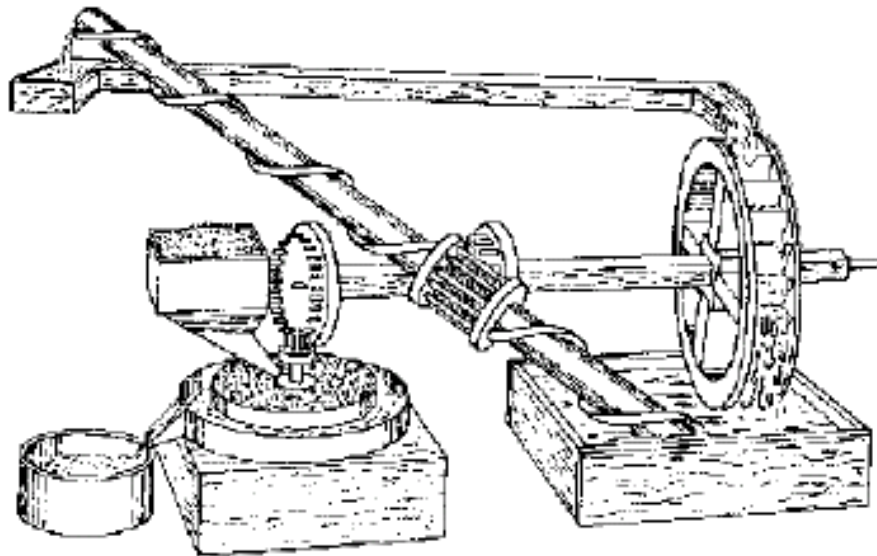


**P4:** A resource- and energy-intensive scenario in which economic growth and globalization lead to widespread adoption of greenhouse-gas-intensive lifestyles, including high demand for transportation fuels and livestock products. Emissions reductions are mainly achieved through technological means, making strong use of CDR through the deployment of BECCS.



# The magic invention

- ❖ Takes CO<sub>2</sub> out of the atmosphere
- ❖ It builds itself
- ❖ Its cost nears zero

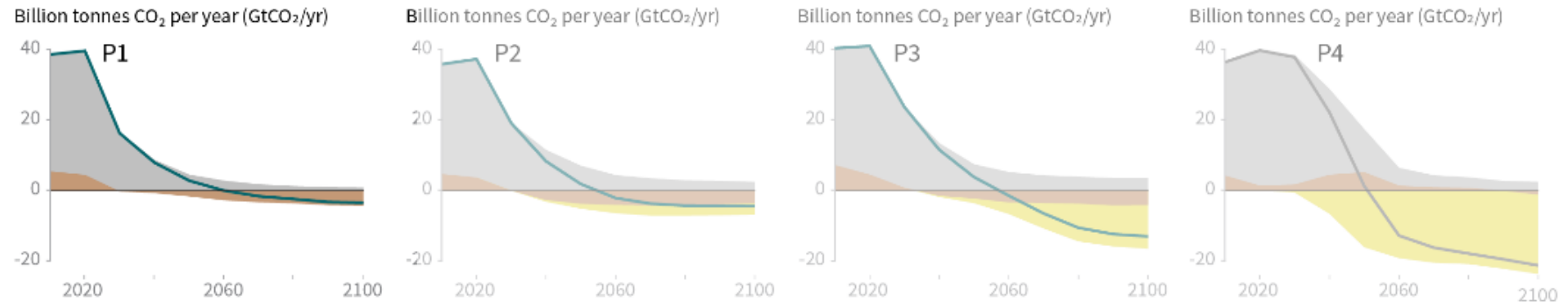




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● Fossil fuel and industry ● AFOLU ● BECCS



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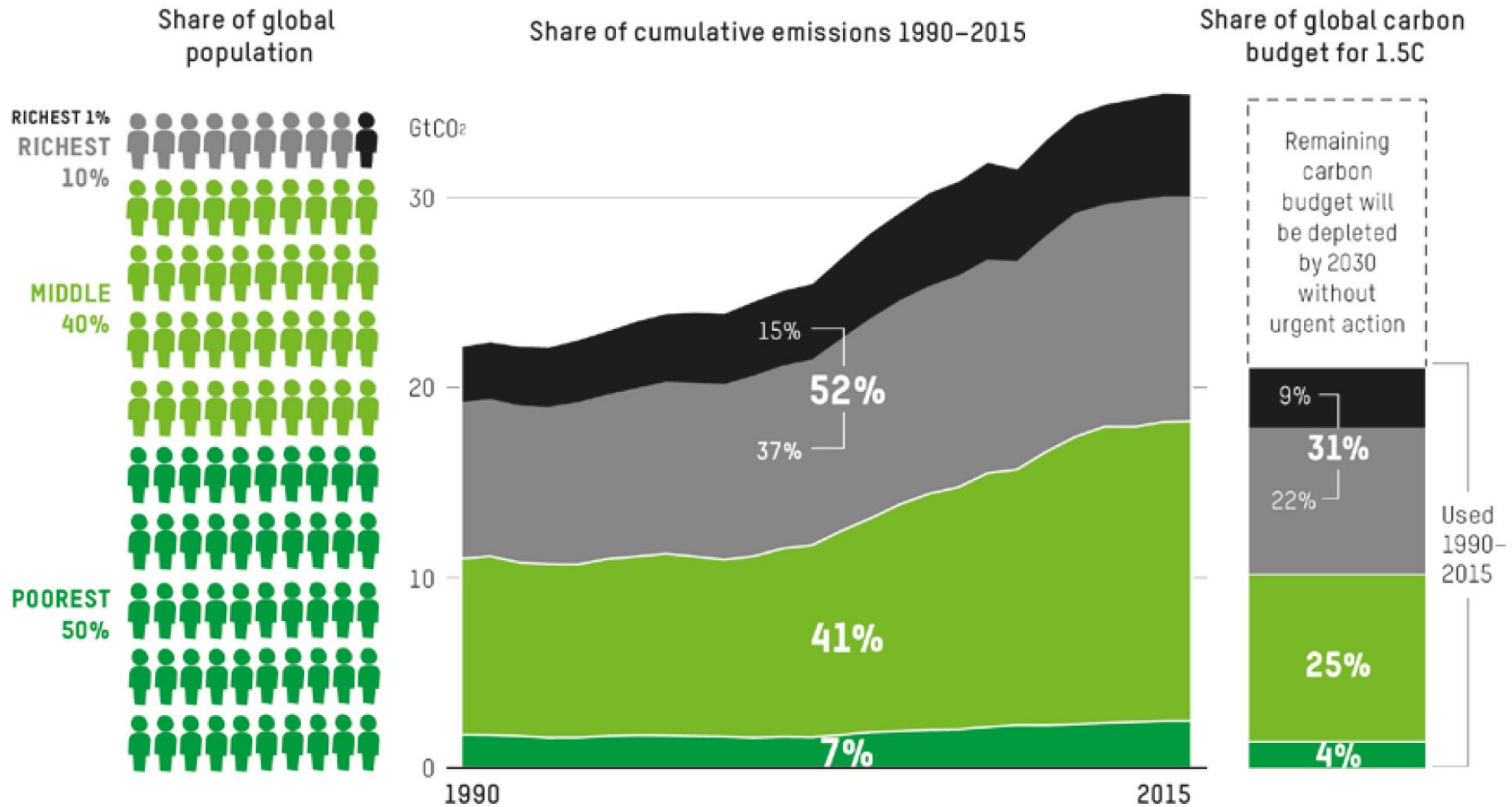
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**Figure 1: Share of cumulative emissions from 1990 to 2015 and use of the global carbon budget for 1.5C linked to consumption by different global income groups**

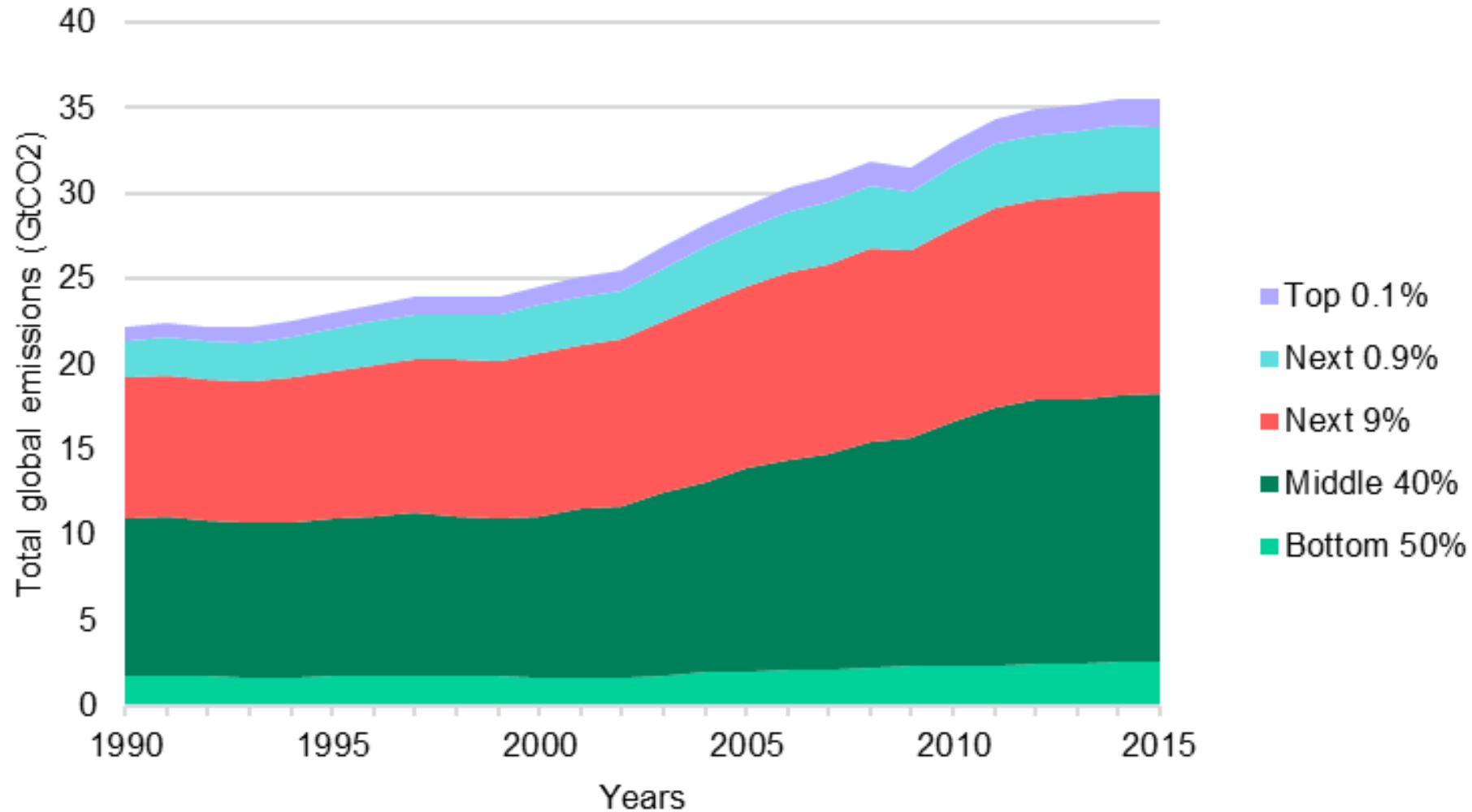


Per capita income threshold [SPPP2011] of richest 1%: \$109k; richest 10%: \$38k; middle 40%: \$6k; and bottom 50%: less than \$6k. Global carbon budget from 1990 for 33% risk of exceeding 1.5C: 1,205Gt.

SIVAN KARTHA, ERIC KEMP-BENEDICT, EMILY GHOSH AND ANISHA NAZARETH, TIM GORE:  
*The Carbon Inequality Era, Sept 2020, Stockholm Environment Institute and Oxfam*



# Total carbon emissions associated with consumption of individuals in different global income groups from 1990 to 2015



SIVAN KARTHA, ERIC KEMP-BENEDICT, EMILY GHOSH AND ANISHA NAZARETH, TIM GORE: *The Carbon Inequality Era*, Sept 2020, Stockholm Environment Institute and Oxfam

In 2015, the richest 10% were responsible for 49% of emissions

2015

1990

In 1990, the richest 10% were responsible for 50% of emissions

The middle 40% were responsible for 44%

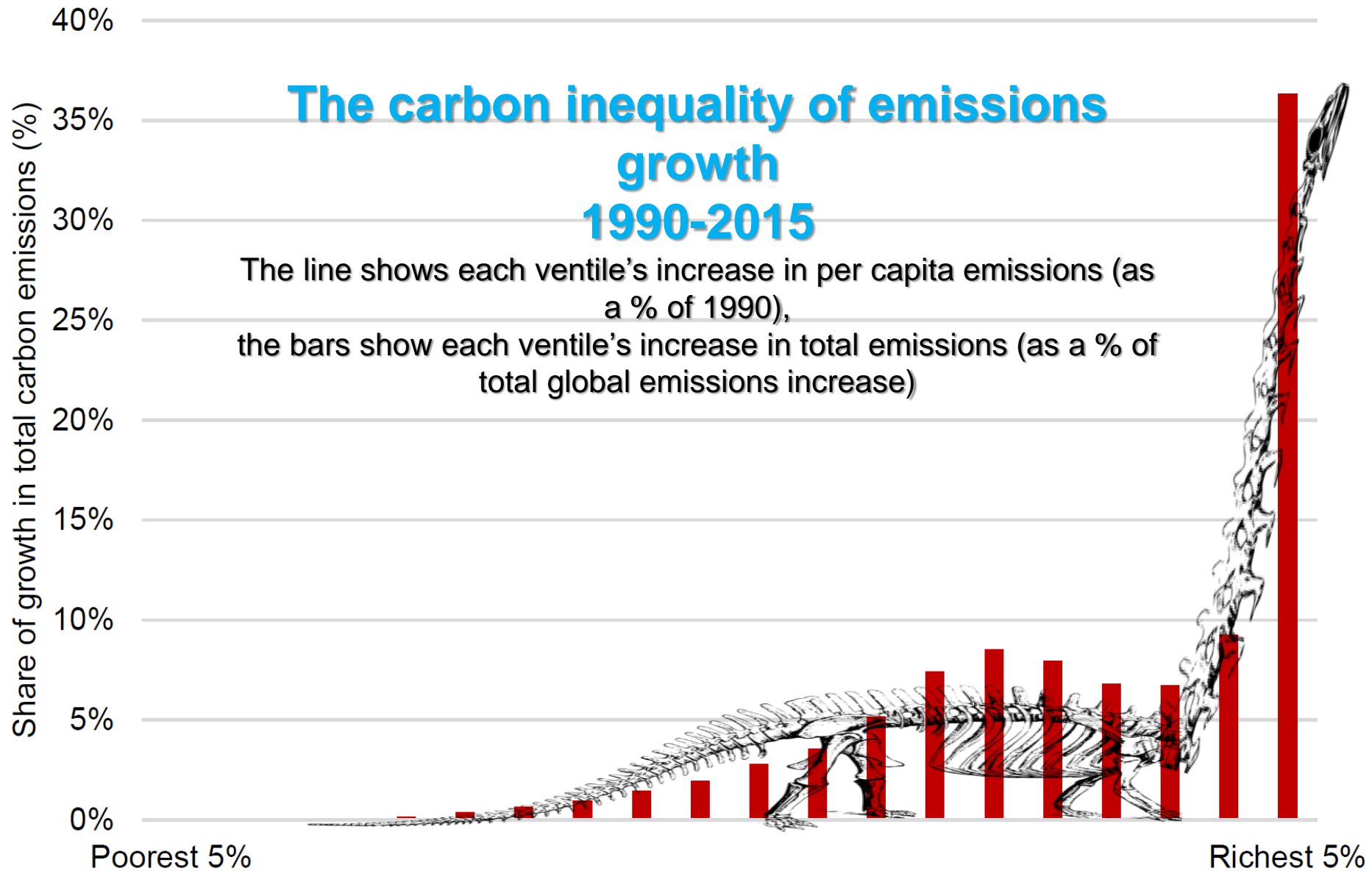
The middle 40% were responsible for 41%

# The Global Carbon Inequality

The poorest 50% were responsible for 7%

The poorest 50% were responsible for 8%

*SIVAN KARTHA, ERIC KEMP-BENEDICT,  
EMILY GHOSH AND ANISHA NAZARETH, TIM  
GORE: The Carbon Inequality Era, Sept 2020,  
Stockholm Environment Institute and Oxfam*



Ventiles of global population by income

*SIVAN KARTHA, ERIC KEMP-BENEDICT, EMILY GHOSH AND ANISHA NAZARETH, TIM GORE: The Carbon Inequality Era, Sept 2020, Stockholm Environment Institute and Oxfam*



**Figure 3: Total and per capita consumption emissions of individuals in different global income groups in 2015**

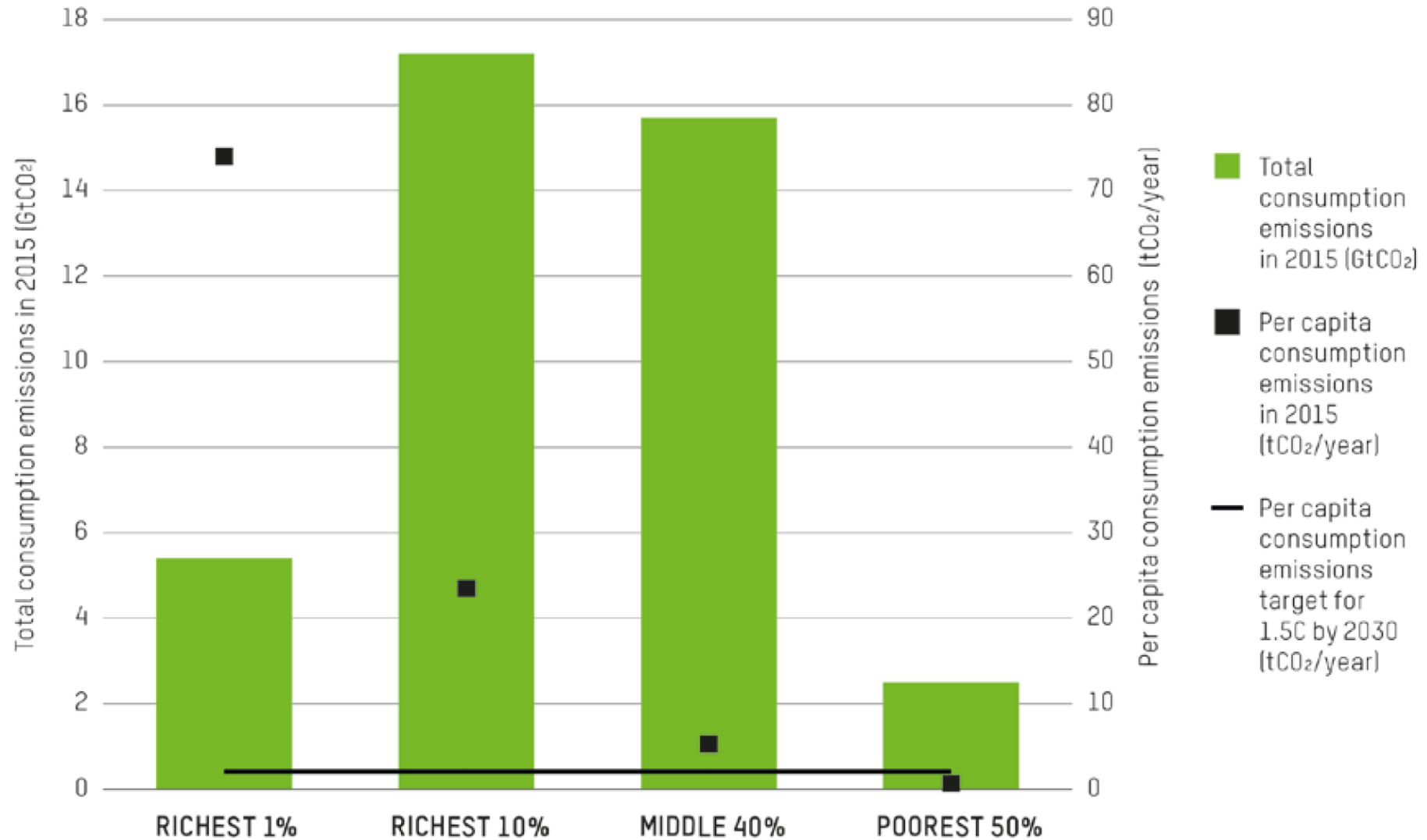


Figure 5: Main categories of consumption among highest emitters in the EU (2010)<sup>30</sup>



GOSFORD ANGLICAN CHURCH

LET'S NOT GET  
BACK TO NORMAL

NORMAL

WASN'T WORKING



# Thank you for your attention

Never let a good  
crisis go to waste.

Winston Churchill

 quote fancy

**Diana Ürge-Vorsatz**

**CEU**

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