

Benefitting from the Transition to Net Zero

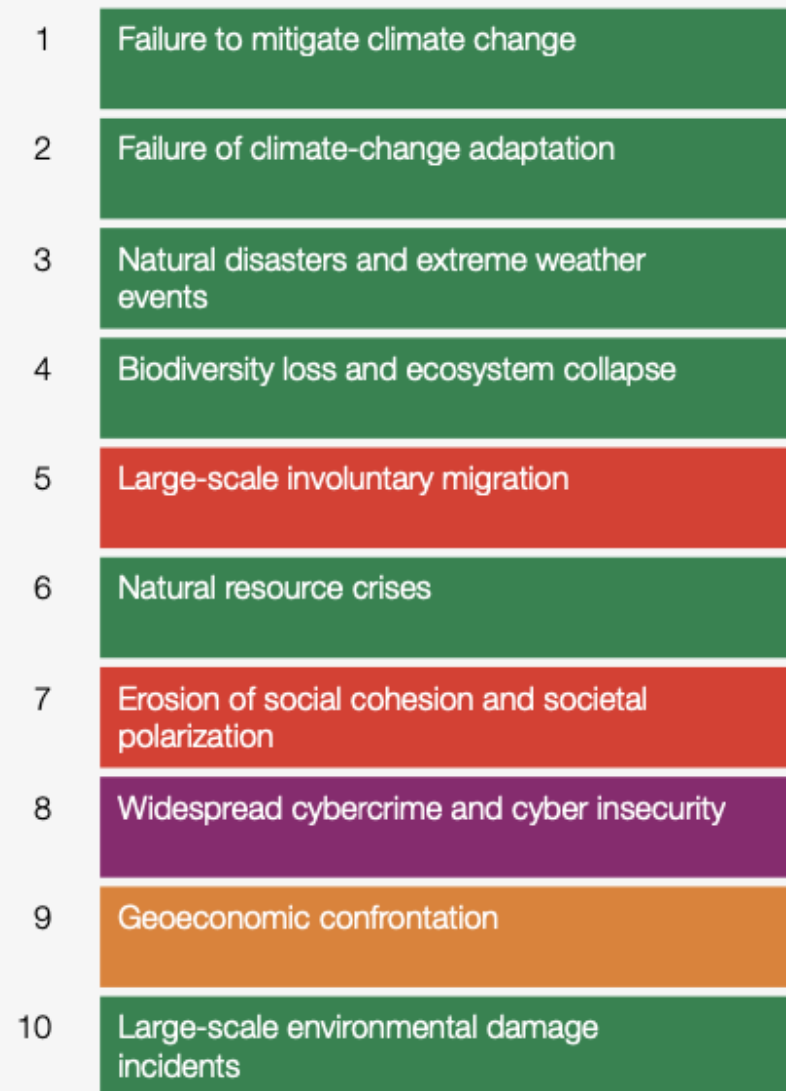
Leading the Change

Global risks
ranked by
severity over the
short term and
long term

2 years



10 years



Risk categories



Economic



Environmental



Geopolitical



Societal



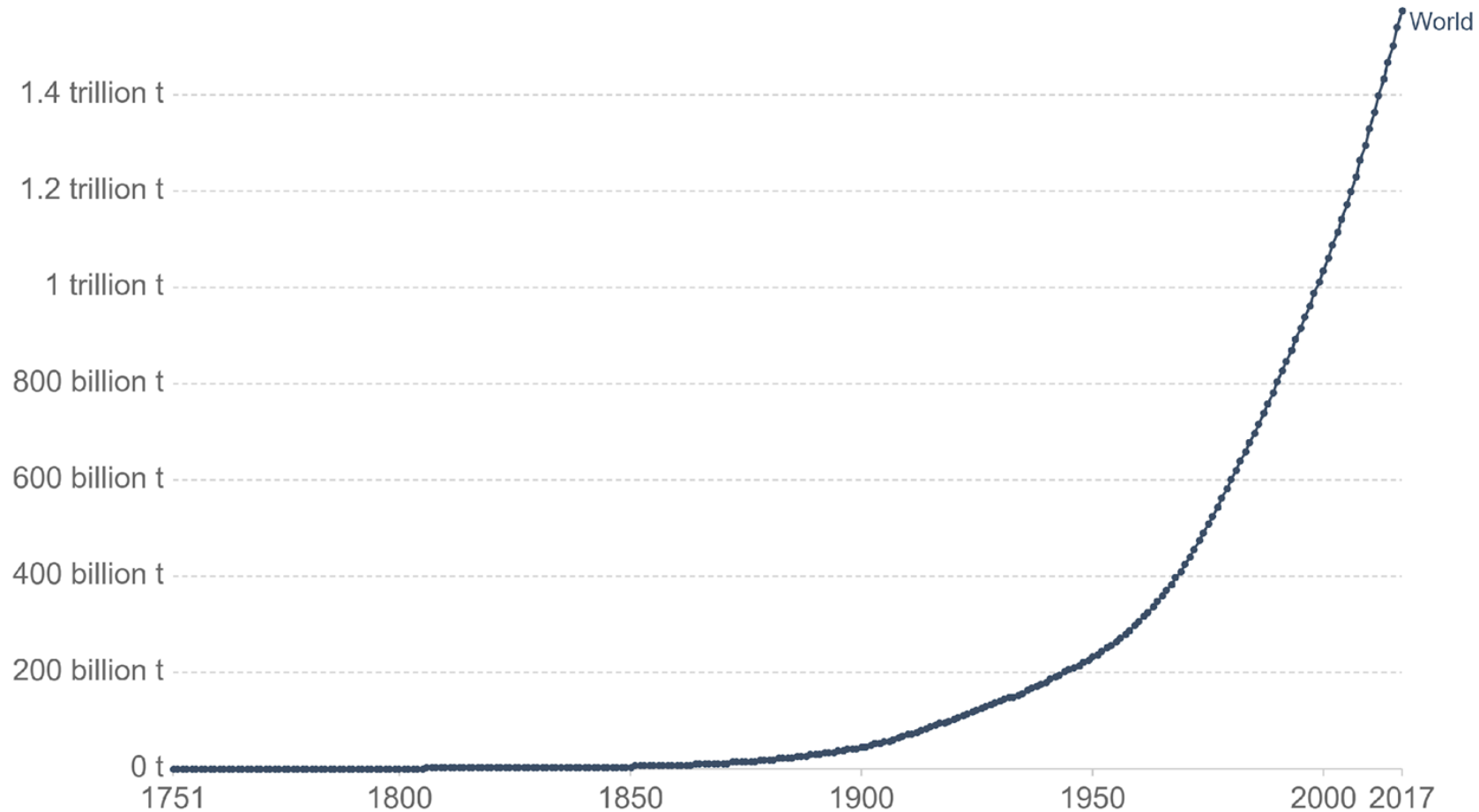
Technological



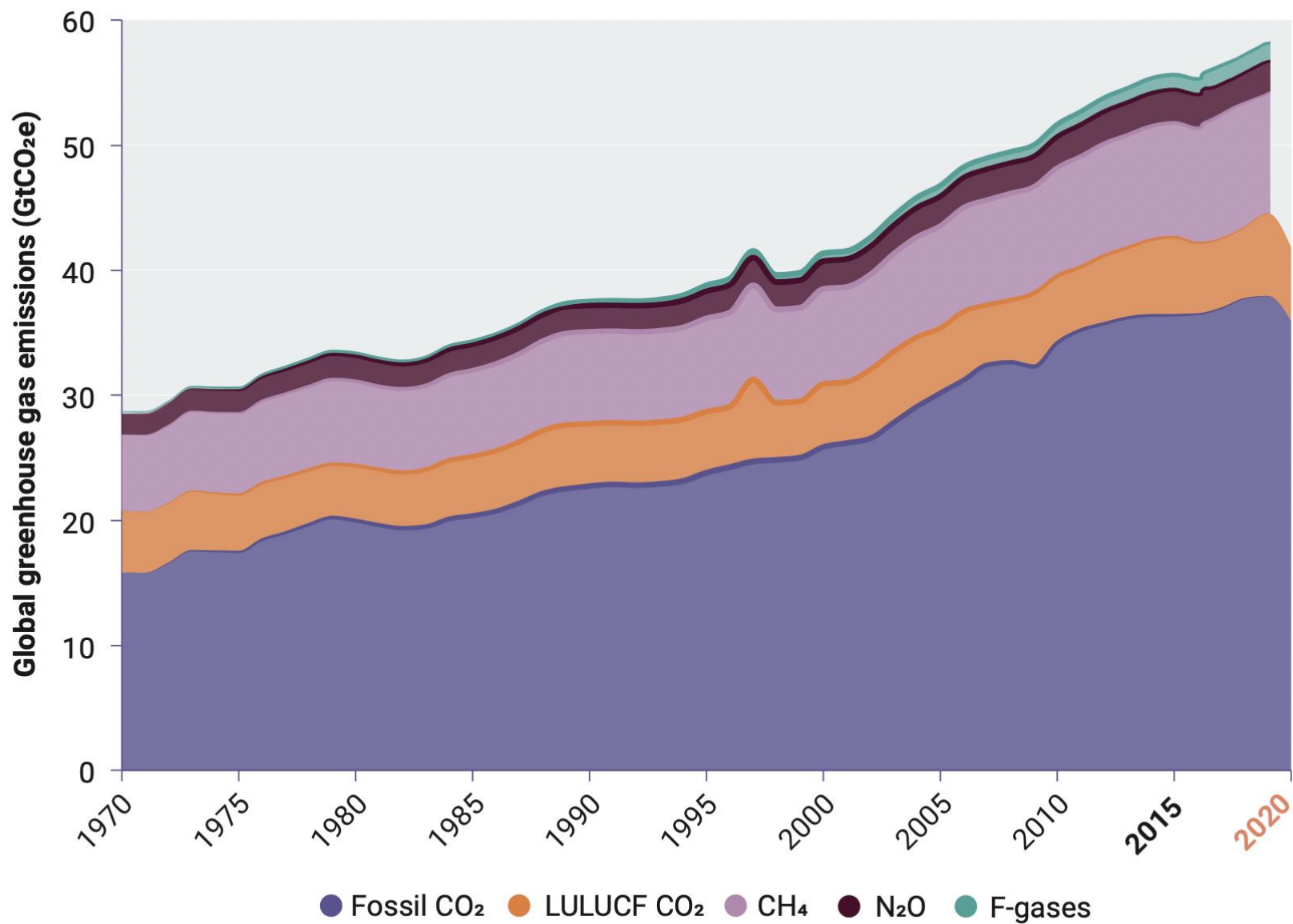
Cumulative CO₂ emissions

Cumulative carbon dioxide (CO₂) emissions represents the total sum of CO₂ emissions produced from fossil fuels and cement since 1751, and is measured in tonnes. This measures CO₂ emissions from fossil fuels and cement production only – land use change is not included.

Our World
in Data



Source: Global Carbon Project (GCP); Carbon Dioxide Information Analysis Centre (CDIAC)
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

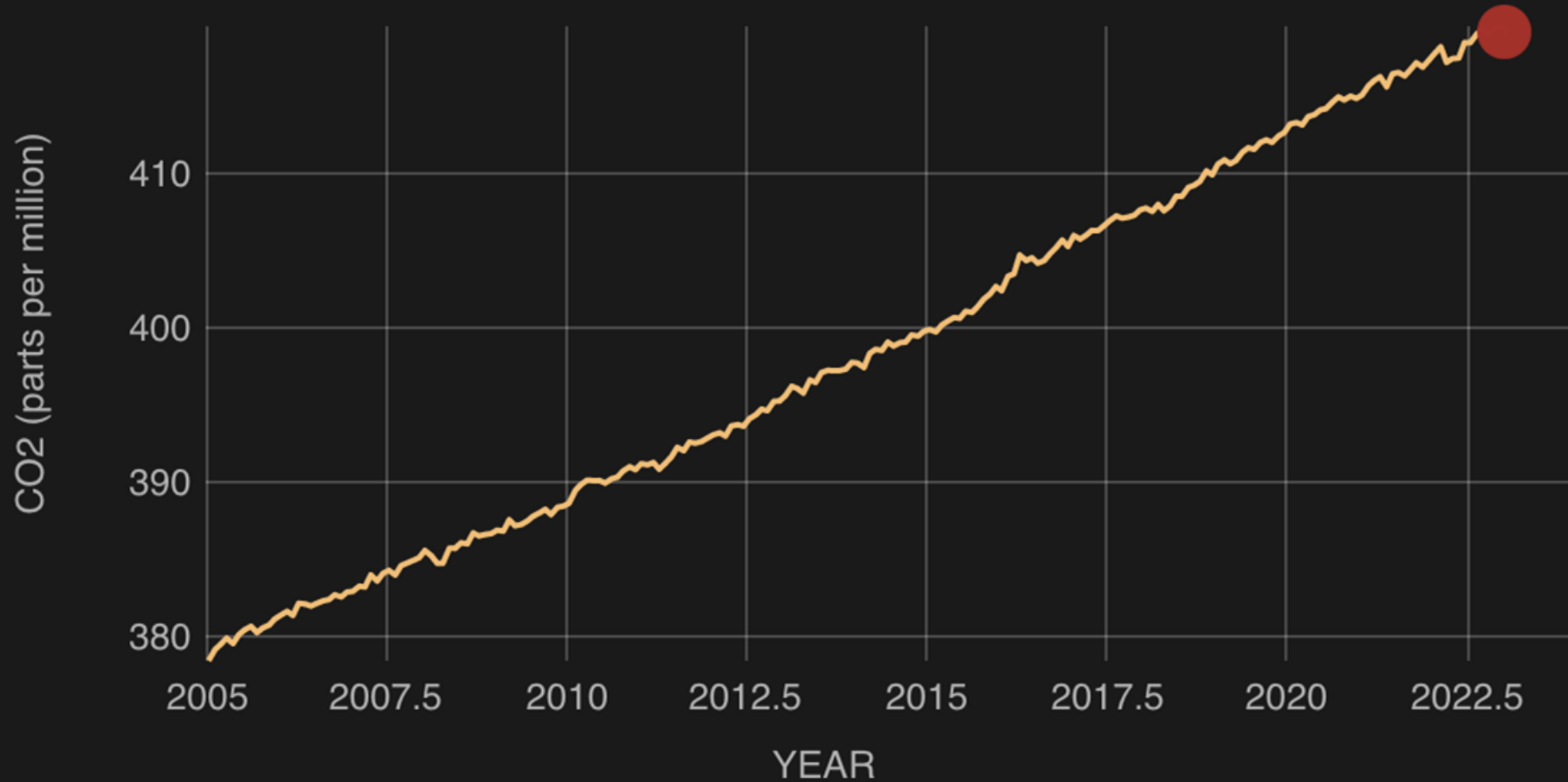


2020 data only available for fossil and LULUCF CO₂

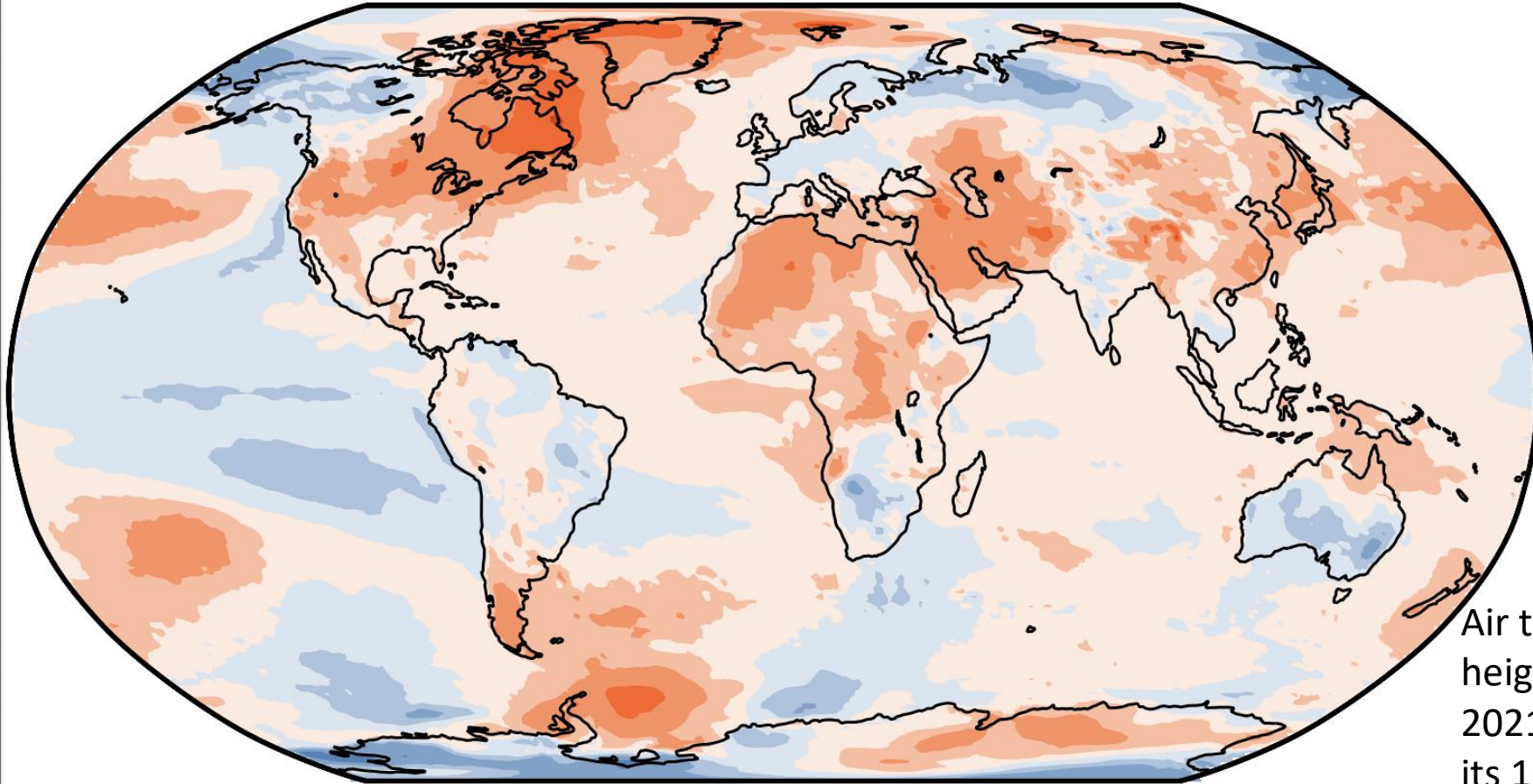
Data from the Global emissions gap report 2021 published by the UNEP

DIRECT MEASUREMENTS: 2005-PRESENT

Data source: Monthly measurements (average seasonal cycle removed). Credit: [NOAA](#)



Temperature difference 2021 and 1991-2020



Data source: ERA5
Credit: C3S/ECMWF



Air temperature at a height of two metres for 2021, shown relative to its 1991–2020 average. Source: ERA5. Credit: Copernicus Climate Change Service/ECMWF



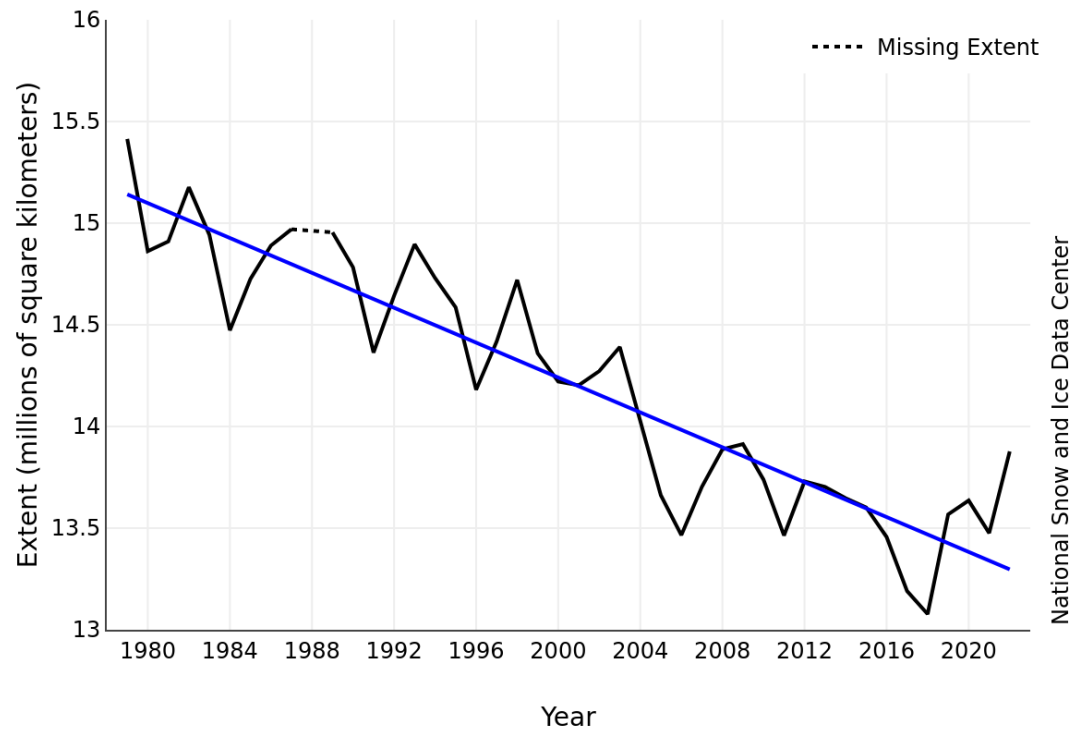
PROGRAMME OF
THE EUROPEAN UNION



IMPLEMENTED BY



Average Monthly Arctic Sea Ice Extent
January 1979 - 2022



A tipping point

Met Office

Arctic Sea Ice Loss

The September minimum Arctic sea ice extent in 2019 was the 2nd lowest on record.



Annual loss

87,055 km²

An area greater than Scotland.

Surface area of Scotland = 80,226 km² (World Bank)

Decadal loss

870,550 km²

An area greater than the UK, Ireland and France combined.

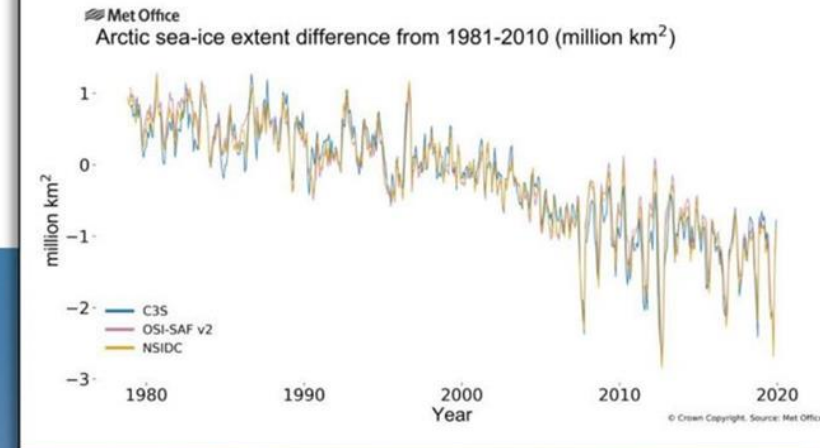
Surface area of UK, Ireland & France = 862,977 km² (World Bank)

40 year loss

3.48 million km²

An area greater than India, Bangladesh and Bhutan combined.

Surface area of India, Bangladesh & Bhutan = 3,473,283 km² (World Bank)



Multiple impacts in various locations

Impacts of a warming world

Flooding and sea level rise

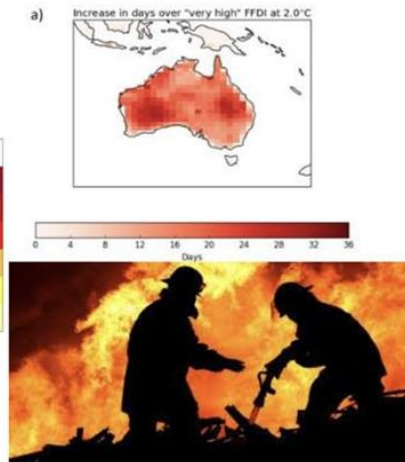


Wildfires

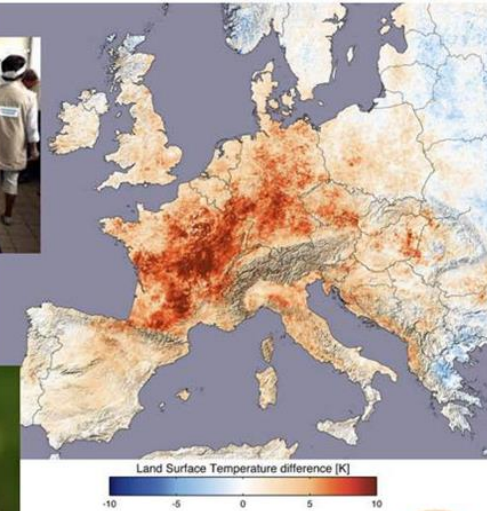
Category	Forest Fire Danger Index
Catastrophic* (code red)	100+
Extreme	75 - 99
Severe	50 - 74
Very high	25 - 49
High	12 - 24
Low - Moderate	0 - 11

Table 1: McArthur FFDI scale of fire danger.

*Catastrophic refers to fires that spread so quickly that they present a threat to life and safety.



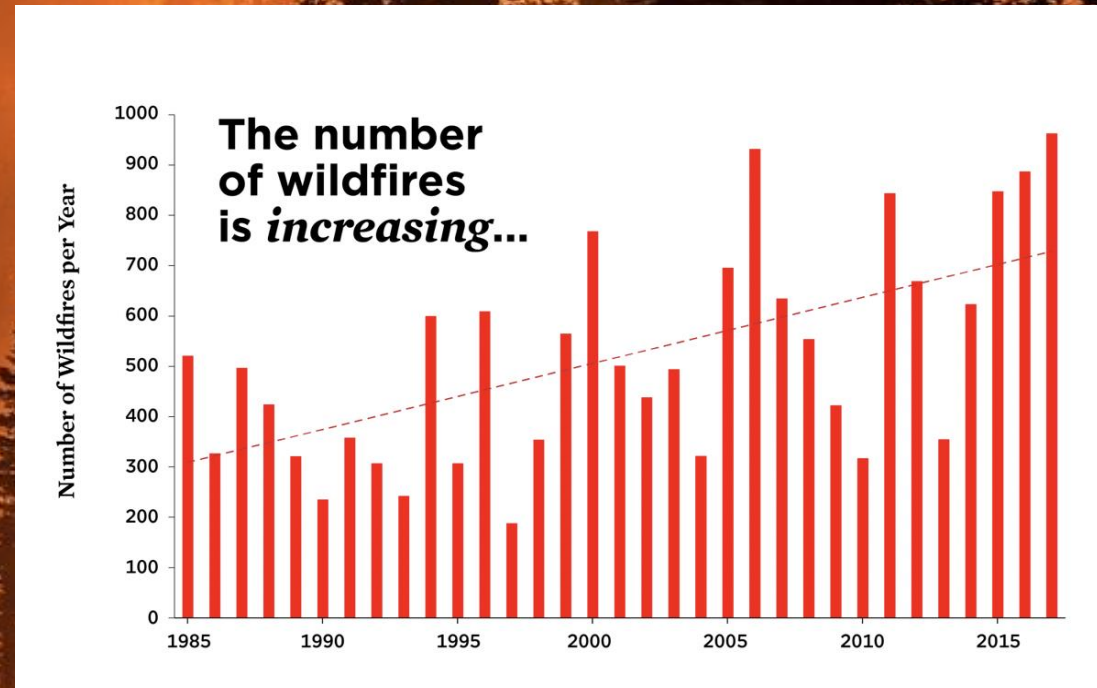
Heatwaves, health and disease



Biodiversity



Impacts of the climate crisis



UK Flooding

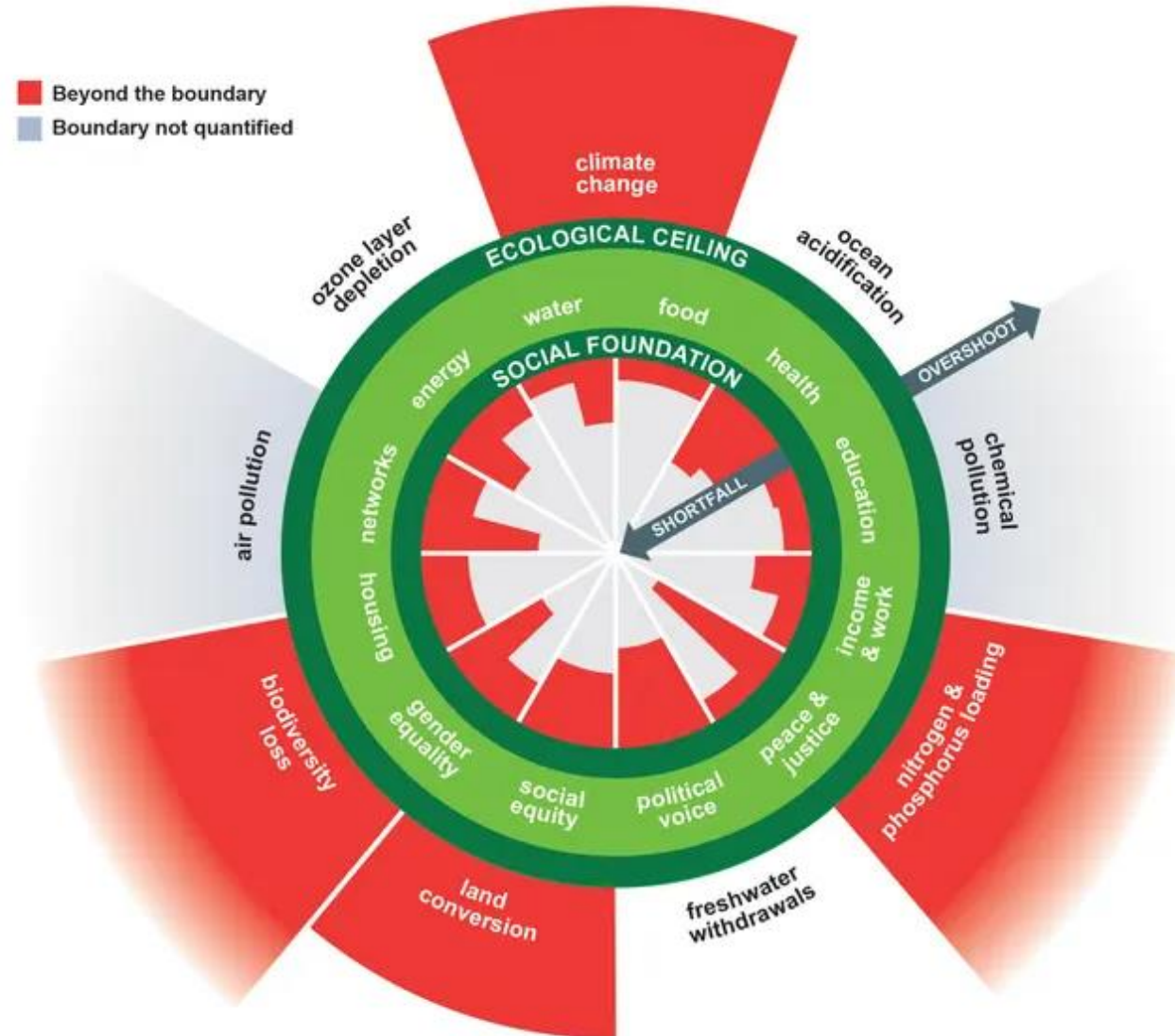


Moorland village, Somerset 2014



Designing in flood resilience 'The home of all seasons'
RIBA

Doughnut Economics



What happened next in Yorkshire North & East...



2020 Starting blocks

○ **Three elements of Net Zero:**

- **Decarbonisation of our buildings**
- **Switching to renewable energy tariffs**
- **Personal Pledges to reduce our every day Carbon Footprint**

○ **Two next steps:**

- **Networks and Learning**
- **Funding**

Networks and Learning



Learning – understanding power & CO₂ emissions



**Average church* could stop 8.9 tonnes
CO₂ emissions per year by installing
renewable energy measures**

**Average church* could have
enough solar PV panels to brew
almost a million cups of tea per
year (821,000 actually)**



****Based on sample of 36 rural churches within the District***

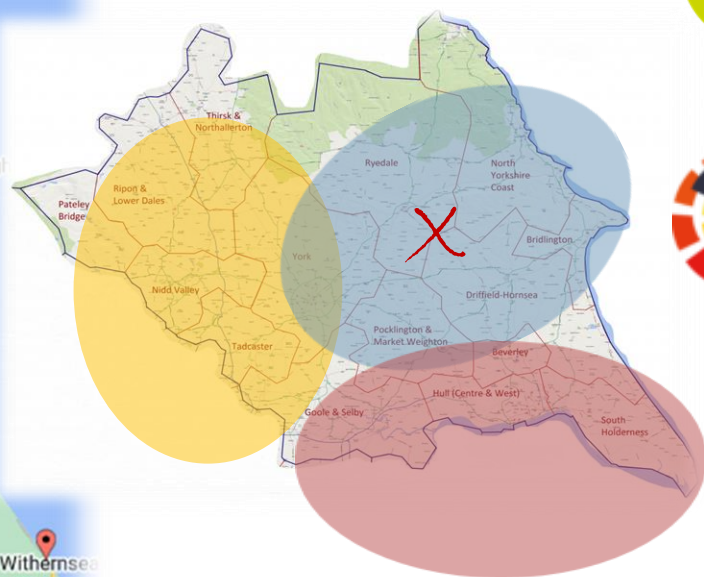
○ Learning – buildings and technology

- Solar PV panels – seek advice, choose a reputable contractor
- Heat pumps – a long road: feasibility must come first
- Talk to others – learn from their learning, and share yours



Funding: Rural Community Energy Fund

Expert help to understand how to decarbonise our buildings came from:



Funding

Successful scoping and feasibility work provided a firm foundation to seek funds for:

Development Costs



Capital Costs



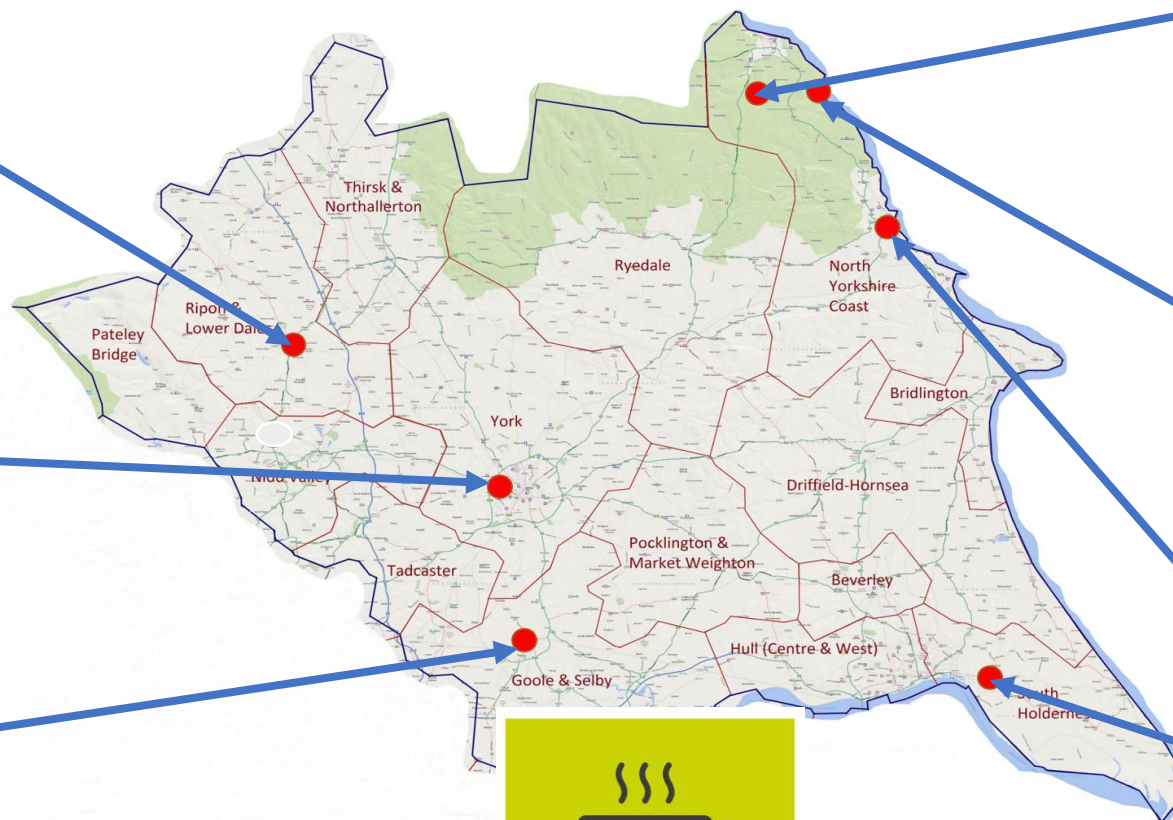
Staff Costs



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Current Projects – Tea & PV

Flourish



centrica



d3associates
ENERGY & ARCHITECTURE



South Holderness Circuit Solar Project

- Trio of Churches in one Circuit
- Three with Solar PV, Two with batteries
- Just transition – urban deprived, rural isolation and a Suburban Hub
- Aims:
 - Move towards Net Zero - lower carbon footprint
 - Reduce energy bills
 - Show solar PV is beneficial in a variety of settings



Connecting Killinghall Community

- Decarbonisation included in general refurbishment
- Includes insulation, solar PV, air source heat pumps, EV charger
- Partnership with a foodwaste café, Resurrected Bites



Killinghall Methodist Church: Decarbonised – can you tell?



What's Next?

Net Zero Officer: Tim O'Brien

**Killinghall Methodist Chapel,
Harrogate (HG3 2DF)**

Open Day

3pm-5pm on Sunday 23rd April



netzero@yorkshirenemethodist.org

With grateful thanks to



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**For a three year
Transformational Grant**

