

# SWLEOC

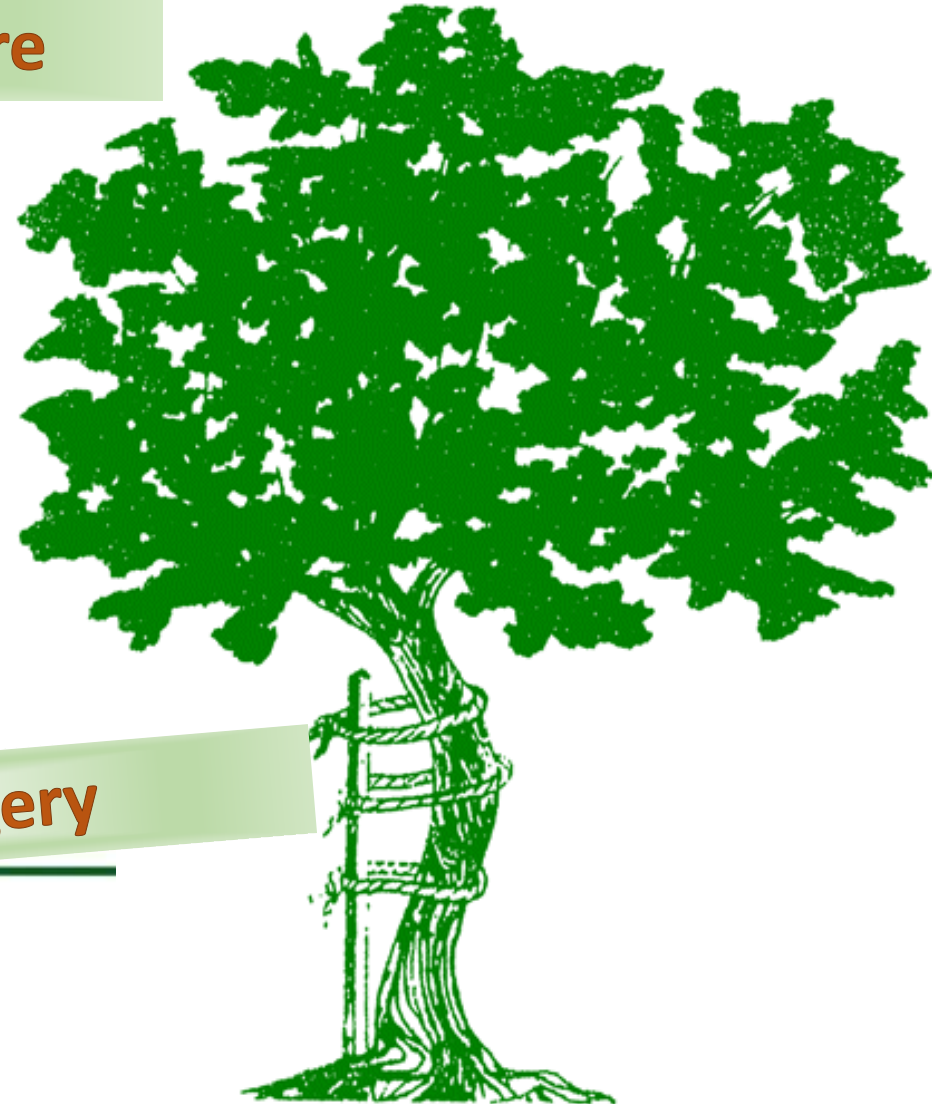
## South West London Elective Orthopaedic Centre



Nicolas Andry  
(1658 – 1742)



**Sustainability in Orthopaedic Surgery**



# Climate Change

---

**There is a problem**

---

**Probably exaugurated**

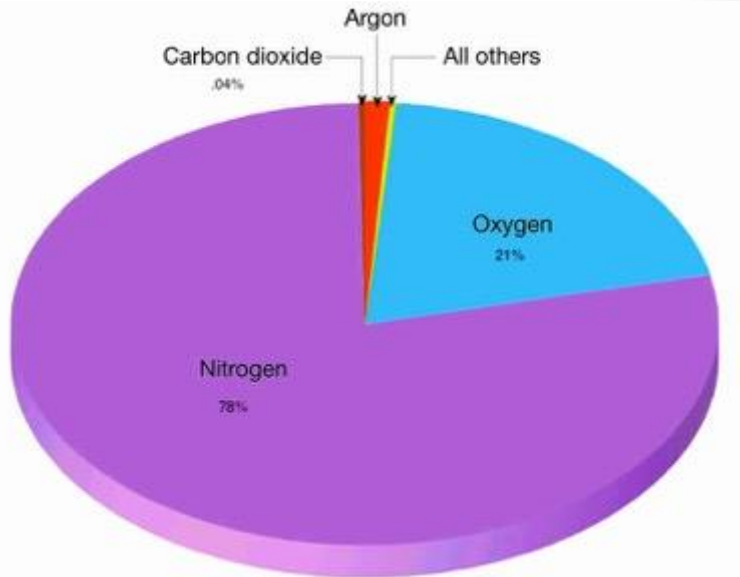
---

**SWLEOC focused on SiOS  
which is not just being  
environmentalist**

# Greenhouse Gas

## Trace Gases

- Co2 76%
- Methane 16% (agriculture)
- N2O 6% (industry and agriculture)
- H2O water vapor 0- 4%
- O3 ozone



## Earth atmosphere

N2 = 78%

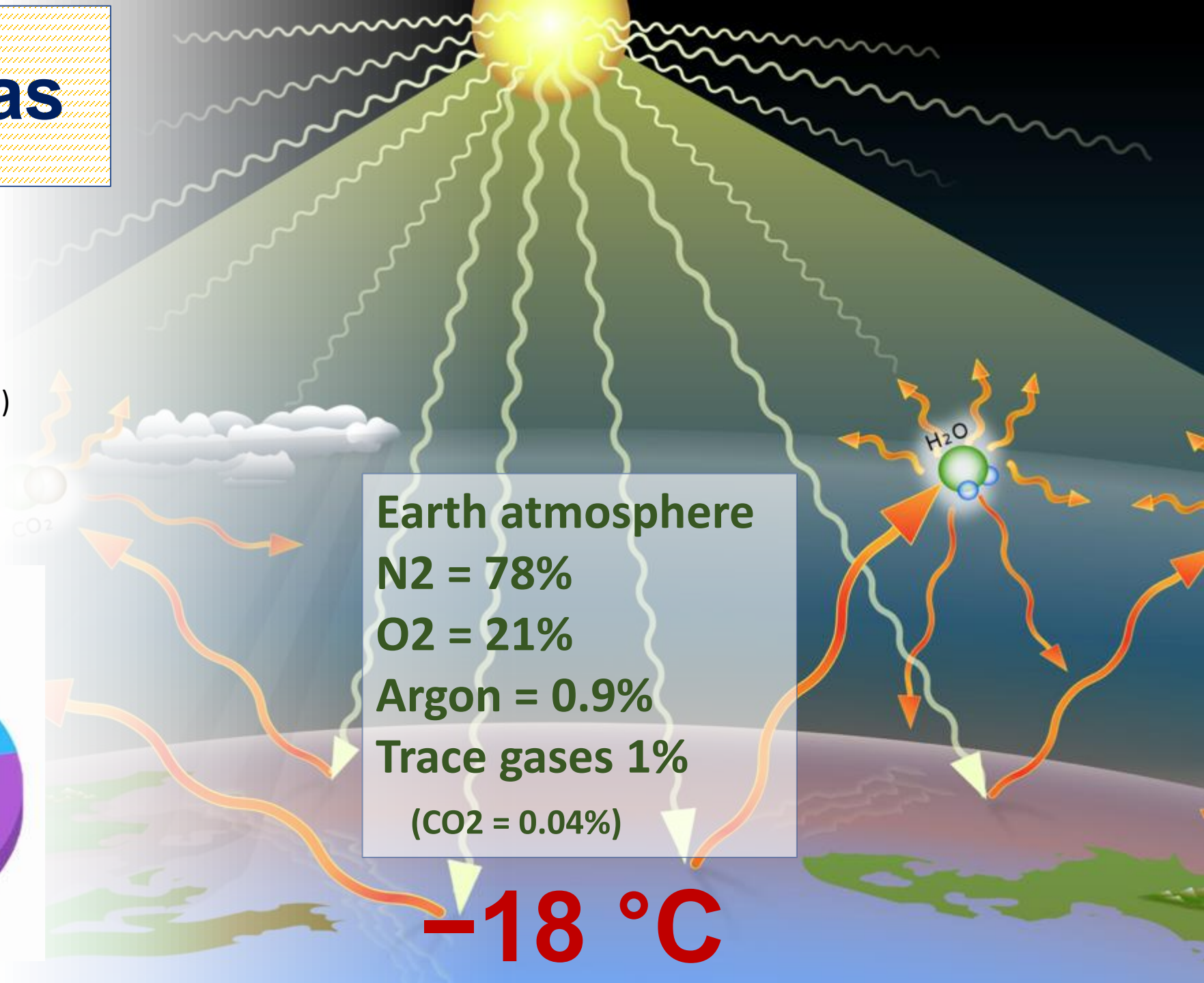
O2 = 21%

Argon = 0.9%

Trace gases 1%

(CO2 = 0.04%)

**-18 °C**





# CO<sub>2</sub>

0.04% of the atmosphere

Global Warming of 1.5 °C  
IPCC

Since the industrial revolution

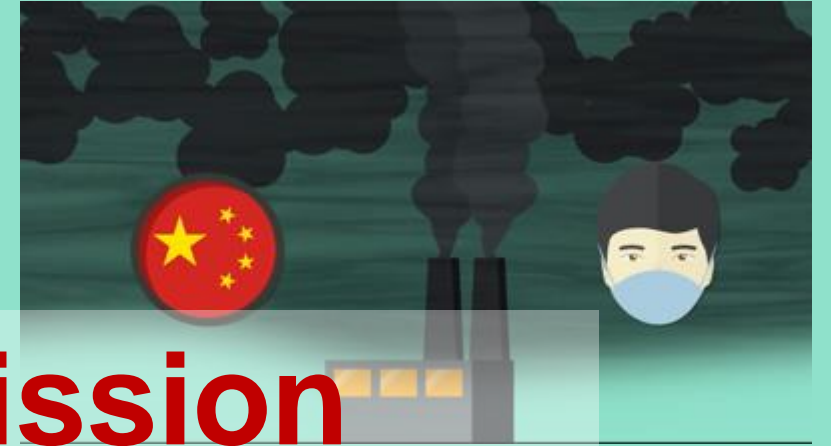
- 45% increase in the atmospheric concentration of carbon dioxide.
- Last time CO<sub>2</sub> was as high over 3 million years ago
- Largely due to Burning fossil fuels and deforestation

- Increase from 280 ppm to 415 ppm
- CO<sub>2</sub> traps heat
- Ocean acidification. 30-40% dissolves into the oceans



A fossil fuel is a fuel formed by anaerobic decomposition of buried dead organisms.

**80% of greenhouse emission  
is from burning fossil fuel energy**



## Fossil Fuel Energy



**Coal**



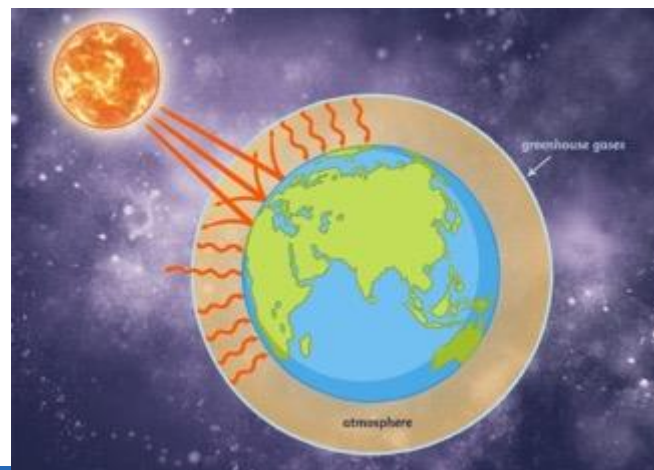
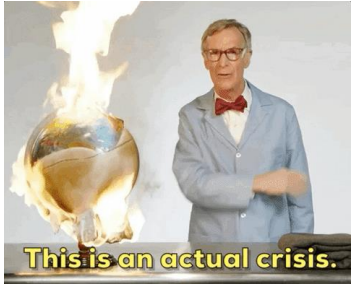
**Oil**



**Natural Gas**



**Gasoline**





# NHS Carbon footprint

4-6 % of the nation's greenhouse gas emissions from the NHS

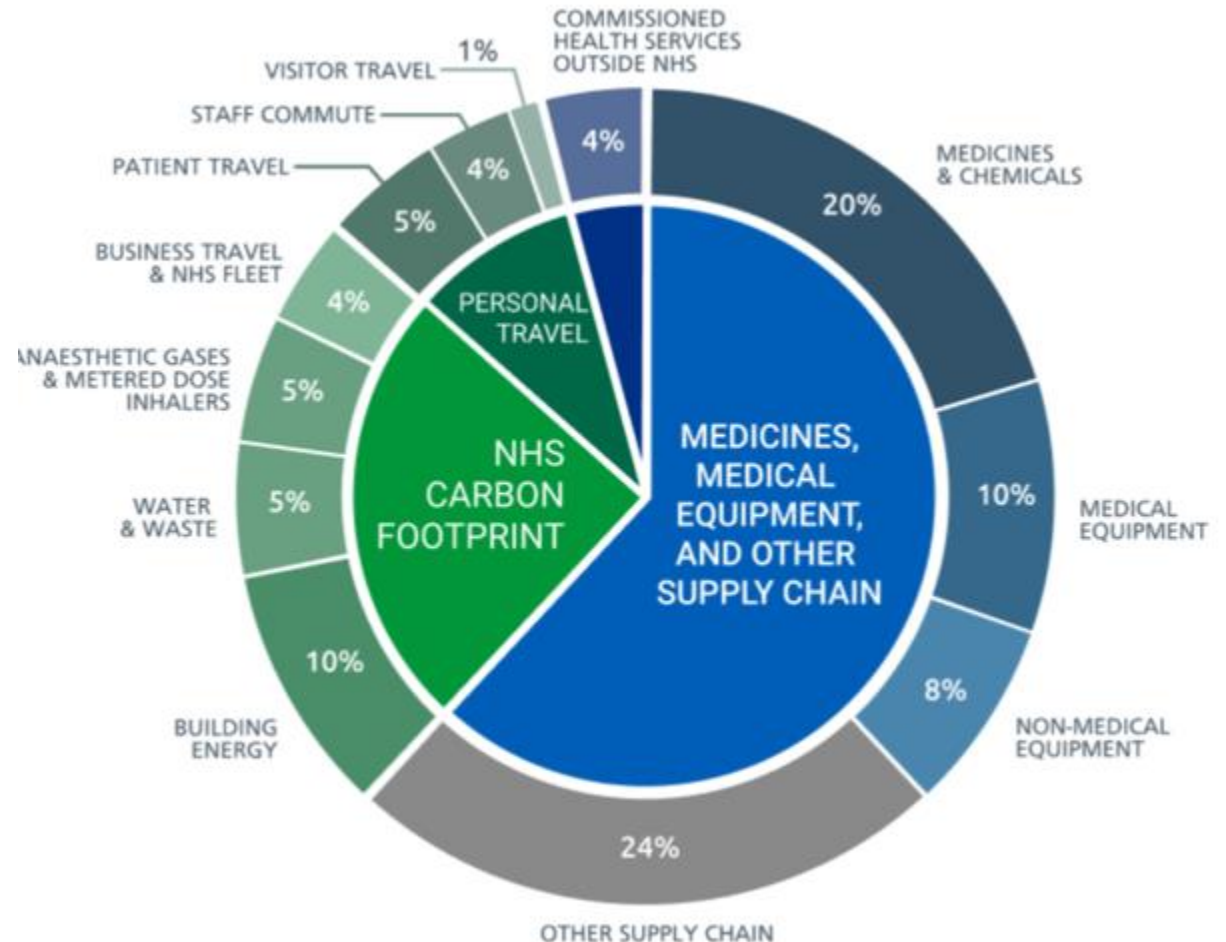
## Major carbon hotspots in the NHS

62% Medicines, Equipment,  
Supply chain

5% Anaesthetic gases

15% Energy, water and waste

14% Travel (staff and patients)



A conceptual image showing a hand made of green grass holding a globe that is also made of green grass. The globe shows the continents of North and South America. The background is white.

# Operating Theatres

**Theatre is  
resource  
intensive area**

**1/3 of hospital  
waste**

**Single operation  
waste = Family  
of 4 for a week**

**Single operation  
=250kg CO<sub>2</sub>e**

**Driving from  
London to  
Newcastle and  
back**

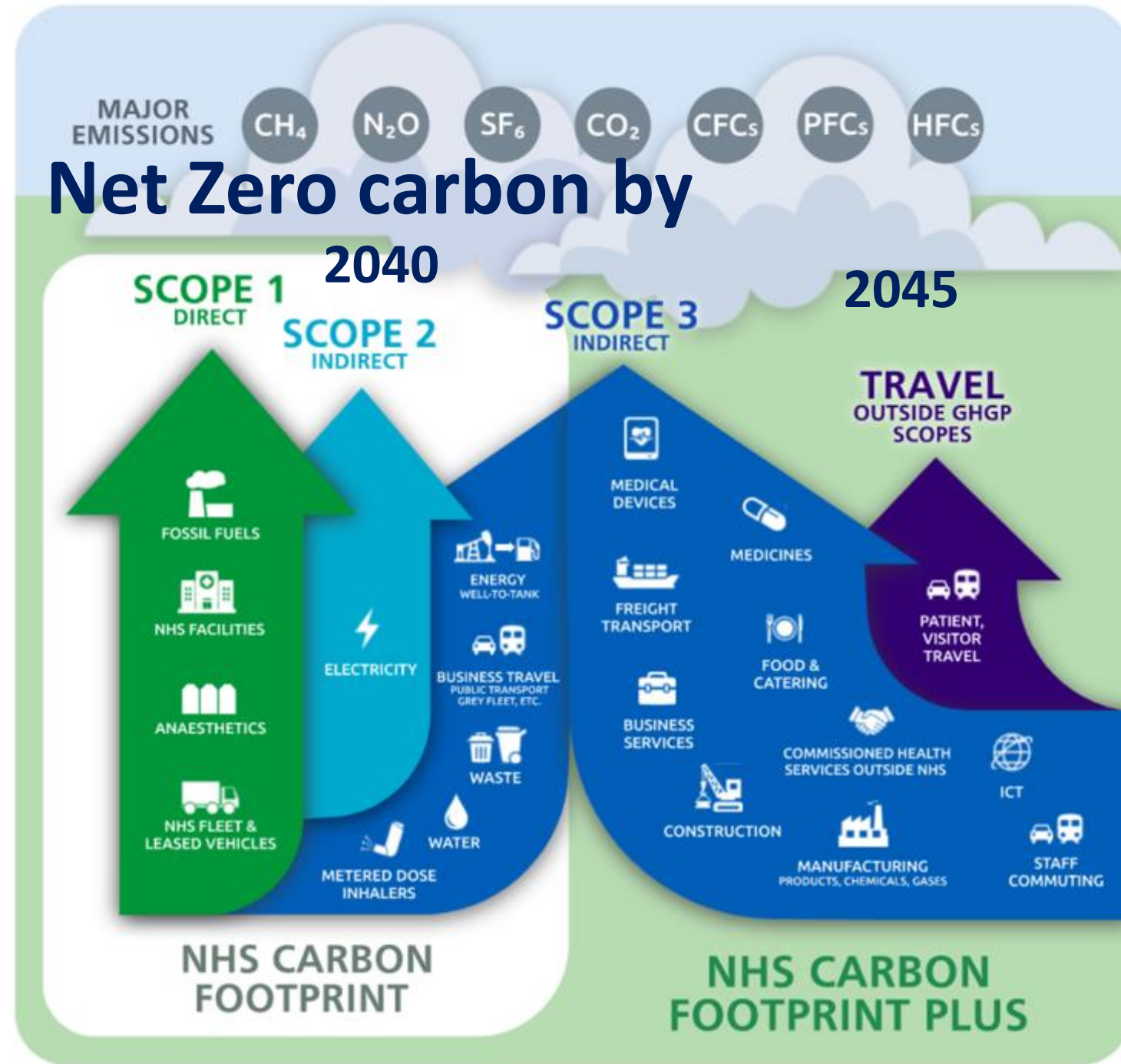


# Why do we need SiOS?



- NHS England has an annual carbon footprint of 25 million tonnes CO<sub>2</sub>e
- Net Zero CO<sub>2</sub>e Target
  - Direct control
  - Influence

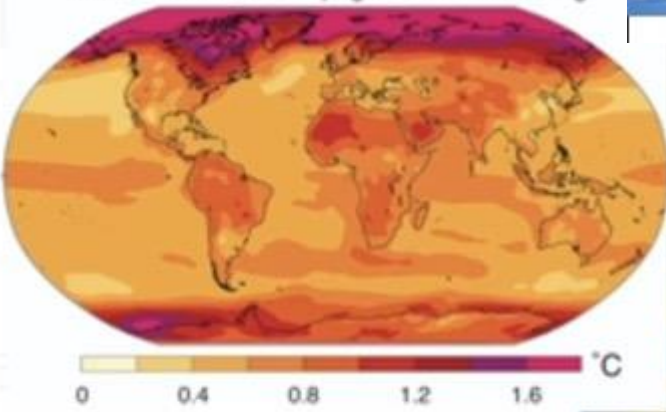
Chris Skidmore signs legislation to commit the UK to a legally binding target of net zero emissions by 2050



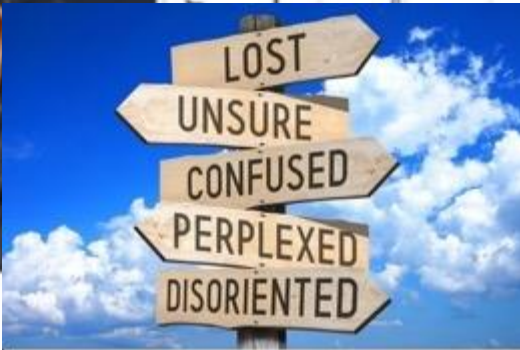
'The world is going to end in 12 years if we don't address climate change,'



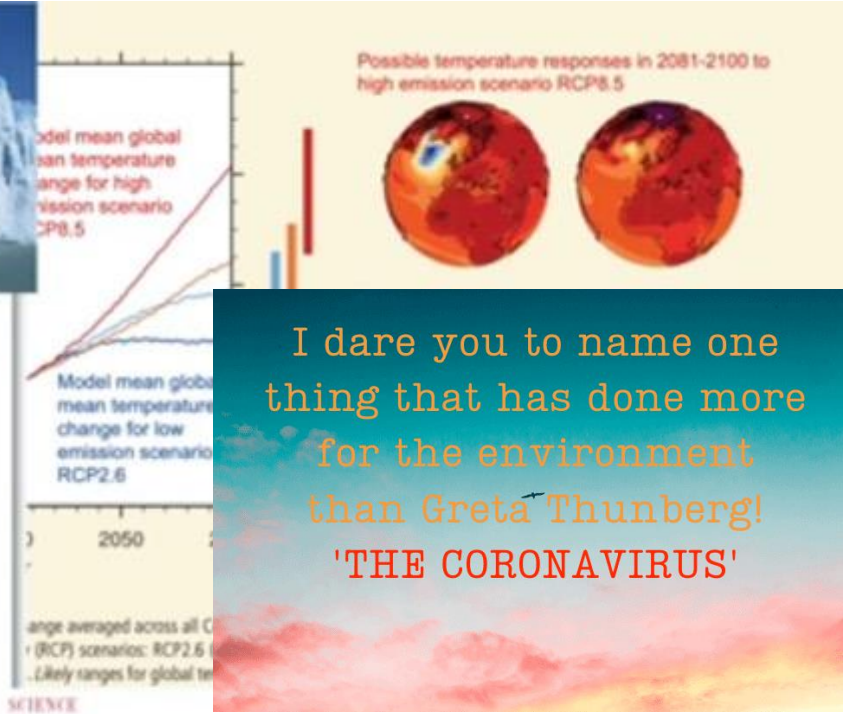
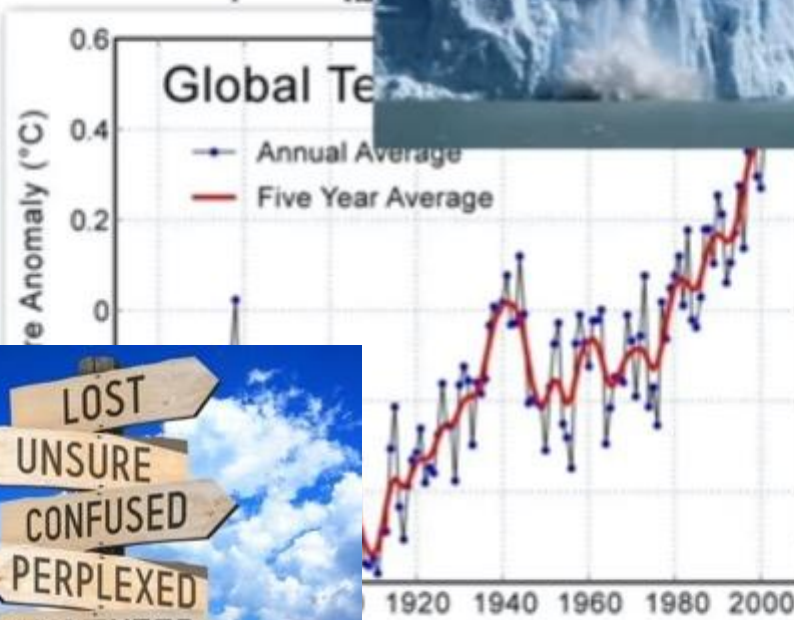
Change in Annual Temperature from historical anthropogenic climate forcing



Greta Thunberg called the fight to mitigate the effects of climate change. Rep. Alexandria Ocasio-Cortez, D-N.Y., made the reference to the late writer Ta-Nehisi Coates at the MLK Now event in New York City, the legacy of Martin Luther King Jr.



shutterstock.com • 537981832



I dare you to name one thing that has done more for the environment than Greta Thunberg! 'THE CORONAVIRUS'

How Dare You

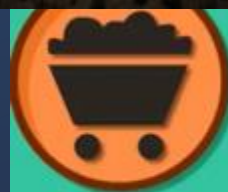
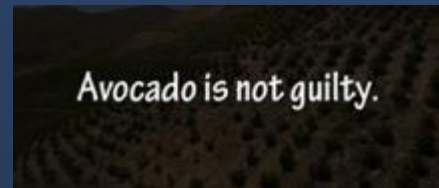


In a very short time, Greta Thunberg—with her soaring voice, Peppi Long pants, and hand-painted signs reading 'SKOLSTREJK FÖR KLIMATET'—has become a global icon. A year ago, the 16-year-old Swedish climate activist began striking in each Friday to protest climate inaction; last Friday, she gave a speech to hundreds of people in New York, at the Global Climate Strike, which was her protest.





# Deception and Misinformation



Coal



Oil



Natural Gas



Gasoline



# Our Aims

- ✓ To embed sustainability in the governance of SWLEOC
- ✓ To promote Greening initiatives of Reducing, Recycling, Reusing, Reprocessing, Repairing, Replacing, Refusing, Refurbishing, Rethinking and Researching
- ✓ To educate and empower healthcare staff
  - To advocate for research into sustainability
  - To be a leading the way for 'green theatre' practice





# Establishing SiOS committee

**12<sup>th</sup> May 2021 CG to make it the 8<sup>th</sup> pillar of Gov**

**ToR written by 19<sup>th</sup>**

**Weekly meeting since**

The directors, senior managers, surgeons, anaesthetist, intensivist, microbiology/ infection control team, procurement lead, sterilisation lead, IT lead, estate/energy lead, theatre lead, theatre staff, ward staff, PACU staff, Porters/Dom, physiotherapy, pharmacy, radiology, education leads, research

**Collaboration with likeminded professionals regionally and nationally**

**Dr Emma Evens Sus Lead for South West London**

**Dr Andrew Broadbent Trust Sus Lead**

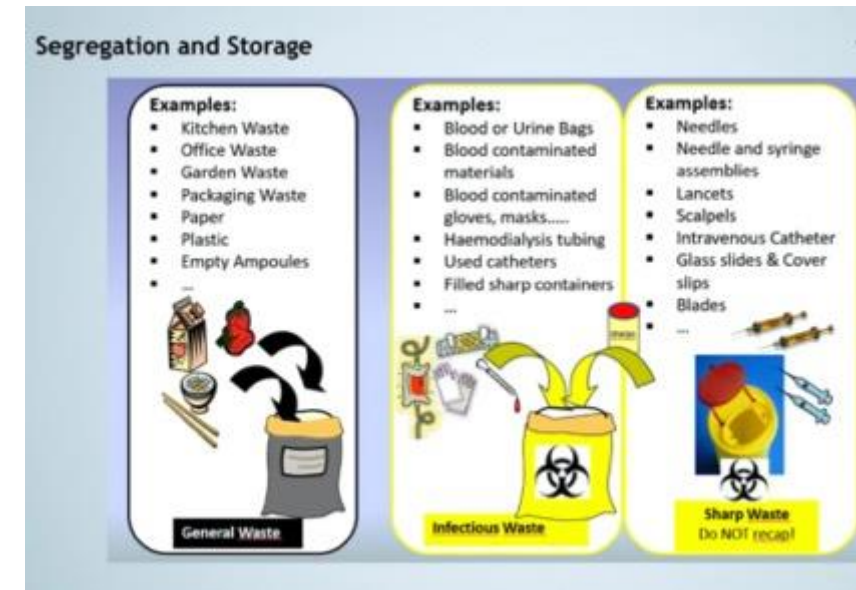
**Dominique Baptiste| Facilities Waste Manager**

**Ankit Desai UL fellow**

# Project plans & Score cards

---

- 1 Project Plan – Theatres – Kate/Felix/Joanna
- 2 Project Plan – Wards – Sarah/Ruth
- 3 Project Plan – PACU – Maria
- 4 Project Plan – Physiotherapy – Boudine
- 5 Project Plan – Outpatients – Tracy Ann
- 6 Project Plan – Radiology – Alok
- 7 Project Plan –Waste management - Dominique
- 8 Project Plan – ESTH Andrew Broadbent





# Sustainability

## The UN Brundtland Commission 1987

**Economic development at the cost of ecological health and social equity does not lead to long-lasting prosperity**

**"Meeting the needs of  
the present without  
compromising the  
ability of future  
generations to meet  
their own needs."**

-Brundtland report, 1987



# Sustainability **Global concept**



Sustainability is a holistic approach that considers ecological, social and economic dimensions, all must be considered together to find lasting prosperity

## **Environmental Sustainability**

Maintaining ecological integrity by balancing the consumption and replenishment of **natural resources**

## **Economic Sustainability**

Securing basic human needs

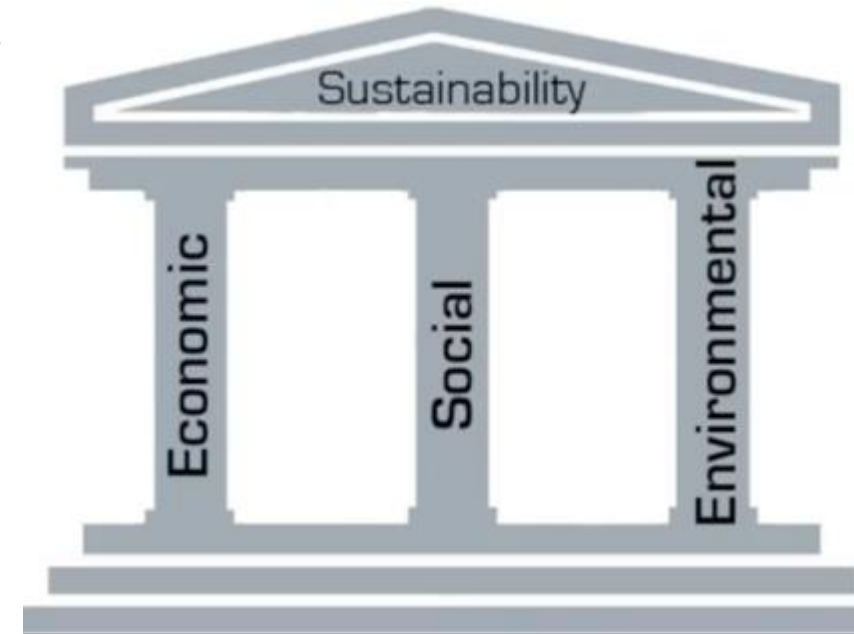
Securing source of livelihood to all human

## **Social Sustainability**

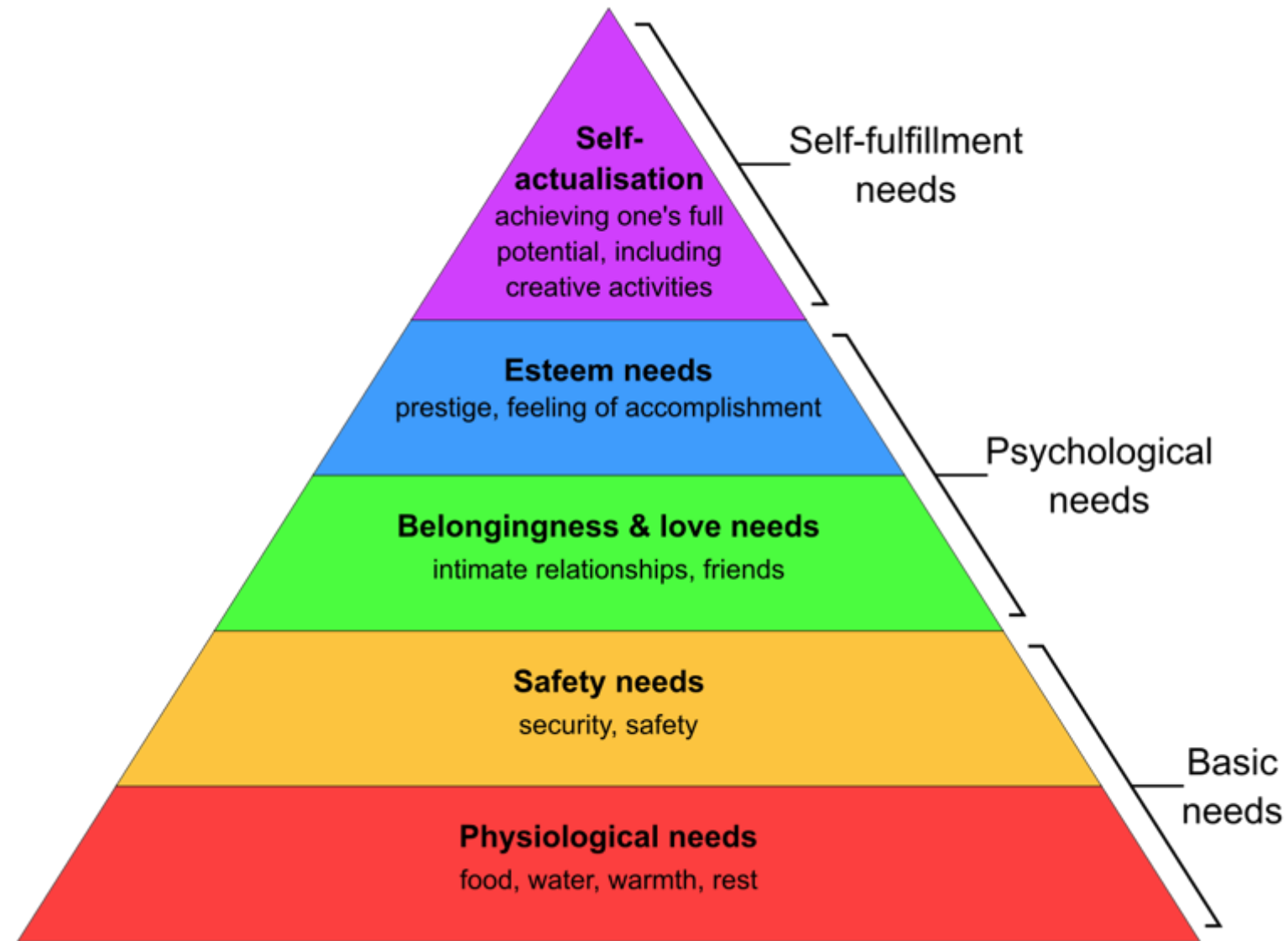
Respect Diversity and universal human rights

Basic necessities are attainable by all people.

Respect personal, labour and cultural rights



# Maslow's Hierarchy of Needs





# Sustainability Healthcare Concept

**Sustainability is not just environmental-ism.**

## Environmental

Reduce environmental impact  
Reduce NHS carbon footprint  
Net-Zero emission by 2040

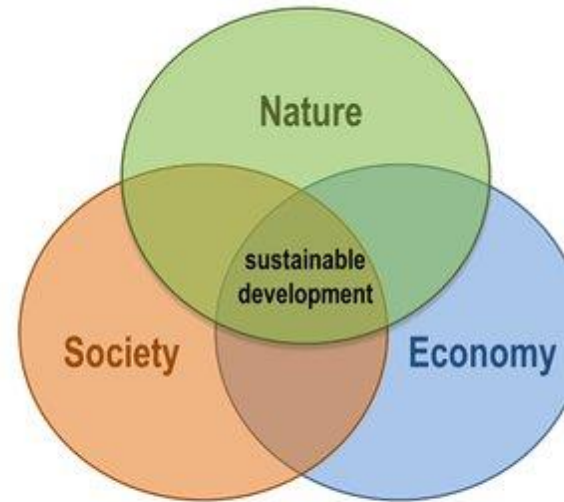
## Financial

Reducing variability of care  
Cost-effective use of healthcare resources  
Ethical **purchasing, production and sourcing**  
of healthcare products  
Promoting efficiency

## Social

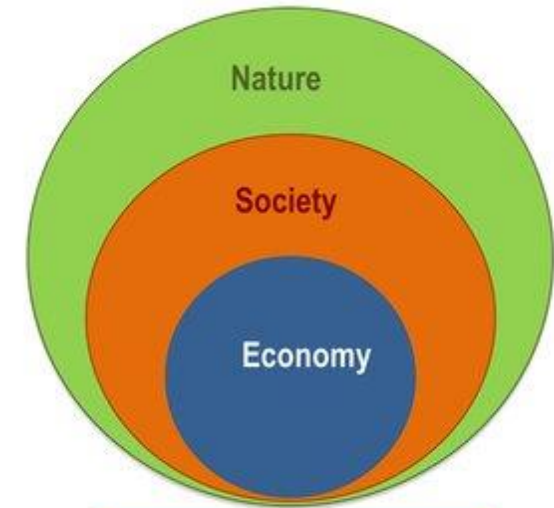
Community involvement  
Health is basic human right  
Staff retention  
Building resilience in the workforce

Natural capital or system can be substituted  
The capitals are substitutable



**Weak sustainability**

Based in Brundtland 1987.



**Strong sustainability**

Giddings 2002.

Must maintain Natural capital  
*Economy only exists in the  
context of a society*

# SWLEOC Workforce Resilience



## ENERGY

Sustaining and renewing physical energy to have the capacity to keep going through challenging times.



## FUTURE FOCUS

Having a clear sense of purpose and direction to help to move forward without getting stuck or feeling held back.



## INNER DRIVE

Sustaining self-belief when times get tough, displaying confidence, motivation and perseverance.



## FLEXIBLE THINKING

Having an open and optimistic mindset, enabling a positive and adaptive response to change and challenges.



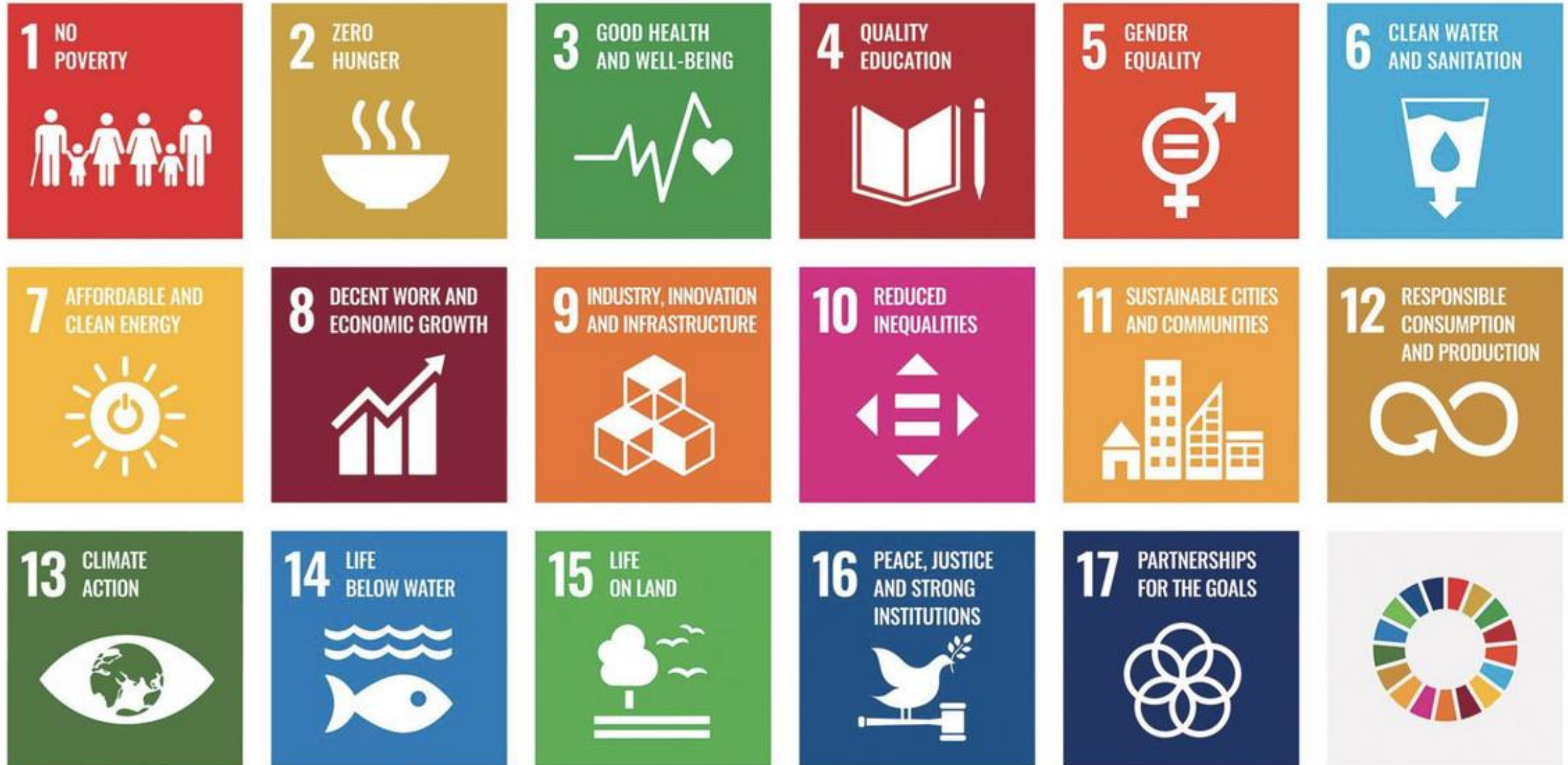
## STRONG RELATIONSHIPS

Building open and trusting relationships and being willing to call on these for help and support if facing a challenge.



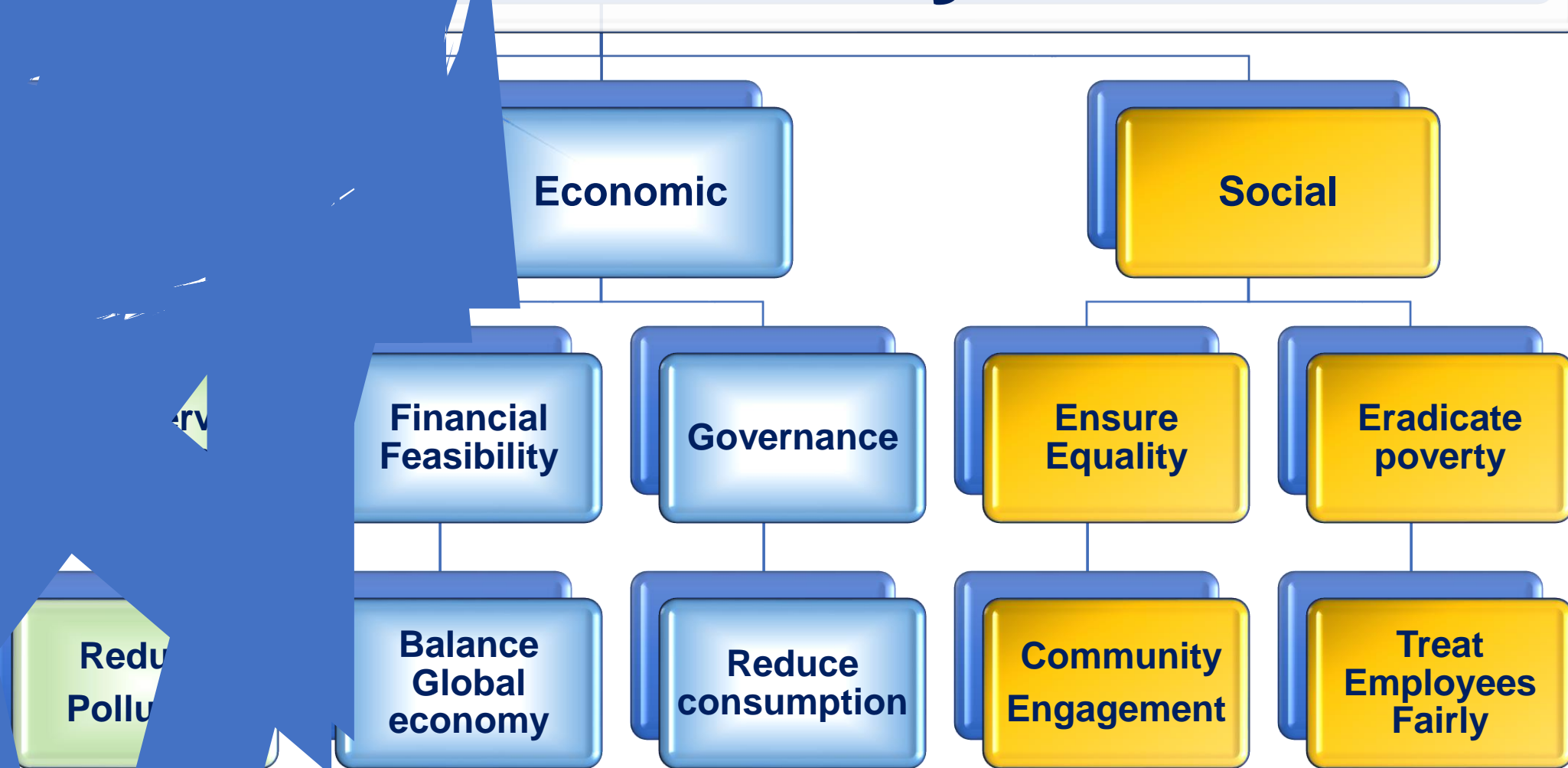
# SUSTAINABLE DEVELOPMENT GOALS

2030



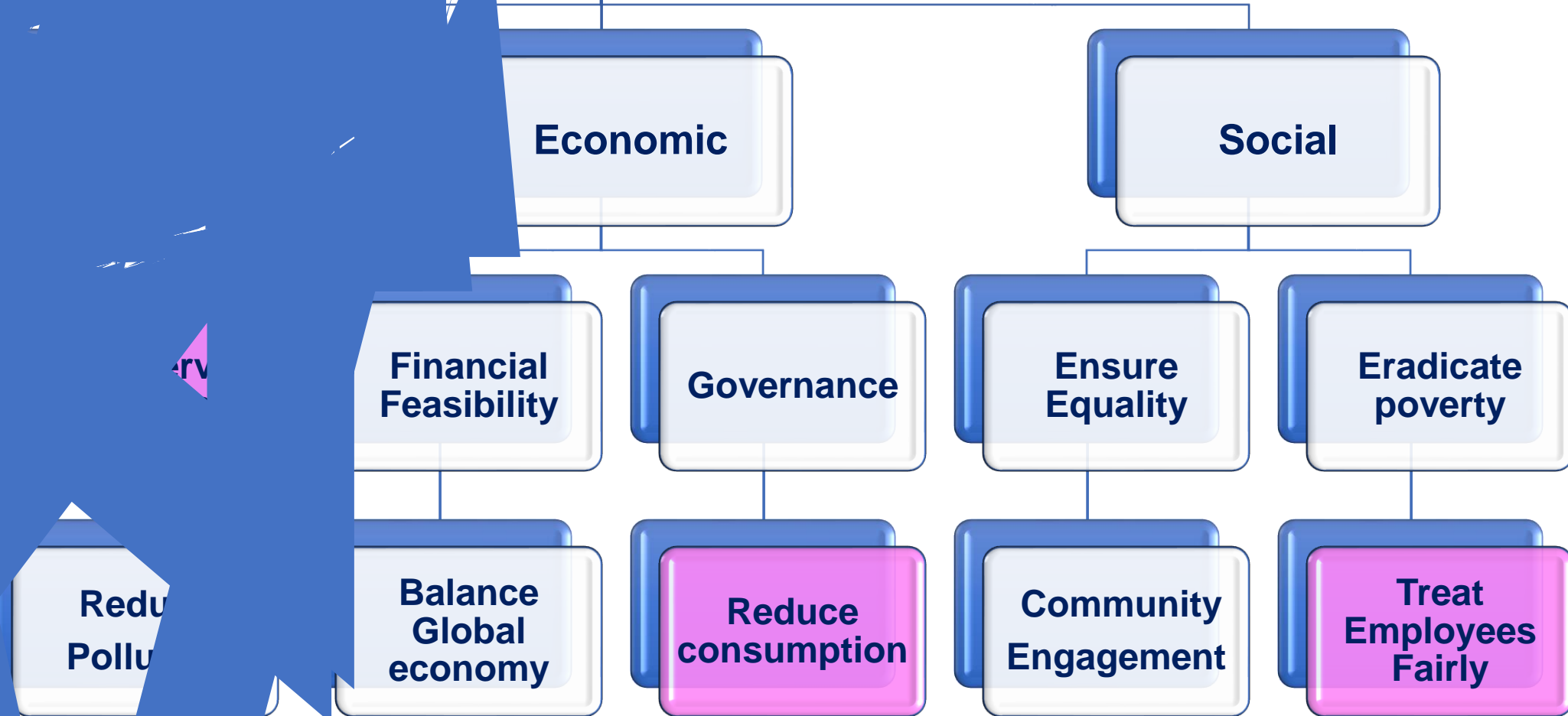


# Sustainability



Environmental sustainability cannot be achieved without meeting human needs and getting people from around the world on board

# Sustainability



Environmental sustainability cannot be achieved without meeting human needs and getting people from around the world on board

# The end-game is finding a way that we can all have a “good life” within the limits of nature

Future we are leaving for the next generation

Half the world lives on less than \$2.50 a day

1 Billion people cannot read or write

1 Billion currently without basic drinking water services.

2 Billion people still do not have basic sanitation facilities

**46% of children from black and minority ethnic groups are in poverty in the UK, 26% of children in white British families (End Child Poverty, 2020).**

Child poverty is defined by the Child Poverty Action Group as existing when parents can't afford to pay for basics such as food, housing and clothes - it affects 1/4 children in the UK





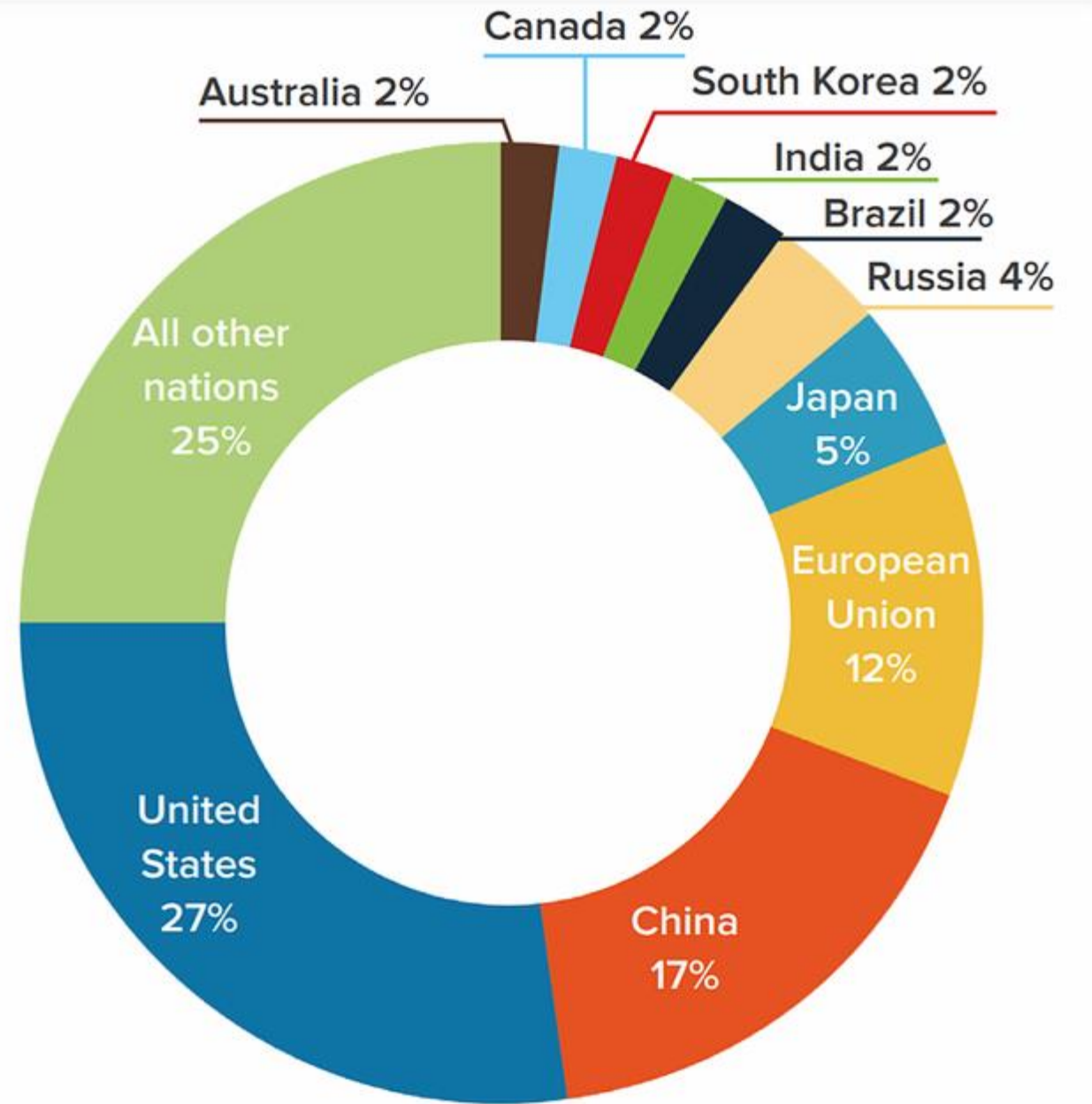
## 8R Greening Initiatives

Eco-Friendly  
Healthcare





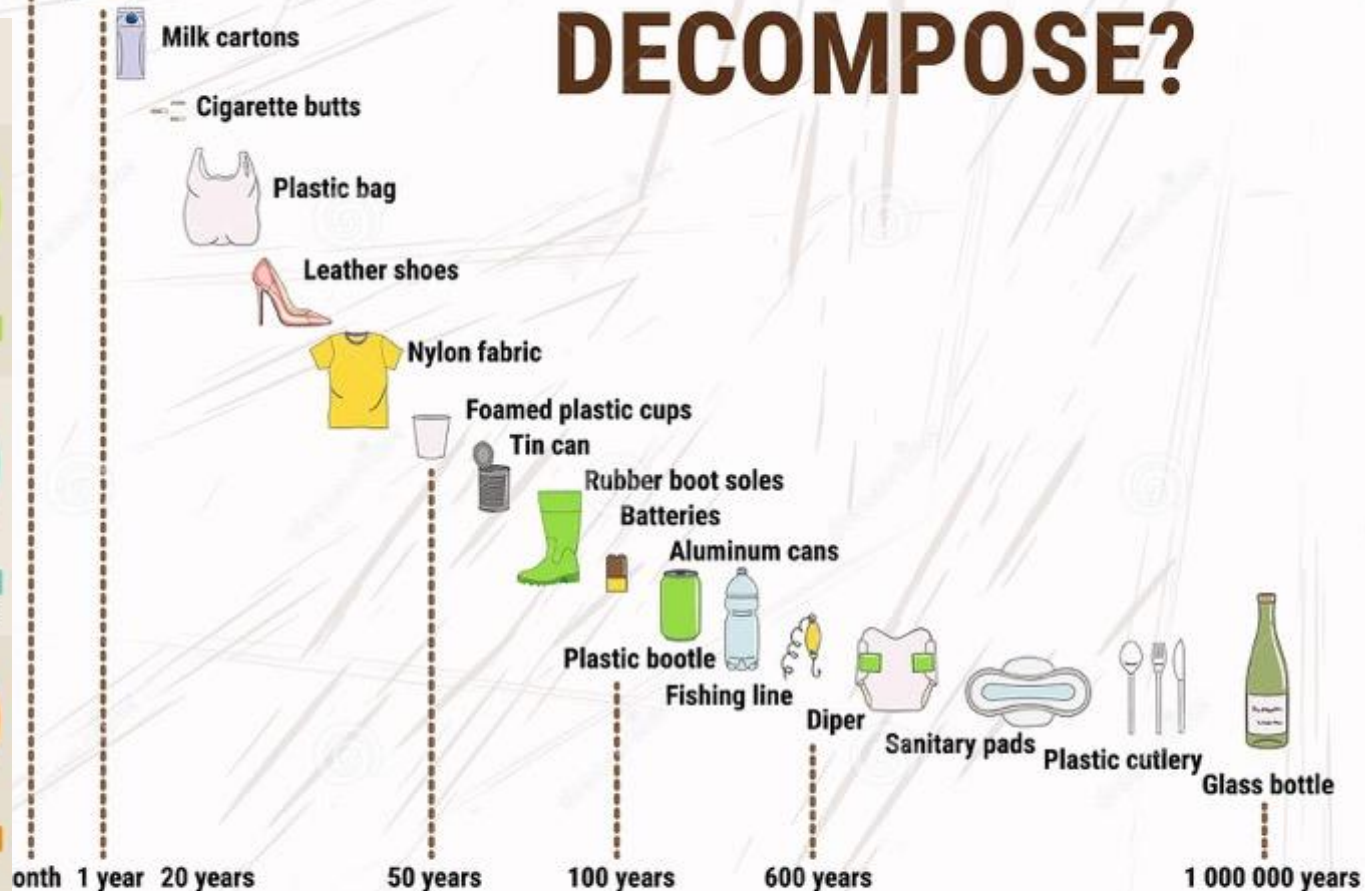
# Top ten emitters as % of global health care footprint



1 Month



# HOW LONG DOES IT TAKE TO DECOMPOSE?



Material	Estimated Decomposition
Cigarette butts	5 years
Plastic bags	20 years
Plastic-lined coffee cups	30 years
Plastic straws	200 years
Soda can rings	400 years
Plastic bottles	450 years
Toothbrushes	500 years
Disposable diapers	500 years
Styrofoam	500 years
Fishing line	600 years
Glass	Unknown



# Throwaway culture

disposal of millions of items each year  
because of a theoretical risk of transmitting infection.

- Instrument sets
- Syringes
- Saw blades
- Wires
- Tourniquet
- Diathermy hooks etc)
- single-use items



**'There is no more neutrality in the world. You either have to be part of the solution, or you're going to be part of the problem.' T. Siedner**

