Co-financed by the Connecting Europe Facility of the European Union

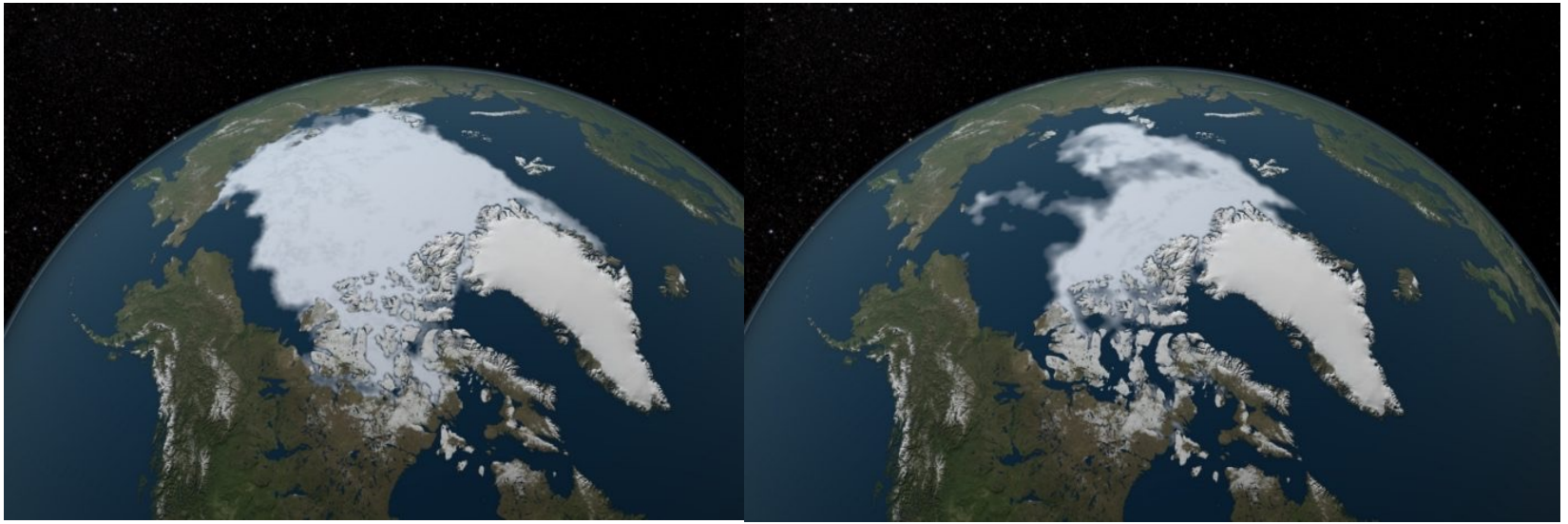
Sustainability in health care

“Primum non nocere”

Chiara Demartini
mariachiara.demartini@unipv.it

Why do we want to focus on ESG practices?

Artic Ocean



1984 2012

Co-financed by the Connecting Europe Facility of the European Union

Global Risks Report 2023

Top 10 Risks

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period"

WORLD ECONOMIC FORUM

	2 years	10 years
1	Cost of living crisis	Failure to mitigate climate change
2	Natural disasters and extreme weather events	Failure of climate-change adaption
3	Geoeconomic confrontation	Natural disasters and extreme weather events
4	Failure to mitigate climate change	Biodiversity loss and ecosystem collapse
5	Erosion of social cohesion and societal polarization	Large-scale involuntary migration
6	Large-scale environmental damage incidents	Natural resource crises
7	Failure of climate-change adaption	Erosion of social cohesion and societal polarization
8	Widespread cybercrime and cyber insecurity	Widespread cybercrime and cyber insecurity
9	Natural resource crises	Geoeconomic confrontation
10	Large-scale involuntary migration	Large-scale environmental damage incidents

Risk categories: Economic, Environmental, Geopolitical, Societal, Technological

Source: World Economic Forum, Global Risks Perception Survey 2022-2023

North Western Glacier (Alaska)

1920-1940

2005

Co-financed by the Connecting Europe Facility of the European Union

Neumayer Glacier (Montana)

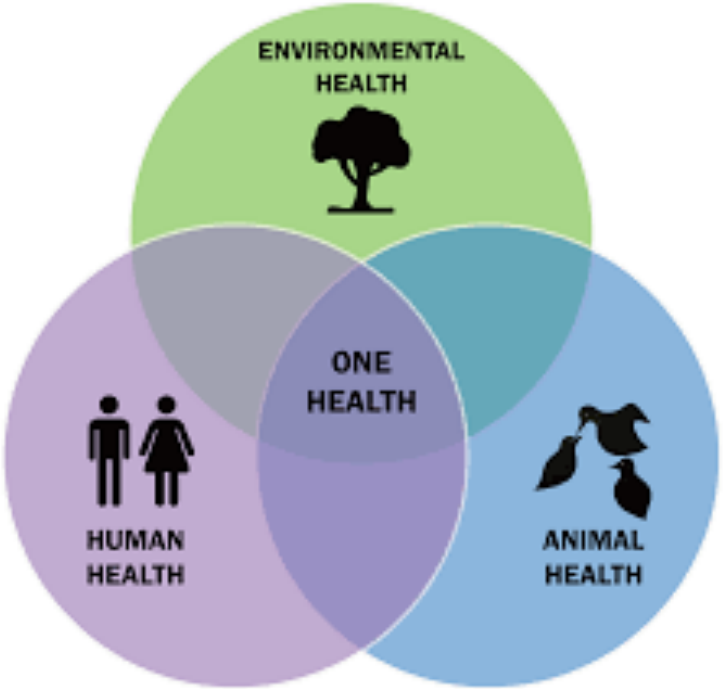
2005

2016

SustainAbility

Co-financed by the Connecting Europe Facility of the European Union

One health



(Wild Conservation Society, 2004)

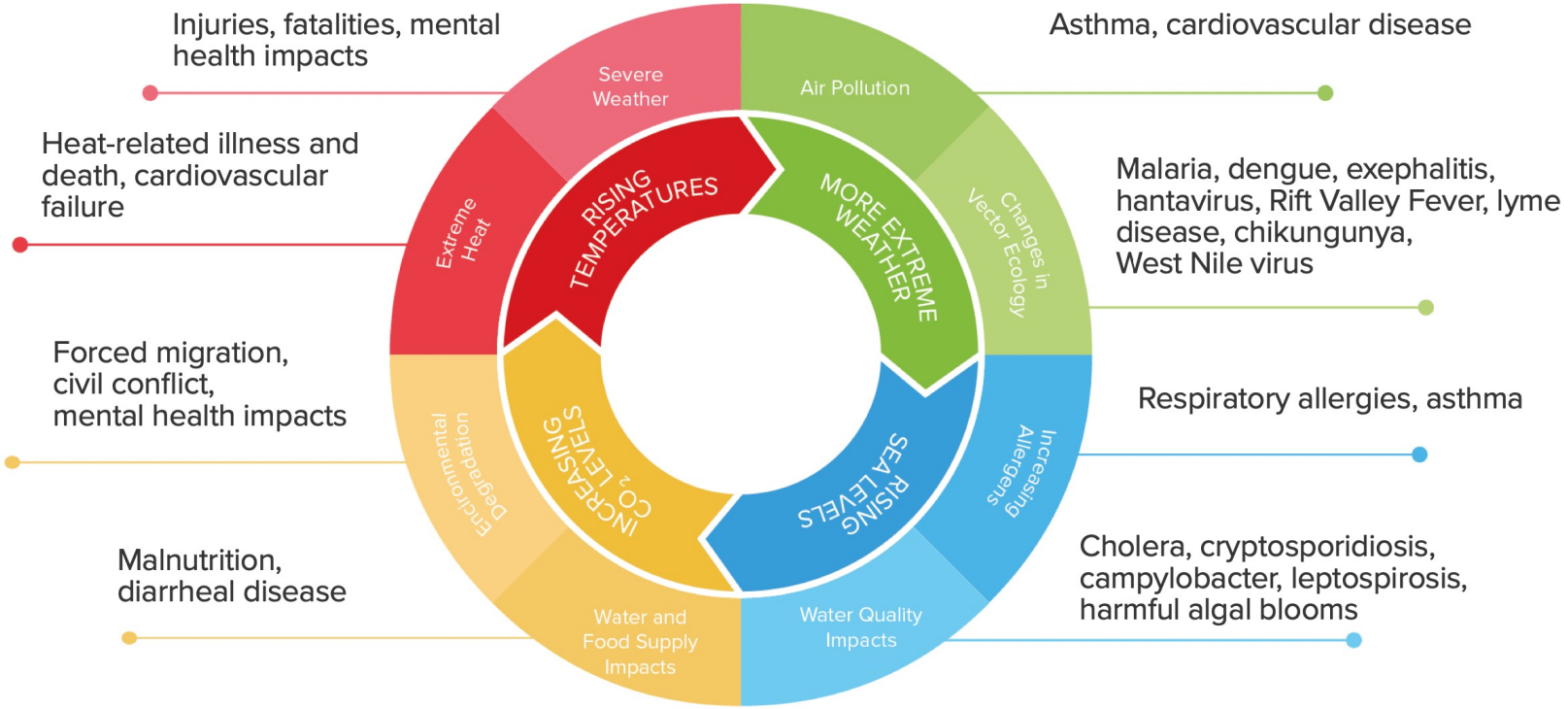


Figure 1: Impact of climate change on human health (Source: U.S. Centers for Disease Control and Prevention)

SustainAbility

- The call for a more sustainable action is widespread worldwide (SDG, 2016)
  - A growing number of companies are facing sustainability issues and a greater awareness of these topics (Knauer and Serafeim, 2014).
  - Recent literature and international bodies are taking actions to try and *identify*, *measure* and *mitigate* the negative impact of unsustainability globally (Gibbons et al., 2000).
- Businesses are responding to this call by promoting **environmental, social and governance (ESG)** practices (Abhayawansa and Guthrie, 2016; Druz et al., 2017; Hummel et al., 2017).

Co-financed by the Connecting Europe Facility of the European Union

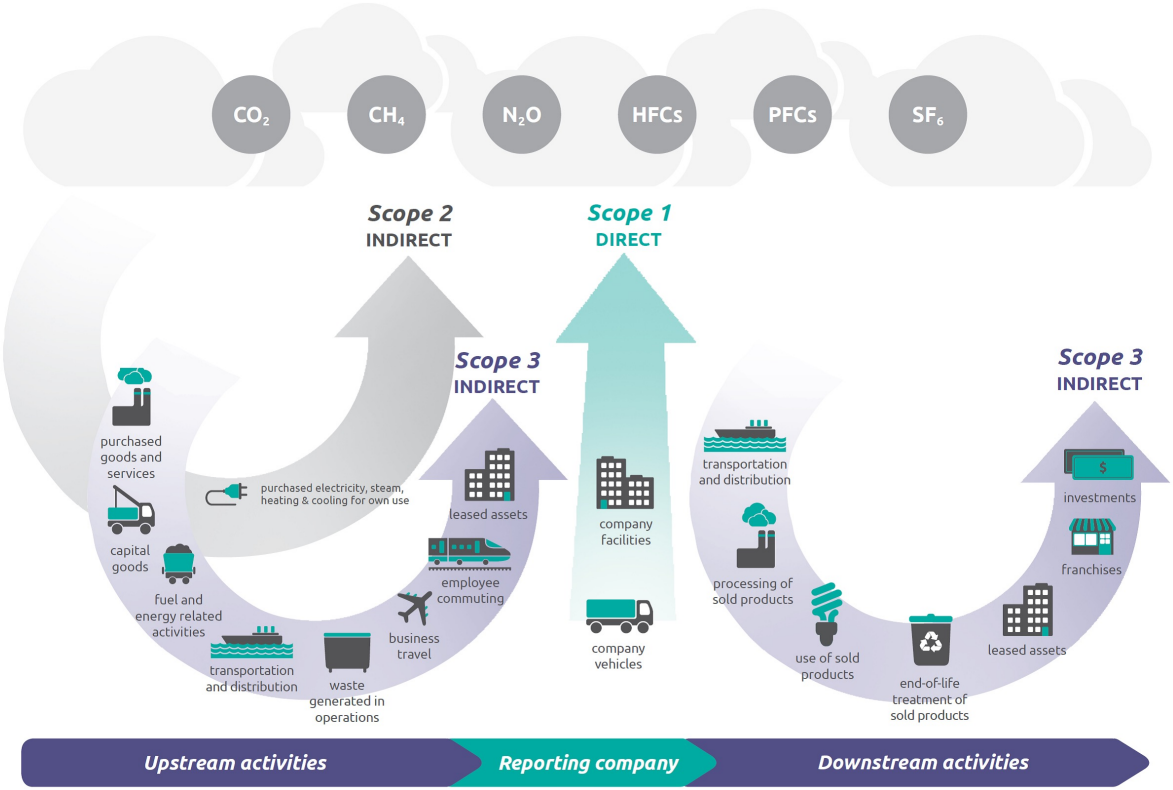
Environmental
Renewable fuels
Climate risks
Greenhouse gas emissions
Energy efficiency
Water management
Recycling processes
Population growth
Emergency preparedness

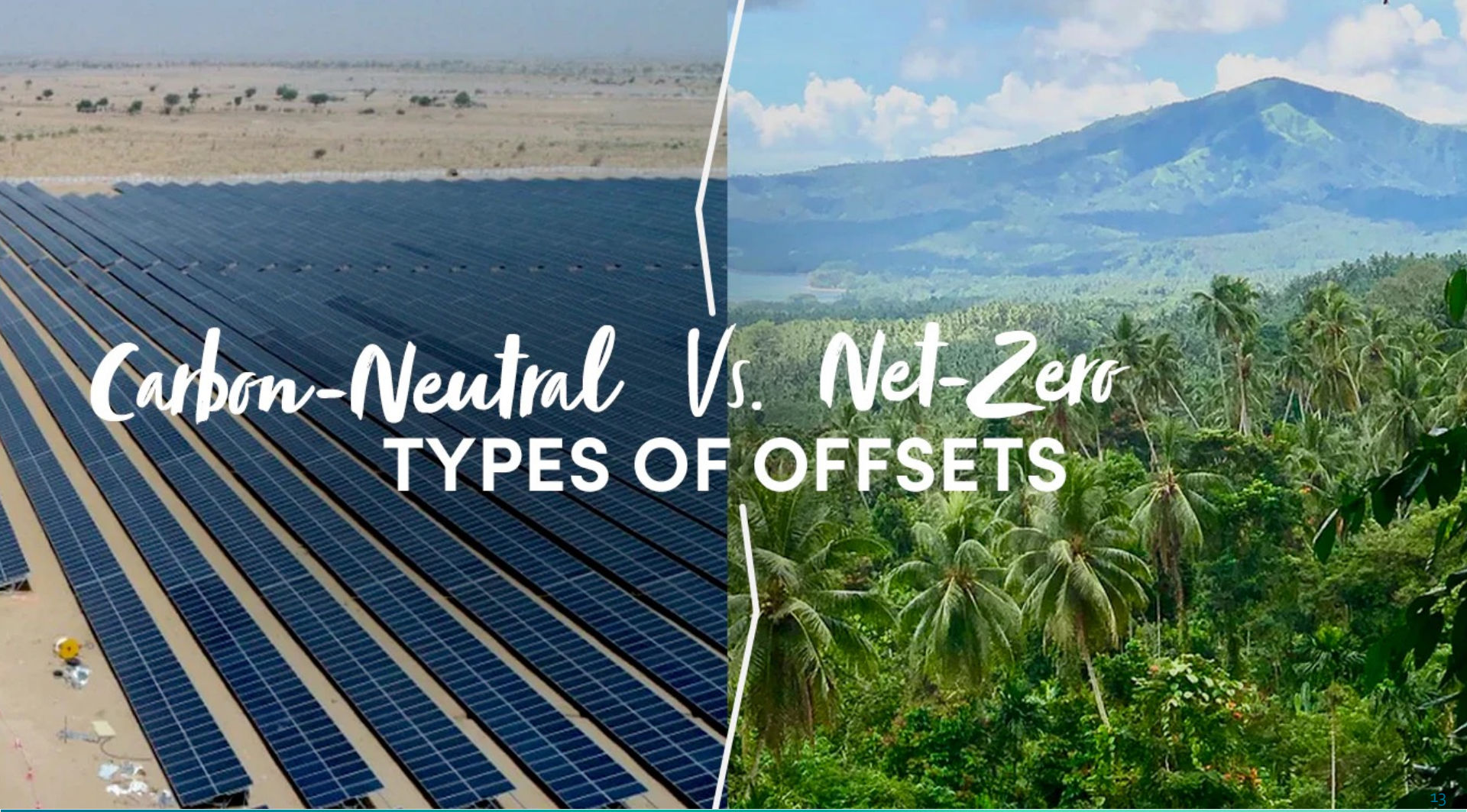
Social
Health & Safety
Human rights
Working conditions
Employee relations
Inclusion & Diversity
Impact on local communities

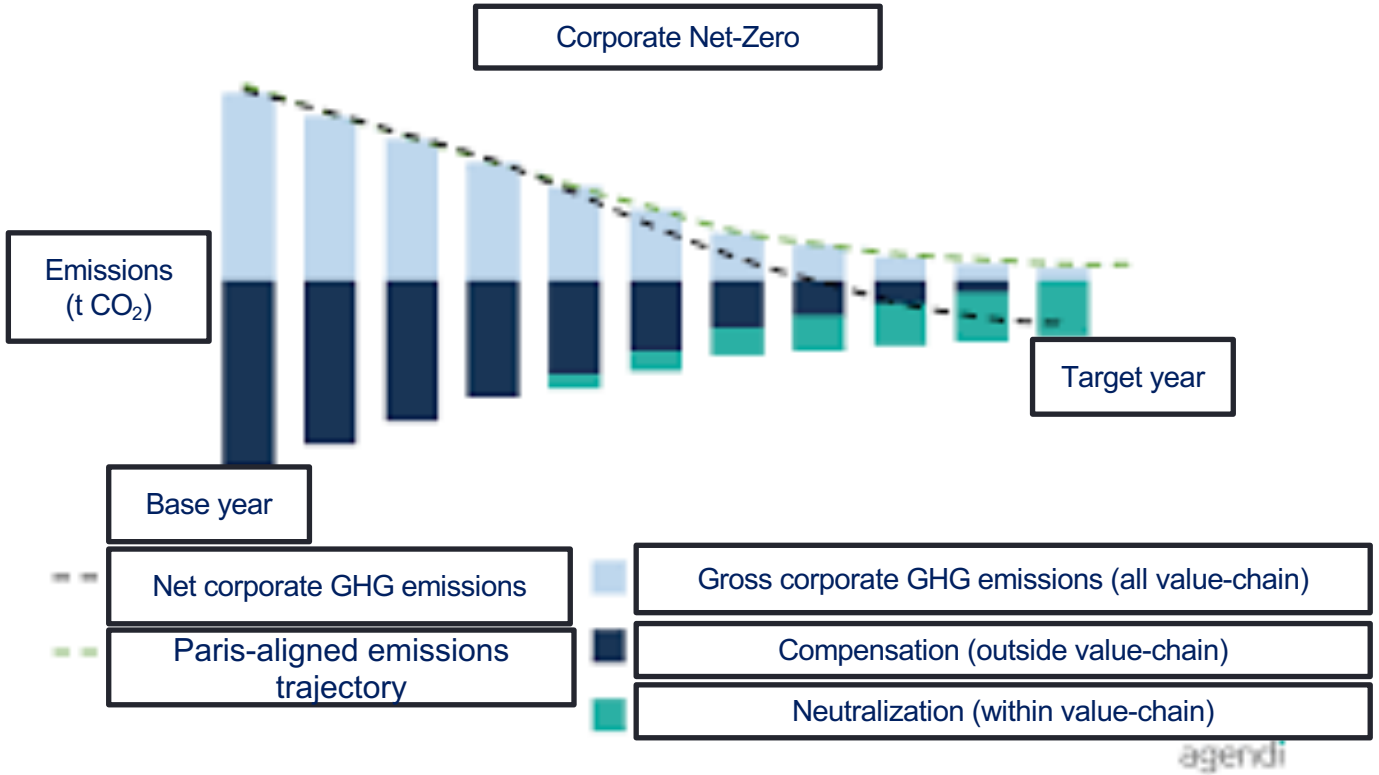
Governance
Ethical standards & corporate behaviour
Board diversity & structure
Stakeholder engagement
Executive compensation
Shareholder rights

Co-financed by the Connecting Europe Facility of the European Union

Environmental Pillar




Carbon-Neutral Vs. Net-Zero
TYPES OF OFFSETS


Corporate Net-Zero
Emissions
(t CO_2)
Target year
Base year
Net corporate GHG emissions
Paris-aligned emissions trajectory
Gross corporate GHG emissions (all value-chain)
Compensation (outside value-chain)
Neutralization (within value-chain)
agendi

14

Recommendations and Supporting Recommended Disclosures

Governance

Disclose the organization's governance around climate-related risks and opportunities.

Recommended Disclosures

a) Describe the board's oversight of climate-related risks and opportunities.

b) Describe management's role in assessing and managing climate-related risks and opportunities.

Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosures

a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate-related risks.

c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk

Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

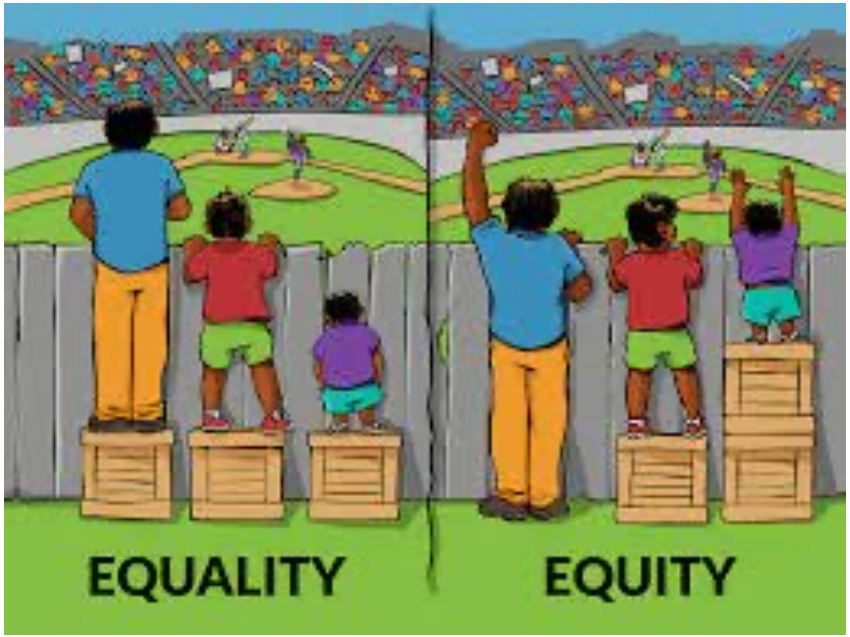
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

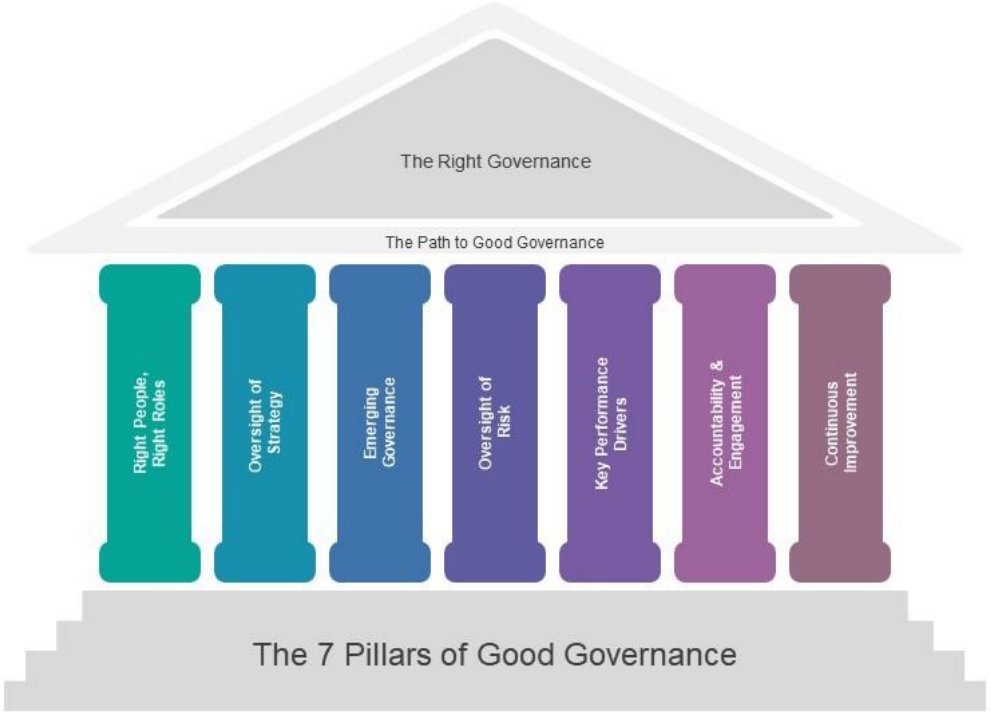
Co-financed by the Connecting Europe Facility of the European Union

Social Pillar



Co-financed by the Connecting Europe Facility of the European Union

Governance Pillar



Co-financed by the Connecting Europe Facility of the European Union

Sustainability in health care

Salus populi suprema lex esto

(un)sustainable health care

- 2015 - world leaders committed to 17 Sustainable Development Goals (SDGs). **SDG 3** focuses specifically on **health**.
- Modern healthcare is one of the **major contributors** to pollution that adversely affects human health (Sherman et al., 2019). The global healthcare system has generated around 5% of GHG emissions that are equivalent to the emission from 514 coal power plants (Healthcare Without Harm, 2019).
- However, reducing carbon footprint through government policies and regulations, and technological innovations only indirectly affect the health sector (Bhopal & Norheim, 2021).
- Pan-European Commission on Health and Sustainable Development (2021) - Call to Action on making healthcare greener in the post-pandemic era (biodiversity- and climate-related risk)
- COP26 UN climate conference - call for climate-resilient and low-carbon health systems to respond to mounting evidence that climate change is affecting global citizens' health and wellbeing
- Research focused on building a greener healthcare system from an **individual** (e.g., Xu et al., 2021), to **organizational** (e.g., Ryan-Fogarty et al., 2016), to **industrial levels** (e.g., Zimmer and McKinley, 2008).

Co-financed by the Connecting Europe Facility of the European Union

Health care's climate footprint

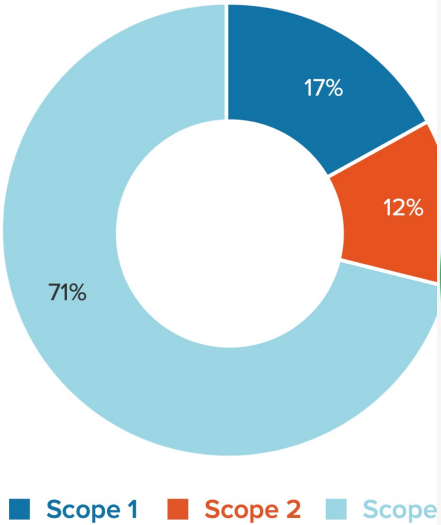


Figure 5: Global health care footprint split by GHGP Sco

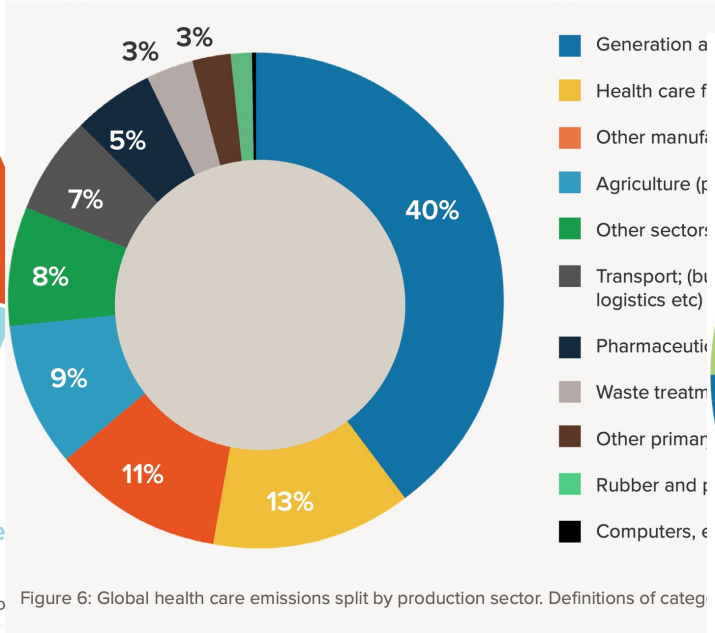


Figure 6: Global health care emissions split by production sector. Definitions of categ

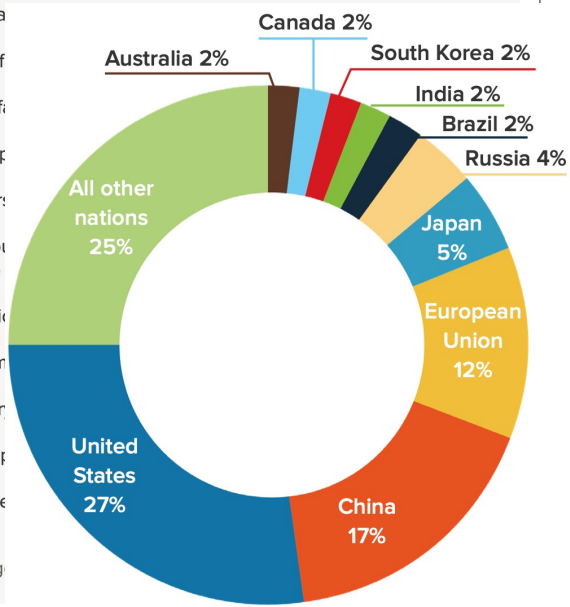


Figure 8: Top ten emitters as percentage of global health care footprint.

Source: Health Care Without Harm (2019)

Co-financed by the Connecting Europe Facility of the European Union

Medical waste

- Medical waste is the **second most hazardous waste globally** after radiation waste.
- It has been increased greatly due to a large number of hospitalizations and medical testing during the pandemic (Saadat et al., 2020).
- The pandemic has caused a significant increase in disposable personal protective equipment **(PPE)** such as face masks, plastic gloves and insulation garments. (129 million+ disposable masks and 65 billion gloves were used globally each month; Chen et al., 2021; Prata et al., 2020).
- Among healthcare professionals single-use plastic is viewed as a legitimate way to prevent infectious diseases, especially single-use protective equipment is viewed as the **safter option** (Ngo, 2020; Xu et al., 2021).
- Therefore, it is imperative that we find innovative solutions to this dilemma to ensure a sustainable management of medical waste (Tirkolaee et al., 2021)

Co-financed by the Connecting Europe Facility of the European Union

NHS – Road to Carbon Net-Zero

Figure 2: Sources of carbon emissions by proportion of NHS Carbon Footprint Plus

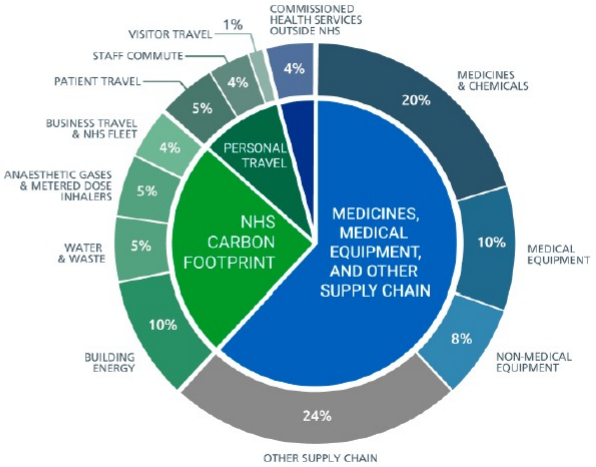
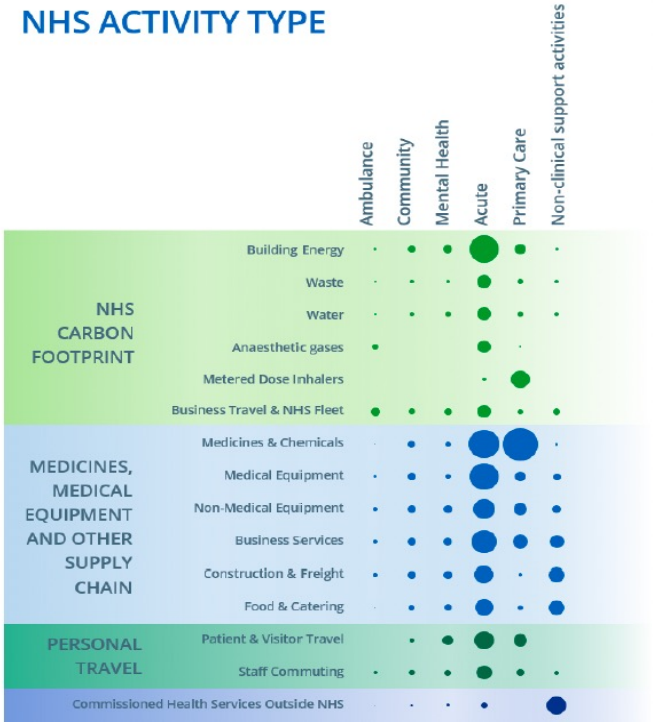


Figure 3: Sources of carbon emissions by activity type and setting of care



Co-financed by the Connecting Europe Facility of the European Union

NHS – Road to Carbon Net-Zero

- The NHS cut its own carbon footprint in 2020 by 62% compared to the international-standard 1990 baseline and by 26% when indirect factors are included.
- NHS addresses hospital food and catering waste, which accounts for 6% of the NHS's total greenhouse gases, by offering patients plant-based food options, implementing carbon labeling on food items, and switching to local food suppliers to reduce food miles.
- Targets:
  - *"for the emissions we control directly (the NHS Carbon Footprint), net zero by 2040, with an ambition to reach an 80% reduction by 2028 to 2032*
  - *for the emissions we can influence (our NHS Carbon Footprint Plus), net zero by 2045, with an ambition to reach an 80% reduction by 2036 to 2039" (NHS, 2020, p. 5)*

NHS

Delivering a 'Net Zero' National Health Service

NHS – Early measures

1. ***Our care***: *framework to evaluate carbon reduction associated with new models of care*
2. ***Our medicines and supply chain***: *suppliers*
3. ***Our transport and travel***: *world's first zero-emission ambulance by 2022, with a shift to zeroemission vehicles by 2032 feasible for the rest of the fleet.*
4. ***Our innovation***: *digital transformation agenda aligns with our ambition to be a net zero health service*
5. ***Our hospitals***: *40 new 'net zero hospitals'*
6. ***Our heating and lighting***: *LED lighting replacement programme*
7. ***Our adaptation efforts***: *By building resilience and adaptation into the heart of our net zero agenda*
8. ***Our values and our governance***: *By supporting an update to the NHS Constitution to include the response to climate change, and ensuring that every NHS organisation has a board-level net zero lead, making it clear that this is a key responsibility for all our staff*

United Nations Framework Convention on Climate Change (UNFCCC)

- Areas of intervention:

1. **mitigation** (reducing carbon footprints),
2. **resilience** (preparing for extreme weather events and diseases), and
3. **leadership** (providing education to promote climate change policies).

RACE TO ZERO

Target: 28,000 hospitals from 40 countries have committed to addressing health care climate challenges by 2021.

Co-financed by the Connecting Europe Facility of the European Union

EU Green Deal and other EU policies

- EU countries could take advantage of:

1. the **Pharmaceutical Strategy for Europe**, which underlines the importance of using environmentally sustainable and climate-neutral pharmaceuticals,
2. the **eHealth**, the digital health strategy, which although specifically outlines improvements in access to care and its quality, could also have an important role in the decarbonization of healthcare systems, and
3. the **Farm to Fork Strategy**, which can support the use of healthy and sustainable food in the healthcare system

Co-financed by the Connecting Europe Facility of the European Union

Best practices for sustainable health care

1. Online medical appointments (to save 40,000 cars worth of carbon; Patel, 2021).
2. NHS Digital - more efficient data hosting environment (carbon reduction of 4,000 tonnes; Patel, 2021).
3. Wider adoption of waste anesthetic capture systems has the potential to be a high impact health care-specific climate mitigation measure (HCWH, 2019)
4. Climate smart healthcare approach (Bouley et al., 2017)

Co-financed by the Connecting Europe Facility of the European Union

The Italian perspective

- Climate change is already affecting the health of Italian people (Vineis et al., 2021):
  - almost 100 million more person-days of **heatwave exposure** than between 1986 and 2005, and heatwaves lead to a quantifiable burden of mortality and morbidity in Italy each summer;
  - 2.3% of the total deaths observed in 2015 were attributable to heat exposure;
  - twice the land surface was affected by at least one month of **drought** in 2020 than in 1950, putting food and water security at risk ;
  - changes in climatic conditions are affecting the **environmental suitability for infectious disease transmission.**
- The continued use of fossil fuels is still contributing to high concentrations of air pollution,
- GHG emissions related to **consumption of animal products** represented 82% of all emissions coming from the agricultural products consumed in Italy in 2018. The *Lancet*Countdown modelling estimates that the associated red meat consumption contributed to more than 16 000 deaths (Vineis et al., 2022)

Co-financed by the Connecting Europe Facility of the European Union

The Italian perspective

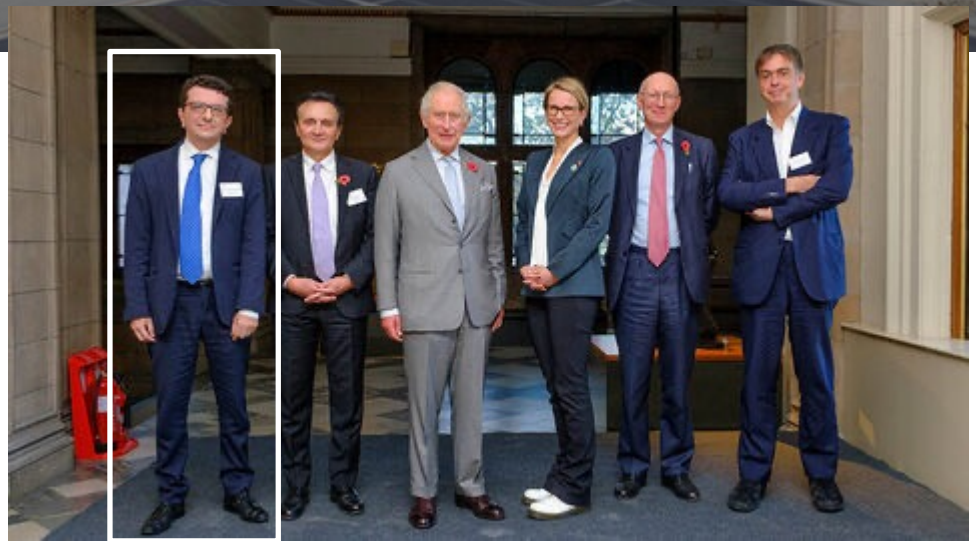
- Italy's **healthcare footprint is 4%** of the national footprint;
- the country is currently investing in **ecological transition** and **climate policies** promote infrastructure improvements at the national level and energy efficiency improvements at the regional level in public sector buildings, *including hospitals*.
- However, despite the Italian National Prevention Plan recognizing that the health sector must contribute to climate change mitigation and improve its resilience, **health care is not explicitly mentioned** when planned emission reductions are indicated.
- Considering that two of the assets of NRRP are the strengthening of primary healthcare and the development of telemedicine, both of which, replacing hospital-based services, can become instrumental to reduce emissions as well (Armocida et al., 2022)
- In 2019, a document of a working group of Consiglio Superiore di Sanità (the strategic advisory board of the MoH), including the current Minister of Ecological Transition, stressed the **need to consider health co-benefits in all climate policies** (Vineis et al., 2022)

Policy recommendations to promote and maximise the health gains from climate action in Italy (Vineis et al., 2022)

1. Improve interaction between health and environment authorities
2. Accelerate action on climate change mitigation policies that reduce air pollution in urban areas
3. Deliver rapid decarbonisation of the energy system
4. Stop subsidising fossil fuels
5. Promote shifts to healthy, low-carbon diets, such as that put forward by the EAT-*Lancet* Commission, with particular emphasis on reducing red meat consumption
6. Ensure that the use of COVID-19 fiscal stimulus funds supports decarbonisation and health protection for Italian populations now and in the future, in line with WHO's prescriptions for a healthy, green recovery, and with the goals of the Paris Agreement

Co-financed by the Connecting Europe Facility of the European Union

Sustainable Markets Initiative Health Systems Taskforce



https://www.sustainable-markets.org/taskforces/health-systems-taskforce/

Co-financed by the Connecting Europe Facility of the European Union

Task Force's specific actions

1. Recognising that supply chain emissions drive over 50% of overall health care emissions, the Task Force members today announced they are committed to net zero emissions and will:
    1. align on a set of common supplier standards
    2. switch to renewable power
    3. jointly evaluate renewable power purchase agreements in China and India in 2023
    4. explore green heat solutions by 2025 to accelerate the adoption of scalable technologies
    5. transition car fleets to zero-emission vehicles by 2030 and jointly explore green transportation corridors by 2025
2. There is a significant opportunity to reduce the emissions of patient care, which contribute to approximately 45% of overall health care emissions, while simultaneously improving health outcomes. The Task Force will:
    1. collaborate with stakeholders including health policy makers, regulators, payers, providers, healthcare professionals and patient groups to raise awareness on the need and opportunity to decarbonise care pathways
    2. build an end-to-end care pathway emissions calculation standard and tool for specific diseases that allows stakeholders to measure and track emissions across the care pathway and assess decarbonisation strategies
    3. align on a common framework to perform LCAs, with private sector members also committed to publishing product-level LCA data across their product portfolio to increase transparency on treatment emissions
3. The Task Force is committing to leverage digital health solutions to decarbonise clinical trials and will:
    1. commit to a common framework by 2023 and subsequently start to measure greenhouse gas emissions in phase 2 and 3 clinical trials. Companies aim to report phase 2 and 3 trial emissions for trials starting in 2025
    2. align new trials to companies' decarbonisation pathway and set trial emissions reduction targets for 2030 at the latest
    3. Incentivise clinical research organisations and clinical trial-related suppliers to commit to a framework to measure and reduce emissions, including through the use of digital solutions
    4. target 90%+ of trials starting in 2025 to include a review of how digital solutions can reduce emissions

Groupwork:

1. Split into groups of up to 3 people
2. Select a health system (at the global level of analysis)
3. Identify its weaknesses from a sustainability perspective
4. Propose a strategy to improve sustainability in all the three pillars
5. Define 3-5 actions that substantiate your strategy
6. Present your results

How can we make our NHS more sustainable?

What's your thought on it?