The Lancet Countdown on Health and Climate Change

Policy brief for Europe

2022

LANCET COUNTDOWN: TRACKING PROGRESS ON HEALTH AND CLIMATE CHANGE

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LANCET COUNTDOWN: HEALTH AND CLIMATE CHANGE IN EUROPE

Introduction

Climate change threatens to reverse the progress made over the last 50 years in global health and development.[1] Recent floods, droughts, heatwaves and wildfires across Europe illustrate the impacts of extreme weather and climate events on human health, with several studies linking these events to anthropogenic climate change.[2,3] There is widespread recognition that action to reduce emissions (known as climate mitigation) and adaptation to current and projected impacts of climate change are crucial to ensure the health of the planet and people.[4]

Greenhouse gas (GHG) emissions from the EU account for 17% of global cumulative GHG emissions (1950-2020), making Europe one of the major contributors to the climate crisis with a global responsibility to move towards a low-carbon economy. In 2019, the European Union (EU) committed to the European Green Deal, including becoming climate-neutral by 2050.[5] The EU Climate Law, recently endorsed by the European Parliament, forms a binding obligation for EU Member States to realise the EU's climate ambition.[6] This legislation sets out the interim goal of reducing emissions to at least 55% of 1990 levels by 2030. Transformative actions are needed at European and national levels to reduce emissions, whilst protecting natural carbon stores and sinks (such as forests, peatlands, urban green space, freshwater and the marine environment) to meet these targets.

Building on previous calls for a healthy, green and just recovery from the COVID-19 pandemic, this policy brief focuses on data and policy recommendations in three key areas, building on the scientific evidence of the 2022 *Lancet* Countdown and *Lancet* Countdown in Europe reports – highlighting areas for action on health and climate change.[2,3] The three key areas are: sustainable food and diets, ambient air pollution, and greening of the healthcare sector, including sustainable waste management as part of future pandemic preparedness.

EU policies on climate action

Between 2021 and 2022, the EU adopted proposals to reduce deforestation, support the transition to fossil fuel-free transport, decarbonise gas markets, fast-forward the green transition of the energy system (e.g., via the REPowerEU Plan), and restore nature in different ecosystems (through the Nature Restoration Law). In addition, the European Climate and Health Observatory was launched by the European Environment Agency (EEA), the EU and key actors, such as the European Centre for Disease Prevention and Control (ECDC), the WHO Regional Office for Europe and *Lancet* Countdown in Europe. This Observatory supports EU and national climate strategies by providing access to relevant data and tools and fostering knowledge exchange and cooperation between relevant actors. Most recently, in June 2022, the European Council agreed to a set of legislative proposals, the so-called Fit for 55 package, paving the way to revise all climate, energy and transport-related legislation to align with the EU Climate Law.

Recommendations

1. Develop national food strategies and plans supporting the transformation of food production, manufacturing, retail, service, and distribution systems to cut GHG emissions across Europe, whilst protecting the planet's soils, biodiversity, air, water, and public health. This includes encouraging the shift towards healthier, plant-rich and affordable diets by reducing the intake of red meat and dairy products (with less pesticide and fertiliser use). Special attention should be given to restricting marketing and advertising of unhealthy food, with a large carbon footprint.

2. By 2030 at the latest, fully align EU air quality standards (which are legally binding at national level) with the updated World Health Organisation (WHO) Global Air Quality Guidelines, including of 5 $\mu g/m^3$ (annual mean) for fine particulate matter ($PM_{2.5}$) and the latest scientific evidence on the health effects of air pollution.

3. Increase national efforts to de-carbonise healthcare services towards net zero emissions by improving energy efficiency, regulating the procurement and greening the lifecycle of pharmaceuticals and medical devices, developing waste management systems, and investing in research in sustainability and patient safe healthcare.

Sustainable food and diets in Europe

Global food systems are major contributors to the global burden of disease through poor nutrition and the overuse of antibiotics in livestock, of pesticides and fertilisers, whilst also contributing to anthropogenic climate change.[4] The food sector contributes to about one third of all global GHG emissions.[7] Importantly, the combination of high GHG emissions from this sector, combined with the projected growth in global population and increased use of animal-based products, highlights the need for a systemic transformation of food production, supply and consumption towards healthy, affordable and low-carbon foods. Such diets would be less dependent on red meat and have a higher share of vegetables, fruit and grains.[8] Moreover, steering away from animal products reduces the probability of developing zoonoses (infectious diseases that jump from animals to humans).[4]

The 2022 European *Lancet* Countdown report shows that, in 2019, nearly 2.2 million deaths (27% of the total 8.3 million deaths) among adults in Europe were attributable to imbalanced diets **(indicator 3.4.2)**.[3] The data also give insight into total GHG emissions related to the consumption and production of agricultural products, and animal-based foods **(indicator 3.4.1)**.[3] In 2019, total food demand was responsible for 31% of Europe's emissions (see **Figure 1 A**); with only a small decrease from food-demand related emissions compared to emissions reported in 2010. Meat, dairy and eggs made up the majority of per capita emissions, with the highest per capita emissions seen in Northern Europe (see **Figure 1 B**).

The EU aims to transition to sustainable food through its Farm to Fork Strategy.[9] As part of this strategy, the European Commission will propose a legislative framework for sustainable food systems in late 2023,[10] which has the potential to put the European food system on a sustainable path by ensuring policy coherence at the EU and national level and triggering regulatory action. This legislation is expected to introduce a framework for sustainability labelling (i.e., labels which inform consumers about the environmental impacts of using a product) and minimum requirements for public food procurement. Furthermore, the renewed EU common agricultural policy (CAP), which will enter into force in January 2023, could have an important role in the shift to sustainable food systems – if appropriately implemented at national levels.[11]

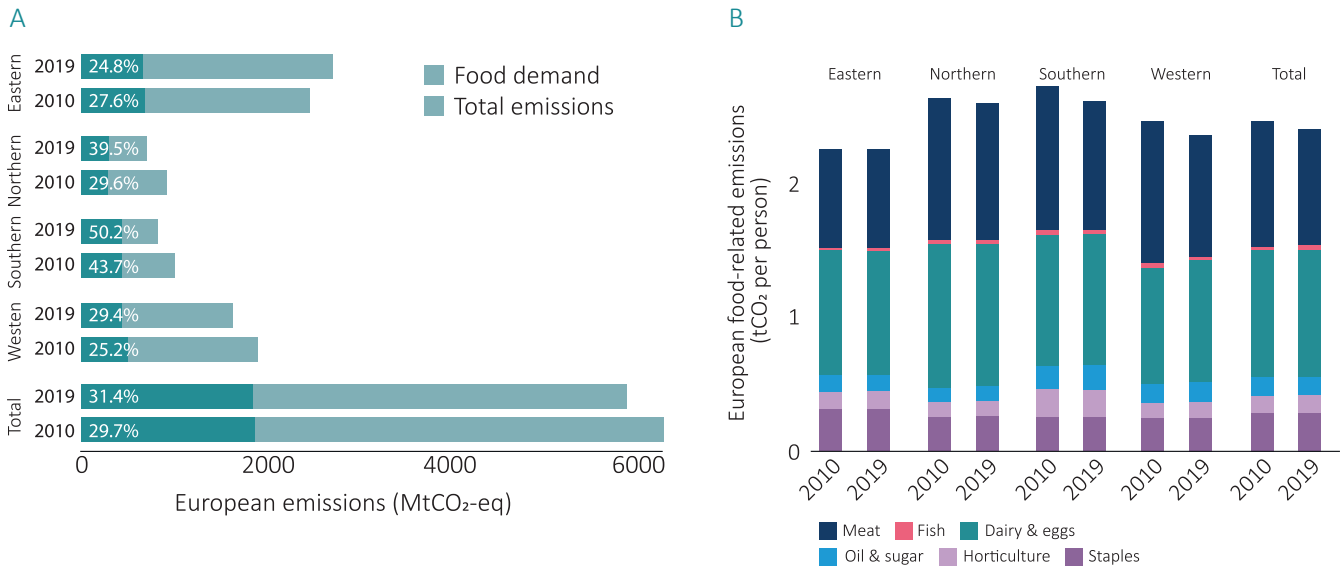

Fig 1: Life cycle emissions related to European food demand. (a) Greenhouse gas (GHG) emissions from food as a proportion of total territorial emissions in absolute terms (2010 and 2019) by European region (i.e., Eastern Europe, Northern Europe, Southern Europe, Western Europe). (b) Per capita food-related CO_2 emissions by European region and food group (i.e., meat, fish, dairy and eggs, oil and sugar, horticulture, staples) comparing 2010 and 2019. This visualisation used the M49 classification of Europe of the United Nations Statistical Division. (Figure from van Daalen *et al.* 2022).

Ambient air pollution in Europe

Reducing ambient air pollution is at the heart of the EU's zero pollution action plan.[i] The *Lancet* Countdown in Europe estimates that 94% of the European population live in areas where air pollution with fine particulate matter (also known as $PM_{2.5}$) exceeds the new WHO guideline level (5 µg/m^3 annual mean).[3,12] Exposure to $PM_{2.5}$ leads to a range of serious health impacts including increased risk of respiratory disease, cardiovascular disease, lung cancer, and premature death. The costs of premature mortality associated with exposure to $PM_{2.5}$ (estimated through placing an economic value on the years of life lost[ii]) were around US$25 trillion globally in 2020.[2]

The *Lancet* Countdown in Europe estimates that, in 2020, approximately 117,000 deaths in Europe were attributable to exposure to $PM_{2.5}$ from the combustion of fossil fuels such as coal, oil and gas **(indicator 3.2)**.[3] Annual deaths attributable to $PM_{2.5}$ from coal-fired power plants decreased from 103,000 deaths annually in 2005, to 23,000 deaths in 2020 (see **Figure 2**). This decline of 60% compared to 2005 is is mostly attributed to the reduction in coal use. However, action is still needed across all European countries to further reduce air pollution, particularly from fossil fuel sources, given that recent research underlines health impacts even at very low pollution levels. Worryingly, as a result of the energy crisis exacerbated by the Russian invasion of Ukraine, some countries have indicated they will revert to coal for energy supply.

[i] https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en [Accessed 28.09.22]

[ii] Years of life lost is a measure of premature mortality that takes into account both the frequency of deaths and the age at which it occurs. Source: WHO.

Germany, for example, announced in June 2022 that it would restart previously retired coal-fired power plants, and the Netherlands announced that they would lift a cap on electricity generation from coal.[13] These actions risk undercutting the improvements in air quality made between 2005 and 2020.

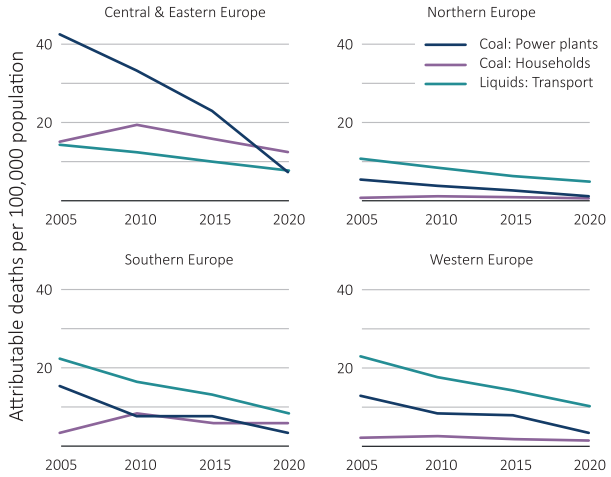

Fig 2: Estimated premature mortality due to fine particulate matter ($PM_{2.5}$) by fuel type, economic sector, and European region calculated in five-year steps expressed as annual attributable deaths per 100,000 population. Countries include the EEA member and cooperating countries, excluding Liechtenstein, Bosnia and Herzegovina, Serbia, Kosovo and Montenegro as data were not available for these countries. (Figure from van Daalen *et al*. 2022).

The majority of $PM_{2.5}$ pollution from fossil fuel combustion comes from the transport sector and is estimated to be responsible for approximately 48,000 deaths in 2020. Tackling air pollution through transport policies would provide direct benefit by providing cleaner air which reduces health harms. Simultaneously, a reduction in the use of fossil fuels for transport will help cut GHG emissions. Additionally, policies promoting active transport, such as walking and cycling, provide health benefits by reducing the burden of noncommunicable diseases (e.g., obesity, cardiovascular disease and diabetes). Therefore, the EU aims to reduce GHG emissions from transport by 90% compared to 1990 levels by 2050.[14] Part of the EU's Fit for 55 package includes regulation for alternative fuels infrastructure which will ensure that road transport, shipping and aviation can refuel with alternative fuels (e.g., electricity or hydrogen). Alternative fuel infrastructure should further be complemented by the development of Sustainable Urban Mobility Plans (SUMPs) – which encourage a shift towards more sustainable transport modes – at both the national and city level. Implementation of SUMPs can be further promoted through EU funding programmes.

Greening the healthcare sector in Europe

Globally, the healthcare sector is a major contributor to GHG emissions, at 5.2% of the total **(indicator 3.6)**.[2] Reducing the healthcare sector's environmental footprint is part of an effective response to climate change and supports the sector's purpose of protecting human health. The largest source of this sector's GHG emissions is linked to the supply chain (accounting for 71%), including product manufacturing, transport, use and disposal of pharmaceuticals, food products, and medical devices.[15] In parallel to reducing healthcare related GHG emissions, health promotion and disease prevention is essential to reduce population demand for healthcare, by supporting better health for all.

The global *Lancet* Countdown's data show that, from 2018 to 2019, average emissions from the healthcare sector of European countries grew by 2.2%, despite several countries taking action to reduce their

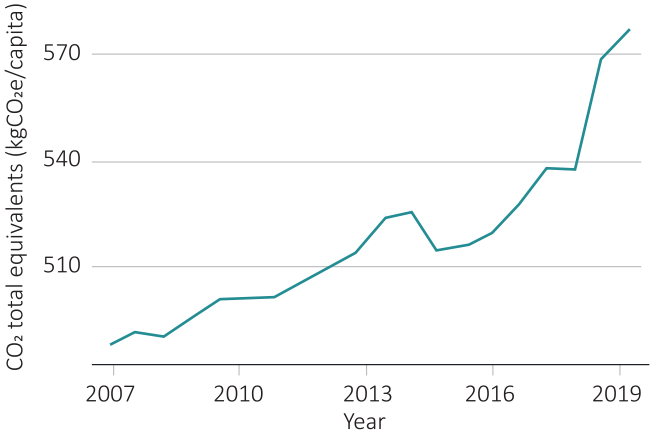

Fig 3: Estimated greenhouse gas emissions (CO2 total equivalent) in the health sector in Europe in 2007-2019. Countries include the EU-27 Member States, excluding Croatia as data were not available for this Member State.

healthcare emissions (see **Figures 3 and 4**).[2] Several countries are taking measures to improve energy efficiency, reduce GHG emissions from pharmaceutical supply chains, and improve waste management. In 2018, the Dutch government adopted the Green Deal on Sustainable Healthcare, committing more than 200 organisations, including healthcare institutions, to a 49% GHG reduction by 2030 and net zero emissions by 2050.[16] More recently, England became the first country to include net zero emissions targets in health and social care legislation.[17] At the European level, the WHO is providing guidance for healthcare institutions and professionals for transitioning to greener healthcare.[18]

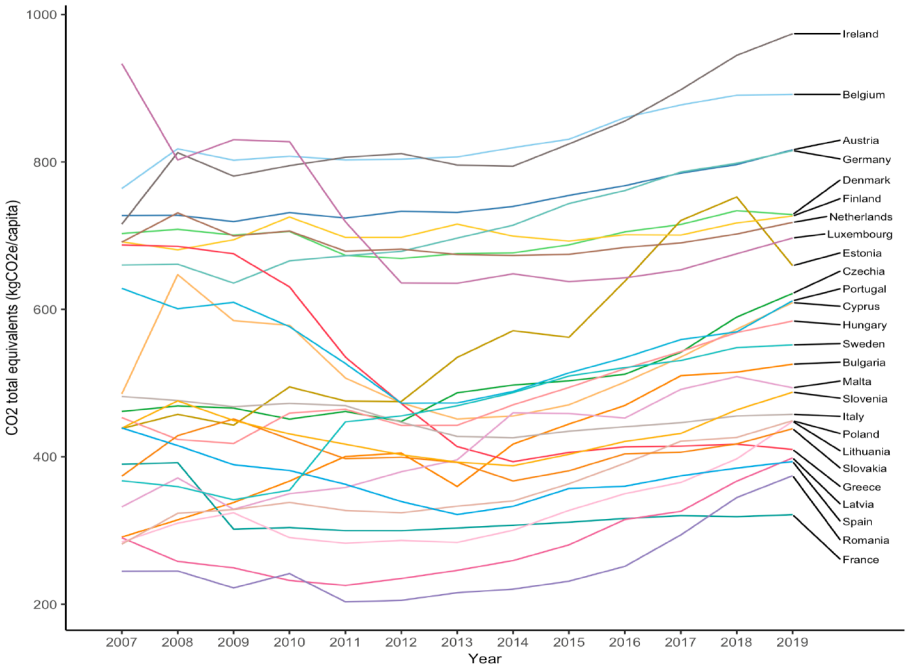

Fig 4: Estimated greenhouse gas emissions (CO2 total equivalent) in the health sector by European country in 2007-2019. Countries include the EU-27 Member States, excluding Croatia as data were not available for this Member State.

References

1. WHO. COP26 special report on climate change and health: the health argument for climate action. Geneva: WHO, 2021.
2. Romanello M, Di Napoli C, Drummond P, et al. The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels. *Lancet* 2022; 399
3. European *Lancet* Countdown report
4. IPCC. Climate Change 2022: Impacts, Adaptation and Vulnerability. Geneva: IPCC, 2022.
5. European Commission. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions—The European Green Deal (COM (2019) 640 final, Brussels, 11.12.2019).
6. Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law').
7. Crippa M, Solazzo E, Guizzardi, Monforti-Ferrario F, Tubiello FN, Leip A. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food* 2021; **2**: 198–209.
8. FAO and WHO. Sustainable Healthy Diets – Guiding Principles. Rome: FAO and WHO, 2019.
9. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system (COM/2020/381 final).
10. European Commission. Legislative framework for sustainable food systems. 2022; published online. https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/legislative-framework_en.
11. European Commission. The new common agricultural policy: 2023-27. 2022; published online. https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/new-cap-2023-27_en.
12. WHO. WHO global air quality guidelines: particulate matter ($PM_{2.5}$ and PM_{10}) ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide. Geneva: WHO, 2021.
13. France 24. Dutch join Germany, Austria, in reverting to coal. 20 June 2022; published online https://www.france24.com/en/live-news/20220620-dutch-join-germany-austria-in-reverting-to-coal
14. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Sustainable and Smart Mobility Strategy – putting European transport on track for the future (COM/2020/789 final).
15. Health Care Without Harm. Health Care's Climate Footprint: How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action. Brussels: Health Care Without Harm, 2019.
16. Government of the Netherlands. More sustainability in the care sector. 2022; published online. https://www.government.nl/topics/sustainable-healthcare/more-sustainability-in-the-care-sector.
17. HM Government. Health and Care Act 2022. 2022; published online. https://www.legislation.gov.uk/ukpga/2022/31/contents
18. WHO. WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: WHO, 2020.

Organisations and acknowledgements

The concept for this brief was developed by the *Lancet* Countdown on health and climate change. The brief was written by Rana Orhan Pees MPH MSc. Critical review was provided by Dr. Martin Balzan MD FRCP (Lond) FEFIM, Markus Kujawa MA, Cristina Pricop MA, Matteo Barisione MA, Nikolai Pushkarev, Anne Stauffer, the Austrian Medical Chamber, the Danish Medical Association, the Royal Dutch Medical Association and Egid van Bree. Review on behalf of the *Lancet* Countdown was provided by Dr. Frances MacGuire PhD, Dr. Marina Romanello PhD, and Maria Walawender MSPH. Review on behalf of the *Lancet* Countdown in Europe was provided by Dr. Kim van Daalen MPhil, Prof. Rachel Lowe PhD and Dr. Cathryn Tonne ScD. Graphics are designed by Dr. Kim van Daalen.

THE *LANCET* COUNTDOWN

The Lancet Countdown: Tracking Progress on Health and Climate Change exists to monitor the links between public health and climate change, and the transition from health threat to opportunity. We are a global collaboration of over 300 leading experts from academic institutions and UN agencies across the globe, bringing together climate scientists, engineers, energy specialists, economists, political scientists, public health professionals and doctors.

Each year our findings are published annually in medical journal The Lancet ahead of the UN climate change negotiations. Our data makes clear how climate change is affecting our health, the consequences of delayed action and the health benefits of a robust response.

THE *LANCET* COUNTDOWN IN EUROPE

The *Lancet* Countdown in Europe is a new transdisciplinary research collaboration monitoring progress on health and climate change in Europe. With the wealth of data and academic expertise available in Europe, the collaboration develops region-specific indicators to address the main challenges and opportunities of Europe's response to climate change for health. The indicators produced by the collaboration provide information to health and climate policy decision making and contribute to the European Observatory on Climate and Health. Find more information about the initiative here: www. lancetcountdown.org/europe.

STANDING COMMITTEE OF EUROPEAN DOCTORS (CPME)

The Standing Committee of European Doctors (Comité Permanent des Médecins Européens, CPME) represents national medical associations across Europe. CPME is committed to contributing the medical profession's point of view to EU institutions and European policy-making through pro-active cooperation on a wide range of health and healthcare related issues.

EUROPEAN PUBLIC HEALTH ALLIANCE (EPHA)

The European Public Health Alliance is a member-led organisation made up of NGOs, patient groups, health professionals and disease groups working to improve health and strengthen the voice of public health in Europe. Since 1993, EPHA has built a solid network of more than 80 members dedicated to providing better health for all.

THE ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH IN THE EUROPEAN REGION (ASPHER)

The Association of Schools of Public Health in the European Region (ASPHER) is the key independent European organisation dedicated to strengthening the role of public health by improving education and training of public health professionals for both practice and research.

THE HEALTH AND ENVIRONMENT ALLIANCE (HEAL)

The Health and Environmental Alliance (HEAL) is the leading European not-for-profit organisation addressing how the natural and built environments affect health in the European Union (EU) and beyond. HEAL's vision is a world in which today's and future generations can benefit from a clean environment to enjoy long and healthy lives. We demonstrate how policy action can protect health and enhance everyone's quality of life.