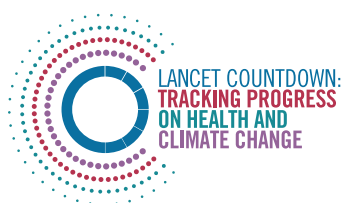


The Lancet Countdown on Health and Climate Change

Policy Brief for Germany

2024



Introduction

The 2024 report of the *Lancet* Countdown¹ illustrates that the negative global impact of the climate crisis has reached unprecedented levels—especially in terms of our health. Further delays in the implementation of effective climate protection measures will result in high health, economic, social and environmental costs.^{2,3} The flood in the Ahr valley in 2021, for example, not only claimed 135 lives, but also incurred estimated costs of around 40.5 billion euro.⁴ It is therefore more urgent than ever to take the necessary measures to prevent the climate crisis from worsening while strengthening the systemic resilienceⁱ of the health sector and society at large.

Current political and social efforts to reduce greenhouse gas (GHG) emissions in Germany are not ambitious enough to achieve national and international climate targets.^{6,7} Emissions in the transport and building sectors in particular, as well as in land use, are currently well above the requirements of the Climate Protection Act.^{7,8} One reason for this is the continued financial support for sectors that are harmful to the climate and the environment, such as the fossil fuel sector or the emissions-intensive transport sector.^{9,10} According to the 2024 report of the *Lancet* Countdown, Germany subsidised the use of fossil fuels to the tune of US\$4.5 billion in 2022 alone.¹ This not only contributes significantly to the climate crisis, but also has a massive negative impact on our health, our ecosystems, and society.^{1,2,11}

To address the health risks of the climate crisis, in addition to reducing subsidies that are harmful to the climate and environment, stronger cross-sectoral governance and financing of climate adaptation measures as well as climate and environmental protection is required. At the same time, the health sector itself must also become more resilient to the multiple crises and reduce its climate and environmental impact.¹² To this end, it is crucial to prioritise health promotion and prevention more strongly. The promotion of equitable and health-promoting living conditions would not only relieve the burden on the healthcare system, but also contribute to its needs-oriented further development and reduce its ecological footprint.¹³

This policy brief focusses on three central fields of action that have been identified as particularly urgent and promising for the protection of health, climate, and the environment in Germany: *Heat Protection, Nutrition, and Resilient Health Sector*. Policy recommendations are formulated below for each of these fields of action.

ⁱ In this policy brief, the term 'resilience' is understood as the ability of the system to respond flexibly, sustainably and effectively to various crises and stress factors, in line with the definition used by the German Expert Council for the assessment and development in the healthcare system. Resilience encompasses not only the short-term response to acute crises, but also long-term adaptability and the ability to learn from crises, prevent them in the future and emerge stronger from them.⁴

Recommendations

1

Heat Protection

- **Developing cross-sectoral adaptation of the regulatory framework:** The necessary evaluation and adaptation of the existing legal regulatory framework for heat protection in health must be carried out jointly across all sectors at all decision-making levels.
- **Maximising health promotion and prevention:** The planning and implementation of heat protection measures requires an intersectional perspective as well as the identification and consideration of social determinants.
- **Strengthening heat literacy:** Targeted behavioral prevention measures are suitable for promoting individual heat literacy, i.e., knowledge of risks and protection options. Particularly important are multipliers, e.g., in health and educational institutions.

2

Nutrition

- **Changing financial incentives:** Taxes and subsidies should be designed in a way that supports the shift towards healthy and environmentally friendly diets.
- **Setting standards in communal catering:** Binding quality standards should be introduced in communal catering (e.g., schools, kindergartens, clinics and care facilities) in accordance with the new nutritional recommendations by the German society for nutrition.
- **Anchoring/Strengthening nutrition in the health sector:** Structures and processes should be promoted in the health sector that explicitly promote and utilise the preventive potential of nutrition in relation to individual and planetary health.

3

Resilient Health Sector

- **Financing models for transformation:** The federal and state governments must enable necessary investments by healthcare facilities in climate protection through an additional special programme. Moreover, health sector institutions must be considered and integrated into the climate adaptation strategy.
- **Anchoring health in and for all policies:** Prevention and health promotion must be anchored as a cross-cutting task in line with the *health in and for all policies* approach.
- **Monitoring and surveillance of GHG emissions:** All larger healthcare facilities should record and report their GHG emissions according to standardised criteria.
- **Implementing sustainable supply and production chains:** International databases with product carbon footprints as well as regulatory incentives for sustainable production and recycling of medicinal products and medical devices are required to survey Scope 3 emissions, which have often only been estimated to date, to enable sustainable purchasing decisions.

The increase in hot days and heatwaves poses one of the greatest climate change-related health risks to the population, especially for cardiovascular and respiratory diseases.^{1,14,15} According to current calculations, 9,100 heat-related deaths were estimated for Germany in the summer of 2022.¹⁶ The elderly, pregnant women, young children, infants, people with chronic illnesses, people who work outdoors and socially disadvantaged people are particularly at risk.^{14,15,17} Heat-related losses in labour productivity and the additional burden on the healthcare system lead to considerable costs.^{1,18}

The Lancet Countdown Policy Briefs for Germany 2019 and 2021 have already highlighted the field of action of heat protection.^{19,20} Since then, more and more adaptation strategies and heat protection measures have been developed and implemented at federal, state and municipal level as well as in health and care facilities. These include local and state (e.g., action plans for individual hospitals, the Berlin Heat Protection Action Alliance) and federal initiatives (e.g., national heat action days, preparation of the national heat protection plan for health by the Federal Ministry of Health).^{21,22,23,24}

However, the following areas of tension have crystallised, which stand in the way of broadly effective, heat protection in Germany. Taking these areas of tension into account in existing and new heat protection plans and measures can have an important leverage effect and contribute significantly to avoiding additional heat-related health and economic costs.

Social determinants of health: Individual heat stress and people's ability to adapt depend on a variety

of social factors. For example, socio-economically disadvantaged population groups not only have fewer financial resources for adaptation measures, they are also more likely to live and work in environments that are exposed to higher heat stress. This is exacerbated by a frequently lower level of health literacy. The links between heat stress, exposure and adaptive capacity have so far been insufficiently recognised.^{17,25}

Interaction of heat and air pollution: High levels of air pollution (especially particulate matter, nitrogen dioxide and ozone) increase the heat-related risk of heart and lung diseases- especially in large cities as 'heat hot spots'.^{15,26,27} Therefore, improving air quality not only has a direct positive effect on human health, but also reduces the health effects of heat. This aspect must be considered in the development and implementation of heat protection measures, e.g., as part of heat action plans.

Heat at the workplace: Heat stress poses a direct threat to the health and safety of workers and has a negative impact on their productivity.^{1,28} Areas particularly affected by heat are those where work is carried out outdoors and is physically demanding; where protective clothing must be worn; and/or where there are inflexible working hours that cannot be adapted to heat events.^{28,29} According to this year's global *Lancet* Countdown report, in 2023, 37 million potential labour hours were lost, with people working in the construction sector bearing 58% of the potential working hours lost and 56% of potential income losses from labour capacity reduction.¹ Heat protection measures at the workplace are therefore investments in employee health, productivity and economic stability.³⁰

The following recommendations can be derived for heat protection:

- **Developing cross-sectoral adaptation of the regulatory framework:** The necessary evaluation and adaptation of the existing legal regulatory framework for heat protection in health must be carried out jointly across all sectors at all decision-making levels (federal, state and local government). Policies and strategies must be coherently coordinated, and responsibilities must be clearly defined.^{14,31} It is helpful to set up task forces of relevant stakeholders in cross-sectional areas, e.g., in the area of labor, which specifically transfer heat protection to their field of action, adapt it to the respective requirements and implement it.
- **Maximising health promotion and prevention:** The planning and implementation of heat protection measures requires an intersectional perspective as well as the identification and consideration of social determinants. Targeted prevention measures can help to reduce social inequalities in health-related heat protection.
- **Strengthening heat literacy:** Targeted behavioural prevention measures are suitable for promoting individual heat literacy, i.e., knowledge of risks and protection options. The prerequisite for this is to promote, strengthen and utilise the heat literacy of multipliers, e.g., in labor, in health and educational institutions, but also in the general public.³²

2 Nutrition

An unhealthy diet is one of the main risk factors for disease and premature death in Germany and worldwide.³³ According to this year's global *Lancet* Countdown report, low consumption of nutritious plant-based foods (including fruits and vegetables) caused 84,000 deaths in Germany in 2021, and excessive consumption of red meat and dairy was associated with over 79,700 deaths.¹ In addition, current food systems, especially the production of animal-based foods, contribute significantly to exceeding planetary boundaries- through high GHG emissions, tropical deforestation, soil, air and water pollution and globally altered water cycles.³⁴ In Germany, more than half of diet-associated emissions are caused by the production of red meat and dairy products.³⁵ A shift towards a wholesome, plant-based diet therefore offers great opportunities for individual and planetary health^{ii 36}.

Since the *Lancet* Countdown Policy Brief for Germany 2020³⁸ examined the field of nutrition, concrete recommendations for a nutritional transition have been made in two processes with citizen participation – the Federal Environment Agency's 'Bürger:innenratschlag pflanzenbasierte Ernährung' (Citizens' Council on Plant-based Nutrition)³⁹ and the Bundestag's "Ernährung im Wandel" (Citizens' Council on Nutrition in Transition)⁴⁰. At the beginning of 2024, the German federal government also adopted the first national nutrition strategy, which proposes ambitious measures to ensure access to a healthy diet for all.⁴¹ Shortly before this, the German Society for Nutrition (DGE) published new food-related nutritional recommendations that take environmental and health aspects into account and recommend a predominantly plant-based diet.⁴²

ii Planetary health emphasises the dependence of human well-being on intact ecological systems and aims to protect health within planetary boundaries. The concept complements and expands established approaches such as public health, global health and one and eco health and offers a transdisciplinary understanding of a healthy life in a safe and just space for humanity.³⁷

However, there are still fundamental areas of tension regarding the implementation of a sustainable and healthy agricultural and food system:

Financial disincentives: Incorrectly set subsidies, tax-associated price incentives and a lack of advertising regulations favor the production and consumption of animal-based and highly processed foods. In the EU, for example, 80% of all agricultural subsidies flow into the production of animal-based foods every year.⁴³ At the same time, the ecological and health-related damage caused by the agricultural and food system totals at least US\$ 10 trillion per year worldwide, exceeding the food system's share of global GDP.⁴⁴ For Germany, these costs amount to as much as US\$ 330 billion per year, with health-related follow-up costs accounting for the largest share.⁴⁵ Meanwhile, many places lack financing models for the implementation and promotion of healthy and environmentally friendly nutrition, for example in communal catering and in the health sector.

Inadequate governance: Political framework conditions and the private sector interests of the agricultural and food industry stand in the way of the nationwide implementation of a healthier and more environmentally friendly diet. This is also significantly hampered by a lack of cooperation between the federal and state governments and a lack of policy coherence. For example, there is a lack of binding guidelines and support services for communal catering. On the production side, there is a lack of large-scale processing and marketing structures and sales markets for many environmentally friendly and health-promoting agricultural products (e.g., legumes).⁴⁶ There is an urgent need to establish and implement a long-term vision with corresponding interim goals and coherent policy measures and instruments along the entire value chain.⁴⁷

The following recommendations can be derived for the area of nutrition:

- **Changing financial incentives:** Taxes and subsidies should be designed in a way that supports the shift towards healthy and environmentally friendly diets. This includes the inclusion of agriculture in the Nationally Determined Contributions (NDCs) as part of the Paris Agreement and European emissions trading, the shifting of agricultural subsidies towards climate- and environmentally friendly production systems and tax incentives for healthy food or taxation of unhealthy or climate-damaging food based on the consequential costs.
- **Setting standards in communal catering:** Binding quality standards should be introduced in communal catering (e.g., schools, kindergartens, clinics and care facilities) in accordance with the new DGE nutritional recommendations.
- **Anchoring/Strengthening nutrition in the health sector:** Structures and processes should be promoted in the health sector that explicitly promote and utilise the preventive potential of nutrition in relation to individual and planetary health. This includes integration into basic, further and advanced training, the strengthening of nutritional expertise and incentive models for health-promoting nutrition in healthcare facilities.

A shortage of skilled workforce, demographic change, decades of misguided incentives, limited financial resources and high GHG emissions are leading to considerable pressure to transform the health sector. In 2019, the carbon footprint of the German health sector was around 68 million tonnes of CO₂ equivalents- this corresponds to around 6% of national GHG emissions.⁴⁸ A resilient and climate-neutral health sector is crucial to manage the increasing health risks caused by the multiple crises and at the same time contribute to the reduction of GHG emissions.¹²

The *Lancet* Countdown Policy Briefs for Germany 2019 and 2021 emphasized the need to transform the health sector towards resilience and climate neutrality.^{19,20} Since then, the Federal Ministry of Health has initiated the Climate Pact Health to contribute to the climate neutrality of the German healthcare sector by 2045.⁴⁹ More than 300 hospitals and 1,000 care facilities have already joined the Competence Centre for Climate-Resilient Medicine and Healthcare Facilities (KliMeG), which was founded in 2023.⁵⁰

Despite these developments, the health sector lacks clear targets for reducing its climate and environmental impact, a corresponding action plan and funding for implementation. To strengthen the resilience of the health sector to the consequences of the multiple crises, key areas of tension must be overcome:

Insufficient investment funds and disincentives: The necessary transformation of the health sector requires financial incentives for sustainable management and the modernisation of infrastructure. Targeted investments, e.g., in renewable energies and energy-efficient buildings, will relieve the burden on the health sector in the long term.^{51,52} The economic efficiency requirement in the German Social Code should be flanked by a sustainability requirement to make sustainable action the easy choice. There is an urgent need to provide investment funds as part of statutory investment financing or through additional targeted funding programmes.⁵³

Health promotion and prevention: The burden of non-communicable diseases in the German health sector is comparatively high.⁵⁴ Their care is associated with avoidable demand for human and financial resources. The increasing burden of disease due to the ecological crises further exacerbates this problem.⁵⁵ Health promotion and prevention have great potential for society as a whole to counteract this trend- in particular, preventive measures with co-benefits in the areas of air quality, active mobility and healthy eating.^{56,57}

Insufficient monitoring mechanisms: Accounting and reporting of GHG emissions in the health sector is essential in order to prioritise climate protection measures in a coordinated and effective manner.^{48,58} All areas of the Greenhouse Gas Protocol⁵⁹ should be taken into account- including Scope 3ⁱⁱⁱ, i.e., upstream and downstream supply chains (e.g., medical and pharmaceutical products), which cause the majority of GHG emissions in the German health sector.⁶⁰

iii Scope 3 emissions in the healthcare sector include indirect emissions along the value chains, e.g. from transport, business trips, employee commuting and the procurement and disposal of medical products and pharmaceuticals.⁴⁹

The following recommendations can be derived for a *Resilient Health Sector*:

- **Financing models for transformation:** The federal and state governments must enable necessary investments by healthcare facilities in climate protection, particularly for building envelope renovation, through an additional special programme, e.g., as part of the upcoming hospital reform.⁶¹ Hospitals and other healthcare and nursing facilities must be considered and integrated as critical infrastructure in the climate adaptation strategy.
- **Anchoring Health in and for all policies:** A health-promoting overall policy is the essential prerequisite for a resilient health sector.^{5,12} Prevention and health promotion must be anchored as a cross-cutting task in line with the *health in and for all policies* approach. To this end, corresponding structures should be strengthened, e.g., through the planned national prevention initiative⁶² and a national competence centre for prevention and health promotion that supports, evaluates and updates implementation and uses existing network structures.
- **Monitoring and surveillance of GHG emissions in health facilities:** All larger healthcare facilities should record and report their GHG emissions according to standardised criteria. This data should form the basis of a sector-wide decarbonisation strategy. The focus should be on the knowledge and implementation of the most effective climate protection measures possible in the various health and care facilities.
- **Implementing sustainable supply and production chains:** International databases with product carbon footprints need to be created when surveying Scope 3 emissions, which have often only been estimated to date, to enable sustainable purchasing decisions. This requires publicly accessible information on the climate and environmental impact of supply and production chains. National and European supply chain legislation and the Sustainability Reporting Directive are the first steps towards mandatory consideration of sustainability. This must be followed by further regulatory incentives for the more sustainable production and recyclability of medicinal products and medical devices.

Conclusion

This policy brief has focused on the three fields of action of heat protection, nutrition, and resilience in the German health sector. These have the potential to develop a transformative leverage effect to strengthen the systematic resilience of the health sector and society while at the same time not further exacerbating the health effects of the ecological

crises. Taking the recommendations for action into account can make a significant contribution to minimising additional health, social, economic and environmental costs. This requires strong political will and decisive as well as ambitious actions across all sectors.

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Contributing institution

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Organisations

LANCET COUNTDOWN

The *Lancet* Countdown: Tracking Progress on Health and Climate Change is a multi-disciplinary collaboration monitoring the links between health and climate change. In 2024, we published the 8th *Lancet* Countdown annual indicator report, funded by Wellcome and developed in close collaboration with the World Health Organization. The report represents the work of 122 leading experts from 57 academic institutions and UN agencies globally. Published ahead of the 29th UN Conference of the Parties (COP), the report provides the most up-to-date assessment of the links between health and climate change. For its 2024 assessment, visit <https://www.lancetcountdown.org/>.

GERMAN MEDICAL ASSOCIATION

The German Medical Association is the central organisation of medical self-administration in Germany. As an association of the state medical associations, it represents the interests of over 500,000 doctors in matters of professional policy. It is actively involved in opinion-forming and legislative processes in the field of health and social policy.

HELMHOLTZ ZENTRUM MÜNCHEN

Center for Environmental Health pursues the goal of developing personalised medicine for the diagnosis, treatment and prevention of widespread common diseases such as diabetes mellitus, allergies and chronic lung diseases. To this end, the institute is investigating the interaction of genetics, environmental factors and lifestyle. The Helmholtz Zentrum München is a member of the Helmholtz Association.

POTSDAM INSTITUTE FOR CLIMATE IMPACT RESEARCH

The Potsdam Institute for Climate Impact Research (PIK) is one of the world's leading institutes for research into global change, climate impact and sustainable development. At PIK, researchers from the natural and social sciences develop interdisciplinary scientific findings that provide a robust basis for decisions in politics, business and civil society. PIK is a member of the Leibniz Association.

LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN - FACULTY OF MEDICINE

Ludwig-Maximilians-Universität (LMU) Munich is one of the oldest and most traditional universities in Germany. The Faculty of Medicine combines clinical care with research and teaching on all aspects of human health, including public and planetary health. The LMU Hospital treats around 500,000 patients every year, making it one of the largest healthcare facilities in Germany.

THE GERMAN ALLIANCE FOR CLIMATE CHANGE AND HEALTH E.V. (KLUG)

KLUG is a rapidly growing network of individuals, organizations and associations from the health sector. KLUG aims to draw attention to the health consequences of global warming and to initiate political and social changes for the transformation to a climate-neutral society. **The Center for Planetary Health Policy (CPHP)** is an independent think tank founded by KLUG. The CPHP is a forum for scientific policy advice at the interface between global environmental change and health. **The Competence Center for Climate-Resilient Medicine and Health Facilities (KliMeG)** is another KLUG initiative. KliMeG is a strategic alliance of clinics that want to advance climate protection in the health care system.