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Centre for
Planetary Health
Policy

Health within planetary boundaries

Open questions for policymakers, scientists and health actors

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To address the urgent planetary crises and to ensure the planet's habitability for future generations, planetary health needs to be anchored as a vision in all policies at national and international levels. Experiences and lessons learned from other policy fields and other countries can be considered in strengthening prevention of and preparedness for planetary crises and their health risks. To do so, we need to answer some urgent questions: 1) how can regulatory frameworks, structures, institutions, and incentives be adapted to make health within planetary boundaries the core goal of a comprehensive prevention policy and a public welfare-oriented care economy? 2) what role do conflicting goals and interests play in this context? 3) how can health equity and environmental justice be integrated into (health) policy decisions? 4) what forms of science communication, translation and generation are needed to accelerate the transformation towards health within planetary boundaries effectively?

Healthy people only exist on a healthy planet

Looking at the global development of human health in recent decades, a contradictory picture emerges: on the one hand, life expectancy – one of the main indicators of well-being – has risen and the proportion of undernourished people has tended to decline.^{1,2} On the other hand, this progress on health remains unevenly distributed both within and across countries and population groups.³

While deaths from communicable diseases are decreasing globally, non-communicable diseases such as cancer, diabetes and cardiovascular diseases are rapidly increasing in all countries.⁴ The regional differences in the distribution of health and social advance-

ments are significant but come at a high price: they endanger the habitability of the planet. In particular, the use of fossil fuels for energy generation and its impact on global warming but also changes in land and water use – especially for food production, the expansion of housing and infrastructure, the overexploitation of natural resources, the pollution and destruction of ecosystems and the associated loss of biodiversity are causing the overshooting of multiple planetary boundaries as well as human rights violations.^{5,6} We are amidst multiple, escalating, systemic crises, both within natural and human systems. **We describe these multidimensional crises that partially reinforce each other as planetary crises.**



A safe and just scope for human well-being

To protect health and to preserve the habitability of the planet for future generations, planetary boundaries must not be exceeded any further. At the same time, the consequences of overshooting certain boundaries must be mitigated and reversed as far as possible. The medical journal, *The Lancet*, has identified the climate crisis as humanity's greatest threat⁷ and its tackling as a major opportunity for human health and well-being in the 21st century.⁸ Regarding the transgression of the planetary boundary "climate change", the latest report from the Intergovernmental Panel on Climate Change (IPCC) is clear:

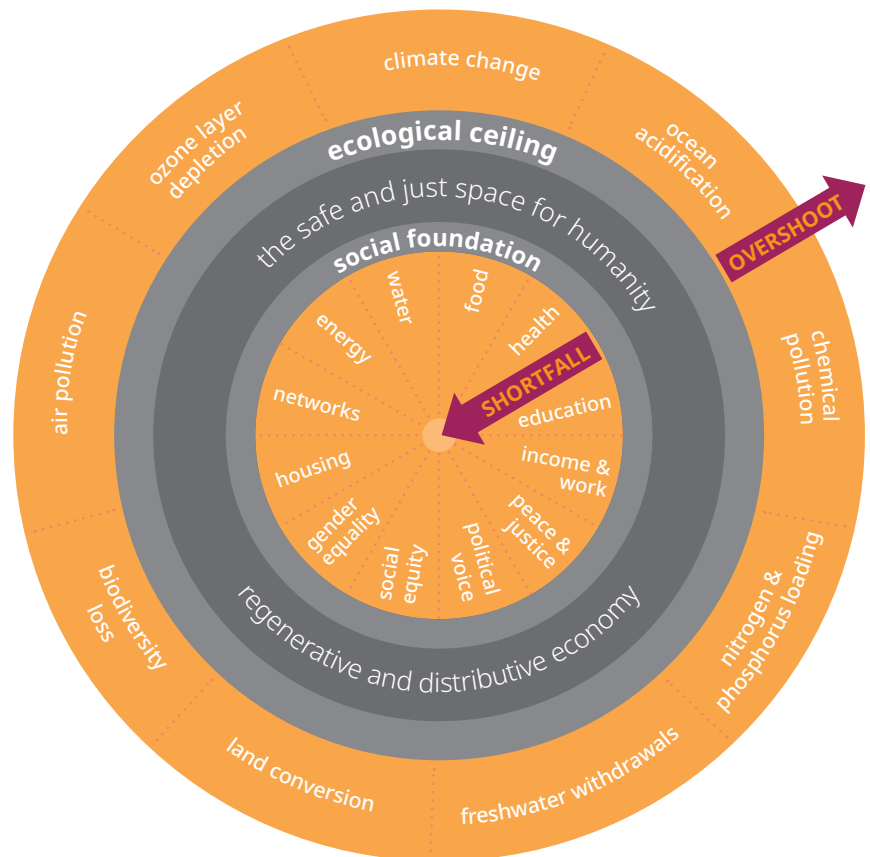
"The cumulative scientific evidence is unequivocal: Climate change is a threat to human well-being and planetary health. Any further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all."⁹ The same can be said for other planetary boundaries.

The 'safe and just space for humanity' that is based on a comprehensive social foundation but does not transgress the ecological ceiling of the Earth's natural systems is visualised by Kate Raworth's doughnut economics model (see Figure 1).¹⁰ It illustrates what the global economic system must achieve: the attainment of minimum social standards for all without exceeding planetary boundaries.¹¹ These include meeting basic needs but also access to high quality education, work and health care.

Political, social, and economic processes and structures must therefore be designed and governed nationally, as well as internationally, with a focus on safeguarding health and well-being for present and future generations while also preserving the habitability of the planet.

The well-documented health effects of the planetary crises range from acute physical and psychological burdens caused by extreme weather events, the emergence and spread of new (zoonotic) infectious diseases, the effects of air pollution on various organs, to food insecurity and forced migration.^{12,13,14} The exceeding of planetary boundaries affects us all, but not equally: disadvantaged and marginalised population groups in all regions of the world are most affected by these impacts, even though they have contributed least to their creation.

Figure 1: The safe and just scope of action on a social foundation and within ecological limits



The richest 10% of the world's population cause half of global greenhouse gas emissions and pose major challenges to global burden sharing.¹⁵ The consequences of planetary crises thus reinforce historical and persistent marginalisations, poverty risks, conflicts and thereby inequalities such as colonial continuities and gender inequities.¹⁶ Although these increasing risks to human health, stability and security are politically known, one question in particular remains: how can political, economic, and social systems deal with these risks in a forward-looking manner? If these risks were significantly reduced now and investments were made in prevention and crisis preparedness, a societal transformation could lead to more resilience and health equity. To achieve this, the principle of

prevention helps as a political compass.¹⁷ To make use of this compass, profound changes are needed to human activities, in the form of a „societal transformation“, as recently carried out by the German Advisory Council on Global Change (WBGU).¹⁸

We do not lack knowledge of the health consequences we face from multiple systemic crises nor know-how on how to overcome them. There is also no lack of compelling visions for the future. However, there is a lack of concrete and effective political activity to ensure the required transformation at all levels and across national borders to secure health within planetary boundaries.¹⁹

Challenges for the German health system posed by planetary crises

Our health system is part of an unsustainable social and economic system. The paradigm of growth, which manifests in the need to constantly increase gross domestic product (GDP), is not expedient for designing a sustainable social and economic system for planetary health.²¹ According to the World Health Organization (WHO), GDP is a widely used but in (planetary) health terms, it is an inappropriate tool for measuring economic activities, as it largely excludes their environmental and health impacts and immaterial values.²²

A societal debate on how health and well-being can be created within planetary boundaries and what the health system should do and should not do to achieve this, is urgently needed but so far lacking.

This also includes considering how the access, quality and financing of a climate-neutral health system can be realised in accordance with the doughnut economics model.²³ The health system has a special role to play in the transformation. On the one hand, 4.4%

of the world's²⁴ and 5.2% of Germany's national²⁵ greenhouse gas emissions are produced by the health system and while it's not the largest source of emissions, it is an important driver of the climate crisis nonetheless. Simultaneously, the overlapping planetary crises create additional and often preventable burdens of disease that pose enormous challenges to the health system, both now and in the future.²⁶ **For all actors in the health sector, the principle 'Do no harm' applies, which must be widened in the Anthropocene. Harm to the environment must be avoided to safeguard (planetary) health, and prevention must be prioritised over cure.**²⁷

This results in the need for a comprehensive prevention policy. Although the goal of promoting and maintaining health already guides actions and is internalised by health professionals, the regulatory framework, incentives and in some cases institutions that prioritise and implement health prevention

and promotion are lacking.²⁸ This currently prevents health actors from taking transformative action in their own institutions.

The German Social Codes (Sozialgesetzbücher) currently prescribe principles such as quality of and access to health services as well as their economic efficiency as legal frameworks in the provision of services. Sustainability (meaning both ecological sustainability and health equity) is not yet sufficiently considered, despite being indispensable from a planetary health perspective.²⁹ Political decision-makers, legislators at federal and state level as well as the bodies of self-administration that play a central part in the governance of the German health system have a

central responsibility to adapt the regulatory framework and to set effective incentives. In addition, the health system is not sufficiently prepared for future system shocks such as extreme weather events,³⁰ the care of people nationally or internationally displaced due to planetary crisis, nor for outbreaks of infectious diseases with pandemic potential.³¹ This lack of preparation represents a real risk in the case of heatwaves, which represent the greatest climate change-related health risk in Germany.³² Extreme hot days require a cross-policy field approach to ensure that care can be provided in the event of a crisis and to strengthen the resilience of the health system.

Planetary Health

The effects of human activities on political, economic, and social systems in the 21st century represent the greatest factor influencing the natural environment as well as human and animal health. The environment can do without us - but we cannot do without it. „As living beings, we humans are an inseparable part of nature and, despite all technical achievements, we are ultimately dependent on it“, as the WBGU put it in its impulse paper.¹⁸

The concept of planetary health encompasses a broad, transdisciplinary understanding of the factors and conditions for human health today and in the future. To protect and promote health within planetary boundaries, the Earth's natural systems and processes are indispensable, as they create favorable living conditions for human well-being and health, as are political, social, and economic systems that enable equity. In achieving planetary health, the planetary boundaries will no longer be exceeded, and all people will be enabled to live healthy, dignified, and secure lives within effective and sustainable political, social and economic systems.

Anthropocene

The 'Anthropocene' is a term used to describe the human-dominated epoch that is characterised by profound changes in Earth systems as a result of human activities. These include the increased amount of manufactured materials in sediments, the alternation of carbon, nitrogen and phosphorous cycles, climate change and resulting sea-level rise as well as the accelerated rate of species extinction.²⁰

Challenges for the governance of planetary health outside the health system

To achieve planetary health, new forms of political governance and design are required that extend beyond health policy. Since the greatest health gains and losses are caused by structural determinants and are thus independent of healthcare³³, new forms of governance for planetary health are needed in other policy fields. **Health governance within planetary boundaries describes all institutionalised forms of social coordination that: 1) aim to develop and implement binding rules for ensuring health and well-being 2) aim to provide collective goods for the benefit of society without exceeding planetary boundaries.**³⁴

Policies that aim to achieve planetary health are characterised by systems thinking and the consideration of path dependencies. This approach aims to address the adverse health impacts of past policy decisions. To advance the transformation of the German health system, change in other sectors - especially the energy system - is indispensable. The transformation of the energy system would have far-reaching positive effects on other policy areas and would simultaneously contribute to a significant reduction in the burden of disease, for example by reducing air pollution. The WHO estimates that air pollution causes about 33% of new cases of childhood asthma, 17% of all lung cancers, 12% of all heart attacks and 11% of all strokes in Europe.³⁵ At the same time, the use of fossil fuels is the biggest driver of the climate crisis.³⁶

This example illustrates the interconnectedness of individual sectors and how their transformation would have direct and indirect positive impacts on health. The use of

renewable energy sources is not only good for the climate, but also promises so-called co-benefits for population health.³⁷ **It will be relevant for prevention policy in the future to develop co-benefit policies in a targeted manner and to reduce the effects and costs of other policy areas at the expense of health.**

In transport policy, for example, the health costs of environmental, air and noise pollution and greenhouse gases could accelerate the transformation of this sector. The global interconnectedness and interdependencies of countries and regions as well as the global nature of planetary crises show that the strict distinction between foreign or development and domestic policy is obsolete when it comes to the governance of planetary health. From a health perspective, the implementation of the Paris Climate Agreement is an essential measure to promote health globally.³⁸ To comply with the Paris Agreement as well as further international agreements concerning other planetary boundaries, the historical responsibility of states for planetary crises must be recognised and the adaptation and mitigation measures must be financed accordingly. In addition, a solidary approach to dealing with climate-related losses and damages must be found, which is a key element of the concept of 'climate justice'.^{39,40} **For the analysis of global health governance within planetary boundaries, it is crucial to determine who sits at the table, with which resources and in which power constellations, and who does not.**

States of the Global North and the Global South, their civil societies, science and (transnational) companies can jointly sha-

pe, accelerate or deliberately obstruct the necessary transformation. But the forms of governance and cooperation at levels which

are helpful and necessary for achieving planetary health have not yet been sufficiently described.⁴¹

Open questions for policymakers, scientists and health actors

To ensure a resilient, high quality, accessible, environmentally friendly, and fundable health system for all and for future generations within a public welfare, health-promoting and preventive framework, the following questions must be answered:

1. **Agenda-Setting:**

How can planetary health as a vision for the future be established as a standing item on national and international political agendas permanently and effectively?

2. **Crisis prevention and preparedness:**

How can ecological and social risks to the health of current and future generations be decreased and what can be learned from other policy fields and countries?

3. **Governance:**

What new forms of governance, reforms, institutions, structures and incentives are needed for a prevention policy and a public welfare-oriented care economy that aims to safeguard health within planetary boundaries?

4. **Partnerships:**

What kind of partnerships are necessary for planetary health and

how are conflicts of interest between actors that hinder or even block the transformation towards planetary health negotiated?

5. **Equity:**

How can health equity and environmental justice be incorporated in (health) policy decisions?

6. **Participation:**

How can the perspectives of health actors and those most affected by the impacts of the transgression of environmental and social boundaries be integrated in policy processes?

7. **Communication:**

What forms of science communication, translation and generation are needed to effectively accelerate the transformation towards health within planetary boundaries?

The Centre for Planetary Health Policy

The Centre for Planetary Health Policy (CPHP) provides scientific policy advice at the nexus of global environmental change and health with the aim of achieving a sustainable and equitable transformation of social coexistence in Germany and the world. Socio-economic debates on what constitutes a ‘good life’⁴² and how healthcare can be designed in a sustainable, accessible and high-quality manner for present and future generations are pivotal for this. With CPHP we are aiming to stimulate and support this kind of socio-political debate.

Together with health actors, policymakers, and researchers, we are developing options for action to secure health within planetary boundaries. In addition, we want to connect with actors from other policy fields, because we know that health is not only shaped by the health sector but by all policy areas. To that end, we will also look beyond Germany for collaborators. In view of the urgency need to overcome our planetary crises, new forms of cooperation are needed to ensure the habitability of the planet for future generations and their health.

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With the Centre for Planetary Health Policy, we want to make a decisive contribution to anchoring health equity and climate resilience within the health sector, thus making it a role model for other sectors and establishing planetary health as a central field of policy.
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Maike Voss, Director CPHP

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