

Health and Global Policy Institute (HGPI) Planetary Health Project

Issues Facing Planetary Health and the Role of the Health Sector



HGPI Health and Global
Policy Institute

Report

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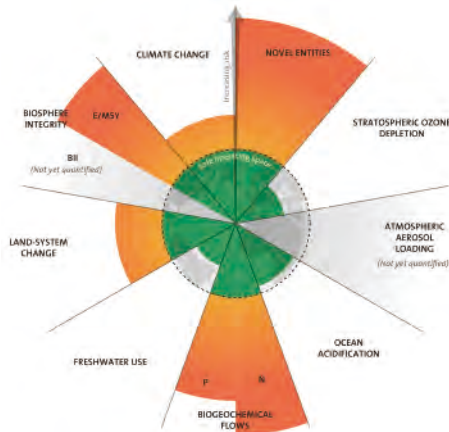
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The Anthropocene and the planetary boundaries

The scope and scale of human activities have rapidly expanded since the Industrial Revolution and a number of improvements to society have resulted in population growth, longer lifespans, and lower rates of poverty. However, the Earth's environment is degrading, which is leading to rising temperatures, loss of biodiversity, and ocean acidification. Some have proposed assigning the current geological era a new classification called the "Anthropocene" to reflect the major impacts humanity has had on the Earth's ecosystems and climate.



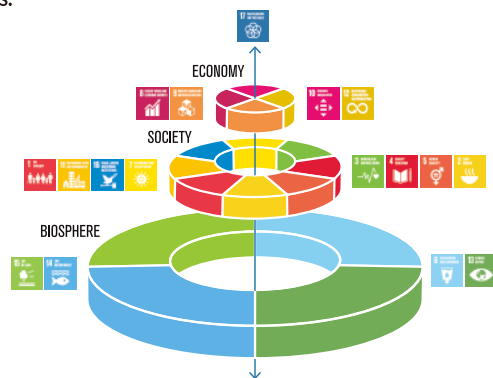
source : Stockholm Resilience Centre, Stockholm University

The planetary boundaries are one of the most important concepts when thinking about the environmental issues we currently face. They assess nine sub-systems for global sustainability: climate change, stratospheric ozone depletion, ocean acidification, biosphere integrity, biogeochemical flows, freshwater use, land-system change, atmospheric aerosol loading, and novel entities. Humanity has already crossed the Earth's limits for sustainability for some of these boundaries.

What is planetary health?

Planetary Health is a research and implementation framework based on the view that the Earth's health (or that of its ecosystems) and human health (and civilization) are interdependent. While this concept is similar to the Sustainable Development Goals (SDGs), the SDGs are 17 issues to be addressed individually by 2025. Not only will the SDGs be achieved when their respective targets are reached, there is little attention paid to how they are interrelated.

In 2016, J. Rockström proposed the concept of the "SDGs wedding cake" that arranged the goals into three tiers, with the bottom representing the biosphere, the middle representing society, and the top representing the economy. In a similar manner to the concept of the "SDGs wedding cake," planetary health also emphasizes the relationships among goals and tiers, but with a more dynamic, far-reaching vision for sustainability than the SDGs. The concept of planetary health is often thought of as an issue that concerns the planet and is unrelated to the health sector, while problems facing health are viewed as unrelated to the environmental sector. However, it will be vital for us to intervene in ways that cut across both of these sectors.



source : Stockholm Resilience Centre, Stockholm University

Health and Global Policy Institute (HGPI) Planetary Health Project

Health and Global Policy Institute (HGPI) launched Planetary Health Project in 2022. The objectives of this project are to collaborate with multi-stakeholders to identify planetary health-related issues for Japan to address, to improve understanding, to disseminate information in Japan and around the world, and to create opportunities to take the next steps. As part of this project, we have hosted continuous discussions with our multi-stakeholder advisory board, which included representatives of industry, Government, academia, and civil society, and this report is based on those meetings.



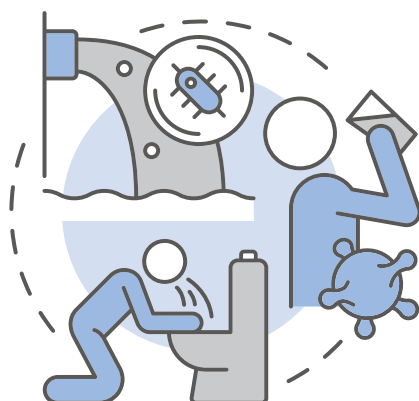


Air pollution

Air pollutants including particulate matter (PM10 and PM2.5) are mixtures of microscopic solids or liquid particles found in the air. These particles are so small they pass through the respiratory system, settle deep into the lungs, and enter the bloodstream, resulting in various health problems. Long- and short-term health problems caused by these pollutants include increased respiratory and circulatory diseases. In addition to causing respiratory symptoms, exacerbating asthma, and increasing hospitalizations, they also increase mortality from lung cancer. It has been estimated that transitioning away from fossil fuels may prevent as many as 1.2 million deaths caused by exposure to PM2.5 air pollution from fossil fuels.

Water pollution

The greatest threat to drinking water is microbiological contamination from feces and urine. Around the world, at least 2 billion people are using sources of drinking water that are contaminated with feces. Among chemical contaminants, the greatest threats to drinking water are posed by arsenic, fluoride, and nitrate, but contaminants like pharmaceuticals, pesticides, per- and polyfluoroalkyl substances (PFAS), and microplastics have also been attracting growing interest in recent years.



Climate change

It has been reported that failure to rapidly reduce greenhouse gas (GHG) emissions will lead to more extreme weather events like heat waves, droughts, and floods which will result in devastating effects on human health. The frequency of life-threatening extreme weather events has been increasing. Food shortages caused by extreme heat waves in 2020 were reported to have impacted 98 million more people compared to the 1981 to 2010 average. According to the Lancet Countdown report, weather conditions are becoming more favorable for the transmission of infectious diseases. The risk of dengue fever infection increased by an average of 12% from 2012 to 2021 compared to the years 1951 to 1960. Yet, initiatives for climate change are inadequate. The carbon intensity of the global energy system has decreased by less than 1% since the United Nations Framework Convention on Climate Change was adopted in 1992. (In Japan, carbon intensity trended downward from 1992 to 2010, but was higher in 2019 than in 1992.)

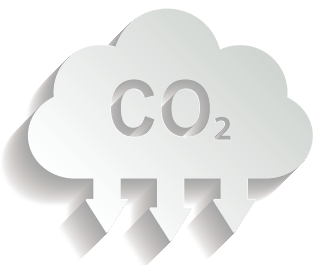


Biodiversity loss

Factors like land- and sea-use change, the exploitation of natural resources, climate change, pollution, and invasive species are resulting in the loss of biodiversity and the degradation of ecosystems. Their effects on food security, water quality, changes in the environment, and the outbreak of infectious diseases are also resulting in significant impacts for human health. Furthermore, existing food systems are unsustainable and are thought to contribute to various problems for the environment and for health, including climate change, biodiversity loss, and diet-related chronic diseases.

Mitigation

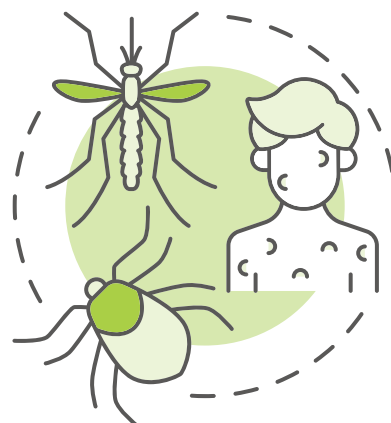
It has been said that global warming above 1.5°C will be the tipping point that triggers a sequence of irreversible effects. “Mitigation measures” are measures that aim to reduce GHG emissions that cause warming and other forms of climate change. The total amount of carbon dioxide (CO₂) emitted by humanity to date is estimated to be approximately 2,460 Gt. Humanity only has room to emit another 330 Gt of CO₂ and currently emits approximately 41 Gt every year. If the current rate of global CO₂ emissions is maintained, we will exceed the 330 Gt limit in seven years. While each country has been setting more ambitious CO₂ reduction goals to reach the 1.5°C target, those measures will require additional reinforcement.



Adaptation

Heat Heat stroke is viewed as a major issue in Japan, where efforts to address heat stroke are currently advancing under the leadership of the Ministry of the Environment. Bills to partially amend the Climate Change Adaptation Act and the Act on the Environmental Restoration and Conservation Agency, Independent Administrative Agency to strengthen measures for addressing heat stroke were submitted during the ordinary session of the Diet in 2023. If actions to combat global warming are not taken and current temperatures remain unchanged, compared to averages for the years from 1981 to 2000, the number of emergency heat stroke cases is projected to increase 1.7-fold by mid-century and 4.5-fold by the end of the century. Various efforts will be necessary to address heat stroke, including establishing heat stroke warning systems, emergency transport systems, and emergency healthcare provision systems; promoting the effective use of the aforementioned systems; conducting urban planning; and establishing cooling centers and other air-conditioned facilities to serve as shelters.

Infectious disease Arthropod-borne viral infections are a high-priority, urgent item in the area of infectious diseases. The habitable range of *Aedes albopictus* or the tiger mosquito, a carrier of arthropod-borne diseases, currently covers less than 40% of Japan, but this range is projected to cover 75% to 96% of Japan by the end of the century. As it is impossible to eradicate zoonotic diseases, we must create anticipatory strategies through measures like elucidating transmission pathways and routes for natural hosts; developing methods for prevention, diagnosis, and treatment; and elucidating molecular bases for host ranges and pathogenicities.



Co-benefits

Actions that serve as mitigation measures by reducing GHG emissions while providing health benefits are called “co-benefit actions.” Creating healthy and sustainable urban transportation systems provides co-benefits by reducing GHG emissions, traffic injuries, air pollution-related diseases, and lifestyle-related diseases while increasing physical activity. Sustainable food systems generate co-benefits by reducing food waste and lifestyle-related diseases while providing environmentally-sustainable food production and healthier diets. Based on various lessons from Minamata disease, Minamata City in Kumamoto Prefecture issued Japan’s first “Declaration on the Creation of an Environmental Model City” in 1992. It then expanded community development efforts to share the values of “Healthy and cultured lifestyles,” “Circulating natural ecosystems,” and “Sustainable communities” through the formulation of the Minamata City Basic Plan and Basic Ordinance on the Environment. Japan has many examples of innovative efforts like those from Minamata City, so they must be shared both domestically and internationally.



Expanding perspectives on planetary health in all fields of policy and all sectors, including those for the environment and economy

Human life expectancies have continuously increased as progress has been made in public health. However, some have warned that contributions from the field of public health may be eroded by climate change and other environmental risks. While WHO and other organizations have advocated for cross-sectoral approaches to health such as “Health in All Policies” (HiAP), shaping a healthy and sustainable future will require us to broaden our focus on both health for the Earth and for humans and to advance collaboration that spans multiple sectors including the environmental sector through a “Planetary Health in All Policies” approach. While measures to reduce environmental risks will come with great costs, it is clear that they will generate even greater returns in terms of public health and in economic benefits. We must encourage the inclusion of planetary health perspectives in decision-making processes.

Decarbonizing the health sector

The carbon footprint of the health sector accounts for 4.4% of total global carbon emissions (and 6.4% of carbon emissions in Japan). If the health sector were a country, it would be the fifth largest emitter on the planet, so decarbonizing the health sector has the potential to make a big impact.

Looking at the breakdown of health sector emissions, direct emissions from health facilities and healthcare-owned vehicles (Scope 1) account for 17% of the footprint. Indirect emissions from purchased energy sources like electricity, cooling, and heating (Scope 2) account for 12%. The health supply chain (Scope 3) comprises most of the remaining 71% of emissions, which originate from the production, transportation, and disposal of goods and services like pharmaceuticals and other chemicals, as well as food, agricultural products, medical devices, hospital equipment, and instruments. As we can see, the bulk of emissions come from the overall supply chain (Scope 3). In addition to curbing direct emissions from hospitals and companies, it will be particularly important to decarbonize the entire supply chain. The U.K. is working to achieve decarbonization throughout its health system in an initiative called “Greener NHS,” and Japan should consider implementing a similar initiative.

Making the health sector resilient

Working together with healthcare providers, national and local governments must conduct regional health vulnerability and adaptation assessments and formulate and implement climate change adaptation plans for the health sector. All healthcare facilities and the entire healthcare supply chain must be made resilient to climate change and other environmental changes while simultaneously reducing their impact on the environment. For example, investments should be made in renewables so healthcare facilities can access stable electricity even in the event of disasters, and remote medicine should be considered as a possible alternative to face-to-face care when transportation and other systems have been suspended due to disasters or emergencies.

In addition to investments in infrastructure, it is vital for investments to also be made in people. Support must be provided for administrative management, which includes providing healthcare professionals with educational programs on establishing environmentally-sustainable health systems and conducting Business Continuity Planning (BCP).

Reinforcing research and evidence

Japan has fallen behind other countries in research on planetary health. Steps must be taken to advance research funded by competitive grants in order to establish scientific evidence. The MHLW began accepting proposals for studies on healthcare system designs and transformation measures for achieving a carbon-neutral society as part of its FY2023 Health and Labour Sciences Research Grants, but it will also be necessary to encourage cross-disciplinary research on health impact projections, adaptation, and co-benefits.



Regarding the independent nature of this report

This report is based on discussions at each of the meetings HGPI held for this project and has been compiled in HGPI's capacity as an independent health policy think-tank. It does not, in any capacity, represent the opinions of any participating expert, speaker, related party, or organization to which those parties are affiliated. This report is copyright 2023 Health and Global Policy Institute.

Guidelines on Grants and Contributions

As an independent, non-profit, non-partisan private think tank, HGPI complies with the following guidelines relating to the receipt of grants and contributions.

1. Approval of Mission

The mission of HGPI is to improve the civic mind and individuals' well-being, and to foster a sustainable healthy community by shaping ideas and values, reaching out to global needs, and catalyzing society for impact. The activities of the Institute are supported by organizations and individuals who are in agreement with this mission.

2. Political Neutrality

HGPI is a private, non-profit corporation independent of the government. Moreover, we receive no support from any political party or other organization whose primary purpose is political activity of any nature.

3. Independence of Project Planning and Implementation

HGPI makes independent decisions on the course and content of its projects after gathering the opinions of a broad diversity of interested parties. The opinions of benefactors are solicited, but the Institute exercises independent judgment in determining whether any such opinions are reflected in its activities.

4. Diverse Sources of Funding

In order to secure its independence and neutrality, HGPI will seek to procure the funding necessary for its operation from a broad diversity of foundations, corporations, individuals, and other such sources. Moreover, as a general rule, funding for specific divisions and activities of the Institute will also be sought from multiple sources.

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6. Written Agreement

Submission of this document will be taken to represent the benefactor's written agreement with HGPI's compliance with the above guidelines.

Acknowledgements

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Planetary Health Project

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Project sponsors

(in Japanese syllabary order)

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About Health and Global Policy Institute (HGPI)

Non-profit, Independent, and Global

Health and Global Policy Institute (HGPI) is a Tokyo-based independent and non-profit health policy think tank, established in 2004. Since our establishment, HGPI has been working to help citizens shape health policy by generating policy options and bringing together stakeholders as a non-partisan think-tank. Our mission is to enhance the civic mind along with individuals' well-being and to foster sustainable, healthy communities by shaping ideas and values, reaching out to global needs, and catalyzing society for impact.

We commit to activities that bring together relevant players from various fields to deliver innovative and practical solutions and to help interested citizens understand available options and their benefits from broader, global, long-term perspectives.

HGPI's activities have received global recognition. It was ranked second in the "Domestic Health Policy Think Tanks" category and third in the "Global Health Policy Think Tanks" category in the Global Go To Think Tank Index Report presented by the University of Pennsylvania (as of January 2021, the most recent report).



Role of the Health Sector

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