Caribbean Climate and Health Responders Course

Climate Change and Health Equity

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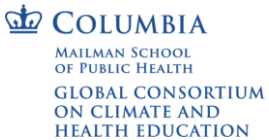
Zoom Poll Question 1



Learning Objectives

- Define climate-health vulnerability and climate resilience.
- Identify social and environmental determinants of health that make individuals and communities more vulnerable to climate-related health threats.
- Apply the vulnerability framework to specific populations (women, workers, climate refugees, indigenous people).
- Describe the unique vulnerabilities of the following populations: elderly, children, socioeconomically disadvantaged, homeless, immunocompromised patients, patients with chronic medical conditions/ NCDs.
- Apply knowledge of the ethical, professional, and legal obligations relevant to climate and health.

WORD CLOUD #1

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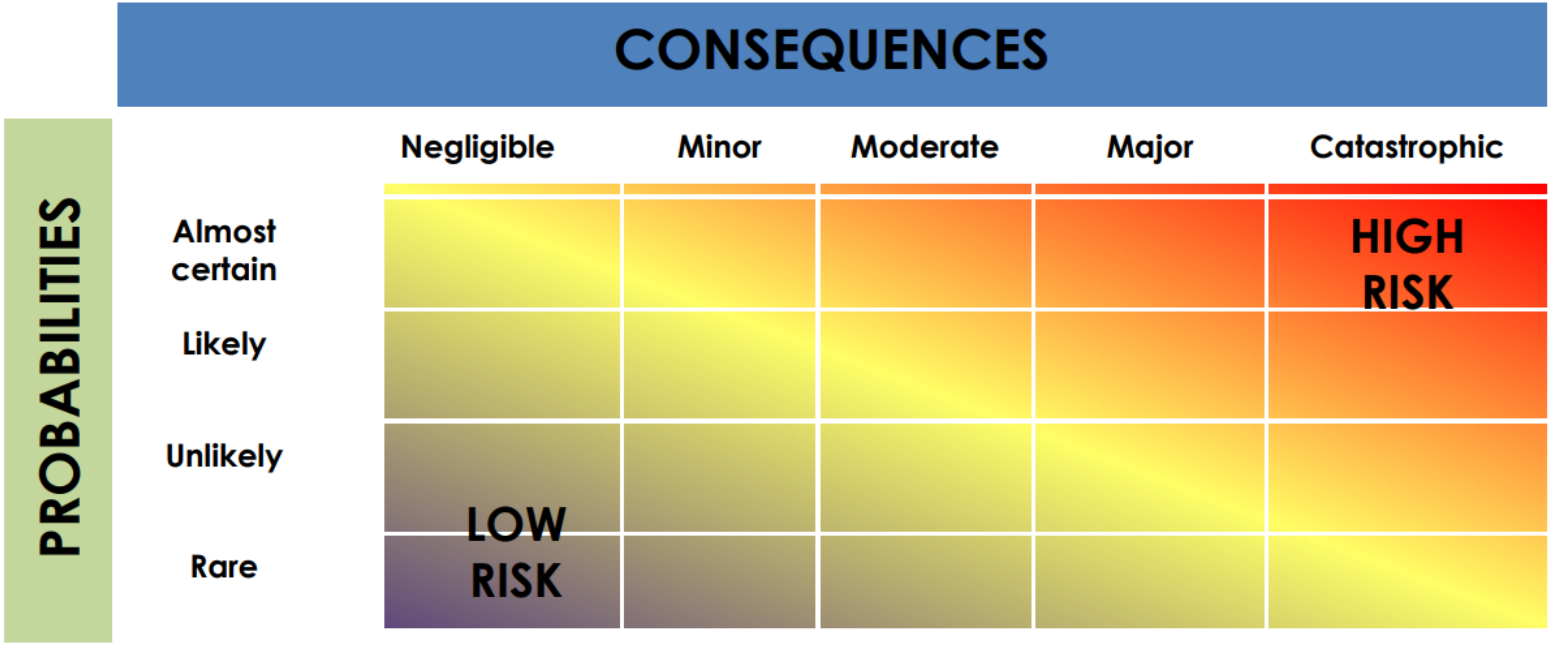
Understanding Risk

Simpson, N.P., Mach, K.J., Constable, A., Hess, J., Hogarth, R., Howden, M., Lawrence, J., Lempert, R.J., Muccione, V., Mackey, B. and New, M.G., 2021. A framework for complex climate change risk assessment. *One Earth*, *4*(4), pp.489-501.

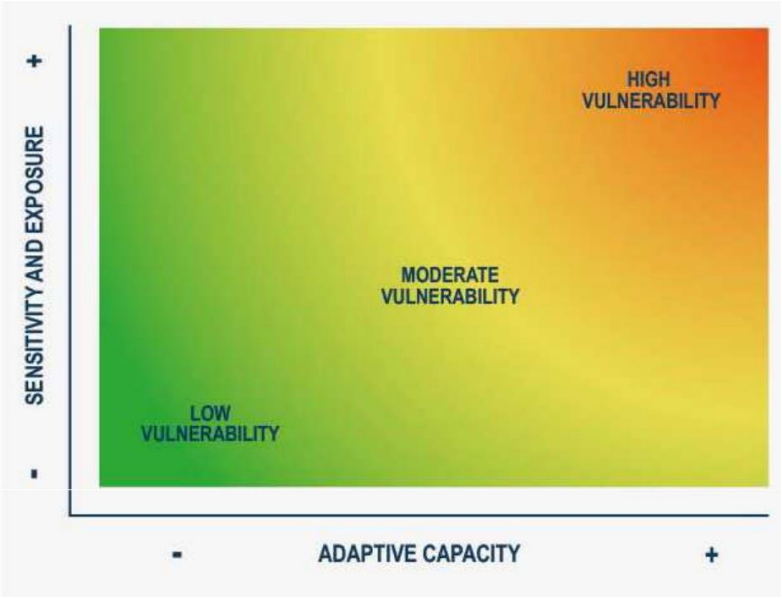
Understanding Risk



IPCC Sixth Assessment **Report**
Climate Change 2022: Impacts, Adaptation and Vulnerability

Understanding Vulnerability

Understanding Vulnerability

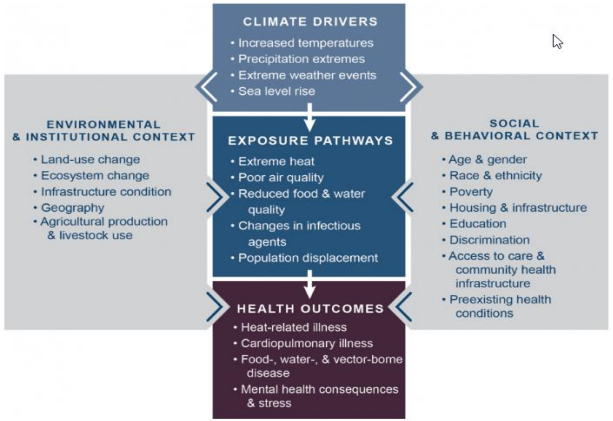


http://www.lifesecadapt.eu/fileadmin/user_upload/ALLEGATI_LIFESECADAPT/documenti/Vulnerability_Risk_FGiordano.pdf

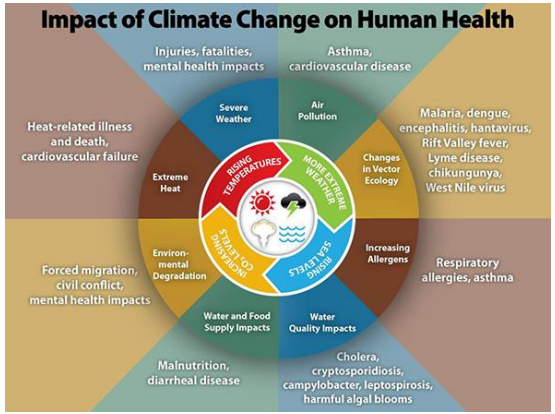
Understanding Resilience

Health and Climate – many models…

Figure ES2: Climate Change and Health

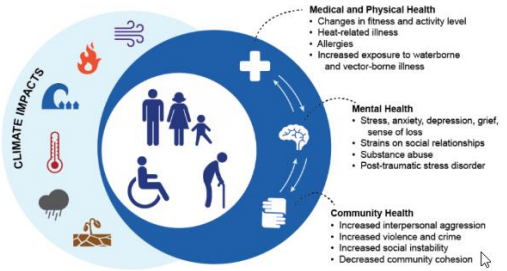


Source: USGCRP 2016

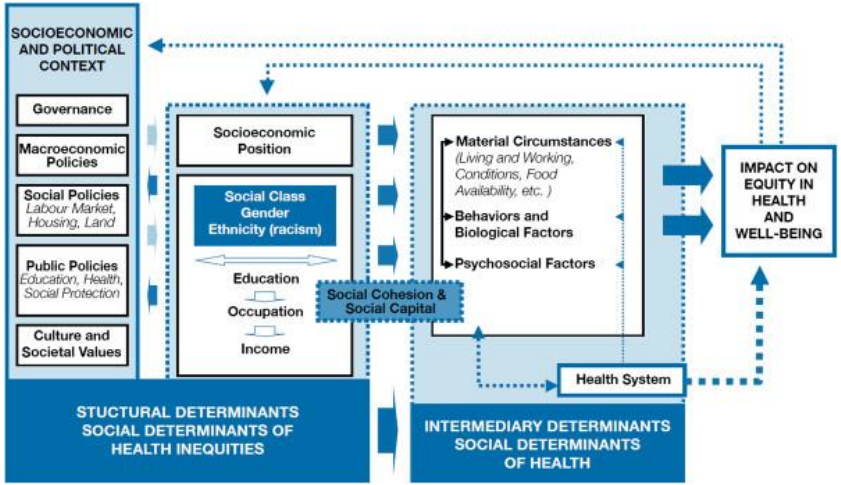


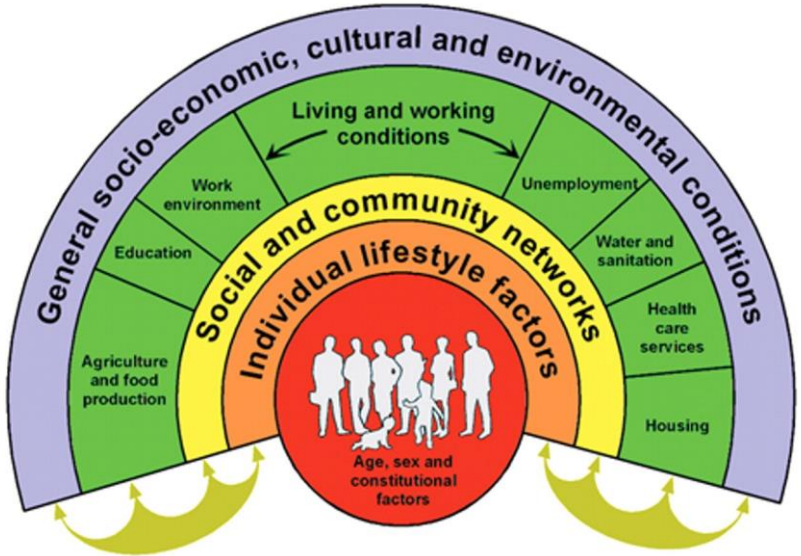
National Center for Environmental Health

Figure 8.2: Impact of Climate Change on Physical, Mental, and Community Health



Crimmins et al. 2016





Commission on Social determinants of Health WHO 2008

Dahlgren and Whitehead 1991

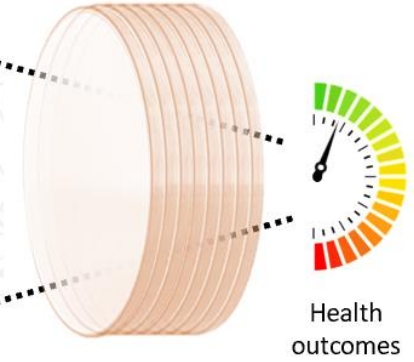
DETERMINANTS OF HEALTH

Macro-economic context
Policy environment
Governance mechanisms
Education
Cultural context
Access to justice
Health systems

Labor conditions
Food production
Land use
Access to fresh water
Air quality
Infectious disease exposure

Socioeconomic status
Social capital
Ethnicity/Race
Behavior/personal choices
Gender
Constitutional factors

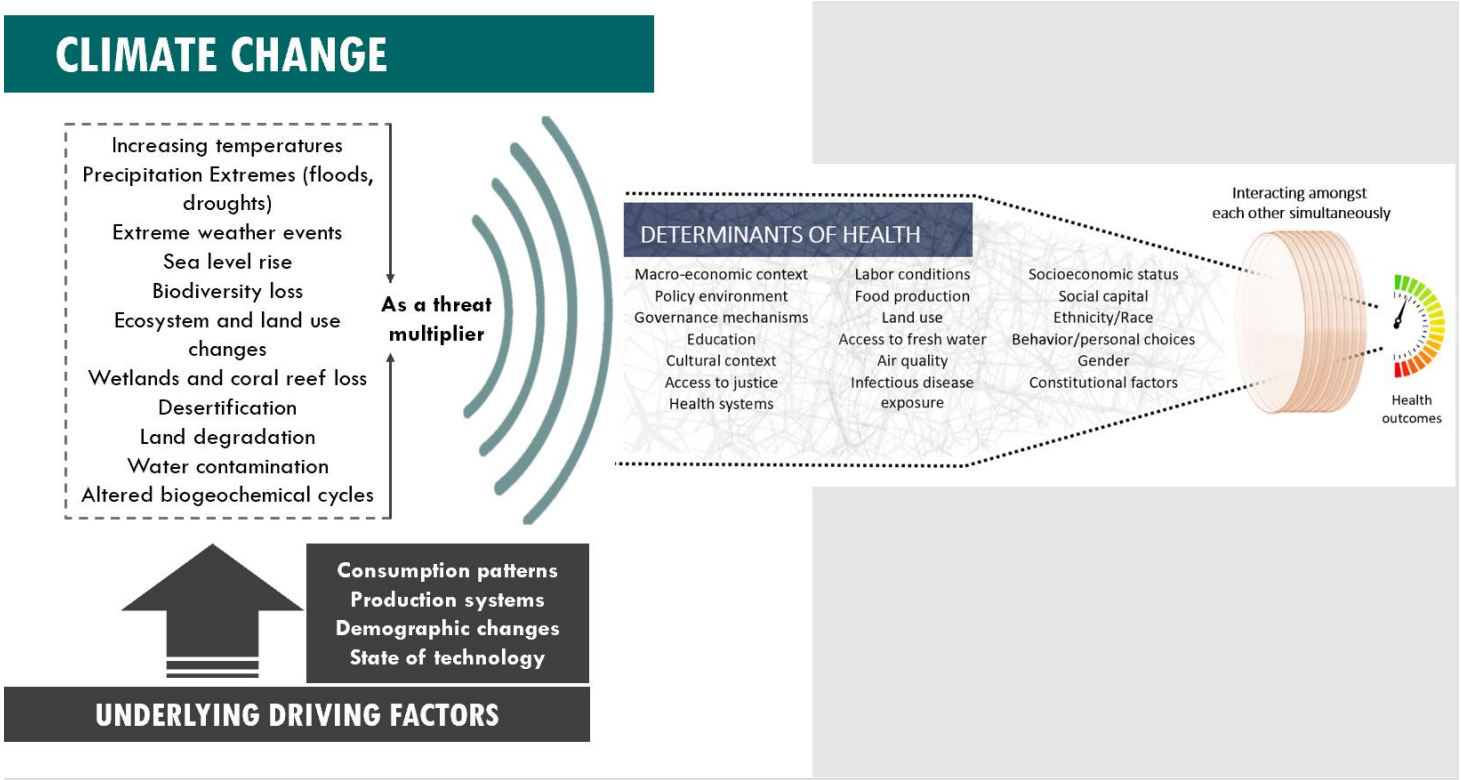
Interacting amongst each other simultaneously



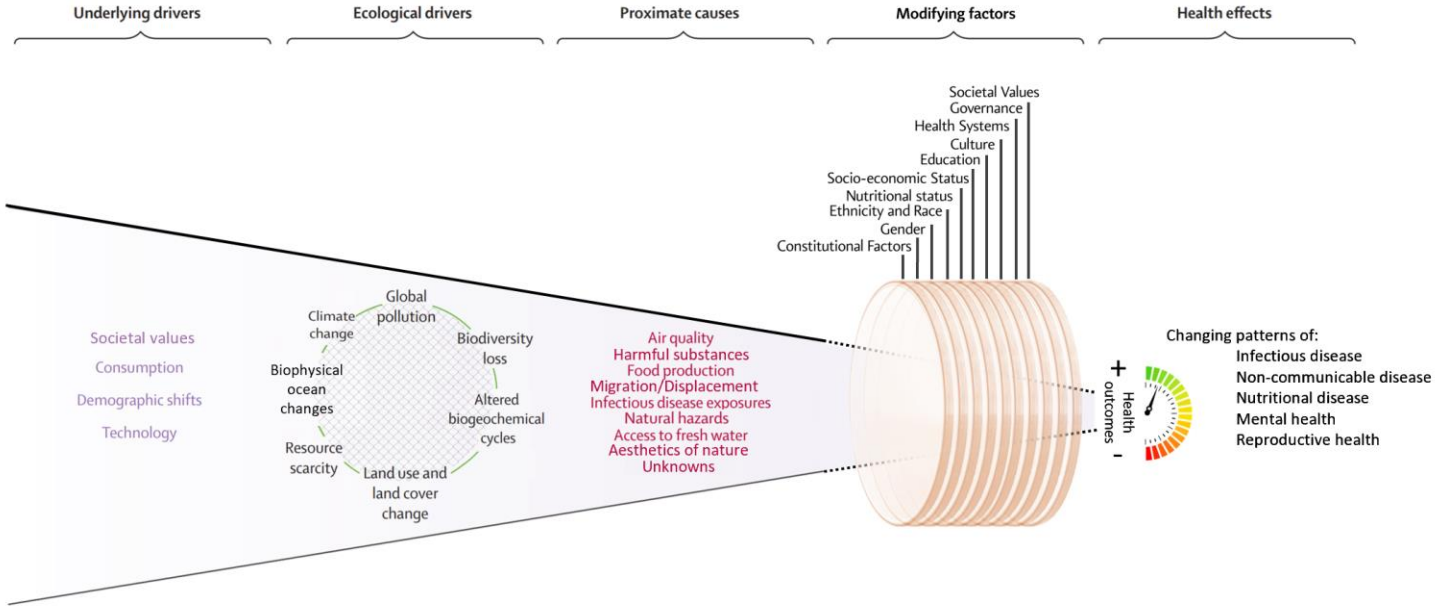
Health outcomes

Health (disease) as a dynamic product of an eco-social system

Climate Change is a threat multiplier



Climate change does not happen in a vacuum

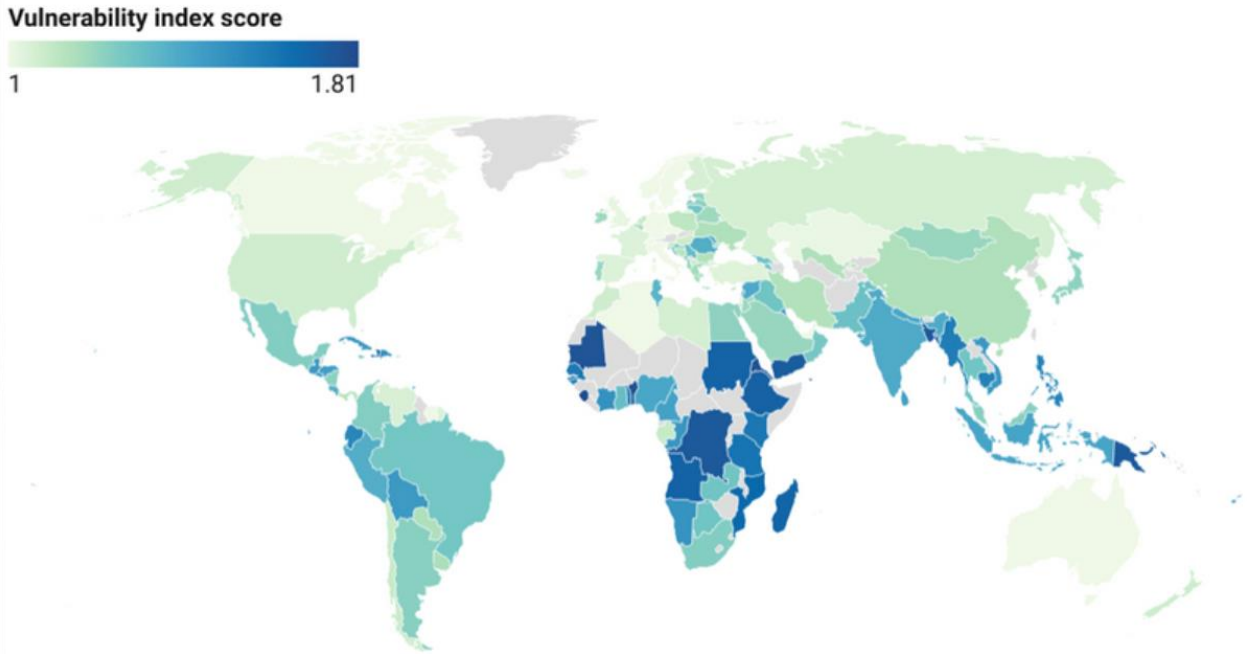


Schematic illustrating impacts of anthropogenic change on human health

(modified by Faerron Guzman from Myers, S.S., 2017. Planetary health: protecting human health on a rapidly changing planet. *The Lancet*, *390*(10114), pp.2860-2868.)

The countries most vulnerable amid climate change

Scientists assessed countries' vulnerability based on food security, water availability, human health and living conditions, ecosystem services and infrastructure, including energy. The most vulnerable are in sub-Saharan Africa, South Asia and small island states.

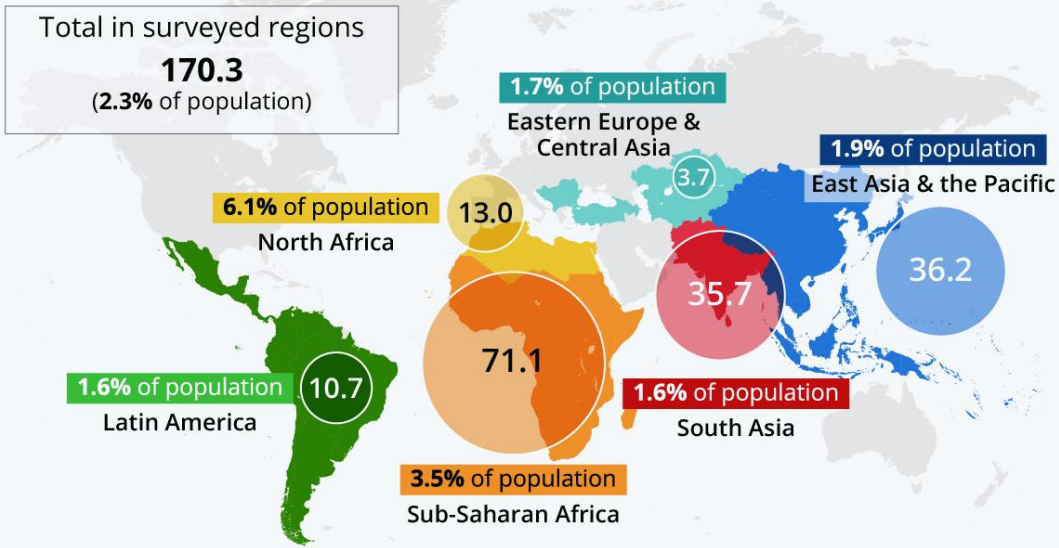


Vulnerability rises with higher scores. Data not available for regions in gray.

Map: The Conversation/CC-BY-ND • Source: Edmonds, Lovell and Lovell, 2020

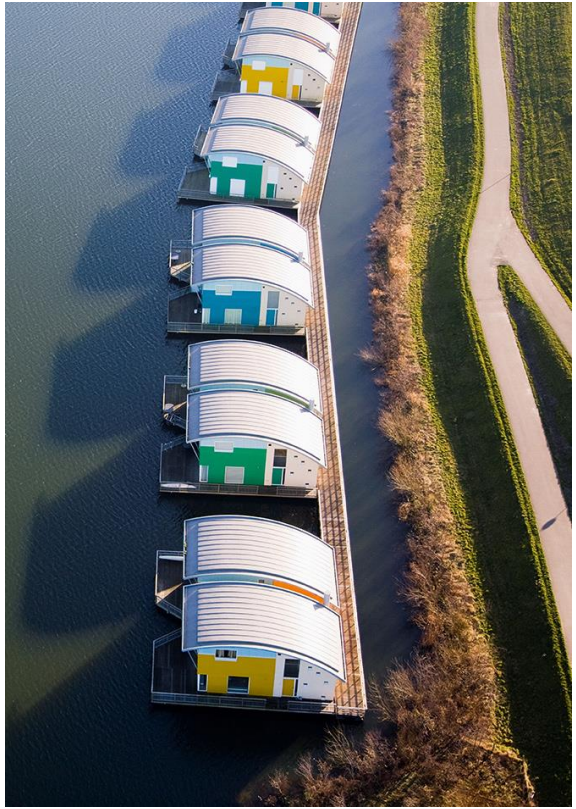
Climate Change, the Great Displacer

Average number of internal climate migrants by 2050 per region (in millions)*



* Modeled on pessimistic reference = High emission & unequal development scenarios concerning water availability, crop productivity and sea-level rise

Source: World Bank



Crops grown in open field conditions with elevated CO^2 = lower amounts of iron, zinc, and protein

- 150-200 million people are expected to be pushed into zinc deficiency

Climate change

Climate change making food crops less nutritious, research finds

High CO2 levels significantly reduces essential nutrients in wheat, rice, maize and soyabeans, Nature paper reveals

Damian Carrington

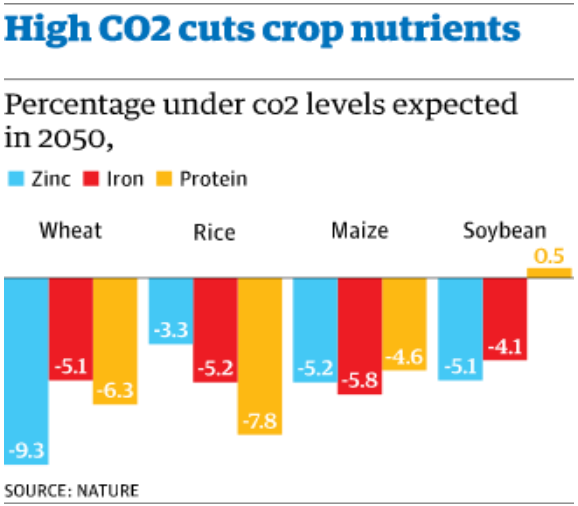
@dpcarrington

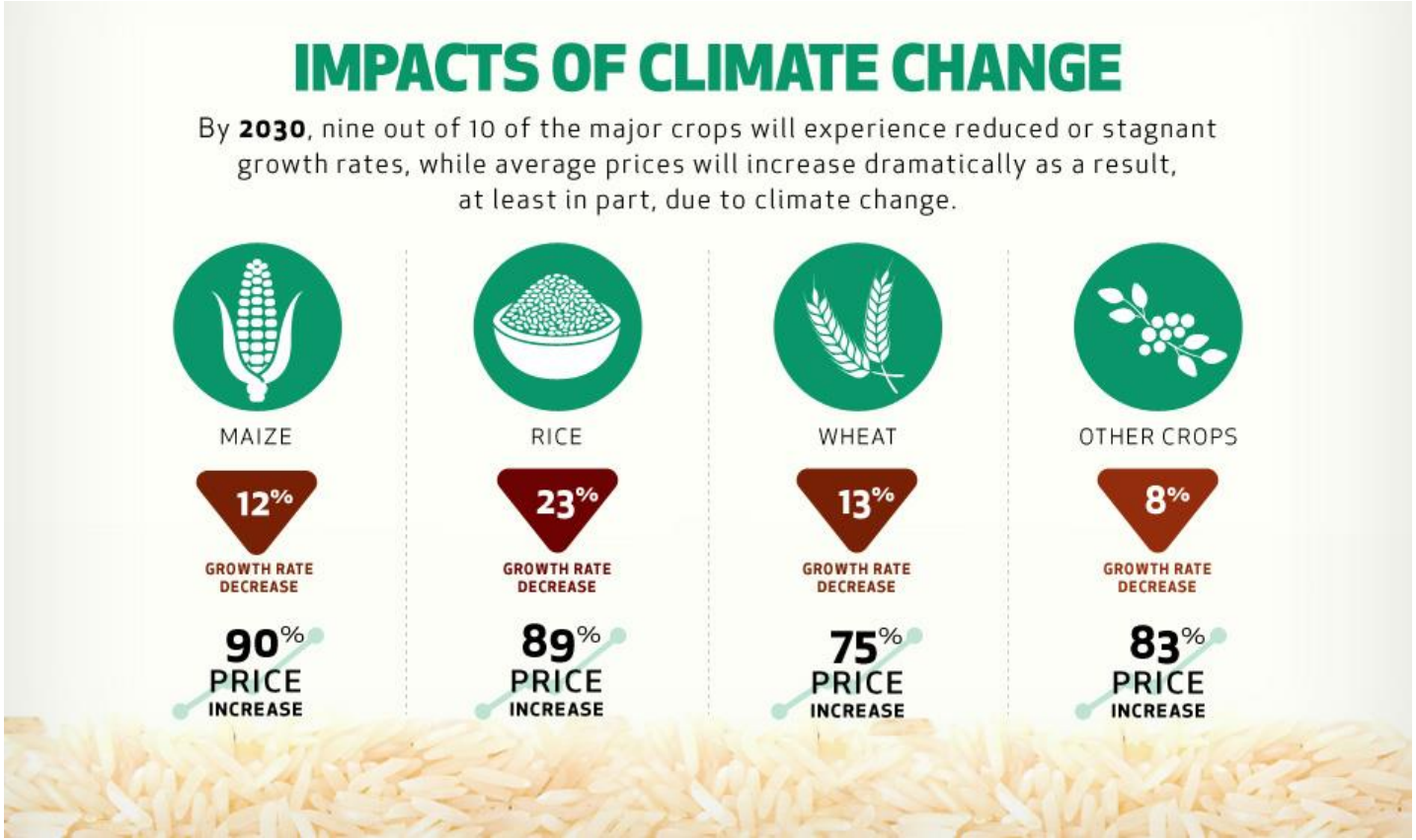
Wed 7 May 2014 13.03 EDT

This article is over 3 years old

1,052 192

▲ Bangladeshi farmers harvest rice in a field on the outskirts of Dhaka. Photograph: Munir Uz Zaman/AFP/Getty Images

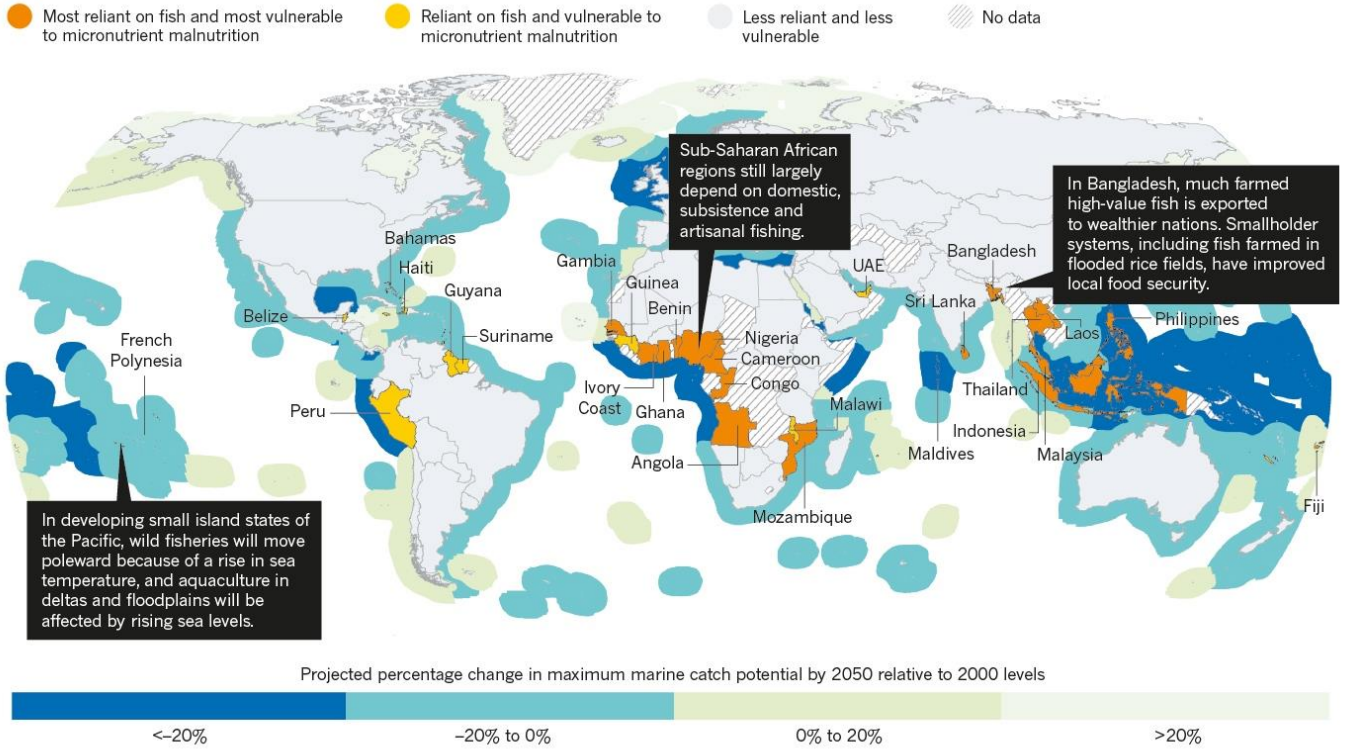




SOURCE: FAO OXFAM

TROUBLED WATERS

In the low-latitude developing nations, human nutrition is most dependent on wild fish, and fisheries are most at risk from illegal fishing, weak governance, poor knowledge of stock status, population pressures and climate change. These countries urgently need effective strategies for marine conservation and fisheries management to rebuild stocks for nutritional security.



Who bears responsibility for carbon emissions growth?

From 1990 to 2015, the wealthiest 5% of the global population were responsible for 36% of global emissions growth, an analysis by Stockholm Environment Institute and Oxfam found. Together, the wealthiest 10% accounted for almost half of the emissions growth.

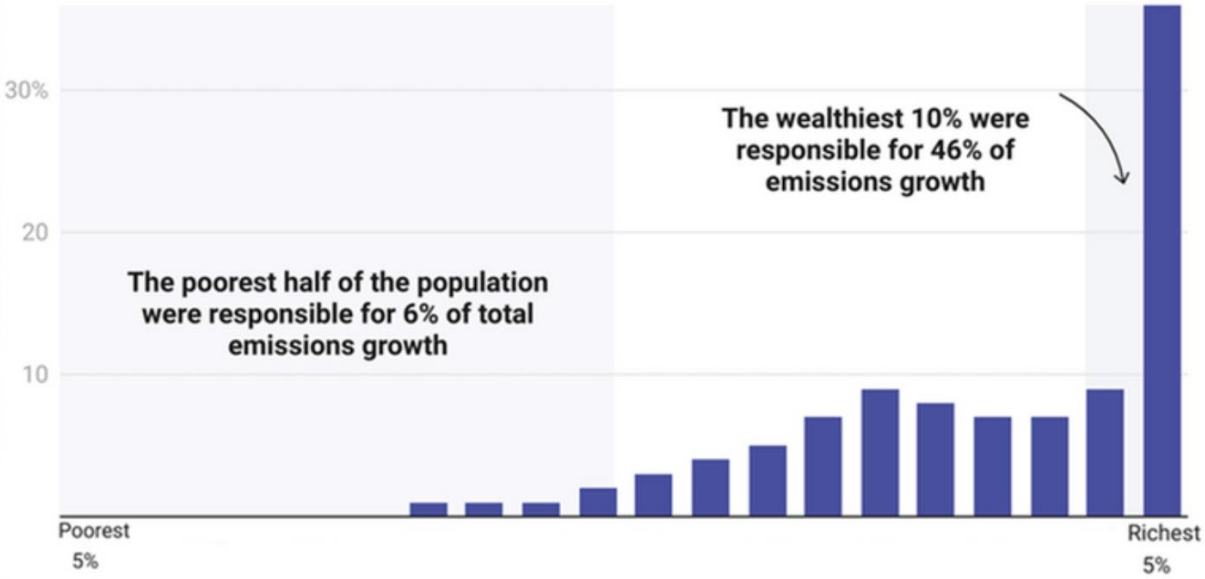
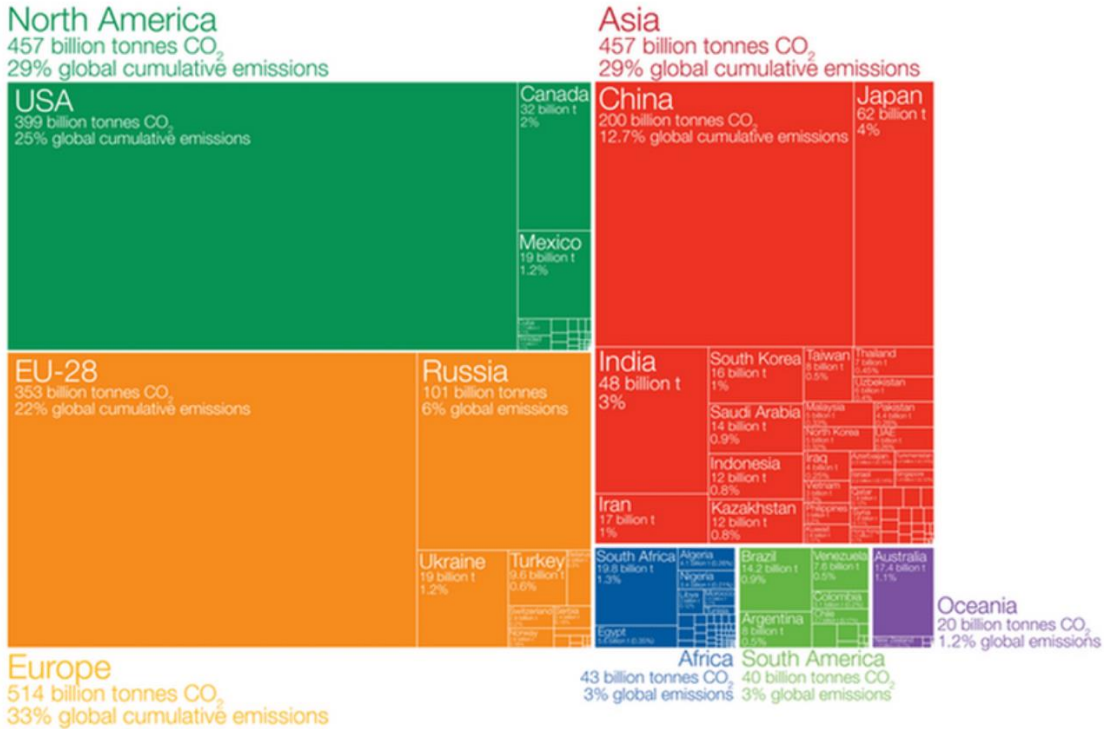


Chart: The Conversation/CC-BY-ND • Source: Stockholm Environment Institute and Oxfam

Who has contributed most to global CO_2 emissions?

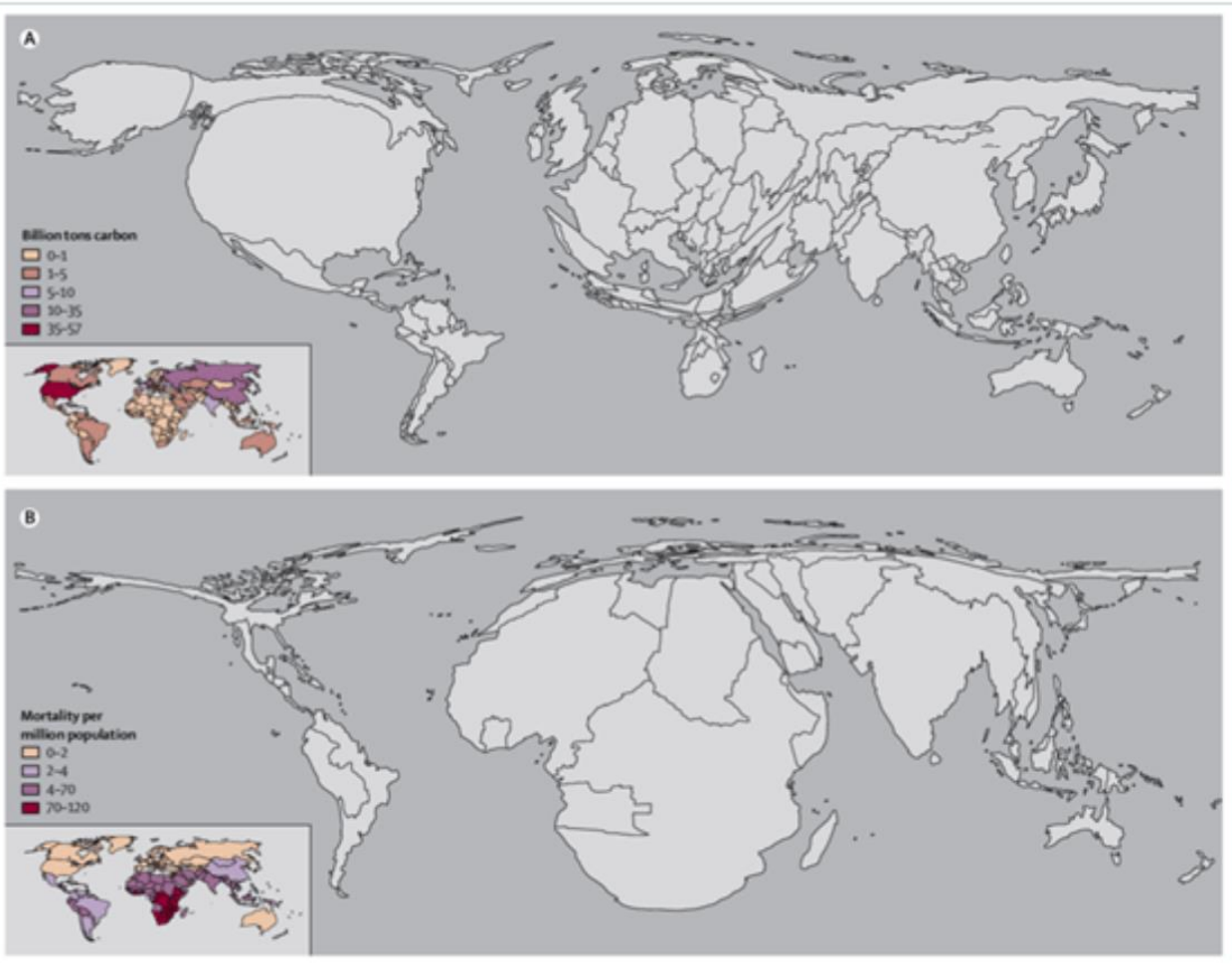
Our World in Data

Cumulative carbon dioxide (CO_2) emissions over the period from 1751 to 2017. Figures are based on production-based emissions which measure CO_2 produced domestically from fossil fuel combustion and cement, and do not correct for emissions embedded in trade (i.e. consumption-based). Emissions from international travel are not included.



Figures for the 28 countries in the European Union have been grouped as the "EU-28" since international targets and negotiations are typically set as a collaborative target between EU countries. Values may not sum to 100% due to rounding.

Data source: Calculated by Our World in Data based on data from the Global Carbon Project (GCP) and Carbon Dioxide Analysis Center (CDIAC).
This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.



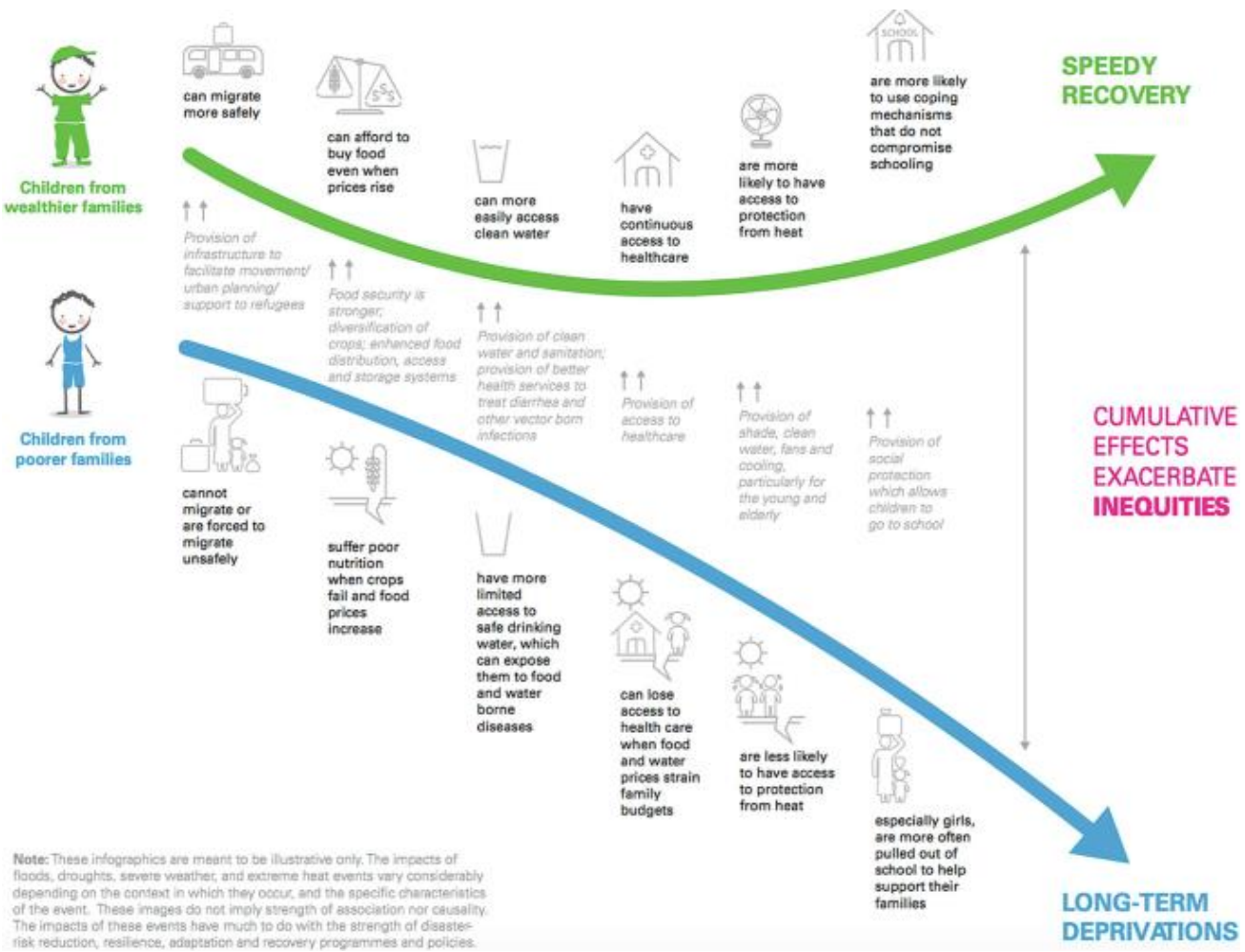
From Patz JA, Gibbs HK, Foley JA, et al. Climate change and global health: quantifying a growing ethical crisis. EcoHealth. 2007; doi.10.1007/s10393-007-0141-1

Gunilla Olsson, Director of UNICEF Office of Research –

“

In some cases we are seeing countries providing relatively healthy environments for children at home while being among the top contributors to pollutants that are destroying children’s environments abroad.

”



Sanson, A.V. and Burke, S.E., 2020. Climate change and children: An issue of intergenerational justice. In *Children and peace* (pp. 343-362). Springer, Cham.

WORD CLOUD #2

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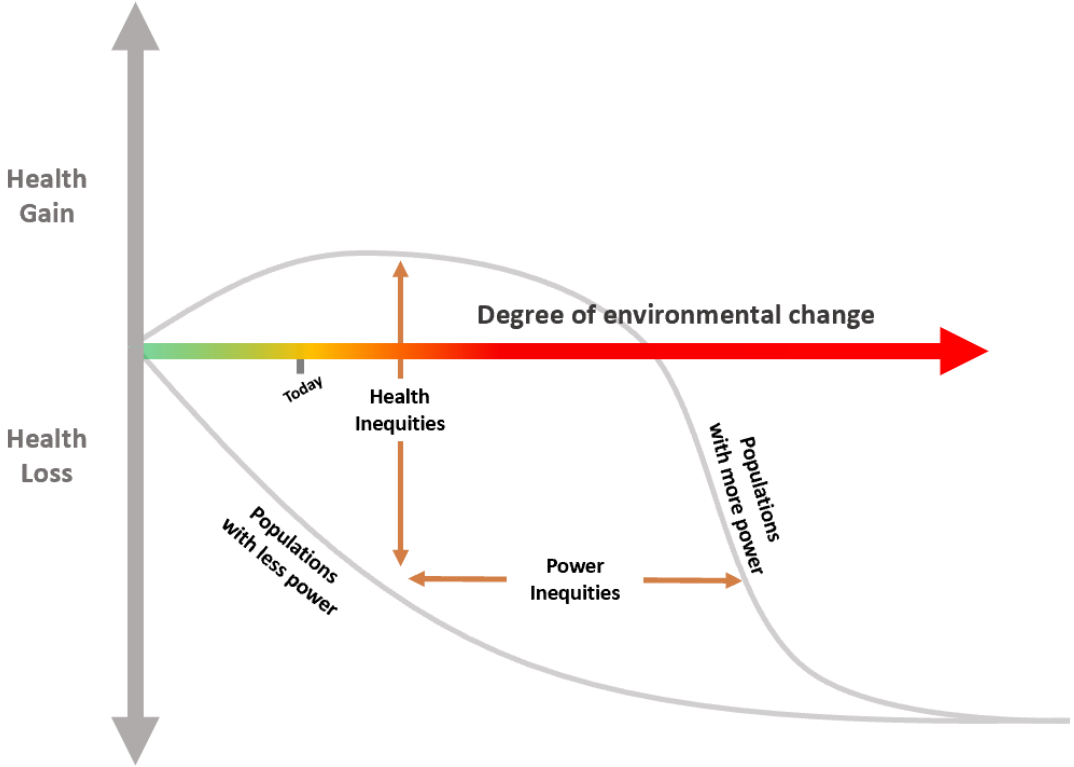
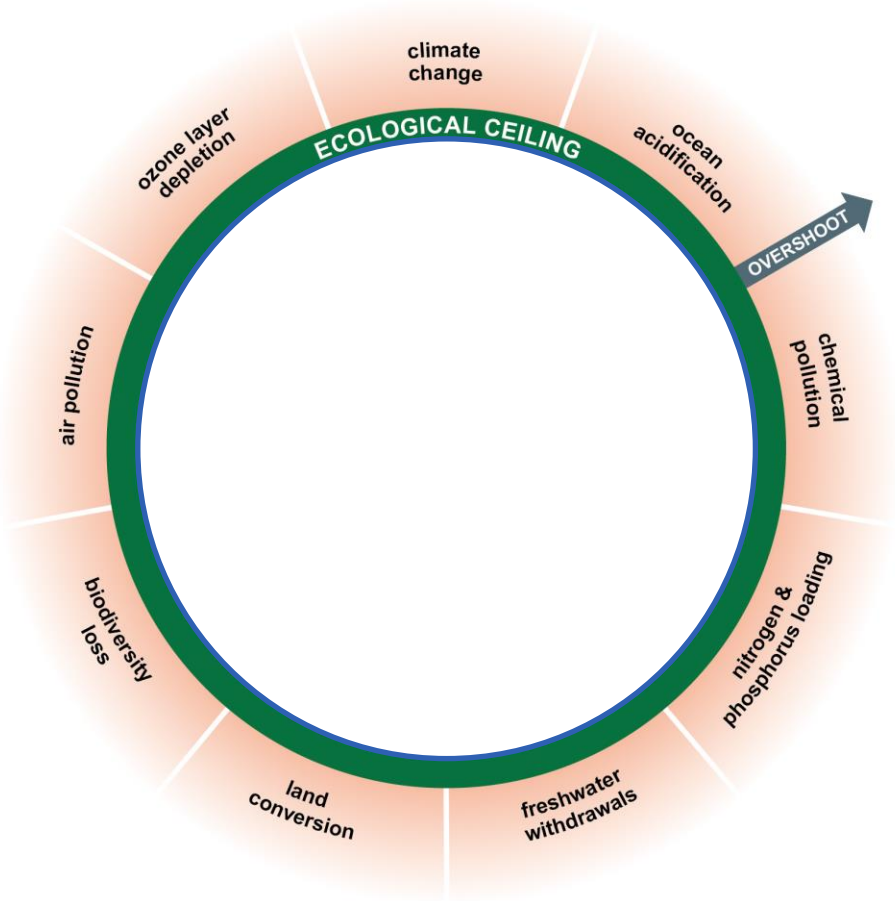
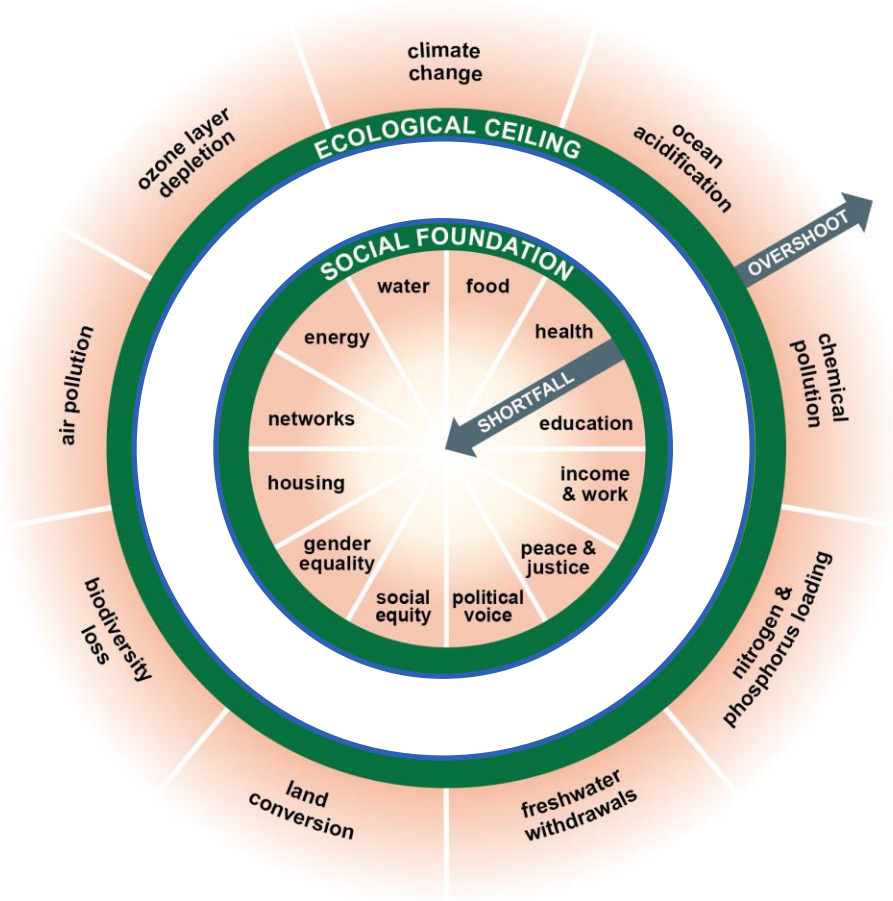


Health Impacts of Anthropogenic Environmental Change – Status quo scenario.
Inequitable health impacts and inequitable power distribution explain the delay to act and inaction from the most powerful in the face of global environmental change.



https://www.kateraworth.com/doughnut/



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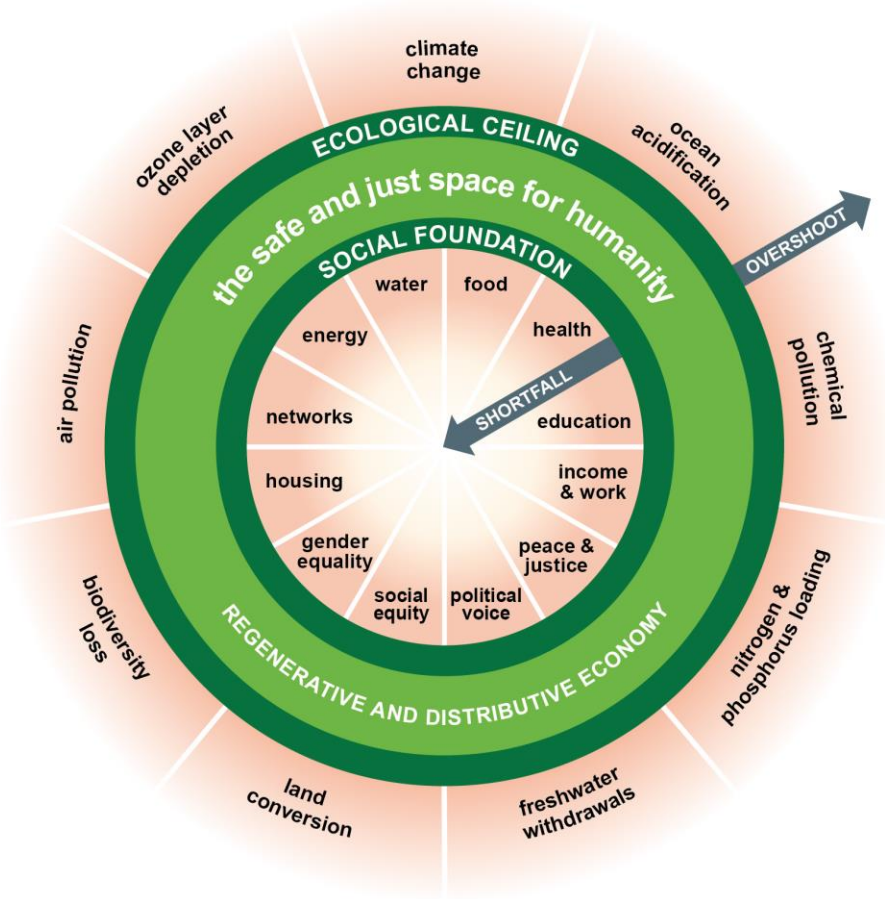

https://www.kateraworth.com/doughnut/

YOUR ROLE AS A HEALTH PROFESSIONAL

Know your science

Understand the co-benefits of climate action

Get involved with the policy makers

Keep the research (and the funding going)

Mobilize from the base