

## Environmental impacts on health, growth and inequality reduction

cite as Angela Cindy Emefa Mensah and Edward B. Barbier, "Environmental impacts on health, growth and inequality reduction", *Sustainable Future Policy Lab: Analyses*, 2022-002.

One of the greatest economic challenges of our time is reducing inequality and ensuring that no one is left behind. The consensus in recent empirical analysis is that a higher growth rate will speed up absolute inequality reduction across countries, with some evidence that such reductions could be offset by a high initial level of inequality. However, a seemingly overlooked factor is the impact on inequality differences across countries from the mortality and morbidity attributed to the environment, such as air, soil and water pollution, ecosystem degradation, unsafe water and sanitation, and other environmental quality changes. These environmental health risks are impacting welfare and income distribution worldwide.

For example, the World Health Organization estimates that 24% of all global deaths are linked to environmental factors, or around 13.7 million mortalities per year. Air pollution accounts for 7 million of these deaths, and around 3 billion people face health risks from using polluting fuels such as solid fuels or kerosene for lighting, cooking and heating. Particulate matter alone kills more than 4 million people each year, mainly in emerging market and developing economies. Over half the world's population is exposed to unsafely managed water, inadequate sanitation and poor hygiene, resulting in over 800,000 deaths annually. These exposures are highest in low and lower middle-income countries, which are plagued with the poorest health outcomes (see Figures 1 and 2). All these environmental health impacts constrain human capital accumulation, reducing the quantity of human capital per person and adversely impacting the income distribution, especially among the poorest countries who already have low human capital.

In a recent study "[Growth and inequality convergence: the role of environmentally related impacts on human capital](#)", funded by the World Institute for Development Economic Research (UNU-WIDER), Angela Cindy Emefa Mensah and Edward B. Barbier examine the rate of inequality reduction over the past three decades for 176 countries and ask if environmental health impacts are responsible for the slow rate of inequality reduction in countries. Their study is the first of its kind to focus on how such impacts may exacerbate inequality, especially among low and lower middle-income countries who are disproportionately affected by environmental health risks.

The results suggest that while higher initial incidence of environmentally related impacts on health worsens the rate of inequality reduction, those countries that experience faster reduction in the level of environmentally related impacts on health tend to converge to a lower level of inequality more quickly than their counterparts. Thus, ignoring these effects of environmentally related impacts on health may bias estimates of the relationship between growth and inequality. Higher rate of income growth, per se, do not reduce inequality across developing countries. Instead, the level of both initial inequality and environmentally related impacts on health are just as important as growth. As such, policies targeted at reducing inequality must also address health impacts from the environment.

These findings suggest that countries cannot expect to reduce inequality while maintaining high levels of environmentally related impacts on health—especially developing economies. If inequality reduction is a priority, then they must also implement policies that alleviate environmental health risks and protect the vulnerable population who are disproportionately

impacted. For example, developing countries should build infrastructure and improve access to clean water, proper sanitation, and hygiene, which according to the WHO account for about 827,000 deaths globally each year.

Figure 1: Per capita environmentally related disability-adjusted life years (DALYs) across countries in 1990

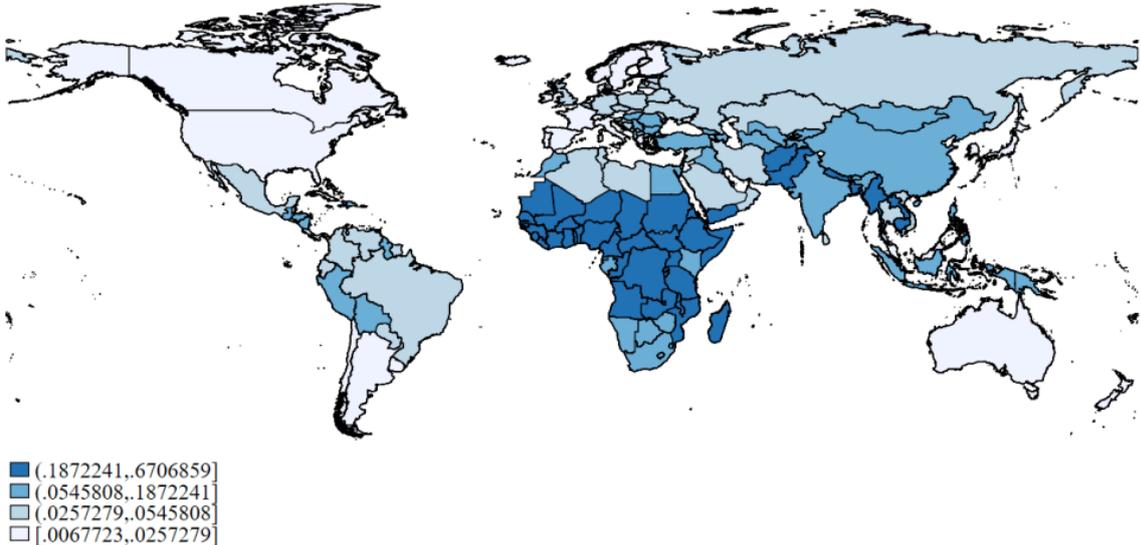
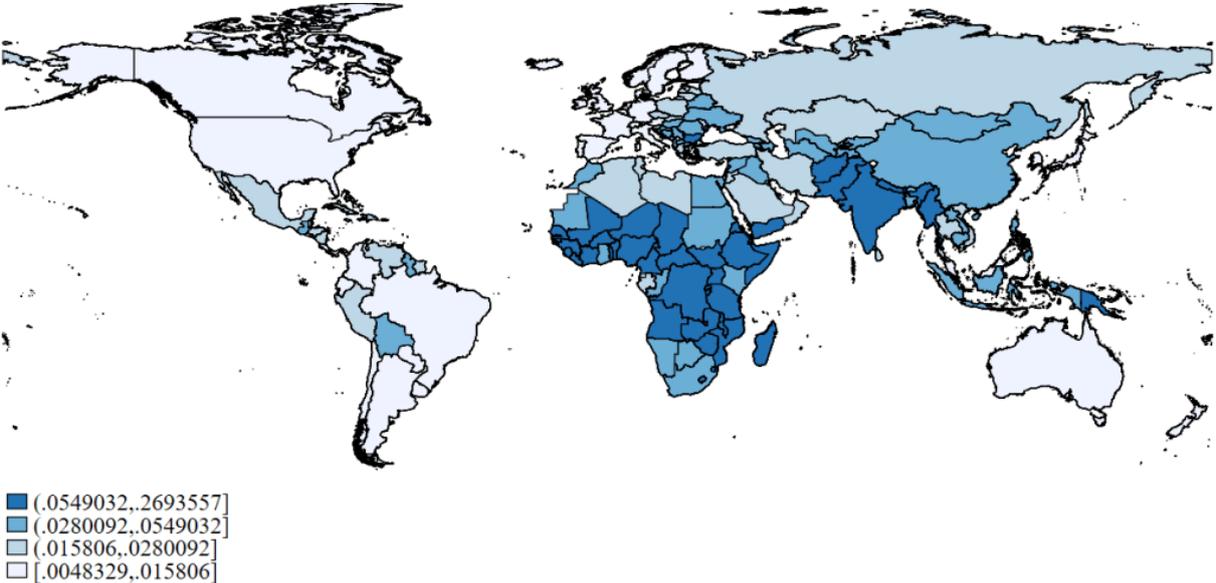


Figure 2: Per capita environmentally related disability-adjusted life years (DALYs) across countries in 2019



Source: Authors' estimates based on the Global Burden of Disease (GBD) dataset, available from the Global Health Data Exchange (GHDx, <http://ghdx.healthdata.org/gbd-results-tool>)