

POTENTIAL IMPACTS OF CLIMATE CHANGE ON HEALTH -  
A SOCIAL JUSTICE PERSPECTIVE



## **POTENTIAL IMPACTS OF CLIMATE CHANGE ON HEALTH -** **A SOCIAL JUSTICE PERSPECTIVE**

**Jatin Naidu - May 2021**

2021 has been hailed the ‘make or break’ year in the fight against climate change. While the physical effects of climate change are more actively researched, there is a huge void of evidence concerning its impacts on health.<sup>i</sup> The direct effects of climate change on health are easier to consider, however, health, in large is influenced by the social determinants of health.<sup>ii,iii</sup> We hypothesise that any climate-linked disruption to the social gradient may indirectly affect healthcare outcomes. This makes climate change a pressing issue to address. Here we will provide an overview of the potential effects of climate change on health.

Hotter summers and heat waves are commonly associated with climate change. Both have been linked to heat-related disorders, exacerbations of cardiovascular, respiratory, and chronic diseases. A disproportionate amount of morbidity and mortality is seen in older people, people living alone, urban populations and those without air conditioning.<sup>iv</sup> The disproportionate effects don’t stop there. The Global South contribute only 8% of excess carbon dioxide emissions, but weather-related natural disasters are 80 times more likely compared to the Global North.<sup>v</sup> This includes an increased number, intensity, and duration of droughts which in turn has huge effects on poor and marginalised people. They often lack socioeconomic resilience to withstand natural weather disasters, access to preventative and reactive services. We hypothesise that more frequent weather disasters may lead to income shortage, food insecurity, structural conflict, lack of water and basic amenities, eventually leading to adverse health outcomes.

Over the years, pictures of smog from industrial cities in India and China have gained a lot of attention worldwide. Smog is composed of nitrogen oxides, sulphur oxides, ozone, smoke, and other particulate matter. High levels of fine particulate matter (PM<sub>2.5</sub>) in smog pose a huge health risk.<sup>vi</sup> Increased PM<sub>2.5</sub> levels have directly led to an increased number of lung-related diseases including asthma exacerbations and lung cancer. While the exact mechanisms of its action are not known, epigenetic and microenvironmental alterations seem to play a part in lung cancer, while PM<sub>2.5</sub> induced cytokine release and oxidative stress may aggravate asthma.<sup>vii</sup> In the west, geographical differences due to urban planning have meant deprived communities are more likely to be affected by air pollution-related diseases compared with more affluent communities. They often live closer to busy roads, have less access to green space thereby experiencing a higher disease burden.<sup>viii</sup>

New emerging infections have been propelled in frequency by the effects of climate change. Vector-borne diseases (VBDs), water-borne diseases (e.g., cholera), soil-borne and food-borne pathogens have emerged as a direct consequence of climate change.<sup>ix</sup> Regarding VBDs, vector biting rates have increased with temperature up to a certain threshold. This has caused the development and transmission of vector transmitted pathogens to increase.<sup>x,xi</sup> The novel SARS-CoV-2 virus has also been linked to climate change; however, this is purely speculative. The mechanism involves changes in sunlight, temperature, and carbon dioxide levels leading

to changes in vegetation growth, causing the migration of new bat species from forests (natural habitat) to new areas.<sup>xii</sup> Climate can also indirectly act through socioeconomic factors e.g., flooding can destroy disease prevention measures including vector control.<sup>xiii</sup>

Climate change is likely to discriminately impact hungry and undernourished people due to the substantial risk it poses to food security. Computer models have shown that a high spatial variation in crop yields could arise depending on the degree of latitude a country is situated at.<sup>xiv,xv</sup> This is most likely going to affect the Global South first causing their crop yields to decrease and the Global North last. The Global South coincidentally have higher pre-existing hunger and undernutrition rates making this a pertinent issue to deal with. The risk of mortality and morbidity due to starvation and malnutrition is likely to increase.

In this article, we've highlighted a few examples of the deleterious effects that climate change may have on health. It is imperative that we mitigate against these effects by cutting down our carbon emissions, protecting green spaces and cutting down consumption/waste. We encourage policy makers to use social justice reasoning when considering policies that may affect the environment and for individuals to rethink their micro-decisions on a consumer level. 'We are all in this together' is a phrase often used to denote the shared responsibility and equal magnitude of the climate crisis worldwide. But this is simply not true. When likened to the sinking Titanic, the Global North are getting evacuated while the poorer Global South are locked in the hold. We must act now.

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<sup>iii</sup> World Health Organization, n.d. *Social Determinants of Health*. [Online] Available at: [https://www.who.int/health-topics/social-determinants-of-health#tab=tab\\_1](https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1) [Accessed 22 May 2021].

<sup>iv</sup> Levy, B. S. & Patz, J. A., 2015. Climate Change, Human Rights, and Social Justice. *Annals of Global Health*, 81(3), pp. 310-322.

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