

## Climate Brief No. 6: Climate Change and Health

Climate change affects the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter (WHO 2018).

### Threat and Opportunity

In 2009, The Lancet and University College London Institute for Global Health Commission, in a paper entitled ‘Managing the health effects of climate change’, stated “climate change is the biggest global health threat of the 21<sup>st</sup> century”. Consistent with most studies that indicate that climate change will be most particularly harmful for disadvantaged and vulnerable population, this report opined “climate change will have its greatest effect on those who have the least access to the world’s resources and have contributed least to its cause. Without mitigation and adaptation, it will increase health inequity especially through negative effects on the social determinants of health in the poorest communities”.



Six years later, the second Lancet Commission on Health and Climate Change (Lancet 2015), in a paper entitled ‘Health and climate change: policy responses to protect public health’, reiterated that while the effects of climate change are being felt today, and future projections represent an unacceptably high and potentially catastrophic risk to human health, tackling climate change could be the greatest global health opportunity of the 21<sup>st</sup> century.

The World Health Organization (2018) indicates that between 2030 and 2050, climate change will cause roughly 250,000 additional deaths per year from malnutrition, diarrhea and heat stress, with the direct costs to health amounting to between US\$ two and four billion per year by 2030.

## Warmer Temperatures

Climate change will impact public health in several ways. The most obvious is the impact of warmer temperatures. Heatwaves will occur with increasing frequency and this result in increased morbidity and mortality, with children, the elderly, sick people and the poor the most seriously affected. In 2019, vulnerable populations were exposed to an additional 475 million heatwave events globally, and during the past 20 years there has been a 53.7% increase in heat-related mortality in people over 65 years old (Lancet 2021).

## Respiratory Illnesses



Heat waves and the dry conditions they create will also increase the probability and frequency of bush/forest fires. In addition to the impact this has on livelihoods and food security, particularly in rural areas, bush fires increase the levels of particulate in the air. This will cause distress for people who suffer with asthma or other respiratory ailments.

## Vector-Borne Diseases

Warmer temperatures and more frequent bouts of intense rainfall are causing conditions to develop that are more conducive to the spread of vector-borne diseases. The primary vector of significance in our region, the mosquito, thrives in warm, moist environments. This means that diseases that are carried by mosquitos, such as dengue, zika and chikungunya are likely to become a greater concern in our region. The region also has to be vigilant for the entry of West Nile virus, which is also carried by mosquitos and very prevalent in the United States of America, and the possible resurgence of malaria.

Another vector-borne disease that is of concern to the region and which may become more prevalent with warmer temperatures and flooding is leptospirosis. Studies have suggested that climate change can affect various ecological factors that are likely to drive an increase in the overall incidence as well as the frequency of outbreaks of leptospirosis (Lau et al, 2010).



## More Intense Hurricanes

More intense hurricanes is perhaps the impact of climate change that is most dreaded in the Caribbean. However, in addition to loss of lives, catastrophic damage to infrastructure and loss of livelihoods, destructive hurricanes also cause serious health problems. In the immediate aftermath of a catastrophic storm or hurricane, many roads are impassable because of land



slippages, fallen trees or downed power lines. Hospitals are often part of the national public infrastructure that are damaged. Additionally, there are usually power outages that happen during and after a major storm. All of these make it difficult, and sometimes impossible, for chronically ill people to get access to the health care that they require. The intense distress caused by the trauma of a major storm or hurricane often calls for psychological first aid, which is not always

available. In many instances, for months after the passage of the storm, many individuals, particularly children, experience serious psychological distress.

## Water and Food Insecurity

Through its impacts on reducing water security (see Climate Change Brief No. 5) and creating greater variability and uncertainty in the supply of potable water, it is very likely that hygiene will be compromised, and the risk of diarrhea will increase. This can have fatal consequences for children under the of five years. Climate change will also increase food insecurity (see Climate Change Brief No 5), which will lead to poor or sub-optimal nutritional choices being forced on vulnerable populations, leading to an increase in morbidity and mortality.

## References

1. Lancet 2009; 373: 1693-733
2. Lancet 2015; 386: 1861-914
3. Lancet 2021: 397: 129-70
4. Lau, Colleen L., Lee D Smythe, Scott B. Craig, Philip Weinstein (2010). Climate Change, flooding, urbanization and leptospirosis: fueling the fire? Transactions of the Royal Society of Tropical Medicine and Hygiene. Vol 104, Issue 10, pp 631-638
5. World Health Organization 2018; Climate change and Health. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>