

# The impact of climate change on maternal and child health

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## Introduction

It can be argued that there are three colliding pandemics that are currently affecting the planet and its people: COVID-19, global inequities and climate change. Regrettably, these are all the result of human action or inaction and are preventable. The United Nations Conference of the Parties (COP26), held in November 2021 in Glasgow, addressed some of these issues.<sup>1</sup> Prince Charles called this meeting the 'last chance saloon to save the planet.' The main objective of COP26 was to reduce global heating and limit global warming to the target maximum temperature of 1.5-degree Celsius above pre-industrial levels. According to the National Aeronautics and Space Administration (NASA), since the late 19th century, the earth surface temperature rose by 1.18 degrees Celsius, caused by increased carbon dioxide and other emissions into the atmosphere, with the years 2016 and 2020 being tied as the warmest years on record.<sup>2</sup> However, many, including a group of scientists called 'Scientist Rebellion' were not convinced that COP26 would make any difference to the warming of the planet.<sup>3</sup> President of COP26, Alok Sharma admitted that the objective of the conference was not reached but remained cautiously optimistic: "We can now say with credibility that we have kept 1.5 degrees alive. But its pulse is weak and it will only survive if we keep our promises and translate commitments into rapid action".<sup>4</sup>

In this paper we consider how climate change can potentially impact pregnancy and its outcomes and how it will interact with inequality to affect especially the most vulnerable, namely women and children in low-and-middle-income countries (LMICs).

## Scope of the problem and why pregnant women and LMICs are affected disproportionately

Climate change refers to a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century and is largely attributed to increased levels of atmospheric carbon dioxide produced by use of fossil fuels. The global north (typically high-income countries) are the world's largest emitters of carbon dioxide. According to Hickel (2020) the global north is responsible for 92% of excess carbon dioxide emission while African countries, cumulatively contribute around 3% greenhouse emissions.<sup>5</sup>

Changes in climate are certain to impact human health in a variety of ways. Increasing heat, flooding, droughts, wildfires, nutrition insecurity and an increase in infectious diseases are the main areas of concern. Low-and-middle-income countries are particularly vulnerable to these outcomes of climate change. With rising seas because of polar caps melting, island states are likely to

disappear over time – 80 % of the Maldives, for example, is only 3.3 feet (about 1 metre) above sea level and is under serious threat. The United Nations Department of Economic and Social Affairs estimates that over 1 billion people are living in informal settlements with poor access to water and sanitation. Of these 238 million are in sub-Saharan Africa (SSA). This situation is predicted to get worse with 3 billion people needing housing by 2030. This group includes poor pregnant women who do a variety of outdoor work and are continuously exposed to the elements.<sup>6</sup>

Pregnancy outcomes are likely to be significantly affected by global warming. Many low-and-middle income countries already have unacceptably high maternal and neonatal mortality rates. According to the World Health Organisation, SSA accounts for roughly two-thirds or 196 000 maternal deaths, with South Asia accounting for nearly one-fifth or 58 000 annually.<sup>7</sup> The maternity mortality ratio in low-income countries is 462 per 100 000 live births while it is 11 per 100 000 in high-income countries. Similarly, according to the United Nations Children's Fund (2020) neonatal mortality is 27 per 1000 live births in SSA and 25 per 1000 in South Asia.<sup>8</sup> A child born in SSA is 10 times more likely to die in the first month of life than a child born in a high-income country, while a child born in South Asia is nine times more likely to die. It is clear that mothers and newborns in low-income countries are already extremely vulnerable and this situation is likely to get worse. Unless we act now, the existing inequity in mortality between the global north and the global south and the rich and the poor will only get wider.

Low-and-middle-income countries will struggle to cope with the impact of climate change for the following reasons: inadequate expertise and resources, inability to rapidly reduce the use of fossil fuels; poor health and social systems, significant number of people living in informal settlements that are subjected to the elements. This means that the poor, including pregnant women, are likely to be the most adversely affected by climate change.

## Food (In)security

The term food security encompasses the availability (production, distribution and exchange), access (affordability and preference) and utilisation (food safety, nutrition and social value) of food. The impact of climate change on food security, particularly in sub-Saharan Africa (SSA), is increasingly being recognised. It is estimated that two-thirds of arable land in Africa is expected to be lost by 2025 due to drought.<sup>9</sup> Pregnant women in low-resource settings are particularly vulnerable to food insecurity. United Nations Climate quotes the Food and Agricultural Organisation (FAO) as suggesting that since 2012 the number of undernourished people in SSA has increased by 45.6%.<sup>10</sup> Food insecurity and undernutrition in pregnancy are associated with maternal micronutrient deficiencies, depression, anxiety, gestational diabetes, hypertension and maternal

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