



Policy Brief

Climate Change and Health in Africa: Issues and Options

Climate change is expected to alter temperature, air movements and precipitation in various ways and to varying degrees across Africa, and this will have important consequences for human health. Climate change effects on human health, along with the additional impact on the environment and on the economies of African countries, are likely to impede development. African countries will suffer health consequences related to the effects of climate change as their people are among the most vulnerable to climatic change in the world. This vulnerability is due in part to existing problems of poverty, weak institutions and armed conflict. These limit the capacity of African countries to deal with the additional health challenges posed by climate change. However, the type and magnitude of the health impacts of climate change will vary significantly among communities and regions. Variations are due to such factors as geographic and micro-climate differences, socio-economic conditions, the quality of existing health infrastructure, communication capacity, and underlying epidemiology. Importantly, Africa has already begun to address climate and health issues. From a policy perspective, it is important to determine what might be done differently to address health concerns across Africa given that climate is expected to change in some predictable ways. In some cases doing more of the same may be appropriate (e.g. using mosquito nets and other measures to prevent malaria). In other cases completely different approaches to health care may be needed.

Key Messages

- The impact of climate change on health occurs both directly and indirectly.
- Africa is particularly vulnerable to the health effects of climate change.
- African countries have begun to address climate and health issues.
- More research is needed to enable the design of effective responses and policies to address the health impacts of climate change.

Impact of Climate Change on Health

Climate change has both direct and indirect impact on human health. The direct impact affects human biology and includes injury, morbidity and mortality caused by climate change-related extreme weather events (such as cyclones, floods and droughts); thermal stress (heat waves and cold periods); skin and eye damage (as a result of UV radiation), and cardio-respiratory diseases directly related to changes in temperature and air quality.

Health related impacts of climate change

| | Climate Changes | Health Impacts |
|----------|---|---|
| Direct | Extreme weather events | High levels of mortality and morbidity, changes in disease prevalence and patterns |
| | Temperature | Thermal stress, skin cancer, eye diseases |
| | Air quality | Cardio-respiratory diseases, allergic disorders |
| Indirect | Temperature | Food availability, malnutrition, famine, infectious diseases of migrants, droughts |
| | Precipitation | Water-borne diseases, vector-borne diseases, droughts, food and water availability |
| | Extreme weather events (+ rainfall + temperature + ecosystem) | Diseases of migrants, conflicts, food and water availability, malnutrition, famine |
| | Ecosystem composition and function | Food yields and quality, aeroallergens, vector-borne diseases, water-borne diseases |

However, most of the health impact of climate change is indirect. The most significant manifestations are malnutrition, neglected tropical diseases, diarrhoea, malaria, and meningitis, discussed below.

- **Malnutrition.** At present, malnutrition causes 1.7 million deaths per year in Africa, and it is estimated to be the largest contributor to climate change-related mortality around the world. Moreover, leading scientists in development and humanitarian research agree that climate change will likely worsen existing production and consumption stresses in countries that are already food-insecure, like many in Africa. More understanding of how climate change contributes to malnutrition is important if effective adaptation measures are to be implemented and governance structures improved.
- **Neglected tropical diseases (NTDs).** These are the most common conditions affecting the poorest 500 million people living in Africa. NTDs are a group of 13 major disabling conditions distributed throughout Africa. Many African countries are host to half of all pathogens defined as NTDs by the World Health Organisation. Together, NTDs produce a burden of disease that may be equivalent to half of the malaria disease burden of Africa and more than double that caused by tuberculosis.
- **Diarrhoea.** Diarrhoeal diseases are second only to acute respiratory infections as a cause of mortality of children under 5. According to one study, there are an estimated 4.3 episodes per child each year and an attributed mortality rate of 4.2/1,000 people, representing 27% of all deaths in this age group (Zimbabwe Public Health Review, 1987). The majority of pathogens that induce diarrhoea in humans are water-borne, and, given that climate change will affect water availability and temperature, climate change could lead to additional cases of diarrhoea.
- **Malaria and Dengue Fever.** Vector-borne diseases, such as mosquito-borne malaria and dengue fever, are among those undergoing resurgence and redistribution. The combined effects of changing temperature and precipitation may lead to a more suitable environment for the spread of vector-borne diseases and the emergence of new ones in different parts of Africa. Malaria is especially problematic. Most of the 700,000 to 2.7 million people who die annually of malaria live in sub-Saharan Africa. Much climate-malaria research in Africa suggests that malaria transmission, especially epidemic outbreaks, is associated with increased rainfall in typically dry regions and increased temperatures in high-altitude, typically cool regions.
- **Meningitis.** Meningococcal meningitis is caused by the bacteria *Neisseria meningitidis*, which exists all over the world. It is one of Africa's top three climate-sensitive diseases.

Roughly 350 million people live in zones where the disease is endemic. Humans are the only natural reservoir for the disease, and it is often spread between people via respiratory droplets or saliva.

Recommendations

The following are some key recommendations for consideration by African governments, coordinating bodies, and other organisations to address the impact of climate change on health in Africa. These recommendations need to be more thoroughly refined, and require additional research, dialogue and discussion.

- Resources should be invested in public health infrastructure in Africa to improve its quality.
- Many of Africa's current health problems are a result of frequent contact with contaminated water and open sewerage. Improved physical infrastructure would reduce the damage and health dangers associated with extreme weather events.
- Comprehensive drug therapy and other mitigating or preventative measures can help enable the health sector in Africa to combat the most prominent, and often most climate-sensitive infectious diseases, including malaria, meningitis, and NTDs. Medication and other paraphernalia (mosquito nets, condoms, sterilisation tablets, and sanitisers) for curing or preventing Africa's common infectious diseases are required.
- An increased number of clinics and health professionals are required to provide support, explain options, and give directions on drug use and preventative paraphernalia.
- African governments can increase their effectiveness in addressing the health impact of climate change through the creation of knowledge management platforms for sharing information, skills, and technology between and within governments, private investors, local and international agencies, and academic groups. Particularly important is the need to expand research. Responses, actions, and policies addressing climate change should be based on the best available research.
- There is need for improved regional modelling of climate change so that more reliable predictions of the potential impacts on human health can be made. Improved data and research capacity are important.

ClimDev-Africa



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