Making a case for

Planetary Health

in sub-Saharan Africa

POLICY BRIEF
Issue 1 - Nov. 2021

Key Messages

Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress. (WHO)

- Kenya is highly vulnerable to the adverse impacts of climate change including rising temperatures and changing rainfall patterns and this is having an effect on the health of its citizens.
- Climate change has increased global temperatures, the frequency and intensity of droughts, extreme rainfall, and severe flooding and thereby increased the risk of heat stress, modified the transmission of food-borne, waterborne and zoonotic infectious diseases, and negatively affected national food production.
- Failure to act on the health impacts of climate change is estimated by WHO to cost the world a total of between USD 2-4 billion/year by 2030. Hence, the need to increase knowledge and awareness of the health impacts of climate change through effective communication and translation that can action climate change agenda in Kenya.
- These significant effects of climate change on public health in Kenya require urgent attention to identify climate change adaptation options and must be fully integrated into Kenya's existing health programs and policies.
- A greater understanding of cross-sectoral policy solutions that address the effects on health of climate change is also needed to identify potential "win-win" opportunities from rapid climate change mitigation.
- It is essential to bring together the climate and health communities to deliver the evidence and policy options to respond to the urgent climate crisis.

Positioning Health in Climate Change Action Plans

The link between Climate Change and Health

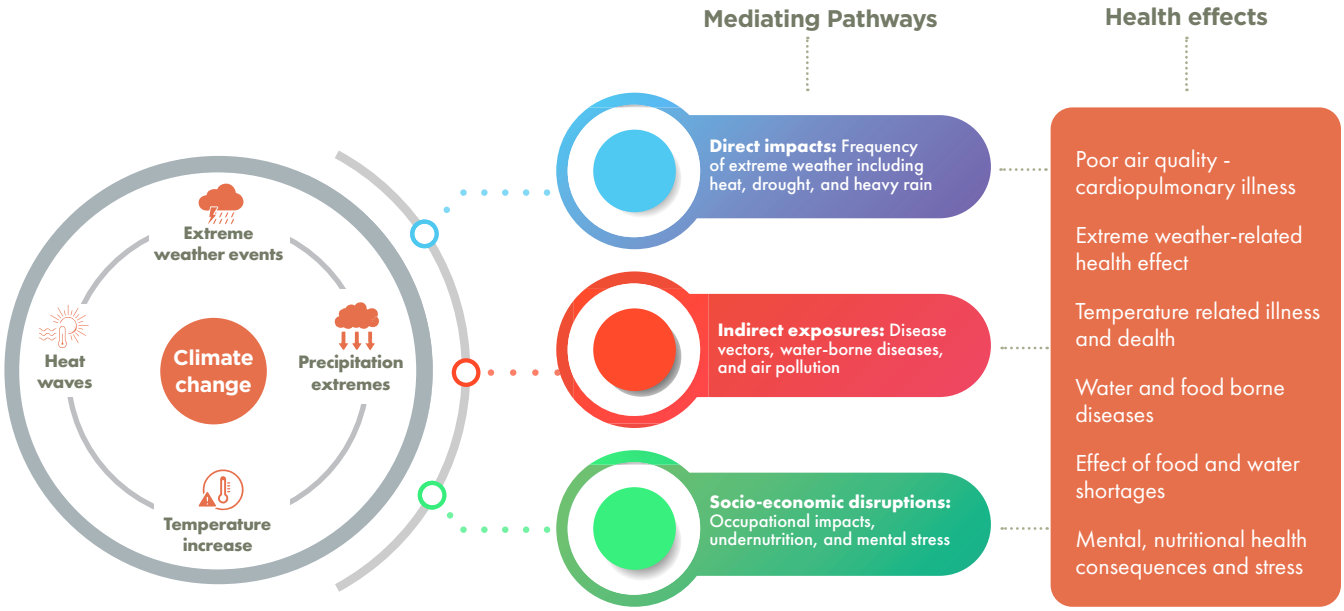
Recognition that human health is affected by a wide range of ecological disruptions consequent upon climate change is a recent development, reflecting the breadth and sophistication of modern scientific knowledge. Global climate change affects human health via pathways of varying complexity, scale, and directness and with different timing. Similarly, impacts vary geographically due to both environment and topography and the local population's vulnerability. This is no surprise since climate change alters an extensive range of natural ecological and physical systems integral to Earth's life support system.

Climatic observations made in Kenya since the 1960s show changes in rainfall and temperature patterns. The annual average rainfall is increasing overall by 0.2–0.4 percent yearly (Thornton *et al.*, 2006) in the northern parts of the country while the southern parts are registering a decreasing trend (NEMA, 2015). Annual average temperatures have also escalated by 0.21 °C every ten years, increasing the number of hot days (NEMA, 2015). This makes Kenya highly vulnerable to adverse impacts of climate change,

both directly and indirectly. While the country has made progress tackling infectious diseases such as tuberculosis and malaria, this is likely to be undermined by projected changes in climate. The incidence and seasonality of critical stressors including heat stress (Scott *et al.* 2017), air pollution (Carvalho *et al.* 2019), asthma (Weinberg, 2000), vector-borne diseases such as malaria (Ruiz *et al.* 2014; Kipruto *et al.* 2017; Shah *et al.* 2019), dengue (Attaway *et al.* 2014), schistosomiasis (McCreesh *et al.* 2015), tick-borne diseases (Chiuya *et al.* 2021), waterborne diseases (Stoltzfus *et al.* 2014), and diarrheal diseases (Njugunal *et al.* 2016; Shah *et al.* 2016) are expected to increase. Kenya's recent improvements in malaria control, and rates of waterborne diseases, infant mortality, and undernutrition are vulnerable to setbacks as the climate changes. These impacts require continued investment and focus on climate-sensitive health issues and full integration of climate change into Kenya's many existing health programs and policies (World bank 2020).

The Effects of Climate Change on Human Health

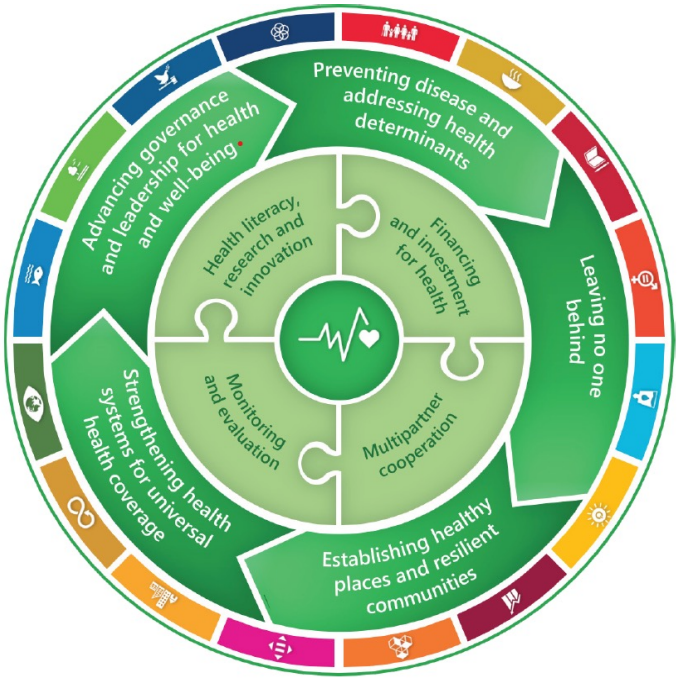
The risks of the climate crisis to human health in Kenya are the geographic expansion of climate-sensitive vector-borne diseases, an increase in waterborne diseases, and the nutrition implications of food shortages due to longer drier spells, increased land-surface temperature, and water scarcity affecting agricultural productivity.



Source: AFIDEP 2021

- Vector-borne diseases, such as *Chikungunya*, Dengue Fever, Malaria, Rift Valley Fever, and Yellow Fever, pose significant health impacts and are highly sensitive to changing climatic conditions (temperature, precipitation, humidity), which exert a strong influence on the life cycles of the vectors (such as mosquitoes) (Jjemba, 2021).
- Climate change is likely to impact vector-borne diseases in many ways, including expanding to new areas and increasing disease outbreaks' magnitude, duration, and frequency. (Attaway *et al.*2014).
- Climate change exacerbates the challenges of accessing safe drinking water for most people in rural areas, especially those in arid and semi-arid regions. A health survey in 2020 indicated that only 59 percent of households in rural Kenya have access to improved water sources, and only 10 percent have a place to wash their hands with soap (UNICEF 2018).
- Groundwater sources are being depleted as a result of urbanisation and population growth. For example, major cities like Nairobi are experiencing falling water tables and aquifer depletion.
- Continuous drought and dry spells have affected agricultural productivity by decreasing crop yields which has negative consequences on food prices and can worsen food insecurity and undernutrition (Awuor *et al.*, 2008)

Need for Action



Source: WHO 2020

Climate change's direct (storm, drought, flood, heatwave) and indirect (poor water quality, air pollution, land-use change, and ecological change) effects result in injuries, deaths, allergies, and various diseases, including vector borne diseases, mental illness, food insecurity, and undernutrition.

Implications for Policy and Action

Kenya is already facing these challenges which are negatively impacting human health (Jjemba, 2021) and therefore have the potential to slow down efforts in attaining the Sustainable Development Goals (SDGs) and the Big Four Agenda (food security, affordable housing, manufacturing, and affordable health care for all). Despite these, the local perspective of resilience to health impacts of climate change is not consistently reflected in the national policies including the national ambitions for health within the Nationally Determined Contributions (NDCs) and the National Adaptation Plan (NAP).

The government has undertaken a climate vulnerability and risk assessment of the impacts of climate change and variability on human health. However, there is lack of public awareness of health impacts of climate change and the implementation of appropriate measures for surveillance and monitoring of climate change-related diseases to enhance health early warning systems.

These systems should include the enhancement of existing databases on health sector indicators. Increasing public awareness about impacts of climate variability on health can also facilitate adaptation planning at the community and individual level (Coughlan de Perez *et al.* 2014). Long-term adaptation measures need to be driven by local and national government prioritisation requiring sustained and coordinated cross-ministerial policies.

Recommendations

There are significant gaps in awareness and understanding of the linkages between climate change and health that may slow down mitigation and adaptation activities in the health sector. It is therefore essential to:

- Build the resilience of health systems in the face of climate change, providing a plan for action to mainstream the public health response to climate change within the health sector and other relevant sectors.
- Bridge the gap between policies and practices through legislation and guidelines, appropriate planning, including relevant vulnerability assessments, programmatic support, and multi-sectoral and participatory gender-sensitive processes.
- Build capacity and support to the establishment of integrated health surveillance and climate observation and processing systems.
- Integrate climate health risk management into cross-sectoral planning and practice to adopt climate variability and change by developing climate services and products that address disease prevention at the end-user level.
- Ensure that climate change mitigation and adaptation strategies are informed by multidisciplinary research.

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