



REPUBLIC OF KENYA

## Mainstreaming Kenya's National Climate Change Action Plan into the Health Sector

**Introduction:** The health sector is vital to the Kenyan economy because effective public health regimes are necessary for a healthy, skilled and diversified workforce. Kenya's first Medium Term Plan outlined a vision for a health sector featuring "equitable and affordable health care of the highest standard." Comprehensive adaptive measures to reduce vulnerability to climate-related illnesses and health threats will be vital to achieving this goal, as well as the country's broader economic and development goals of attaining middle-income country status by 2030.

**Risks and Impacts:** The burden of climate-sensitive disease is high in Kenya and future climate change is expected to "exacerbate the occurrence and intensity of future disease outbreaks and may increase the spread of diseases in some areas."<sup>1</sup> Climate change is expected to put human health at risk by raising the magnitude and occurrence of heat stress, asthma, vector-borne diseases (such as malaria, dengue, schistosomiasis and tick-borne diseases) and food-borne diseases (such as diarrheal diseases). Climate change is also expected to increase exposure to Rift Valley fever, malnutrition and water-borne diseases.<sup>2</sup>

Increased average rainfall and changing rainfall patterns are likely to contribute to the transmission and survival of infectious disease agents, such as protozoa, bacteria and viruses. Extreme weather events are likely to adversely impact human health, whether through flooding, droughts or heat waves. Climatic catastrophes displace populations and cause sudden deaths, which in turn can lead to conflicts and civil unrest. Indeed, the draft National Disaster Management Policy of 2009 recognises that environmentally triggered (climate-related) disasters, such as droughts, floods, storms and landslides, are some of the most common in Kenya.<sup>3</sup> Drought, landslides and mudslides have claimed many lives and caused loss of property.

Malaria is among the most frequently studied vector-borne diseases because of its high incidence in Kenya and its social and economic costs. Economists have estimated that malaria costs select African economies up to 1.3 per cent of their GDP each year. The disease is currently responsible for the death of approximately 5 per cent of Kenya's population each year, with nearly 70 per cent of the population living in at-risk areas.<sup>4</sup> In terms of the geographic distribution of future risks, the formerly risk-free Kenyan highlands will come under increased threat of the disease due to rising temperatures and precipitation, whereas the risk is likely to become reduced at lower altitudes where the disease is endemic and the strategies for its management are increasingly well known by the local communities. Overall, the extent and distribution of malaria is expected to increase.

Rising annual temperatures are also likely to lead to a higher incidence of diarrheal disease, particularly for children aged five and younger. Extreme weather events such as heavy rainfall will pose increased health risks to vulnerable populations lacking access to basic sanitation, waste collection and disposal facilities. Extreme weather events are also anticipated to increase outbreaks of diseases such as cholera and Rift Valley fever.

While attributing any particular disease outbreak in Kenya to climate change is problematic, its impacts should not be taken lightly. The World Health Organization estimates that climate change was responsible for approximately 2.4 per cent of diarrhoea worldwide and 6 per cent of malaria in select middle-income countries.<sup>5</sup> Kenya already has a high incidence of and is vulnerable to climate-sensitive diseases.



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Climate-related health risks also have important implications for equity, since it is typically vulnerable populations (such as children and impoverished communities) who suffer the highest incidence of vector- and water-borne diseases, and who are the worst affected when natural disasters strike. This trend is highly likely to continue under future climatic change unless further poverty reduction measures and others actions for reducing vulnerability are taken.

A number of additional specific risks have been identified in the National Climate Change Action Plan (NCCAP) and include:

- Flooding and other extreme weather events affect waste treatment and disposal, thereby negatively impacting health.
- Increases in mean seasonal and annual precipitation lead to risks of flooding, landslides, soil erosion, and water contamination. This in turn can lead to outbreaks of water-borne diseases.
- Extreme precipitation events are responsible for the inundation of agricultural land, leading to food insecurity and compromised food quality (such as aflatoxin), and its concomitant health impacts.
- More intense precipitation events (independent of whether or not mean precipitation increases) can lead to flooding, water contamination and landslides, thereby heightening the risk of human death or injury.
- Increases in precipitation intensity causes flooding, landslides and water pollution, leading to increased risk of human injury and death.
- Higher average annual temperatures or more frequent heat waves can lead to heat stress and worsen air pollution, causing increased risk of respiratory illness and heat-related deaths, especially for outdoor workers and people in urban environments.
- Higher sea surface temperatures and El Niño-driven upwelling events lead to increasing numbers of harmful algal blooms, negatively impacting human health.

**Recommended Actions:** Kenya has embraced the African Plan of Action for Public Health Adaptation to Climate Change (2012-2016) but has yet to devise its own national strategy for implementing the Plan.<sup>6</sup> Priority actions for the health sector identified in the NCCAP adaptation analysis include:

- Improved disease surveillance, including strengthening existing early warning, monitoring and evaluation systems for malaria epidemics.
- Improved community-level health care and dissemination of information on changing health risks to enhance the response to climate-related diseases.
- Increased access to water and sanitation to improve disease vector control.

A low-carbon action is the use of water filters that provide access to clean water while reducing demand for firewood used to boil water, which can also slow deforestation.



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**Conclusion:** The negative effects of climate change on public health include higher levels of certain air pollutants, increased transmission of diseases from poor water quality, increased vector-borne diseases, disruption of health services, mass casualties and death. To cope with these effects, Kenya will require improved disease surveillance, improved community-level health care and dissemination of information, and increased access to clean water and sanitation.

<sup>1</sup> Intergovernmental Panel on Climate Change. 2001. *Climate Change 2001. Synthesis report*. Cambridge: Cambridge University Press.

<sup>2</sup> World Health Organization (WHO). 2011. *Global Health Observatory Data Repository*. Available from: <http://apps.who.int/ghodata/#>.

<sup>3</sup> Ministry of State for Special Programmes. 2009. *National Policy for Disaster Management in Kenya*. Nairobi: Office of the President.

<sup>4</sup> Wandiga S.O., Opondo, M., Olago, D., Githeko, A., Githuri, F., Marshall, M., Downs, T., Opere, A., Oludhe, C., Ouma, G.O., Yanda P. Z., Kangaiawe, R., Kambumbuli, R., Kathuri, J., Apindi, E., Olaka, L., Ogallio, L., Mugambi, P., Sigalia, R., Nanyunja, R., Baguma, T., and Achola, P. 2010. Vulnerability of Epidemic Malaria in the Highlands of Lake Victoria Basin: The Role of Climate Change/Variability, Hydrology and Socioeconomic Factors. *Climate Change*, 99: 473-497.

<sup>5</sup> Gordon, B., Mackay, R. and Rehfuss, E. 2004. *Inheriting the World: The atlas of children's health and the environment*, Geneva: WHO, p. 20.

<sup>6</sup> *African Plan of Action for Public Health Adaptation to Climate Change*. 2011. Produced by WHO, United Nations Environment Programme and African Development Bank at the request of the African Ministerial Conference on Environment.