

« Climate Change and its Impacts in Africa: Sea Level Rise and Desertification¹»

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Abstract

Based on the 4th and 5th IPCC reports, following changes are likely to happen before the end of the century with:

- An increase in temperature of 2 to 4 degrees Celsius or more;
- A decrease in rainfall of up to 20% and a rise in sea level that could eliminate agricultural land and move millions of people from their lands;
- A climate change and variability that will affect negatively rain fed agricultural productivity in many parts of the Africa as a whole with more or less important variances following several places and localities;
- Various other changes and modifications that are likely to happen considering a great variability of our climate, including extreme aridity in some cases, flooding in others.

As a large percentage of Africa's urban population lives in coastal cities and the majority of the industries, economic activities and other assets in most African countries are located within the coastal zone, urbanization appears to be one of the biggest challenges Africa is facing today. It is estimated that in excess of 150 million people live within 1 meter of high tide level, and 250 million within 5 meters of high tide, because of this high population densities (and often inadequate urban planning) coastal cities in developing regions are particularly vulnerable to sea-level rise in concert with other impacts of climate change.

According to expert consensus, climate change is a reality facing a number of vulnerable societies across the globe. In *Turn Down the Heat: Climate Extremes, Regional Impacts and the Case for Resilience*, a 2013 report by the World Bank, it is highlighted that under a 4°C warming scenario³, most of the world's population is likely to be affected by impacts occurring simultaneously in multiple sectors. A 4°C world by the end of the century remains a real risk. The United Nations Environment Programme (UNEP) Emissions Gap Report, released at the Climate Convention Conference in Doha in December 2012, found that present emission trends and pledges are consistent with emission pathways that reach warming in the range of 3.5°C to 5°C by 2100 (UNEP, 2012).

It has become clear that the risks associated with increasing urbanization under various climate change scenarios need to be seriously assessed, and well designed 'adaptable cities' are required, particularly in coastal zones where cities will need to be prepared for the possibilities of storm surges and coastal flooding. With a likely increased frequency of extreme weather events predicted in many coastal cities, effective sanitation, drainage and emergency preparedness is essential, with clear evacuation plans and well-developed medical support networks. In a nutshell, there will be a need to better understand and plan for the likely local impacts of climate change, including to be prepared for coastal

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³ *Defined as a 4°C warming of the global-mean near-surface air temperature relative to pre-industrial levels.*

inundation due to sea level rise and storm surge and for more frequent or intense severe storms, cyclones, hail events and floods.

Hence the need for African governments:

- To establish adaptation policies for population and development security for these areas which are already under several stressors from climate change such as coastal erosion, coastal flooding from storm surges, ecosystem degradation – wetlands, mangroves, coral reef, soil salinization – delta areas, construction of buildings on wetlands.
- To design and implement adaptation options such as cost effective coastal protection measures, resilient infrastructures and utilities, coastal and marine spatial planning, regulations/legislation and controls for marine pollution and sustainable development.