



KENYA

CLIMATE VULNERABILITY PROFILE



US Foreign Assistance: ¹ (thousands USD)	Requested FY 2012	Requested FY 2013
Estimated total:	652,200	459,538
Adaptation:	3,000	3,000
Feed the Future:	29,000	50,000
Malaria:	37,000	35,000
Water:	1,332	9,394

Priority Adaptation Country in 2011: YES

Key Climate Stressors: Heat, Drought, Flooding, Sea level rise

INTRODUCTION

Kenya straddles the equator in East Africa and has a population of over 43 million people. It has a diverse terrain that ranges from coastal plains to mountain ridges and plateaus in the central and western regions, and arid and semi-arid plains in the northern and eastern interior. Kenya is the largest economy in East Africa, and serves as the finance and transport hub for the region. The country's economy is highly dependent on rain-fed agriculture, tourism, and the service industry. Agriculture represents 51 percent of the country's Gross Domestic Product (GDP) and employs about 75 percent of the population. Other key sectors include livestock/pastoralism, horticulture, fisheries, and forest products. Climate changes are expected to exacerbate existing stressors such as high population growth and natural resource degradation, thus posing additional challenges to economic development and poverty reduction in Kenya.

PROJECTED WEATHER AND CLIMATE CHANGES

TEMPERATURE: Average annual temperatures have risen by about 1.0°C since 1960 and are projected to increase by 1.0-2.8°C and 1.3-4.6°C by the 2060s and 2090s, respectively.

PRECIPITATION: Precipitation in Kenya has generally remained the same in recent decades, with only a slight decrease experienced, likely due to a reduction in precipitation during extended rain periods. Future projections of annual rainfall are uncertain and range from a 6 percent decrease to a 26 percent increase from the 1970-1999 average by 2060. The amount and timing of rainfall throughout the year is also projected to change, with increased inter-annual variability.

EXTREME EVENTS: Kenya has experienced extreme events of droughts, floods, and storms. Droughts have increased in frequency and extent in recent decades and now impact areas that were unaffected historically. Since 1993, Kenya has declared six national disasters due to droughts. Projections indicate an increase in the frequency and duration of droughts and a greater amount of annual precipitation falling during heavy rainfall events.

SEA LEVEL RISE: Sea level rose by 2.1 mm per year between 1986 and 2008 near Mombasa, and a rise in sea level of 0.75-1.90 m is projected by 2100.

KEY CLIMATE IMPACTS AND VULNERABILITIES

The key sectors in Kenya that are vulnerable to climate changes include agriculture, water resources, health, and ecosystems. For example, increased rainfall variability and shifts in the frequency, intensity, and duration of droughts can reduce agricultural and horticultural crop production or affect grazing potential through expansion of arid and semi-arid lands. As a result, food security will be affected through direct impacts on food availability and indirect impacts on food accessibility, livelihoods, and income. Increases in the frequency and severity of extreme events may reduce productivity of rangelands, which support millions of pastoralists and agro-pastoralists in Kenya.

The availability and accessibility of water resources varies throughout the country. Water resources are concentrated in five drainage basins in areas subject to frequent droughts and floods and therefore vulnerable to further changes in climate variability. Additionally, changes in temperature and precipitation will likely affect vectors for diseases such as malaria, especially in high altitude areas. Furthermore, impacts to water supply, quality, and sanitation will further compound other health impacts. Potential environmental impacts include reduced biodiversity; increased risk of forest fires; changes in distribution of pests, pathogens, and invasive species; a shift in vegetation to higher elevations; and substantial loss of tourism income. Coastal and marine ecosystems, including mangroves, coral reefs, and fisheries, will also be affected by climate change.

KEY USAID PROGRAM VULNERABILITIES

FOOD SECURITY: USAID's Feed the Future (FTF) Initiative in Kenya focuses on improving several key agricultural value chains in two regions: (1) horticulture, dairy, and maize in the rural arable poor areas and (2) drought-tolerant crops (sorghum/millet and root crop systems), drought-tolerant maize, horticulture, and pulses in the semi-arid areas. Livestock production, as well as agricultural and horticultural crop production, is vulnerable to higher temperatures, increased rainfall variability, and more frequent and severe extreme events. Climate change has been identified as a cross-cutting theme in the Kenya FTF Strategy.

HEALTH: USAID's Health program in Kenya consists of four key areas: (1) HIV/AIDS, (2) family health, (3) malaria, and (4) strengthening of health sector systems. Kenya is one of 15 countries in the President's Malaria Initiative. As climate changes are expected to increase the geographic ranges and incidence of vector-borne diseases, USAID's malaria program in Kenya may need to be scaled up in order to respond to these changes. The family health program may also be affected by climate change, as impacts on agriculture and food security will have implications for nutrition.

¹ US foreign assistance includes both USAID and Department of State program funding, but in most cases the bulk of this funding is implemented through USAID. In order to have comparable figures in these categories, all country profiles use figures from the Congressional Budget Justification (CBJ) (see <http://transition.usaid.gov/performance/cbj/1185016.pdf> and <http://transition.usaid.gov/performance/cbj/1158269.pdf>). Between the time of the budget request and the 653(a) report to Congress, these figures can change significantly.

PEACE AND SECURITY: USAID supports reconciliation and conflict resolution in areas that suffered severe post-election violence and areas with chronic conflicts over land resources. Climate changes, coupled with population growth and land degradation, are likely to result in increased conflict over scarce resources. As a result, USAID may consider integrating climate change adaptation measures such as early warning systems for droughts, floods, and disease outbreaks into its peace and security program in Kenya.

ECONOMIC GROWTH: The Kenya USAID Mission's Economic Growth program focuses on agricultural development and providing access to finance for small businesses and microenterprises. Small businesses and microenterprises are vulnerable to economic shocks resulting from extreme events such as droughts, floods, and storms. USAID could therefore consider integrating elements of disaster risk management into its economic growth program, such as helping small businesses access insurance products.

ACTIONS UNDERWAY²

Kenya currently has the highest number of adaptation projects in East Africa and the Government of Kenya has initiated activities to determine vulnerability and adaptation priorities. Kenya is a USAID climate change adaptation priority country and USAID is funding adaptation efforts focused on addressing vulnerabilities in key river catchment areas and other natural resources management issues.

CHALLENGES TO ADAPTATION

Challenges to adaptation in Kenya include lack of quantitative and sector-specific data, lack of downscaled regional and local results of global circulation models, low capacity to conduct adaptation analyses, and difficulty coordinating between actors pertinent to adaptation and disaster risk reduction. These challenges need to be overcome to provide better collection and systematization of data relevant for vulnerability mapping and assessments and, ultimately, implementation of adaptation strategies.

RESOURCES

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² Actions underway include those from direct adaptation funds and indirectly attributed funds. More information on U.S. climate finance can be found at <http://www.state.gov/e/oes/climate/faststart/index.htm>.