



TANZANIA

CLIMATE VULNERABILITY PROFILE

US Foreign Assistance: ¹ (thousands USD)	Requested FY 2012	Requested FY 2013
Estimated total:	531,179	571,365
Adaptation:	3,000	5,000
Feed the Future:	60,000	75,000
Malaria	48,000	45,000
Water:	5,087	5,550

Priority Adaptation Country in 2011: YES

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

INTRODUCTION

Tanzania is located on the coast of East Africa and has a population of nearly 47 million people. Agriculture is the major sector of the economy, accounting for 28 percent of the country's Gross Domestic Product (GDP) and employing 80 percent of the labor force. Tanzania's economic growth has averaged 7 percent over the last decade, but the percentage of people living in poverty has decreased only slightly. Tanzania faces several development challenges, including rapid population growth, heavy reliance on foreign aid, corruption, lack of basic healthcare, the impact of HIV/AIDS and malaria, and low levels of education and agricultural productivity. Climate changes represent an additional stress on development in the country.

PROJECTED WEATHER AND CLIMATE CHANGES

Tanzania has a tropical climate with regional variation due to its varied topography. The north and east regions experience a bimodal rainfall pattern, with short rains from October to December and long rains from March to May. The south, west, and central regions experience a unimodal rainfall pattern, with a wet season from October until April or May.

TEMPERATURE: Average annual temperatures have increased by 1°C since the 1960s and are projected to rise by 1-2.7°C by the 2060s and 1.5-4.5°C by the 2090s compared to the 1970-1999 baseline.

PRECIPITATION: From 1960-2006, annual rainfall in Tanzania has decreased at an average rate of 3.3 percent per decade. Rainfall patterns have become more variable, with an increase in the amount of precipitation falling in isolated events. Projected changes in annual precipitation range from a decrease of 1 percent to an increase of 18 percent by the 2060s from the 1970-1999 average.

EXTREME EVENTS: Tanzania already experienced frequent and severe droughts. The country has had six major droughts over the past 30 years. With projected changes in climate, a larger proportion of the country's annual precipitation is anticipated to fall in heavy rainfall events.

SEA LEVEL RISE: Global sea level is projected to rise by 0.75-1.90 m by 2100.

KEY CLIMATE IMPACTS AND VULNERABILITIES

Tanzania's agriculture, livestock, human health, water, and ecosystems are vulnerable to climate changes. Increasingly unpredictable rainfall, shifting

agro-ecological zones, and increased dry periods could reduce production of certain crops while boosting production of other crops. Overall, a 5°C increase in temperature in Eastern Africa may lead to a production decline of nearly 20 percent. Climate changes are expected to shrink rangelands, change plant species distribution, and cause livestock deaths during heat waves. Climate changes may also increase the prevalence of malaria, the leading cause of death in Tanzania. Water is another key sector that would be significantly affected by climate changes. Impacts are expected to include changes in runoff in river basins, leading to changes in downstream water availability and timing, amounts of water pollution, and disturbances of stream ecosystems. Hydropower production is projected to decrease, mainly due to increased evaporation, with negative impacts on industry. As a coastal country, Tanzania is also vulnerable to sea level rise, which can cause land losses, coastal erosion, damage to coastal infrastructure, and loss of coastal and marine habitats. The forestry sector could be impacted by desertification, more frequent forest fires, and the disappearance of species and other forest products that generate income, such as medicinal plants.

KEY USAID PROGRAM VULNERABILITIES

FOOD SECURITY: The Feed the Future (FTF) Initiative in Tanzania targets the value chains of rice, maize, and horticulture. One of these key crops, maize, has been identified as being vulnerable to climate changes. According to Tanzania's National Adaptation Programme of Action, maize yield is projected to decrease by 33 percent countrywide from the 1950-1980 baseline under a doubling of CO2 scenario. The Tanzania Feed the Future program has four core investment areas: (1) addressing high-impact bottlenecks, such as agricultural production and processing systems, irrigation, and rural roads infrastructure, to transform selected value chains; (2) improving nutrition; (3) capacity building; and (4) policy engagement. Climate change adaptation has been included as a component of the first area. USAID will support applied research and capacity building for the water management and agriculture sectors in order to increase resiliency to climate changes.

HEALTH: Malaria is one of the largest causes of illness and loss of life in Tanzania, responsible for 80 percent of deaths in children under five years of age. Malaria accounts for more than 40 percent of all outpatient visits. USAID/Tanzania supports efforts to address malaria in Tanzania through the President's Malaria Initiative. Recent surveys show that malaria incidence is occurring in areas where it was not commonly found in previous decades, such as some parts of Tanga, Kilimanjaro, and Arusha highlands. Malaria prevalence is projected to further expand in range due to changes in temperature and rainfall patterns. As a result, USAID's Malaria program may need to be extended to more areas in Tanzania.

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/185016.pdf> and <http://transition.usaid.gov/performance/cbj/158269.pdf>). Between the time of the budget request and the 653(a) report to Congress, these figures can change significantly.

ECONOMIC GROWTH: In addition to agriculture, USAID's support for economic growth in Tanzania focuses on natural resource conservation to improve the livelihoods of the rural poor. Over 6.8 million hectares of land and marine areas have been brought under improved conservation management through this program, and USAID also supports the establishment of wildlife management areas. This program and its accomplishments may be vulnerable to a number of climate change impacts, including shrinking wildlife habitat, disappearance of wildlife corridors, and loss of coastal and marine habitats due to sea level rise.

ACTIONS UNDERWAY²

USAID is involved in multiple adaptation projects in Tanzania intended to increase capacity and resilience to climate changes. The agency is working to build adaptive capacity and incorporate climate change adaptation measures into the Southern Agricultural Growth Corridor of Tanzania by supporting vulnerability and impact assessments, working with key institutions to enhance climate change resilience, developing educational materials for rural communities, and contributing to a multi-donor climate change fund that supports strengthening Tanzanian institutions. Other initiatives within the country include enhancing climate change awareness in national institutions and preparing local vulnerability assessments and adaptation plans. USAID, together with the European Commission and the United Nations Environment Program, is also funding the Integrating Climate Change Mitigation and Adaptation into Development Planning (CCMAP) project, which engages scientists and policy makers in nine countries, including Tanzania, in a range of activities that aim to raise awareness and improve access to scientific information so that decision-makers can better integrate climate changes into development planning and poverty reduction measures. In addition, Tanzania is included under the USAID East Africa Regional Climate Change Program, which is investing in building the capacity of regional organizations to respond to climate changes.

CHALLENGES TO ADAPTATION

The challenges to adaptation in Tanzania include limited data availability, data accessibility, and capacity to predict future climate changes and assess sector impacts. Tanzania also has a need to increase capacity to develop, design, and implement financing proposals and projects on adaptation that meet donor requirements.

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>.