



ZAMBIA

CLIMATE VULNERABILITY PROFILE

US Foreign Assistance: ¹ (thousands USD)	Requested FY 2012	Requested FY 2013
Estimated total:	368,097	380,030
Feed the Future:	15,000	8,000
Malaria:	24,000	24,000
Water:	7,378	5,475
Priority Adaptation Country in 2011:	NO	
Key Climate Stressors:	Heat, Drought, Flooding	

INTRODUCTION

Zambia is a landlocked country in Southern Africa with a population of nearly 14 million people, about 40 percent of whom live in urban areas. Political stability and strong growth in mining, construction, telecommunications, and tourism have enabled Zambia to achieve economic growth rates of more than 5 percent per year during the last decade. However, this growth has mostly benefited the urban dwellers, as poverty rates in rural areas have remained at 80 percent over the past two decades. About two-thirds of Zambia's population depends on rain-fed agriculture for their livelihoods. Climate changes will add additional stress on development in Zambia, which is already constrained by high population growth; the impacts of HIV/AIDS; and environmental issues such as air pollution in mining towns, water pollution, substandard sanitation, wildlife depletion, land degradation, and biodiversity loss.

PROJECTED WEATHER AND CLIMATE CHANGES

Zambia has a sub-tropical climate with three distinct seasons: a hot and dry season between mid-August and November; a cool dry season from May to mid-August, and a rainy season from November to April.

TEMPERATURE: Annual temperatures in Zambia have warmed by 1.3°C since 1960 and are projected to increase above the 1970-1999 average by 1.2-3.4°C and 1.6-5.5°C by the 2060s and 2090s respectively.

PRECIPITATION: Annual rainfall has decreased by an average of 1.9 mm per decade since 1960, and projections show an overall downward trend in precipitation.

EXTREME EVENTS: Zambia has experienced an increase in the frequency and intensity of drought and flood events in recent decades. Climate models project an increase in the frequency and intensity of heavy rainfall events during the rainy season.

KEY CLIMATE IMPACTS AND VULNERABILITIES

Climate changes are expected to impact a number of Zambia's key sectors, such as agriculture and food security, water resources, health, forests, grasslands, and wildlife. The impacts of climate changes on agriculture include excessive precipitation, erosion, increased frequency of droughts, shortening of growing seasons, and flash floods. The groups that depend on rain-fed agriculture are particularly vulnerable to these climate changes.

Zambia has relatively abundant surface water and groundwater resources, but the distribution of surface water is uneven and the southern region of the country often experiences water shortages. Surface and groundwater resources would be negatively affected by drought. Reduced water availability and increased evapotranspiration rates may also impact hydropower generation. The health of Zambia's population is also vulnerable to changes in climate. Malaria may become more prevalent in Zambia as areas habitable by mosquitoes and other disease vectors expand. Furthermore, an increased occurrence of droughts and crop failures may cause malnutrition, while increased flooding may cause water pollution and consequently exacerbate health and sanitation problems.

Forests, grasslands, and wildlife have significant ecological, economic, and social value for Zambia, but they are vulnerable to climate changes. Warmer temperatures, drought, and declines in precipitation may cause vegetation loss and soil degradation. Meanwhile, a higher incidence of forest fires and changes in the range of pests and pathogens will impact tree growth and survival. More intense rainfall and flooding can also result in land and soil erosion. Wildlife health can therefore be undermined as a result of habitat degradation due to climate changes and other non-climate stresses such as agricultural expansion, greater demand for timber, and unsustainable land use practices.

KEY USAID PROGRAM VULNERABILITIES

FOOD SECURITY: USAID's Feed the Future (FTF) Initiative in Zambia focuses on developing the value chains of oilseeds and legumes, maize, and horticulture through investments in a number of key areas, including policy, science and technology, innovation, capacity building, finance, and knowledge management. As mentioned above, climate changes will have significant impacts on agricultural production in Zambia. Zambia's FTF strategy recognizes the potential impacts of climate changes on agriculture and indicates that FTF investments in the country will build resilience in farming systems through conservation agriculture and drought-resistant crop varieties, as well as promoting sustainable use of natural resources.

HEALTH: The USAID/Zambia Mission's health program focuses on malaria and tuberculosis, maternal and child health, family planning and reproductive health, and HIV/AIDS. The impacts of climate changes on agriculture and food security will likely have negative effects on the nutrition of Zambia's mothers and children, which may cause potential setbacks to current nutrition programs. Furthermore, climate changes may expand the geographic range of malaria. This may have implications for the mission's current malaria program such as requiring the program to be scaled-up to reach a larger population.

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.

WATER: In coordination with the USAID/Zambia's education program, the mission's water and sanitation program supports the provision of clean water and sanitation facilities in schools. Climate changes are expected to increase the occurrence and intensity of droughts and floods. These impacts will likely have implications for the availability and quality of water, and could lead to the damage or destruction of water infrastructure.

FORESTS: USAID will be involved in piloting small-scale forest management programs and measuring, reporting, and verifying sites. As climate changes reduce agricultural production and increase the prevalence of crop diseases, more farmers may leave agriculture and turn to charcoal production or timber production, thereby intensifying the economic drivers of deforestation. With increases in floods and droughts, some tree species will likely fare worse than others, diminishing biodiversity.

ACTIONS UNDERWAY²

The Government of Zambia has taken a number of steps to determine priority climate impacts and vulnerabilities in the country, as well as identify adaptation strategies. The most recent effort is the development of the National Climate Change Response Strategy in 2010. The donor community is supporting a number of adaptation projects in Zambia, which focus on developing strategies and plans, carrying out assessments, integrating adaptation into general development and sector initiatives, and raising awareness on climate change issues. One of the most important programs on adaptation is the Pilot Program on Climate Resilience, a multilateral climate investment fund, focusing on water; community-based adaptation on agriculture, and private sector support. In line with the goal of integrating climate change concerns into its FTF program, USAID is supporting several initiatives to improve the resilience of the agricultural sector: These include improving the food security of very poor agricultural households, enhancing small-scale farmers' resilience, and investing in a research and development program to develop drought-tolerant and disease-resistant crop varieties.

CHALLENGES TO ADAPTATION

The adaptation needs in Zambia include collecting additional climate-related data, monitoring climate change impacts, improving training for policymakers and other relevant stakeholders, moving from the development of adaptation plans to implementation, increasing public awareness on climate change issues, developing a legal and policy framework to help direct adaptation planning, and addressing the financial constraints to adaptation.

RESOURCES

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USAID, 2012. Sub-Saharan Africa Countries: Zambia. Accessed 4/30/12. http://transition.usaid.gov/locations/sub-saharan_africa/countries/zambia/index.html

USAID, 2012. Zambia. Accessed 4/30/12. <http://zambia.usaid.gov/>

USAID. Climate Change Adaptation in Zambia: Fact Sheet. Internal resource.

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>.