



NIGERIA

CLIMATE VULNERABILITY PROFILE



US Foreign Assistance: ¹ (thousands USD)	Requested FY 2012	Requested FY 2013
Estimated total:	625,388	599,450
Agriculture:	15,000	12,000
Malaria:	23,500	44,000
Water:	2,473	2,886
Priority Adaptation Country in 2011:	NO	
Key Climate Stressors:	Heat, Extreme events, Sea level rise	

INTRODUCTION

Nigeria is home to more than 150 million people, making it the most populous country in Africa. Petroleum, natural gas, coal, oil sands, and telecommunications industries play important roles in the country's economy, and a significant portion of the country's labor force is employed in the agricultural sector. While Nigeria benefits economically from being the biggest oil exporter in Africa, poverty remains an issue. One of the main challenges to national development is the considerable policy autonomy and weak capacity among Nigeria's 36 states and 774 local governments. Inadequate access to energy is also a large obstacle to economic growth.

PROJECTED WEATHER AND CLIMATE CHANGES

Nigeria lies in West Africa and experiences a diverse climate that ranges from arid in the north to tropical in the majority of the rest of the country.

TEMPERATURE: Temperatures average about 27°C throughout Nigeria and climate change scenarios suggest a warmer climate in the future. Regionally, the northeast is projected to experience the largest projected increase, 4.5°C from present day climate by 2081-2100. The coastal regions in the southwest are projected to warm less than the interior regions.

PRECIPITATION: Annual rainfall has declined across the country over the past half century. Future precipitation projections vary across the country. The south may experience a wetter climate with an additional 15 cm of rainfall annually and the northeast may have a drier climate with 7.5 cm less rainfall annually by 2046-2065 compared to present day climate.

SEA LEVEL RISE: Sea levels in Nigeria are projected to rise between 0.5 m and 1.0 m by the end of the century.

EXTREME EVENTS: Nigeria is prone to a variety of climate-induced hazards, including floods, storms, ocean surges, droughts, and wildfires. Changes in climate may increase the frequency and intensity of extreme events in Nigeria. Climate projections suggest a small increase in the number of extreme rainfall days and a considerable increase in the number of extreme heat days.

KEY CLIMATE IMPACTS AND VULNERABILITIES

Changes in climate may alter Nigeria's major ecological zones. Agricultural ecosystems, freshwater and coastal resources, forests, and biodiversity

are all susceptible to impacts from climate changes. Such impacts include increases in soil erosion, flooding, desertification, and salt-water intrusion. Additionally, the country's coastal zone and low-lying islands in the Gulf of Guinea are vulnerable to sea level rise. An estimated 27 to 53 million people in the country may need to be relocated with a 0.5 meter increase in sea level. Nigeria's coastal and marine areas are also home to the country's economically important petroleum and fisheries industries. Furthermore, Nigeria's transportation infrastructure, which is inadequate for current needs, will be further degraded by extreme weather; negatively impacting industry and commerce and placing greater stress on the economy.

KEY USAID PROGRAM VULNERABILITIES

AGRICULTURE: Agriculture employs 70 percent of the country's population. USAID's agricultural program focuses on strengthening private sector demand-driven value chains for products that can increase rural incomes and jobs by developing partnerships with private sector firms involved in processing, agricultural input supply, and exports. Changes in temperature and precipitation patterns are likely to affect the productivity and yield of Nigeria's agricultural sector. These impacts may ultimately reduce the stability of agricultural supply, threaten the livelihoods of rural farmers, and cause disruptions throughout the supply chain.

ECONOMIC GROWTH: Oil accounts for 95 percent of export earnings in Nigeria and is an important source of revenue. USAID works closely with the Government of Nigeria on activities designed to promote increased trade, including reducing Lagos seaport congestion, increasing transport flows along the LKAJA (Lagos, Kano, Jibiya) Transport Corridor, and building trade capacity at the Ministry of Commerce and Industry. More frequent and severe extreme events such as flooding and storm surge may hinder effective trade and transport systems through impacts on transportation and energy infrastructure and their associated services.

HEALTH: The USAID Health, Population, and Nutrition strategy works on maternal and child health, reproductive health, HIV, and malaria. Climate changes may alter the distribution and prevalence of vector-borne diseases in Nigeria. Furthermore, food shortages caused by disruptions in current agricultural production may affect the health of women and children, among other vulnerable populations. These potential impacts to the health of Nigerians may threaten the success of the outcomes stated in USAID/Nigeria's current Health, Population, and Nutrition strategy.

WATER: Many Nigerians lack adequate access to safe drinking water; particularly in the rural north. One of USAID's goals under the Access to Water Sanitation and Hygiene (WASH) program is to increase access to safe water by helping community groups build, operate, and maintain borehole hand pumps and rain water catchment systems. While water

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.

is projected to become scarcer in the north as overall precipitation decreases, the demand for safe drinking water may simultaneously increase as temperatures rise. Considering future climate scenarios in the design of USAID/Nigeria's WASH program will ensure increased resilience to a range of possible future conditions.

OVERARCHING:The northern part of Nigeria has experienced underinvestment in agriculture and infrastructure, high rates of mortality, poor governance, and conflict. USAID has adopted a Focus States Strategy for Nigeria, focusing the bulk of its resources on two northern states, Bauchi and Sokoto, to achieve maximum impact. These two states are projected to experience more drastic temperature increases than the rest of the country and a reduction in rainfall. Changes in climate may threaten the long-term success of the Focus States Strategy if interventions continue to be designed and implemented based on current climate conditions

ACTIONS UNDERWAY²

USAID is supporting a project to strengthen the seed value chain and expand the genetic seed base in order to help farmers in northern Nigeria adapt to climate change. The few existing adaptation projects in Nigeria, funded through various agencies, work toward understanding the potential impacts of climate change, increasing awareness of these risks, and supporting the government in building its capacity to address climate change impacts. The projects focus on the sectors of agriculture, ecosystem conservation, and governance and currently do not address climate impacts on human health, freshwater resources, coastal zone management, and gender issues.

CHALLENGES TO ADAPTATION

USAID may encounter gaps and lack of capacity while developing adaptation activities in Nigeria. USAID will need to work with the Government of Nigeria to gain a more detailed understanding of actions they have undertaken since the release of the National Communication in 2003. Additionally, large-scale adaptation activities will require coordination among the country's numerous disjointed state governments.

RESOURCES

Adaptation Partnership, 2011. Review of Current and Planned Adaptation Action: West Africa. Pages 185-196. Available at <http://www.adaptationpartnership.org/resource/west-africa-current-and-planned-adaptation-action>

Building Nigeria's Response to Climate Change (BNRCC), 2011. National Adaptation Strategy and Plan of Action on Climate Change for Nigeria. Prepared for the Special Climate Change Unit of Nigeria's Federal Ministry of Environment. Available at <http://nigeriaclimatechange.org/NASPA-CCN%20BNRCC%20Edition%20FINAL.pdf>

Central Intelligence Agency, 2012. The World Factbook: Nigeria. Accessed 5/2/2012. <https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html>

USAID, 2012. Nigeria. Accessed 4/24/12. <http://nigeria.usaid.gov/>

USAID. Climate Change Adaptation in Western Africa: Fact Sheet. Internal resource.

World Bank, 2012. Nigeria: Country Brief. Accessed 4/24/12. <http://www.worldbank.org/en/country/nigeria>

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>.