



# COLOMBIA

## CLIMATE VULNERABILITY PROFILE



US Foreign Assistance: <sup>1</sup> (thousands USD)	Requested FY 2012	Requested FY 2013
Estimated total:	383,015	331,825
Adaptation:	0	3,000
Priority Adaptation Country in 2011:	YES	
Key Climate Stressors:	Heat, Drought, Flooding, Sea level rise	

## INTRODUCTION

Colombia, located in northwestern South America, has a population of nearly 46 million people. Approximately 68 percent of the labor force works in the service sector; contributing to about 53 percent of the country's Gross Domestic Product (GDP). Industry, including oil exports, accounts for approximately 38 percent of the GDP. Approximately half of Colombia's citizens live below the poverty line and numerous rural municipalities are isolated by poor infrastructure and fragile institutions. Inequality, underemployment, drug trafficking, and inadequate infrastructure are the most significant challenges to sustained economic expansion in Colombia.

## PROJECTED WEATHER AND CLIMATE CHANGES

Colombia has 3,208 km of coastline along the North Pacific Ocean and the Caribbean Sea. The geography ranges from coastal lowlands to central highlands, the Andes Mountains, and lowland eastern plains. The climate is tropical along the coast and the eastern lowlands, and cooler in the highlands and Andes. El Niño is associated with droughts and La Niña is associated with flooding in Colombia.

**TEMPERATURE:** Based on the average of several climate model scenarios, most of Colombia is projected to experience a temperature increase of 2.4°C by 2070 compared to the 1971-2000 base period. The largest temperature increases are expected in the highlands, with a 1-2°C increase by 2050.

**PRECIPITATION:** Changes in precipitation patterns are projected to vary by region in Colombia. Climate models project rainfall will increase in the coastal areas and the Amazon. In the highland areas, rainfall is projected to decrease.

**SEA LEVEL RISE:** By 2050-2060, sea level rise along the Caribbean and Pacific Coast is projected to increase by 40-60 cm, compared to the baseline 1961-1990 levels.

**EXTREME EVENTS:** Changes in precipitation patterns may lead to an increase in flooding events. The duration of the rainy season in the San Andrés islands could increase by 15 percent by 2050 and 20 percent by 2080, leading to increased risk of flooding. Simultaneously, dry season water shortages may become more severe.

## KEY CLIMATE IMPACTS AND VULNERABILITIES

Temperature increases and changes in precipitation patterns are likely to be the most significant climate changes in Colombia. Water shortages are likely to become more significant. This could impact irrigated agriculture, human health, and other sectors that rely on a consistent water supply, such as hydropower. The increased temperature and decreases in precipitation are expected to contribute to a disappearance of snow-covered areas by as early as 2030. Additionally, a 56 percent decrease in moorland will further contribute to water shortages. Currently, Colombia experiences about 1.7 disasters per year including droughts and floods, often related to El Niño and La Niña, respectively. Between 2002 and 2007 Colombia experienced eight significant flood events, which affected 2.9 million people. Heavy rains in 2010 and 2011 resulted in floods that caused more than \$6 billion dollars in damage to crops and infrastructure, resulted in hundreds of deaths, and displaced millions of Colombians. Sea level rise is likely to have localized impacts that may have significant effects in cities, like Cartagena, that rely on tourism. However, the most heavily populated urban centers are not located on the coast.

## KEY USAID PROGRAM VULNERABILITIES

**ALTERNATIVE DEVELOPMENT:** A significant amount of USAID work in Colombia is based around minimizing the drug trade and providing economic options for people within the country. These programs seek to provide alternative, sustainable, and legal economic opportunities and reintegrate conflict-affected populations. The alternatives promoted by USAID should be designed to be resilient to anticipated climate change impacts if they are going to be successful at transitioning people into viable long-term livelihood

**ENVIRONMENT:** USAID's environment program seeks to improve the livelihoods of people dependent on local ecosystems and environmental services. Natural resource-based livelihoods are common around the ethnic territories, national parks, protected areas, and other biologically or climate-sensitive ecosystems in Colombia. Deforestation, habitat conversion, invasive species, illicit crops, armed conflict, and a weak state presence threaten these resources. Climate changes will likely pose an additional threat, exacerbating these existing stressors. At the same time, effective conservation of resources like mangrove forests can help vulnerable communities address growing climate threats.

<sup>1</sup> 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/1185269.pdf>). Between the time of the budget request and the 653(a) report to Congress, these figures can change significantly.

## ACTIONS UNDERWAY

Adaptation is incorporated into USAID's BIO-REDD+ program. The Government of Colombia (GOC) is creating seven regional climate change and disaster risk management nodes (centers), which will work on adaptation planning, implementation, and dissemination of climate information. USAID is building the capacity of the Pacific Regional Climate Change Node. GOC also works with local communities to implement adaptation measures, particularly ecosystem-based adaptation measures, since this has greatest synergies with biodiversity and REDD+ work being done through this mechanism. Colombia has also included adaptation as a cross-cutting issue in its National Development Plan (2010-2014). Adaptation is dealt with both in a separate sub-chapter on climate change and as a cross-cutting stressor related to biodiversity and urban development. Additionally, Colombia established a national Adaptation Fund in 2010. As of February 2011, Colombia was also working on a National Adaptation Plan.

## CHALLENGES TO ADAPTATION

Current adaptation programming in Colombia does not address human settlements, energy, gender, and ecosystem conservation. Since the geography of Colombia creates three distinct climates—coastal, mountainous, and rainforest—climate change impacts must be considered on a local and seasonal scale. This makes adaptation more challenging. Yet while the climate varies considerably within the country, several neighboring countries have similar climatic splits. Collaboration across borders could provide improved information as well as potential opportunities for program coordination.

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## RESOURCES

Adaptation Partnership, 2011. Review of Current and Planned Adaptation Action: South America. Pages 105-119. Available at <http://www.adaptationpartnership.org/resource/south-america-current-and-planned-adaptation-action>

Central Intelligence Agency, 2012. The World Factbook: Colombia. Accessed 4/27/2012. <https://www.cia.gov/library/publications/the-world-factbook/geos/co.html>

Republic of Colombia, 2010. Executive Summary of Colombia's Second National Communication to the United Nations Framework Convention on Climate Change. <http://unfccc.int/resource/docs/natc/colnc2exsume.pdf>

USAID, 2012. Colombia Country Profile. Accessed 4/27/2012. [http://transition.usaid.gov/locations/latin\\_america\\_caribbean/country/colombia/](http://transition.usaid.gov/locations/latin_america_caribbean/country/colombia/)

USAID, 2012. Congressional Budget Justification FY2012. <http://transition.usaid.gov/performance/cbj/158267.pdf>

World Bank, 2009. Colombia, Country Note on Climate Change Aspects in Agriculture. <http://sdwebx.worldbank.org/climateportal/documents/Factsheets/COL.pdf>

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