



CLIMATE RESILIENT INFRASTRUCTURE SERVICES (CRIS)

INCREASING THE CLIMATE RESILIENCE OF INFRASTRUCTURE IN DEVELOPING COUNTRIES



Photo credit: Joanne Potter

The Climate Resilient Infrastructure Services (CRIS) program works with cities in developing countries and USAID Missions to increase the climate resilience of physical infrastructure and the services it provides. Through CRIS [an initiative under USAID's Climate Change Resilient Development (CCRD) project] USAID and its partners develop, test, and disseminate innovative approaches that build resilience while supporting smart, lasting development.

Infrastructure services—such as transportation, drinking water provision, sanitation and waste management, energy provision, communications, and shelter—are critical to the ability of countries to achieve economic development, protect public health, address poverty, and support rapidly growing populations. Unplanned development and inconsistent enforcement of building standards and zoning codes can lead to inadequate or unsafe infrastructure and hinder achievement of development goals. In addition, climate change poses significant risks to infrastructure that is designed to withstand only current climate conditions. By building climate resilience into existing and planned infrastructure, countries can ensure the continued reliability of infrastructure services, safeguarding human lives and protecting long-term investments.

BUILDING INFRASTRUCTURE RESILIENCE IN CITIES

Through the CRIS program, USAID works with municipal staff, decision makers, and their partners in five pilot cities to integrate climate adaptation and risk management strategies into city development and to share the lessons learned with other cities through peer learning and dissemination. This process uses USAID's climate-resilient development framework, which facilitates the systematic inclusion of climate considerations into the development decision-making process.

The pilots are all fast-growing cities located on coasts or in low-lying areas, making them vulnerable to flooding, erosion, sea level rise, and extreme weather events. Each pilot city has collaborated with USAID to develop a work plan that lays out a set of activities to support the city's ability to address climate risk to infrastructure services. Several of the pilots are implementing a "fast-track" approach that focuses on straightforward,

CRIS AT A GLANCE

- Five CRIS pilot cities developed work plans and initiated activities to help them address climate risk to infrastructure services, plan for a changing climate, and build the resilience of their 2.6 million residents.
- Pilot city activities include screening current and planned infrastructure projects for vulnerability, assessing adaptation options, training municipal staff in effective proposal writing to access external funding, and using climate resilience decision support tools in planning and development.
- Organizations in India, Indonesia, and the Dominican Republic are using USAID small grants to help support the development and testing of innovative approaches for assessing and improving infrastructure resilience.



Homes vulnerable to erosion from extreme weather events. Santo Domingo, Dominican Republic. Photo credit: Joanne Potter.

The CRIS program helps municipalities address erosion and flooding issues that affect housing and other infrastructure.

SAMPLE ACTIVITIES OF THE CRIS PROGRAM

Each CRIS pilot city has identified activities to help address the impacts of climate change on their city infrastructure. Examples include:

● Pilot cities ● Small grants

1. Santo Domingo, Dominican Republic

- Develop plan to address climate vulnerability of water/sanitation infrastructure
- Screen water/sanitation infrastructure projects for climate vulnerability
- Assess relevant adaptation options to incorporate into plan

2. Piura, Peru

- Develop and implement climate information database
- Screen planned infrastructure projects for climate vulnerability
- Identify adaptation options for infrastructure with major climate vulnerabilities

3. Trujillo, Peru

- Evaluate and prioritize “fast-track” adaptation options
- Train municipal staff and other stakeholders on climate resilience
- Develop roadmap for integrating resilience into municipal planning and decision-making

4. Nacala-Porto, Mozambique

- Train municipal staff in developing proposals for financing adaptation projects
- Design and implement a framework to identify and prioritize adaptation measures

5. Hue, Vietnam

- Train city planning staff on how to use an innovative climate impacts decision support tool for flood control
- Pilot test the climate impacts decision support tool
- Use the tool to make land-use decisions that improve climate resilience

inexpensive adaptation measures that can be implemented in the near term. These investments can be very cost effective: for example, a simple decision to site buildings outside of flood zones can avoid significant economic and human losses in the future. Most of the pilots are also developing tools and frameworks to facilitate the screening of adaptation options.

SMALL GRANTS FOR INNOVATION

In addition to working directly with the pilot cities, the CRIS program has provided small grants at city and sub-city levels (see map at left) to catalyze action, demonstrate practical approaches for assessing climate vulnerability and risk, and identify and implement adaptation strategies.

Under four small grants issued between 2013 and early 2014, civil society organizations in **India**, **Indonesia**, and the **Dominican Republic** are developing and testing innovative approaches to assess vulnerability and improve resilience in cities. Approaches include a method for developing an inventory of municipal infrastructure assets and assessing vulnerability, rapid urban assessments to identify vulnerable “hot spots” in municipal infrastructure, developing city resilience strategies, and identifying adaptation planning needs.

SHARING SUCCESSES AND LESSONS LEARNED

By fostering peer learning, the CRIS program is connecting the pilot cities with other cities and regions to share best practices and lessons learned related to tested approaches. In March 2014, CRIS hosted a regional peer learning event for eight cities across Latin America and the Caribbean. The program is also developing an interactive training method to communicate key concepts and enable participants to grapple with adaptation challenges and tradeoffs.



Boy in a vulnerable National District neighborhood in the Dominican Republic. Photo credit: Wendy Jaglom.

Municipalities face a critical opportunity to build climate resilience into their developing water and sanitation infrastructure.