



THE CLIMATE IMPACTS DECISION SUPPORT TOOL

INTEGRATING CLIMATE INFORMATION INTO
LAND-USE DECISIONS IN VIETNAM



Photo credit: Jennifer Le

USAID’s Climate Change Resilient Development (CCRD) program is helping Vietnam and other developing countries withstand the impacts of climate on their development goals and investments. As part of this program, USAID develops and tests innovative tools and other approaches for integrating climate change considerations into planning and development decision-making.

CLIMATE CHANGE IMPACTS IN VIETNAM

With more than 3,000 kilometers of coastline and 300 coastal cities, Vietnam is exposed to coastal storms and sea level rise. In addition, because it is located in humid subtropical and tropical climatic zones, Vietnam’s cities are subject to urban heat island effects. These vulnerabilities are exacerbated by the following factors:

- More than half of the population lives within 0–10 meters above sea level.
- Vietnam lies within the pathway of damaging seasonal typhoons: In 2013, Vietnam was hit by 13 typhoons resulting in billions of dollars of losses.
- The number of days exceeding 95°F (35°C) is expected to double from 15 days per year (1980–1999) to 30 days per year (2100).

Hue, a growing city on central Vietnam’s coast, holds both cultural and economic significance for the country. It is home to a major tourist attraction and UNESCO World Heritage site—the imperial grounds and residences of the former Nguyen Dynasty. Hue also serves as an important regional transportation hub. However, changes in climate pose major risks to the city’s tourism, public health, and infrastructure. Significant flooding occurs in Hue a few times each year; most commonly caused by typhoons. The floods of 1999 and 2006 were particularly severe, inundating thousands of homes throughout the city and surrounding province, damaging roads and other public and commercial infrastructure, and spawning water-borne illnesses. Disasters such as these are projected to increase as the climate continues to change and as land-use decisions are subjected to the stresses of population growth and economic development.

THE CLIMATE IMPACTS DECISION SUPPORT TOOL (CIMPACT-DST)

Vietnam’s National Target Programme on Climate Change requires integration of climate change considerations into local development

RESULTS AT A GLANCE

USAID is demonstrating early successes in the development of a tool for use by Vietnamese urban planners in integrating climate change considerations into their planning processes.

- In 2012, USAID joined forces with stakeholders from the city of Hue to tailor the Climate Impacts Decision Support Tool (CIMPACT-DST) to local conditions and development objectives.
- In 2013, USAID completed the customized tool and trained Hue planners, who are now using the tool to revise local master plans.
- USAID is developing an expanded version of the Hue tool and deploying it in additional Vietnamese cities to assess its scalability.
- Representatives from USAID and two Vietnamese institutes met in Seattle, Washington and Portland, Oregon to participate in a technical exchange about integrating climate change resilience strategies into urban planning.



Photo credit: Pat Keys

ABOUT CIMPACT-DST

Hue city planners use CIMPACT-DST in conjunction with city-scale climate hazard maps to identify their exposure to current and projected key climate stressors and to obtain guidance on how to adapt to these risks.

Backend data

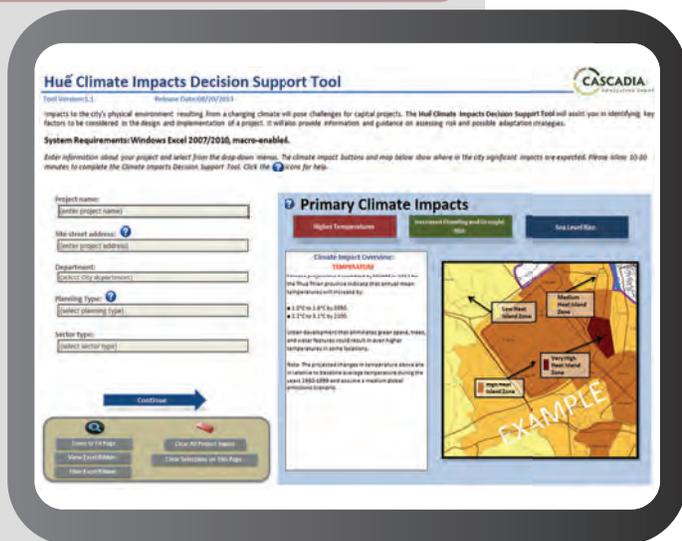
- Regional climate projections
- Local climate vulnerability information
- Sector-specific impacts summaries

User inputs

- Project and sector information
- Exposure to climate hazards based on geography
- Planning timeframe

Outputs

- Summary of regional climate information
- Sector-specific overview of future climate impacts by category (e.g., temperature, precipitation, sea level rise) and planning timeframe
- Sector-specific recommendations for integrating impact information into siting and design decisions



strategies and urban planning. To help the country achieve this goal, USAID is customizing a novel, easy-to-use software system—the Climate Impacts Decision Support Tool (CIMPACT-DST)—for use by the city of Hue. USAID is also investigating the scalability of the tool. Initially developed in 2011 by Cascadia Consulting for the U.S. city of Seattle, CIMPACT-DST consolidates local climate, geospatial, and policy information along with best-practice climate adaptation strategies to supply targeted guidance for improving resilience in urban planning and infrastructure siting and design.

Pilot Testing CIMPACT-DST in Hue, Vietnam. In 2012, USAID, through its global CCRD program, began to collaborate with local planners at the Hue Planning Institute (HPI) and other local stakeholders to tailor CIMPACT-DST for the city of Hue. The development team identified priority sectors for analysis and collected local and regional climate projections, climate vulnerability data, and sector-specific impacts information from existing technical reports and stakeholder input. A recently completed vulnerability assessment funded by USAID's Regional Development Mission for Asia (RDMA) and facilitated by the Institute for Social and Environmental Transition (ISET) was a key resource.

USAID conducted training for HPI staff on how to use, manage, and update the customized tool, and coordinated with HPI to showcase the tool at an event for local officials from city and provincial departments. The city's planners are now using the tool to identify location-specific climate impacts and make land-use decisions that improve the climate resilience of new infrastructure investments. For example, based on their CIMPACT-DST analysis of the Vinh Thanh commune, a rural area west of Hue that is slated for development, planners decided to limit the development of large-scale resorts and hotels within the beach zone. Instead, they plan to preserve many of the natural features of the coastline and restrict construction to smaller beach huts and restaurants. This decision will help preserve the beach's protective dunes, mitigate the impacts of storm surge, protect those living inland, and support a longer-term vision for coastal tourism. The successful use of the tool has motivated planners to make similar adjustments to master plans for two additional communes, Vinh Hien and Dien Loc.

Peer-Learning Exchange. The United States and Vietnam share many climate change concerns that affect urban planning and design, including sea level rise, flooding, and urban heat islands. In fall 2013, USAID invited representatives from IRURE and the Vietnam Institute for Urban and Rural Planning (VIUP) to Seattle, Washington and Portland, Oregon for a technical information exchange. The participants took part in site visits to observe examples of green infrastructure, urban forestry, and sustainable buildings programs, and shared information, lessons learned, and strategies for addressing climate change.

Expanding the Use of CIMPACT-DST. The Hue pilot project can serve as a model for developing a national-level version of CIMPACT-DST. USAID is working with the Vietnam Ministry of Construction's Institute for Environmental Planning, Urban-Rural Infrastructure (IRURE), to apply an expanded version of the tool in two additional cities, Vung Tao and Can Tho, as a first test of its scalability.