OFFICE OF U.S. FOREIGN DISASTER ASSISTANCE (USAID/OFDA)

REGIONAL OFFICE FOR LATIN AMERICA AND THE CARIBBEAN, SAN JOSÉ, COSTA RICA

Lessening the Impacts of Earthquakes in Mexico

With support from USAID/OFDA, earthquake and structural engineering company Miyamoto International is helping national and municipal authorities in Zapopan—a city and municipality with more than 1.1 million people located in Jalisco State in central Mexico—to reduce the social and economic impacts of earthquakes through the use of improved risk data. The program, entitled Preparing Rescue and Emergency Personnel to Ameliorate the Response to Earthquakes (PREPARE), is assessing seismic risks facing those who live or work in Zapopan to improve the Government of Mexico's preparation and response planning.

The program was developed in response to the 7.1 magnitude earthquake that struck Mexico City on September 19, 2017, killing 370 people and damaging or destroying thousands of buildings.

"After the 2017 earthquake, USAID/OFDA was interested in ways to support Mexican authorities and first responders to better prepare and respond to earthquakes," commented Mexico-based USAID/OFDA Disaster Risk Management Specialist (DRMS) Pedro Soto. "Working with Miyamoto International, we were able to implement a program that provides in-depth assessments of the probable outcomes of a serious earthquake event in the city of Zapopan."

In October 2019, Miyamoto International presented citywide risk assessment results to Zapopan Mayor Pablo Lemus Navarro and key partners. The report is the culmination of months of vulnerability analysis, which included understanding both social patterns and physical vulnerabilities—such as how many buildings are likely to be damaged in an earthquake—should an earthquake impact Zapopan.

PREPARE II program assessed the seismic risks facing those who live or work in Zapopan to improve Mexico's preparation and response planning. *Photo Courtesy of CNPC*

Miyamoto International CEO Kit Miyamoto presents the report to Zapopan authorities, Mayor Jesus Pablo Lemos and Municipal Coordinator for CNPC and Zapopan Fire Corps Commander Sergio Ramírez López. *Photo Courtesy of Miyamoto International*

Miyamoto International used earthquake modeling and historical data, as well as assessments of buildings throughout the city to estimate the probable loss of life, injuries, number of displaced persons, and the volume of debris should an earthquake occur. The report generated a greater understanding of possible risks and what potential risk reduction activities authorities can implement to have the most significant impact.

"Understanding how many people occupy vulnerable buildings at certain times, how to make sure first responders have access to those who need help, and how to deal with massive amounts of debris is critical for local authorities and first responders to create more effective earthquake response plans," said DRMS Soto. "It allows the creation of response plans that are customized based on a more comprehensive understanding of the actual realities on the ground, which strengthens risk reduction activities and makes a response faster and more efficient."

"We seek to solve real problems and we are committed to strengthening our capabilities by learning about the threats that surround us and generating information that allows us to better understand our vulnerabilities," said Municipal Coordinator for Mexico´s Civil Protection Coordination (CNPC) and Zapopan Fire Corps Commander Sergio Ramírez López.

The program focused on filling existing gaps in disaster data that impede agencies and first responders from developing more effective

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and accurate preparedness and response plans. By identifying the likely outcome of an earthquake before it happens, disaster authorities are armed with the knowledge of where and how to focus their resources. This new, comprehensive information will be used to minimize loss of life and damage to infrastructure.

"With this information, there is so much we can do," said Dr. Kit Miyamoto, CEO of Miyamoto International. "Damage assessment programs, debris management, and training engineers—those things make a big difference," said Dr. Miyamoto. "There's also disaster finance planning and risk identification of buildings such as schools, hospitals, and government buildings. These buildings can be hazardous, but if we address and solve the problems now, it's much more cost-effective than waiting for a disaster in the future."

"The information is like a crystal ball, in a sense, allowing us to see how the city will hold up during an earthquake. City authorities and emergency responders need this information to guide policy and decision making," explained USAID/OFDA Regional Advisor Phil Gelman, who has worked closely with Miyamoto International on the implementation of the PREPARE program throughout the Latin American and Caribbean region.

Mexican Civil Protection authorities will ultimately integrate these important tools into official policies and procedures to significantly improve the efficiency and quality of disaster response efforts in the event of a future earthquake.

The Miyamoto International assessment generated key information to improve preparedness efforts in Zapopan, such as how many buildings are likely to be damaged should an earthquake impact the city, and how to deal with massive amounts of debris. *Photo Courtesy of Sara Rathbun, LA County Fire Department*

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Costa Rica Acknowledges USAID/OFDA's Support to Drill

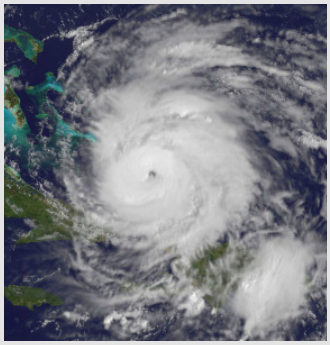
On February 12, the Government of Costa Rica's National Commission for Risk Prevention and Disaster Response (CNE) held a press conference to announce the second National Emergency Drill scheduled for August 12, 2020. During the event, CNE President Alexander Solís (right) presented USAID/OFDA Senior Regional Advisor Tim Callaghan, an award honoring USAID/OFDA for their support for the initial National Evacuation Drill that was held in August 2019. *Photo by Eladio Ramirez, U.S. Embassy Costa Rica*

USAID/OFDA Supports Weather Ready Nations Program in the Caribbean Region

On January 23–24, the National Oceanic and Atmospheric Administration (NOAA) and USAID/OFDA held a meeting in Barbados with Caribbean meteorologists and national disaster management experts from 17 countries to discuss the importance of improving collaboration and coordination among meteorological service agencies and response entities to improve the use of weather and hydrology information and better prepare to respond to extreme weather-related events.

Since 2017, USAID/OFDA has worked with the U.S. National Weather Service, Barbados Meteorological Service, and the Caribbean Institute of Meteorology and Hydrology to strengthen the country's preparedness for extreme climate, water, and weather-related events. The program, entitled Weather Ready Nations (WRN), aims to build the capacity of national meteorological and hydrological services and national disaster management agencies to strengthen weather forecast information, shifting the focus of weather services from providing numerical weather forecasts to describing the potential impacts of predicted weather. With improved and actionable information, emergency managers, first responders, government officials, businesses, and the public will be able to make informed, timely, and appropriate decisions to save lives and property and preserve livelihoods.

With USAID/OFDA support and under the U.S. Caribbean Resilience Partnership, the WRN program will expand to other countries in the Caribbean.



The above satellite image shows the eye of Hurricane Irene, a large and powerful tropical cyclone which affected much of the Caribbean in 2011. *Photo Courtesy of NOAA*