

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

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



Ernesta Duarte and her husband, beneficiaries of the floating garden project, show off their tomato harvest. Photo courtesy of ACDI/VOCA

### USAID/OFDA Supports Resilient Riverside Communities in Paraguay

In recent years, when the torrential rains came and the river began to rise in eastern Paraguay's San Pedro department, Ernesta Duarte would watch helplessly as the floodwaters washed away her vegetable garden and food security. Today, thanks to an innovative disaster risk reduction (DRR) project supported by USAID/OFDA, Ernesta grows tomatoes, cucumbers, and squash on a floating garden.

USAID/OFDA provided \$600,000 to the nonprofit organization ACDI/VOCA to support DRR activities in San Pedro, home to more than 800 rivers and waterways prone to flooding during Paraguay's rainy season, typically from October through April. The program worked with five riverside communities, whose approximately 1,000 inhabitants were highly vulnerable to disaster after three consecutive years of flooding. The program aims to increase the capacity of inhabitants to prepare for and adapt to flooding, using a model that can be replicated in other communities.

One aspect of the program that was met with excitement from the local community was the piloting of a new technology of floating vegetable gardens for the first time in Paraguay. Four different models were tested using locally available, low-cost materials for its construction, including palm trees, bamboo, ropes, floating timbers, barrels, and soil. Floating gardens adapt to the water level of the rivers, allowing for the continued production of vegetables no matter if river levels rise or fall.

Model vegetable gardens were established in the five target communities

that previously were unable to produce many vegetables due to a combination of lack of knowledge, poor land quality, and flooding. Using the techniques learned through the program, participants were able to improve the quantity and quality of food that they produce for their families.

"We went from producing 30 kilos of tomatoes in previous years to about 300 kilos in this season," said Ernesta Duarte, a beneficiary of the program in San Pedro.

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USAID/OFDA Regional Advisor Sarah McNiece and representatives of Puerto Antequera inspect the water reservoir drainage pumping system. Photo courtesy of ACDI/VOCA

## USAID/OFDA Helps Families Affected by Hurricane Otto

On November 24, Hurricane Otto made landfall as a Category 2 hurricane on Nicaragua's southeastern Atlantic coast, near the Costa Rican border, and moved west over southern Nicaragua and into northern Costa Rica, causing extensive damages. It was the farthest south on record that a hurricane made landfall in Central America, according to the U.S. National Hurricane Center .

Hurricane Otto damaged homes and roads but caused no deaths in Nicaragua. In Costa Rica, however, the hurricane resulted in 10 confirmed deaths, with additional people reported missing, and affected approximately 255 communities throughout the country. Hardest-hit areas include Los Chiles and Upala cantons, in northern Alajuela Province, and Bagaces, La Cruz, and Liberia cantons, in Guanacaste Province, where the hurricane passed before reaching the west coast. More than a week of heavy rains associated with the storm also severely affected various cantons in southwestern Costa Rica.

The day after the storm, an estimated 7,800 people were in approximately 50 emergency shelters nationwide—including approximately 6,500 individuals who were evacuated as a precautionary measure in advance of the storm.

On November 25, U.S. Ambassador to Costa Rica S. Fitzgerald Haney issued a disaster declaration due to the effects of Hurricane Otto, and requested USAID/OFDA disaster assistance funding to support immediate humanitarian relief efforts. In response, USAID/OFDA provided \$100,000 to partner World Vision Costa Rica (WVCR) for the local purchase and distribution of emergency relief items—including personal hygiene items, kitchen sets, and cleaning supplies—to approximately 3,500 families in acutely affected areas. Additionally, USAID/OFDA provided \$10,000 to the Costa Rican Red Cross, through the Regional Disaster Assistance Program, to purchase fuel and other supplies to support the Hurricane Otto response.



WVCR staff distribute USAID/OFDA-supported hygiene items to hurricane-affected families in Upala. Photo courtesy of WVCR

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María Isabel Benítez shows off her cucumbers, lettuce, and tomatoes, which are some of the crops being grown on the floating gardens.. Photo courtesy of ACDI/VOCA

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María Isabel Benítez, who is growing pumpkins, lettuce, and tomatoes in her garden, said “the floating home garden requires care to ensure that it is always in contact with the water, but I can do it without inconveniences. Now, I do not need to water the plants because they consume water directly from the river, and there is no need for pest control.”

Another part of the USAID/OFDA-supported program was the construction of a Multifunctional Floating Structure (MFS) designed and built by ACDI/VOCA, in collaboration with an association of local architects supporting San Pedro's Departmental Council for Risk Management and Reduction. The MFS was designed in consultation with residents of riverside communities and local disaster response entities to address the problems they typically experienced during flooding, including access to shelter, sanitation, and clean water.

The 90-square-meter MFS is completely self-contained and can be moved on the river to access communities that are isolated during flooding. The MFS contains a bathroom, water purifier, kitchen and dining room, and solar panels that can power a refrigerator and electronic devices. With the capacity to support up to 60 people, it can be modified to meet the shelter needs of up to 24 people and may also be used as an emergency operations center, health clinic, or school.

The program also developed an infrastructural solution to alleviate flooding in the city of Puerto Antequerá. A water reservoir with a drainage pump with capacity of 500 cubic meters per hour was developed to mitigate the effects of flooding at critical times of heavy rainfall. During the handover event, Puerto Antequerá Mayor Abel Britez said, “the drainage system is a long-awaited dream come true for this community. We have not enough words to express our gratitude to USAID/OFDA and ACDI/VOCA.”

The system has already proved successful on several occasions, preventing flooding from affecting approximately 7,000 local residents.



USAID/OFDA Regional Advisor Sarah McNiece, right, visits the completed Multifunctional Floating Structure. Photo courtesy of ACDI/VOCA