

# DISASTER RISK REDUCTION

Building Resilience and  
Investing for a Safer Tomorrow

## WHAT IS DISASTER RISK REDUCTION?

Disaster risk reduction is everything we do to prevent or reduce the damage caused by natural hazards like earthquakes, floods, droughts, and storms.

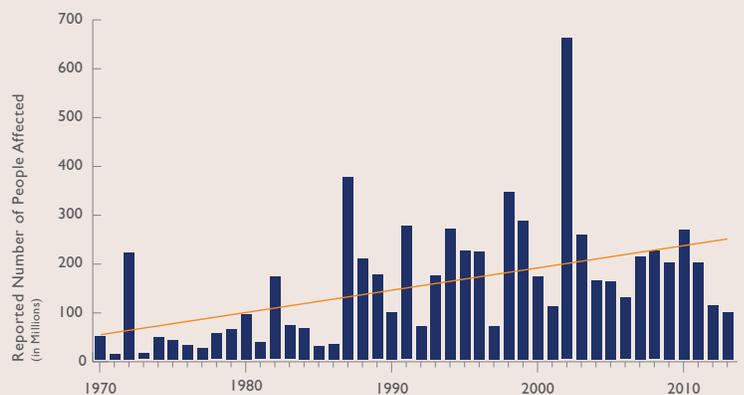
### RESPONDING TO A GROWING NEED

Natural disasters affect hundreds of millions of people around the globe every year. With each new disaster, development gains are threatened as infrastructure is destroyed and economic opportunities and livelihoods are interrupted or lost, leading to increased poverty.

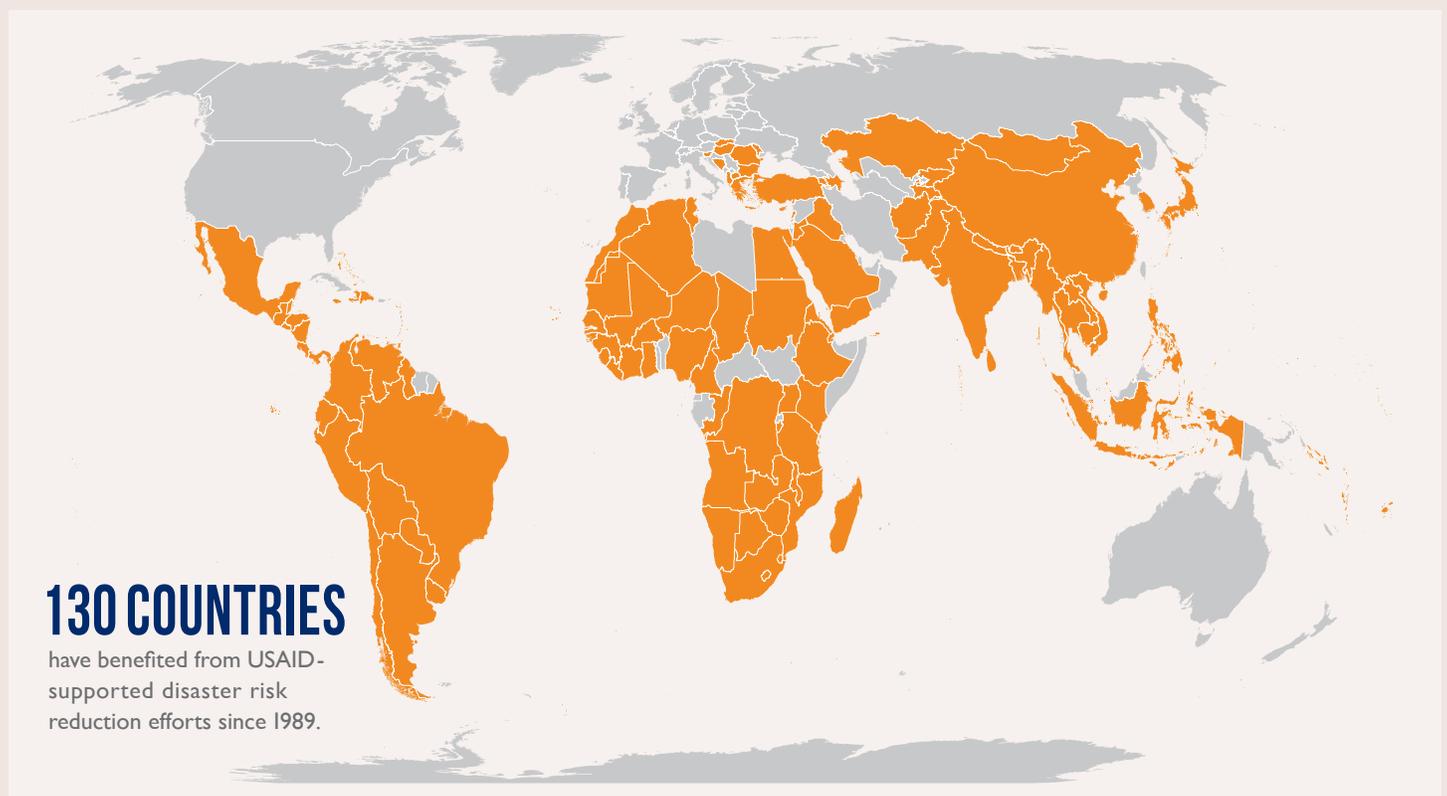
### BUILDING RESILIENCE

USAID responds to natural disasters around the world, saving lives, protecting livelihoods, and working to reduce the economic losses caused by these events. Just as importantly, we are committed to helping people lessen their exposure to hazards, prepare for disasters, and better withstand shocks. The lessons of USAID's disaster risk reduction efforts worldwide have repeatedly shown the importance of building resilience in hazard-prone areas.

### Global Population Affected by Natural Disasters



Source: EM-DAT - The OFDA/CRED International Disaster Database, [www.emdat.be](http://www.emdat.be), April 2014

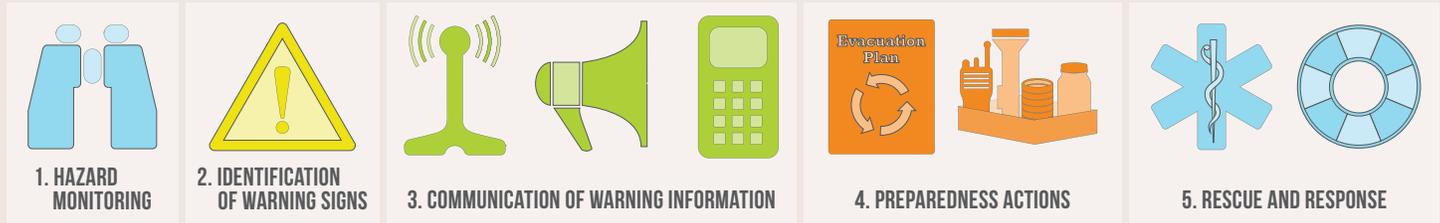


# USAID'S DISASTER RISK REDUCTION PROGRAMS SAVE LIVES

## Strengthening Early Warning

Since 1989, we have helped establish 17 global, regional, or national early warning systems for drought, volcanoes, cyclones, and floods. These early warning systems work. For example, in 2013, warnings issued days prior to Cyclone Phailin's arrival in India gave local authorities time to coordinate preparedness measures, including the evacuation of 1 million people living in coastal areas.

## COMPONENTS OF A COMMUNITY-BASED EARLY WARNING SYSTEM



## EARLY WARNING PROMPTS ACTION:



### INDONESIA

Indonesia has the world's largest population at risk of volcanic hazards. Mt. Merapi—Indonesia's "Mountain of Fire"—began erupting on October 26, 2010, producing the volcano's largest eruptions in more than 100 years. The USAID-supported Volcano Disaster Assistance Program, implemented by the U.S. Geological Survey, worked with volcanologists from the Government of Indonesia to provide early warnings. The warnings led to evacuations credited with saving approximately 10,000 lives.

### PHILIPPINES

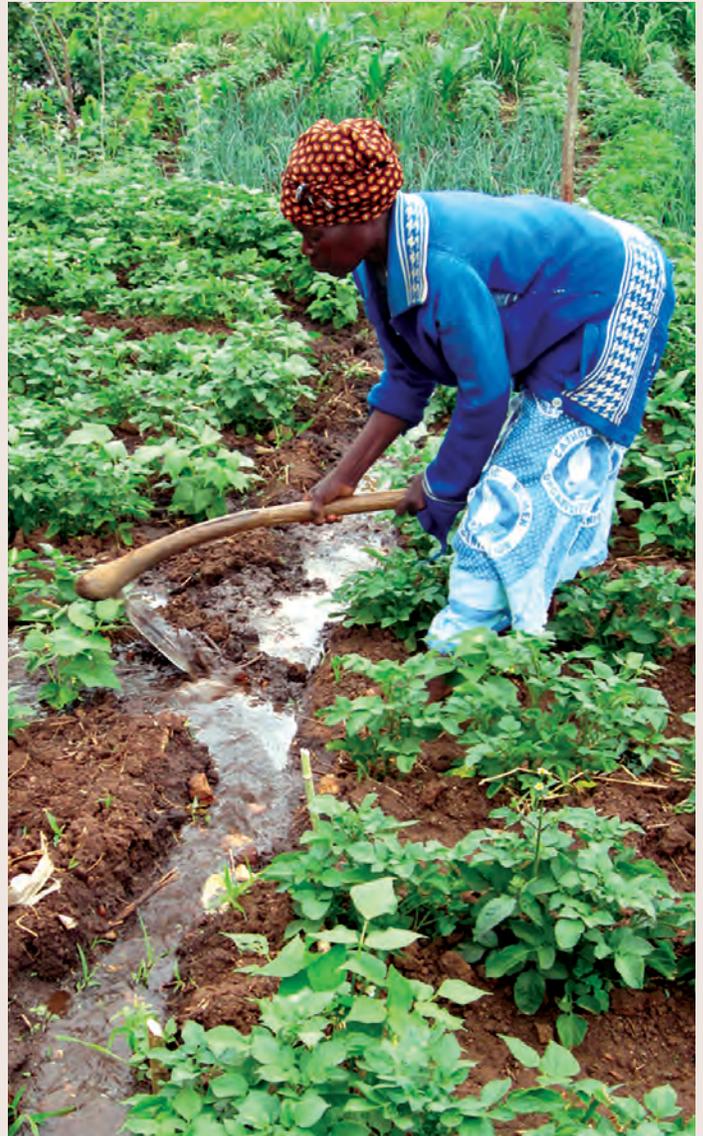
In the Philippines, the residents of Mabitac have worked to prepare themselves for flooding emergencies with support from USAID. In 2012, during severe flooding, the town activated its incident management plans and shared advisories and emergency information with the community. No casualties due to flooding occurred in Mabitac that year.

### MOZAMBIQUE

In Mozambique, over the past ten years, USAID has helped establish a community-based cyclone early warning system. As a result, countless lives have been saved, including when the country experienced flooding after the passage of multiple storms in quick succession in January 2012. Despite the scale of the damage, the use of early warning systems greatly reduced the loss of life.

### GUATEMALA

In 2010, when Tropical Storm Agatha tracked over Guatemala, a graduate of a USAID community-based disaster risk reduction program alerted his neighbors to the threat of imminent landslides. He led the evacuation of his neighbors from steep slopes to municipal shelters, preventing any fatalities in the village.



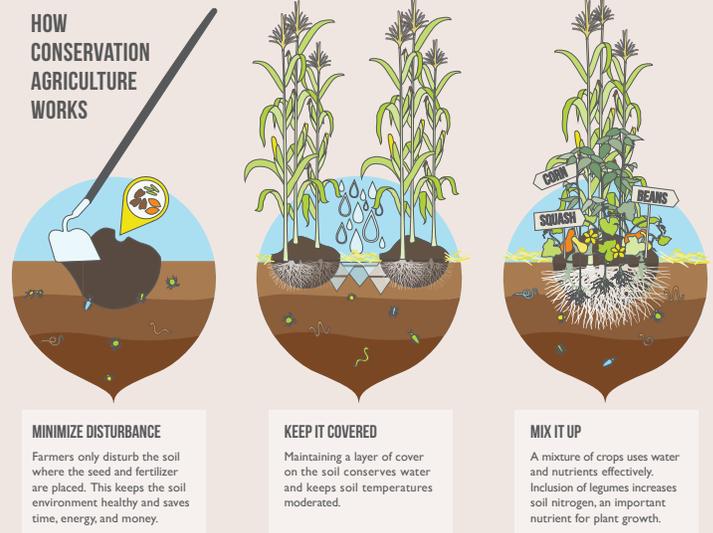
Disaster risk reduction includes a wide array of activities, from the development of early warning systems to investing in hazard-resistant structures to constructing small-scale irrigation systems, like this one in Malawi, which help farmers grow crops despite dry conditions.

# USAID'S DISASTER RISK REDUCTION PROGRAMS REDUCE THE ECONOMIC IMPACTS OF DISASTERS

## Supporting Livelihoods

Disaster risk reduction programs that support livelihoods are important in helping families weather disasters. By reducing the vulnerability of various livelihood activities to specific hazards, we can help reduce the economic impact of disasters and improve the ability of households to cope with shocks.

For example, when droughts occur, farmers who depend on rainfall may not be able to produce enough food to feed their families. Conservation agriculture helps farmers adopt principles that prevent soil erosion and conserve water during dry periods. Even during drought years, farmers who practice conservation agriculture can significantly increase their yield.



## FOOD SECURITY EVEN IN TIMES OF DROUGHT: NAMIBIA

In Namibia, pearl millet is a staple crop. With the introduction of conservation agriculture techniques, yields have increased an average of five times. One standout farmer in the USAID-funded program harvested 15 times the average amount of pearl millet per acre during the 2012/2013 growing season—and this despite Namibia experiencing its most severe drought in 30 years!

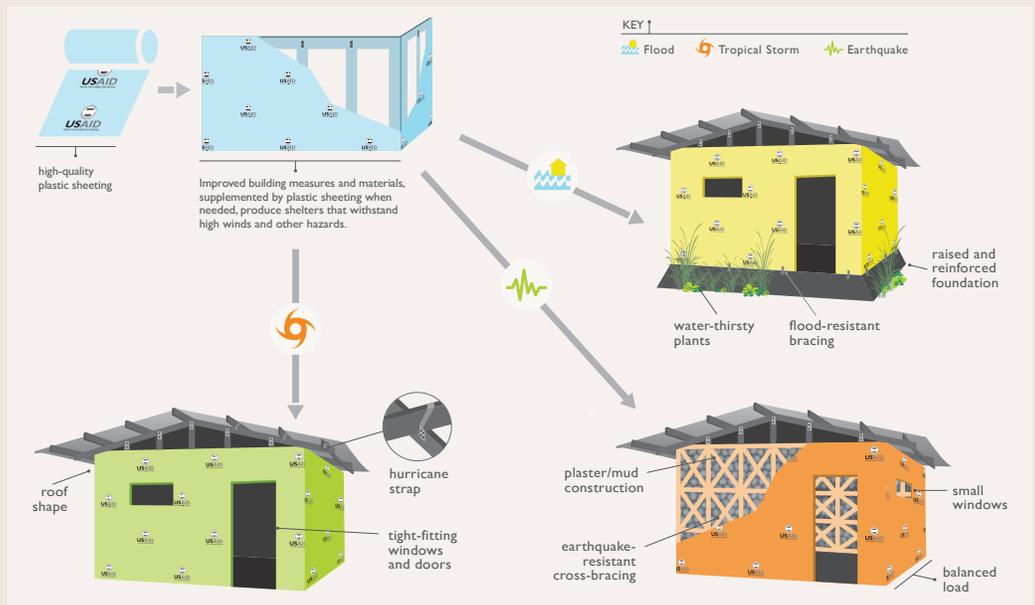
# USAID'S DISASTER RISK REDUCTION PROGRAMS REDUCE SUFFERING

## Integrating Risk Reduction with Disaster Response

Integrating disaster risk reduction with emergency response programs helps build the resilience of communities over time and mitigates the impact of future crises.

When natural disasters affect communities, housing is often a tangible loss. We have developed locally appropriate emergency and transitional shelters with improved construction measures and practices that reduce the risks of hazards like earthquakes, floods, and wind storms.

## SHELTERS INCORPORATE DESIGN ELEMENTS TO WITHSTAND DIFFERENT HAZARDS



Both shelters and settlements can become stronger, more resilient, and more durable when risk reduction measures are incorporated into structures that reflect local conditions, local materials, and local building practices.



## IMPROVED SHELTERS WITHSTAND STORMS: BANGLADESH

In the aftermath of Cyclone Sidr in 2007, USAID funded the construction of thousands of transitional shelters. In 2013, we assessed their impact and learned that all of the shelters built after Cyclone Sidr remained occupied by the original recipients and sustained no structural damage as a result of Cyclone Aila in 2009. Notably, many beneficiaries had gradually upgraded their shelters by improving flooring and roofing materials and adding new living space.

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