

Sustaining Resilience



GUATEMALA | BANGLADESH | VIETNAM

Acknowledgments

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Acronyms

| ССР | Cyclone Preparedness Programme |
|-------|--|
| CFW | cash for work |
| CRS | Catholic Relief Services |
| DRM | disaster risk management |
| DRR | disaster risk reduction |
| EWS | early warning system |
| MUKTE | Make Us Knowledgeable and Trained in Emergencies |
| SILC | Savings and Internal Lending Communities |
| VHT | village help team |
| VTF | village task force |
| WASH | water, sanitation and hygiene |
| WDMC | Ward Disaster Management Committee |

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Foreword

It is rare to have the opportunity to return to project areas several years after a project ends, to meet with communities and learn what project activities they are continuing and why. Such insights provide us with learning that will inform future project design and implementation to best meet the needs of people frequently impacted by disasters, so that they can reduce their risks for the long-term and sustain resilience.

The findings of this small qualitative study in Guatemala, Bangladesh and Vietnam—where CRS implemented resilience-building projects that ended three years ago—strongly indicate that, with the right project design, household and community resilience can be sustained. Women and men in all three countries have maintained key resilience-building activities, including reinforcing housing with hazard-resistant construction techniques, taking part in early warning systems and savings clubs, and introducing alternative agricultural techniques and diversified crops.

They have sustained these activities for the following reasons:

- Effectiveness They see that the activities are effective. Living in areas that are frequently hit by disasters, they have seen first-hand that their efforts have protected their lives, homes and livelihoods.
- Risk understanding What they learned during the project has enabled them to understand what puts them at risk and why the activities reduce risk.
- Economic benefits Many of the activities have clear economic benefits. From diversifying crops to tying down roofs, the activities help women and men to earn more or more reliably, and spend less or have fewer urgent demands on their income.
- Prompts from people, institutions and other sources help. A visit from a community leader before the storm season or a community-wide drill to practice evacuation protocols helps remind people that it is time to act, and what they should do. Also, when activities are done frequently or regularly, either because of cyclical weather patterns or because drills are organized at regular intervals, new practices more quickly become risk-reducing habits.
- Institutional linkages made or strengthened during a project create channels for ongoing support. If suitably engaged, local government units with responsibility for disaster management or agriculture can provide information, technical advice and materials, or maintain the early warning system that calls people to action.
- Customs (or habits) and culture, and social approval play a role. When resilience-building activities help people recall customs, or enable them to exercise values that are important in their culture, such as social responsibility, they are often sustained. Words of encouragement and approval from family members and neighbors also play their part.
- How women and men are supported to learn during the project influences whether they retain the information and feel part of a solution. An inclusive, safe atmosphere that encourages peer-to-peer support is key, especially for women. Visual aids and user-friendly checklists also make a big difference.

The study also highlighted the similarities and important differences in the ways women and men understood resilience and what drove or enabled them to continue to be resilient.

As a result, three years after the projects ended, women and men continued to feel resilient to the hazards that typically affected the areas where they lived and worked. They were aware of the ongoing and constantly evolving risks, but felt confident of their ability to learn to adapt.

This study has led CRS to make the following recommendations to organizations and people who want to sustain disaster resilience:

- Raise awareness of effectiveness
- Invest in enhancing risk understanding
- Design projects that reduce risk while enhancing livelihoods
- Foster multiple sources of prompts and reminders
- Make connections with local organizations and authorities, and foster the development of relevant policies
- Find synergies with local customs and culture
- Engage women and men in setting their own resilience goals, measuring progress and planning for sustainability
- Tailor facilitation styles and materials to audience needs
- Plan for medium-term engagement
- Design disaster response and recovery projects to support disaster resilience
- Build in post-project support to sustain resilience

Introduction

PURPOSE OF THE STUDY

This study, *Sustaining Resilience*, seeks to answer the questions that organizations implementing projects to strengthen disaster resilience may not always have the opportunity to ask, namely: *Are the changes brought about by a resilience-building project sustained after the project ends? If so, why?*

The study is based on field research in Guatemala, Bangladesh and Vietnam, where Catholic Relief Services implemented projects to strengthen peoples' capacities to prepare for, respond to and recover from disasters. The research aimed to establish which activities the women and men who had participated in the projects were still doing three years later, and why. It also aimed to find out whether the women and men still felt resilient—as final evaluations had indicated—and the reasons for that.

CRS conducted this study to enhance its resilience programs based on what the people in the communities we assist think helps them to become and remain resilient to the hazards they face.

BACKGROUND

Sustaining Resilience focuses on the women and men in the communities in Guatemala, Bangladesh and Vietnam where CRS implemented disaster risk reduction projects between 2013 and 2016. The projects were designed through a participatory process that focused on building resilience to the specific hazards people in the project areas faced.

The activities varied from country to country, and included strengthening or establishing early warning systems, household-level disaster preparedness training, hazard-resistant construction techniques to strengthen homes, improved agricultural practices, animal husbandry, livelihoods diversification, savings groups, and other activities identified by the communities.

Final assessments of the projects were carried out in mid-2016, when their funding periods were drawing to a close. During the assessments, participants indicated that they felt more resilient, and identified and discussed the activities that they expected to continue doing by themselves, without CRS support. *Sustaining Resilience* revisits these discussions and looks at what has happened since. The research aimed to establish which activities the women and men who had participated in the projects were still doing three years later, and why.

Overview

PROJECTS IN THIS STUDY



1. GUATEMALA Café Verde (Green Coffee)

CRS and its partner, Pastoral Social Caritas de San Marcos, worked with more than 3,300 people in over 700 households in coffee-growing communities in the Department of San Marcos. In 2012/13, the area began to be seriously affected by *la roya*, or coffee leaf rust, a disease that can quickly destroy coffee plants and cause farmers to have poor or no coffee harvests, and thus decimate their income.

During the final assessment, women and men said they would continue to maintain the plant nurseries they had established during the project, in order to regularly replace old and diseased coffee plants with a disease-resistant variety, to maintain healthy, coffee-producing plants. They also said they would continue the savings groups established during the project.

2. BANGLADESH Make Us Knowledgeable and Trained in Emergencies (MUKTE)

CRS and its partner, Caritas Bangladesh, worked with more than 30,800 people in over 6,000 households in communities in Monpura Union, an area vulnerable to floods, high winds and tropical cyclones, as well as ongoing river erosion.

During the final assessment, women and men said they were most likely to continue to apply the house-strengthening techniques they had learned, namely raising the plinth, using cross-bracing and cross-beams, and tying down roofs. They also said they would continue to use the early warning systems, including participating in drills and using the equipment—such as megaphones—provided by the project.

3. VIETNAM Together: Strengthening Community Resilience to Natural Disasters

CRS and its partner, the People's Committee of Dien Ban, worked with more than 35,000 people in over 8,800 households in communities in Quang Nam Province. The area is regularly affected by typhoons and flooding, which put lives at risk as well as damaging homes and livelihoods.

When consulted about which activities they would continue after the project ended, women and men said they were likely to continue using hazard-resistant techniques to reinforce their homes and animal shelters, store food and water before flooding, use early warning and evacuation plans for people and animals, and participate in drills.

Methodology

The study draws on rich qualitative data, provided largely by the women and men who participated in the projects. Additional key stakeholders were interviewed to complement the input provided by project participants.

The first step was to review documentation from each of the three projects to identify up to five resilience-building activities that participants had expressed an interest in sustaining. This information was then validated or adjusted through two focus group discussions—for women and men separately—in each location. Next, 120 in-depth interviews were conducted with project participants. In each location, women and men were selected randomly from the communities that had been engaged in the project, and invited to participate in the study. Forty interviews—with 20 women and 20 men—were held in each location, complemented by a small number of interviews with other stakeholders in the project locations. Photographs of the activities that participants said they would continue were used as aide-memoires and to focus the discussions.

Interview guides were designed to systematically explore whether and how the following factors—which are known to affect behavior change in general influenced the sustainability of resilience-building activities outcomes: 120 IN-DEPTH INTERVIEWS WERE CONDUCTED WITH PROJECT PARTICIPANTS, BOTH WOMEN AND MEN



1. Effectiveness

To what extent did the activity help the participant achieve their objectives? To what extent did it reduce disaster risk?



2. Risk understanding

.....

To what extent did the participant's understanding of their vulnerability, capacity and exposure to relevant hazards influence their behavior?



3. Prompts

What or who reminded the participant to do the activity after the project ended?



4. Frequency of demand

How often was the participant motivated/ required/prompted to continue the activities, and how might this have influenced sustainability?

5. Customs (or habits) and culture To what extent did customs (or habits) and culture influence the participant to continue with activities introduced during the project?



6. Social approval

To what extent did the views of friends, family and other social interactions influence the participant to continue what they had learned during the project?

.....

7. Policy

What laws or rules—including informal ones—affected the participant's behavior, and how?



8. Connectivity

What relationships with other entities and groups were created or strengthened during the project, and what influence did these have on the participant's disaster risk reduction actions?

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9. Other influences

How did other things—such as the advantages and disadvantages of the activities, economic advantages, the facilitative skills of staff or volunteers, the past experiences of participants—influence the participant to continue to apply the skills they had learned through the project?

Throughout this document, the main factors are presented in order of influence, starting with the factor that appeared to have had the greatest influence on women's and men's behavior since the project ended.

Interviews also included open-ended questions intended to draw out the participants' perceptions of the nature and extent of their resilience and the resilience of their community to withstand future disasters, three years after the project had ended.

The data collected in each location were disaggregated by gender and analyzed separately, then collectively, to ensure that gender differences were noted in each setting. The factors that influenced most women and men were identified, as were the aspects of their lives, livelihoods and social relations that, in their words, demonstrated their capacity to reduce the impacts of hazards and other threats.

The influential factors identified for each project location were then compared across the three countries, activities and hazard types. From this second level of analysis, conclusions were drawn about which factors may be most important for sustaining resilience-building activities, and how these may differ in relation to specific hazard contexts and activities, and for women and men. Where possible, trends in what women and men saw as evidence of their resilience were also identified, to produce learning for project design, monitoring and final assessment. The data collected in each location were disaggregated by gender and analyzed separately, then collectively, to ensure that gender differences were noted.

Activities discussed in the key informant interviews

| Guatemala | Bangladesh | Vietnam |
|-----------------------------|---|--|
| Coffee plant nurseries | Strengthening early warning systems | Strengthening early warning systems |
| Grafting coffee plants | House strengthening | House strengthening |
| Crop diversification | Vegetable gardening on raised beds | Livestock preparedness (shelters) |
| Savings and loans groups | Building raised roads through cash for work | Household-level disaster preparedness |

Findings

GUATEMALA

Project: Cafe Verde (Green Coffee)

La Reforma, Nuevo Progreso and Tajumulco, San Marcos department | April 2014 - March 2016 Partner: Pastoral Social Caritas de San Marcos | Participants: 3,366 people in 765 households



This project focused on agricultural extension efforts to help smallholder coffee-farming families mitigate coffee leaf rust disease and diversify their livelihoods. Besides the key activities mentioned below, the project aimed to strengthen connections with the National Coffee Association, Anacafé, for longer-term technical support. It also included savings groups as well as coordination with government to promote best agricultural practices.

Key activities



Photos by Oscar Leiva/Silverlight for CRS

Coffee plant nurseries: Participants

transplanted rust-resistant coffee seedlings into individual potting bags, and tended them until they were large enough to use to renovate plants on their farms by substituting old or diseased plants with the resistant variety.



Grafting coffee seedlings: A seedling of one coffee variety was grafted onto the root stock of a more robust variety, creating a hybrid more resistant to coffee leaf rust.



Savings groups: The project promoted and provided fiscal management training for self-organizing savings groups of 21 members each on average. Memberssome of whom assumed administrative roles-met regularly to put aside a minimum amount of money, which was stored in a box. They could withdraw the money whenever they needed it, and could request small loans.



Crop diversification: The project promoted diversification through the introduction of macadamia and cacao trees into the coffee plots. These provided a diversified income for the farmers.

On the following pages, we explore which resilience-building activities had been sustained three years after the project ended and why.



COFFEE PLANT NURSERIES

Tending young plants and substituting diseased plants with healthy ones



All the women and men interviewed (20:20) had developed coffee plant nurseries in their yards or farms during the project. Three years after the project ended, 15 women and all 20 men were still actively tending their nurseries. The following factors had influenced them most:

Risk understanding:

This activity addressed several sources of risk associated with coffee farming besides coffee leaf rust. Both the women and the men interviewed understood that the coffee variety promoted by the project was resistant to coffee leaf rust and produced high-quality beans. They also appreciated that replacing older plants with new ones-a practice they had not systematically undertaken before they learned this approach during the project-mitigated the risk of a poor or failed harvest because younger, healthier plants are better able to cope with variable environmental conditions and are less susceptible to disease. The women, more than the men, also appeared to understand the long-term risk to their livelihoods of an aging and deteriorating plant stock.

Other influence— Economic benefits: At the project's start, the women and men were strongly motivated by the opportunity to renovate their coffee plant stock using younger, healthier plants to increase their production and income. As coffee continued to trade at a low price globally, and they were forced to sell their crop through intermediaries, a larger harvest could make an important difference in terms of income. The small but meaningful economic advantages they had seen in the years since the project's nursery activities began had strongly encouraged them to continue growing and planting. Some of the women also noted additional economic benefits. such as growing seedlings and selling them to others, and avoiding having to buy any themselves.

46 Some people have had nurseries for a long time. Anacafé promoted them. But they used smaller bags, so we explained how larger bags helped the root

system to grow strong. - CRS staff member

Customs (or habits) and culture: Before

the CRS project, the communities had benefited from technical support from Anacafé, the National Coffee Association, which included advice on nurseries and coffee plant renewal. CRS project support differed in several ways from the Anacafé support: For example, CRS promoted a disease-resistant coffee variety, environmentally friendly techniques for potting and tending seedlings, and the creation of hybrids through grafting. Nevertheless, as the women and men in the communities were already familiar with the basic practices of coffee nurseries, they were more able to reincorporate the new activities into their daily chores.

* * * * *

Reasons women gave for no longer maintaining their nurseries included: temporary suspension of the activity as they had renovated all their coffee stock in previous years; focusing on developing an alternative crop (macadamia); and lack of time due to childcare demands and domestic chores.



GRAFTING COFFEE SEEDLINGS

Grafting coffee plants onto more robust root stock



About half of the women (11) and almost all the men interviewed (19) had learned to graft coffee seedlings during the project. Three years after the project ended, 7 women and 17 men were still practicing the technique. The main reasons why they had continued were:

Risk understanding: Most of the women and men who



generally stronger and lasted longer, thus reducing the risk of a low or failed harvest due to adverse conditions or diseases.



Other influence— Economic benefits:

Both the women and the men had seen their farms produce more higher-quality coffee as a result of the introduction of the hybrid variety. This benefit had been particularly evident thanks to the two-year duration of the project, which enabled participants and staff to observe and celebrate achievements over time.



Social approval and Connectivity:

Community members respected those who knew how to graft and encouraged

them to continue. Women, in particular, said they were strongly encouraged by their family members, friends and neighbors to keep up the practice, and felt respected and empowered as a result of their recently learned skill. More than half of the men who practiced grafting said they were encouraged and reminded to keep up the practice by Anacafé technicians, with whom they interacted for other coffee production and promotion initiatives, and by people in their savings group.

Grafts are more resistant and there is less risk of plants dying. It is a safe investment.

- Male participant



Effectiveness: At the start of the project, both the women and

the men had been excited by the opportunity to learn a new skill that would improve their crops. They participated in workshops and received regular visits from Caritas and CRS staff, during which they could ask for guidance on how to improve their technique. Mastering, or in the case of some, regaining the skill, and seeing their healthy coffee stock grow as a result, was a clear source of encouragement.

* * * * *

The reasons given by the women who had not continued to practice grafting included: either they had no more land to plant out, or lacked the time due to family demands. Of the two men who had not continued, one had lost confidence in the utility of the technique—possibly due to not doing it properly and the other did not need to replant at scale that year.



CROP DIVERSIFICATION

Planting cocoa and macadamia trees to add alternative income sources to coffee



Eighteen of the women and 20 of the men interviewed had participated in this activity, planting either cocoa or macadamia depending on their suitability to the conditions (soil and altitude) in their community. They all continued, for the following reasons:

Risk understanding: The women believed this activity reduced

risk in various ways. Most knew that macadamia and cocoa were not at risk of coffee leaf rust. Others saw themselves as less vulnerable as they had an alternative income source with a steady market value, should their coffee harvest fail or be poor. Others saw their increased production and higher income as reducing their vulnerability in general. Men overwhelmingly saw macadamia and cocoa as complementary sources of income. They also saw that the income from fruit sales enabled them to buy fertilizer and pesticides to maintain their coffee production and protect it from disease.

Other influence– Economic benefit: Women and men were initially drawn to this activity because they were told it would produce a harvest at a different time to coffee, thus providing a complementary income during lean periods. Many jumped at the chance of training, seeing it as an opportunity to learn about a crop that could give them access to income. Over time they realized that it offered a greater return on investment than coffee: the price was higher and the time required to produce it comparatively lower.

Men were encouraged by producing a crop that could be sold or consumed at home. Some even regarded the income from the fruit trees as compensation for the losses they had suffered due to coffee leaf rust.

It is better to have diversification. We realized that macadamia helps us from April to September to pay the workers. – Female participant

Macadamia produces in winter and summer instead of only once a year like coffee. – Female participant When coffee prices fall, we see that macadamia generates more income. It gives us some money in times of low coffee prices and it is less work. – Female participant



SAVINGS GROUPS

Forming community savings and loans groups



All the women (20) and most of the men interviewed (19) had formed savings groups during the project following CRS' Savings and Internal Lending Communities, or SILC, approach. Three years after the project ended, most (18:18) were still saving in this way. The main reasons why they had continued were:

3-6

Effectiveness: Both women and men were attracted to

the savings group activity because they wanted to learn to save systematically. None of them had previously had successful and sustained saving experiences; instead, all found that their attempts had been thwarted by ongoing or unexpected household needs. Through the project, they learned to save and manage those savings, thus proving to themselves that this discipline was possible.

Women wanted to save for items related to their children and families—including for school materials, uniforms and medical expenses—while men predominantly wanted to save for improved livelihoods through farming inputs, and to create a buffer in case of emergencies. Men, but not women, were attracted by the prospect of access to loans through the Savings and Internal Lending Communities groups. Over the course of the project and since it ended, most women and men had used the funds they had saved for their intended purposes, and some men had obtained and repaid loans. They were committed to continuing to meet and save because they saw that the system worked.

Prompts: Most savings groups met weekly during the project, some fortnightly. Participants were initially invited or reminded by Caritas or Café Verde staff, but, as time passed, women and men were reminded or encouraged to attend by other group members or group leadership. The sense of a united community also spurred them on. They also found the regularity of meetings (e.g. first Friday of the month) very helpful for continuity as it became a fixture of their calendars.

The two women and one men who were no longer participating attributed this to not being called for meetings or a general disillusionment within their groups that the economic situation did not allow them to save.

6 The meeting is always on the first day of the month, so I don't need anyone to remind me. – Female participant

66 The group's director, treasurer and accountant remind me to come to the meeting. – Female participant



HOW RESILIENT DO PARTICIPANTS FEEL NOW?

Women and men both thought they had enabled their *families* to become more resilient because:

- \blacksquare They had a healthy and renewed coffee plantation
- They had improved production and an increased income from coffee, as well as increased income from additional crops
- They had savings for unforeseen expenses

Women also considered that they were more resilient because:

- \blacksquare They had a plant nursery
- ☑ They used a disease-resistant coffee variety
- Both husband and wife were generating income
- Due to their increased income, they could pay day laborers to help tend their crops

Men thought they were more resilient because:

- They were involved in organized activities and groups that would enable them to collectively overcome disasters or misfortunes.
- Interpretation They could get loans from the savings group (or cooperative)

Women and men both thought their *communities* were more resilient because:

They had become more united through the joint activities to improve their crops, and because they were in savings groups.

Women thought their *communities* were more resilient because:

- They grew more than one crop
- More farms had young, healthy plants

Men saw their *communities* as more resilient because:

Many people had participated in the training on techniques to improve production and reduce susceptibility to diseases.

WHAT WILL HAPPEN IF COFFEE LEAF RUST RETURNS?

The women and men interviewed believed that their communities would incur losses if coffee leaf rust returned to the area, but that those who had renovated their coffee stock with a disease-resistant variety, knew how to use techniques to combat the rust and could afford pesticides would be less affected than those who had not used the techniques. They said that they would be spared not just economic hardships but also the emotional burden of uncertainty caused by repeated shocks.

The women were more hopeful than the men that their diversified crops such as macadamia and cocoa—would help them to manage if they faced a future leaf rust crisis. Men recognized that their continued dependency on coffee would keep them poor and make them vulnerable to future outbreaks, but were hopeful that their savings would enable them to buy pesticides to guard against coffee leaf rust.



Women and men both thought they had enabled their families to become more resilient because they had a healthy and renewed coffee plantation.



Women and men both thought their communities were more resilient because they had become more united through the joint activities to improve their crops, and because they were in savings groups.

BANGLADESH

Project: Make Us Knowledgeable and Trained in Emergencies (MUKTE) Monpura Union, Bhola District, Barisal Division | March 2014 - May 2016 Partner: Caritas Bangladesh | Participants: 30,880 people in 6,176 households

CHINA BANGLADESH INDIA Implemented in a remote and underserved area that experiences frequent tropical cyclones and flooding, the project aimed to support participants to build resilient community structures and households, and save lives and livelihoods in the event of natural disasters. Besides the key community-led DRM planning activities mentioned below, the project included a water, sanitation and hygiene element. *Mukte* means 'independence' in Bengali.

Key activities



Photo by Md. Jahirul Islam for CRS

Strengthening early warning systems The project linked the community with the government's Cyclone Preparedness Programme¹ and associated early warning system that had previously not been well understood by the communities where CRS worked.

 A joint program of the Government of Bangladesh and the Bangladesh Red Crescent Society that provides a robust early warning system for the coastal population of 13 districts. Participants learnt the triggers for a warning, what those warnings meant, and what to do when they sounded. They also learned pre-evacuation planning, how and when to move valuables to higher ground, how to evacuate in an orderly way without leaving anyone behind, how to store food, medicine and firewood in a protective structure to take to the cyclone shelter, and other topics.

Vegetable gardening on raised beds

Participants received materials and learned how to create raised beds on which to cultivate vegetables, to protect the plants from floods.



Photo by Md. Jahirul Islam for CRS

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Photo by David Snyder/CRS

House strengthening

Participants learned how to create a raised plinth for their home, how to install cross-beams to strengthen the structure, and how to arrange their roofing and tie it down to reduce the risk of it being blown off by the wind.



Photo by Ismail Ferdous/CRS

Building raised roads

Through a cash-for-work scheme, men and women from the community provided labor to build up embankments to raise the road and thereby create a protective wall to keep flood waters out of the community.

On the following pages, we explore which resilience-building activities had been sustained three years after the project ended and why.



STRENGTHENING EARLY WARNING SYSTEMS

Drills and pre-evacuation planning



All of the 20 women and 20 men interviewed had participated in the CRS training on EWS. Of these, 20 women and 18 men continued to participate in the drills and to follow instructions for evacuation when there was a real warning. The main reasons why they had continued were:

Frequency of demand: On average, the EWS was activated two to seven times a year. Some of these were in response to actual warnings disseminated by the Cyclone Preparedness Programme, and some were drills. This frequency meant that protocols were reinforced in community members' minds, and what they had learned through the project was retained.

Effectiveness: Most of the women and men interviewed believed that the EWS reduced the risk of losing their lives and assets in a cyclone. Two cyclones occurred within the project time frame, causing loss of life and property, but no lives were lost in the communities involved in the project. People were confident that what they

Frequency of demand:had learned about the EWSOn average, the EWShad helped to protect them.

The women believed the EWS was effective because it alerted them to go to the cyclone shelter before the peak of a storm. Some also said that the EWS reduced their risk by enabling them to protect their possessions and livelihood assets. Also, they had access to food, medicine and firewood in the shelter, placed there as part of disaster preparedness activities.

The men believed the training they had received about the EWS reduced their disaster risk because they understood the signals and protocols that enabled them to evacuate their families and vulnerable people in the community with advance notice, before storms hit.



Prompts and Connectivity: During the project, women and men relied heavily on Caritas Bangladesh staff to mobilize them

to participate in EWS activities and follow the procedures they had learned. Three years on from the project's end, women were mainly encouraged by their family members and neighbors, and also by the village disaster risk management team and committee members of the government-run CPP, which is responsible for dissemination of the early warning messaging and, since the project, has been more actively involved in drills and evacuations. The men were mainly encouraged by the village DRM team, CPP committee members and the union officer, as well as by community members who had worked for Caritas Bangladesh during the project. Several women and men acknowledged that the CPP was the entity that sounded the alerts, and therefore played a crucial role in the effectiveness of the system, including the delivery of prompts.

We know the signals and what to do, and we can evacuate the old and young first. – Male participant



HOUSE STRENGTHENING

Raising the plinth, installing cross-beams and tying down the roof to protect the house from flooding, high winds and cyclones



All of the 20 women and 18 of the men interviewed had participated in the no- or low-cost house-strengthening activity. Most of the men and women (18:18) continued to apply the techniques, for the following reasons:

Effectiveness: Both the women and men had experienced storms and floods of varying severity every year and had thus seen first-hand that the techniques they had learned during the CRS project effectively protected the structures of their homes and the lives of their families.



Frequency of demand: Both

women and men applied the techniques at least once a year, and half of them did so twice a year, prior to the cyclone seasons. Social approval: The women—and to a slightly lesser extent, the men—were encouraged by their families, friends and neighbors to continue the practice, which added to their own conviction that these techniques worked and were worth continuing.

Other influence— Facilitation of learning: The photos and other visuals that Caritas Bangladesh and CRS staff used in training sessions had helped women to learn how to use the hazard-resistant construction techniques, as had the staff's friendly manner and clear explanations. Women also found it helpful to participate in group training sessions, where they had the opportunity to ask questions about the techniques and discuss their experiences with others, as well as receive household visits from project staff, during which they could get customized advice and hands-on support. Men also found group training sessions and meetings helpful in general, but were less influenced than the women by the facilitation style or how other types of support were provided.

* * * * *

Of the two women interviewed who had not continued to use the techniques, one said she was prevented from doing so by her childcare responsibilities.

66 People ask where we learned this pattern of tying down the roofs and these other techniques.

— Male participant



VEGETABLE GARDENING ON RAISED BEDS

Planting household vegetable gardens on raised beds



All of the 20 women and 19 of the men interviewed had participated in the project's raised vegetable gardening activities. Almost all the women (19) and all the men (19) had continued the practice since the project ended. The main reasons why they continued were:

Effectiveness: Almost all the women believed that this activity reduced losses from flooding because it enabled them to have a year-round supply of vegetables, even when the surrounding areas and other crops were flooded. The women and men also believed that increasing their income through vegetable sales, and being able to save some income for emergencies, reduced their vulnerability to a range of shocks and stresses. It is also important to note that neither the women nor the men had the same confidence that the technique would prevent vegetable losses during *major* storms and high winds.

Other influence– Economic benefits: Both the women and the men were strongly motivated to participate in the raised vegetable gardening activity because of the opportunity to earn an income from vegetable

sales.

They were also attracted to the possibility of growing fresh food for their families' consumption, thereby reducing expenses. Their experience during the project showed them that this was true, thus encouraging them to continue.



Photo by Md. Jahirul Islam for CRS

 We consume the vegetables ourselves and can save the money we make when we sell them, to have some for times of need.
 – Female participant

6

I can cook vegetables in the shelter even during disasters when they are not available in the market.

– Female participant



BUILDING RAISED ROADS THROUGH CASH FOR WORK

Building and strengthening roads and embankments to withstand storms



Just over half the women (11) and most of the men (18) interviewed had participated in the cash-for-work component of the project. Only one women and two of the men had voluntarily continued to help maintain the infrastructure, although the roads were still functioning.

Although participants' primary motivation for signing up for this activity was to earn an income in order to buy an asset or start a business, the majority also wanted to reduce future risk to their own households and others in the community in the following ways: the raised road would improve access to the cyclone shelter as it would be passable even in a storm, also enabling children to continue attending school during flood periods. The embankments that raised

the road would also protect people's homes, crops and livestock by preventing inundation.

Even though they regarded the raised and reinforced road as key to their communities' resilience, most interviewees did not continue to maintain the road or embankments because they believed that such activities should be continued by organizations or the government, who would pay for their labor.



C When people from outside the community see this type of high road that we have built. they are surprised and congratulate us. They say that it will protect us from disasters for a long **time.** – Male participant



Photo by Ismail Ferdous/CRS

A note

This study focused on resilience-building activities that were sustained after the project ended. Although few of those interviewed had continued to build or maintain raised roads, this activity is included here because such roads were cited by interviewees as a key indicator of why they felt resilient. Because cash for work had ceased when the project ended, this activity cannot be directly compared during and after the project i.e. after the project ended, there was no payment for this work. While people may have had the will to continue it, they may not have had the capacity, because roadbuilding and the strengthening of embankments is not work that can easily be undertaken by an individual alone, while the other activities in this study could be carried out individually.



OTHER CONSIDERATIONS

Gender/community-level organization for DRM

When asked if a disaster risk reduction committee existed in their communities, the women's answers revealed a lack of awareness of village structures and governance. While 13 confirmed the presence of a village DRM team, 6 who lived in the same communities said that one did not exist. This may be due to traditional gender roles and different levels of access by women and men to information and power structures in their communities.

By contrast, almost all the men interviewed were aware of the village DRM team. Half knew of the village DRM team set up by Caritas Bangladesh during the project, and several mentioned the village help team (VHT),² CPP, Ward Disaster Management Committee (WDMC) and other committees by name.

HOW RESILIENT DO PARTICIPANTS FEEL NOW?

Women and men both thought they had enabled their *families* to become more resilient because:

- ✓ They had a house constructed or improved using hazard-resistant construction techniques that made it less vulnerable to storms and flooding
- They grew vegetables on raised beds, to protect the plants from flood waters

Women also considered that they were more resilient because:

- \blacksquare They were better off economically
- ☑ Their children went to school regularly
- They had better hygiene habits
- Both husband and wife were generating income
- Their increased income enabled them to pay day laborers to help tend their crops

Men also thought they were more resilient because:

☑ They had latrines

Women and men both thought their *communities* were more resilient because:

- \blacksquare They had raised roads
- ✓ They had strong houses



Both women and men thought that the most important mark of their *families*' increased resilience was having a house that was constructed or improved to make it less vulnerable to storms and flooding.



Over half of the women interviewed and almost all the men said that having a raised road was the strongest evidence of increased *community* resilience.

Youth were engaged and trained to form village help teams that were instrumental in managing the early warning systems and equipped with megaphones, radios, information dissemination guidelines and clear action steps for households and communities.

Women also thought their *communities* were more resilient because:

- They had good communications systems that provided early warning of cyclones
- \blacksquare There were cyclone shelters
- They could plant and grow vegetables without worrying about losing them in floods
- People used latrines, and the community was clear of open defecation

Men also saw their *communities* as more resilient because:

People had planted trees to protect their homes from strong winds

WHAT WILL HAPPEN WHEN THE NEXT CYCLONE AND FLOODS OCCUR?

Most of the women and men interviewed were confident that those who had carried out DRR actions were less likely to suffer major damage to their homes or death or injury of family members in future hazard events. They saw a significant difference between houses without raised plinths or strengthened structural components and those that had been structurally improved with raised plinths. They were more concerned for vulnerable people—children and older people whom they thought might die in a hazard event, than for themselves whom they considered safer.

The absence of an embankment to protect some areas of the community, and a weakened embankment in others, was one of the key remaining problems they saw for the more vulnerable of their community, along with being too far from an adequate cyclone shelter, or not receiving a warning about an impending storm.

The women and men recognized that their crops, fishing ponds and some livestock continued to be exposed to storms and that if a *very strong* cyclone occurred, their homes would probably suffer some damage, but less than before they applied the strengthening techniques they had learned in the project.

They thought that having savings would help them most to recover from disaster losses, as well as being able to participate in a cash-for-work project immediately after the disaster and, to a much lesser degree, having access to loans. Men also highlighted the need for the embankment to be extended and strengthened, as this was the only way to protect the community.

66 If there was a storm, the damage would be on a small scale. – Female participant

Women thought their communities were more resilient because they had good communications systems that provided early warning of cyclones.



Women and men saw a significant difference between houses without raised plinths or strengthened structural components and those that had been structurally improved.

66 The storm would damage our crops but not our house. – Male participant

VIETNAM

Project: Together – Strengthening Community Resilience to Natural Disasters Dien Ban district, Quang Nam Province | November 2013 - May 2016 Partner: People's Committee of Dien Ban | Participants: 35,000 people in 8,883 households



The highly participatory project focused on strengthening the disaster risk reduction capacities and increasing the resilience of vulnerable communities in 27 villages by helping them to prepare for and respond to natural hazards, and engage with government for support. Besides the key activities mentioned below, the project included livelihood diversification activities and community savings groups.

Key activities



Photos by Lisa Murray/CRS

House strengthening Project participants learned simple hazard-resistant construction techniques to strengthen their homes. They used cross-bracing, tied down roofs to protect them from damage or loss due to high winds, and improved drainage around their homes. Household-level disaster preparedness Project participants learned to elevate food stocks so that they were protected from flood waters, so the family had access to food and water during floods and storms.





Strengthening early warning systems ensured people received warnings in advance of floods, high winds and tropical storms so that they were able to take action to protect lives and livelihoods.



Livestock preparedness Project participants learned appropriate techniques using local materials to build shelters and elevated areas for their livestock to protect them against floods and storms.

On the following pages, we explore which resilience-building activities had been sustained three years after the project ended and why.



HOUSE STRENGTHENING

Raising the plinth, installing cross-beams and tying down the roof



All of the women and men interviewed who had taken part in the project's house-strengthening activities (15:18) had maintained the practices they learned. The main reasons why they continued were:

Effectiveness: The women and men alike were convinced that the actions promoted in the project prevented their houses from being damaged by a storm or flood. In 2013, before the project began, a storm destroyed 49% of the houses in these communities. Two years into the project, after most households had applied some house-strengthening techniques, a storm of a similar magnitude struck, but only 3% of the houses were destroyed. Effectiveness is closely connected to 'risk understanding' (below).



Risk understanding:

Before the project began, some of the women and men understood why their homes were exposed and vulnerable to flooding and storms. Through the project, they learned that despite being located in a typhoon's path, if they anchored their zinc roof sheets with wire, the roofs were less likely to be blown off in high winds. They also learned that if they put valuables, food stores and water containers on a raised platform, they were less likely to be affected even if flood waters entered their homes. Some men also understood that an investment prior to storms reduced the risk of sudden, high expenditure to replace, repair or rebuild everything in their homes and the structure itself.

> **Prompts and Connectivity:** Throughout the 2.5 years of the project,

CRS' partners-local government and village authorities (village task force, or VTF)-taught and reminded community members to apply the house-strengthening techniques and to reinforce them before each rain or storm season. They produced and used booklets with simple graphics to show people how to do each technique. After

the project ended, VTFs, in line with their delegated authority from official government structures, continued to make house-to-house visits to remind people how to protect their homes and families, and provide hands-on support to community members who had difficulty using the techniques on their own, such as the elderly, people with disabilities, and single women.



Frequency of demand: As the household

preparedness component involved using a checklist to carry out certain actions prior to the cyclone season, participants learned to tie down their roofing at least once a year and to routinely maintain it. The project created a habit that kept the practices fresh in participants' minds and was complemented by the prompts issued by the local government and village authorities, and by referring to the checklist developed during the project.

VTFs help households who don't have labor to move assets to higher places and strengthen their homes before disaster time. - Male participant **C** People are giving priority to strengthening their **houses.** – Male participant



HOUSEHOLD-LEVEL DISASTER PREPAREDNESS

Storing food, medicine and other supplies in an elevated location for emergencies



All of the 14 women and 9 of the men interviewed who had been involved in household preparedness activities had continued the practices they learned. The main reasons why they continued were:



Other influence— Basic needs: Most women and men were initially drawn to the household DRR activities because they wanted to protect their families from suffering, and this continued to be a strong motivation for them. Women in particular felt that it was their duty to ensure their families had food, water and other essential items at all times, and that this was especially important during disasters that shifted priorities and interrupted daily routines.

Prompts, Policy and Connectivity: The People's Committee of Dien Ban was CRS' partner for this project and was directly involved in training women and men from

the communities about household preparedness. After the project ended, the committee continued to remind communities about the practices through village-level meetings and through associated groups such as women's associations, youth groups and farmers unions.

Storing food is a must-do activity because in the flooding you can't go anywhere to buy food for your family. – Female participant

I learned to store food and water so I don't have to ask for support from my neighbors.

Female participant

66 Before, I only stored enough food and water for 3 or 4 days, but, after the CRS training, I increased the quantity to enough for 7 days. Learning from neighbors, I now store enough food and water for my family for 15 days. And CRS training encouraged me to store basic medicine and hygiene items for women.

– Female participant



STRENGTHENING EARLY WARNING SYSTEMS (EWS)

Audit, upgrade and implementation



Of those interviewed, only seven representatives from the communities—three women and four men—had participated in these activities to improve the existing early warning systems. They all continued to support the EWS and participate in drills and response actions. The main reasons for their ongoing involvement were:

Customs (or habits) and culture: One of the two original sources of motivation of the women and men interviewed was to have access to information that would allow them time to support others to prepare for an impending hazard. All those who continued were still strongly motivated by the possibility of being able to give a timely warning to family and others. Their sense of duty is a reflection of a culture in which it can be considered an honor to be asked to carry out tasks for the betterment of the community.



Prompts and Connectivity: The local government manages the EWS, including monitoring hazards,

disseminating information and sounding the siren when necessary, and the village task force supports the community to act and evacuate. The men and women who participated in the EWS training understood their role in ensuring early warnings reached everyone in their communities, and helping people—especially the elderly and any women who needed assistance—to respond.



Photo by Lisa Murray/CRS

I continue to take part in these activities because it helps me to receive weather information, if there is any change or if there is a disaster coming. With this information, I can move all my assets to higher places in a timely way, not in a hurry. I can also share this information with my neighbors. – Male participant



LIVESTOCK PREPAREDNESS

Building storm- and flood-proof cattle shelters with raised floors as well as platforms for fodder and water storage. The component included a cattle vaccination campaign and other animal husbandry training.



About half of the women (8) and men interviewed (11) had participated in this component of the project. All the women continued to use and maintain the cattle shelters, as did most men. The reasons why they continued were:

.....



Effectiveness:

Experiences during and since the project had shown them that the

cattle and their food supply were kept dry even when it flooded, and they had reduced livestock losses due to disease caused by cattle standing in flood water.



Frequency of demand / Non-disaster benefits: The

permanent structures built for this project provided cattle with a permanent place to shelter, not just in times of disaster. Both women and men used these shelters for their animals year-round, and thus needed to maintain them regularly.

* * * * *

The two men who had not continued to use the animal shelter were no longer involved in cattle rearing.



Photo by Lisa Murray/CRS

My cows are protected, with safe and clean shedding, sufficient food and vaccinations. - Female participant

If I protect my animals well it means that my income 46 is stable and protected. – Female participant

L I engage in livestock preparedness regularly to protect my family's assets. - Male participant



ALL ACTIVITIES

Participatory approach

Community members found that the project facilitators' participatory approach was what most helped them to learn the skills they needed, and to continue using them after the project ended. Learning from and with each other was key to creating a sense of shared responsibility and mutual support. The training style, which included practical exercises as well as theory, was particularly important to women. For the men, the materials were more important—being contextually relevant, with simple graphics, and including a checklist to apply straight after training.

Both the women and the men felt that the longstanding relationship between CRS, the local government and VTFs was important for building local capacity that would sustain activities after the project ended.

HOW RESILIENT DO PARTICIPANTS FEEL NOW?

Women and men both thought they had enabled their *families* to become more resilient because:

- Their houses were more resilient to typhoons because they had tied roofs
- They had stores of food, water and medicine for when typhoons hit and supplies were cut off
- Their animals could shelter in sheds that were raised and kept them safe from flood waters

Women also considered that they were more resilient because:

- ☑ Rain and flood water drained away easily from around their homes, because the area was clear of refuse
- \blacksquare They had a household plan outlining what to do in a disaster situation

Men also thought they were more resilient because:

They were disciplined and regularly took part in preparedness activities.

Women and men both thought their *communities* were more resilient because:

- ☑ There was an increased number of strong houses built to resist the typhoons
- \blacksquare Many households kept their animals in raised shelters
- The atmosphere was collaborative, with a strong collective commitment to preparedness



Women and men both thought they had enabled their *families* and *communities* to become more resilient because their houses had roofs that were more resilient to typhoons.

Women also thought their communities were more resilient because:

- Meetings of the DRR committee took place regularly and information was shared widely
- Coordination between the government and the community was good
- People had become more aware of when they needed to be more prepared, and when they should store food and water
- Fewer people were falling sick
- ✓ There was less poverty

Men also saw their *communities* as more resilient because:

- ✓ They had an early warning system that included equipment such as loudspeakers, river gauges and ways to rapidly disseminate warnings
- Communities were clear of refuse, so water could drain away easily
- ☑ In general, people's livelihoods were stronger

WHAT WILL HAPPEN IN FUTURE TYPHOONS?

Three-quarters of the men and women interviewed believed there would be little damage if a 'normal' typhoon came, due to the DRR work they had done. However, a significant number warned that if a *major* typhoon hit them, it would cause damage.

The women and men were convinced that the structural improvements to their housing and animal shelters would serve them well. They were also confident that their commitment to preparedness—including having and implementing a household preparedness plan, attending training, heeding preparedness reminders from government and using the EWS would protect them from losses.

Both the women and the men thought local collaboration—between friends, neighbors and relatives—was crucial for staying prepared and resilient, and recovering from any impacts. Having a plan for recovery would also help them to get back to normal quickly. Men in particular believed that working together to keep the community clean and to clear debris after disasters was important for their continued safety.

The whole community will be less damaged because we will receive the warning from the village task force. The community can be ok for more than a week when the flood happens.

The impact will be less because we are proactive and more experienced.

- Female participant

— Male participant

66 Our community will be very safe if a storm with same level as the past three years comes.

46

- Female participant

Male participant

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Men saw their communities as more resilient because they had an early warning system that included equipment such as loudspeakers, river gauges and ways to rapidly disseminate communications.

Conclusions and Lessons

Key resilience-building activities were continued by most project participants interviewed in all three countries.

In each of the three countries, multiple activities implemented during the project were sustained by the women and men interviewed in the communities three years after the projects ended. In **Guatemala**, a high proportion kept up the propagation of coffee plants in nurseries, grafting, crop diversification and savings groups. In **Bangladesh**, a similarly high proportion of project participants interviewed had continued to reinforce their houses, participate in the early warning system and plant their vegetable gardens on raised beds. And, in **Vietnam**, almost all project participants interviewed had continued to strengthen their homes, take household and livelihood preparedness actions, and play a role in the early warning system.

Women and men interviewees felt resilient as a result of participating in the projects and maintaining the practices they learned, but were realistic about the potential impacts of *extreme* events.

In all three countries, the women and men interviewed perceived their households and communities as resilient to future hazard events and disasters. For example, in **Guatemala**, people saw evidence of their resilience in their renovated, hazard-resistant coffee farms; their increased production that generated income; and in their savings. They also considered that their nurseries, diversified crops, community organization, and access to loans made them resilient to coffee leaf rust and other hazards.

In **Bangladesh**, they saw their strengthened homes, raised vegetable beds and participation in disaster risk reduction training as evidence of their *households'* resilience to cyclones and floods. They regarded their *communities* as more resilient due to the raised road and the early warning communications, which enabled them to access the cyclone shelter in time. They also saw the raised road as enabling them to keep accessing markets and children to keep attending school even in the flood season.

In **Vietnam**, interviewees saw evidence of their resilience to typhoons and floods in their strong, permanent housing, raised animal shelters and in being organized with DRM plans and food stores. They regarded having a well-equipped EWS that everyone understood, collaboration between neighbors (including in cleaning up the community), attendance at community meetings, information-sharing, and a positive attitude in general as evidence of *community*-level resilience. In each of the three countries, multiple activities implemented during the project were sustained after the project ended by the women and men interviewed.

In all three countries, project participants interviewed were aware that some people in their communities were more vulnerable because they had not participated in the resilience-building activities. In **Guatemala**, participants interviewed felt—to varying degrees—that they would suffer and incur losses in the event of another coffee leaf rust epidemic, but less so than before the project. In **Bangladesh** and **Vietnam**, there was an awareness that their resilience depended on the magnitude of the event, and that a *major* cyclone or typhoon would still cause significant damage.

Gender affects the sustainability of resilience-strengthening practices. There are similarities and differences in the ways women and men understand resilience and in what drives or enables them to continue to be resilient.

Although the women and men agreed on some of the key pillars of their resilience—such as having a house that was able to withstand cyclones, or crops that were resilient to disease—there were also differences. For example, in **Guatemala**, more men than women thought their *households* were resilient because they had access to loans from savings groups. Their views on what made a *community* resilient also differed. For example, in **Vietnam**, while both women and men considered that the early warning system was important for their community's resilience, the men valued the hardware more than the women did, and the women valued knowledge of the protocols more than the men did.

Also, while some of the factors that influenced women's and men's behavior were the same—such as effectiveness—there were important differences. In **Bangladesh**, for example, women were less likely than men to be encouraged by community organizations, such as the disaster risk management team, to sustain resilience-building activities, because many were not aware of the organizations' existence or who the members were.

There is evidence of effectiveness, economic benefits, risk understanding, frequency of demand, connectivity and prompts as the most important drivers of sustained resilience.

Effectiveness

For all resilience-building activities in **Bangladesh**, and for two out of four of those continued in **Guatemala** and **Vietnam**, people sustained them because they believed they were effective in protecting them from disaster losses. That belief was most often based on direct experience, for example, when women and men saw that the technique they had applied to reinforce their roof resulted in their home withstanding a storm—while the homes of others that had not used the technique were damaged—they were strongly motivated to keep up the practice. Although the women and men may have agreed on some of the key pillars of their resilience, there were also differences.

Economic benefits

When women and men saw that the steps they had taken to build their resilience also had economic benefits, they were motivated to continue those activities. In **Guatemala, Bangladesh** and **Vietnam**, the women and men maintained activities or practices they had learned during the project that increased their income (vegetable gardens in Bangladesh), provided greater income security (diversifying crops in Guatemala) or secured their income-generating assets (building hazard-resistant animal shelters in Vietnam).

Risk understanding

In locations where the disasters that people were preparing for did not recur frequently or had not recurred since they took up the practice, risk understanding had a major influence on whether or not they continued the activity that was supposed to reduce it. In **Guatemala**, for example, there had not been another outbreak of coffee leaf rust since the project began, but women and men understood what made their plants vulnerable to this disease and what they could do to reduce that vulnerability. They were also aware of other risks to their livelihoods and lives, including those that were not directly related to natural hazards, such as low market prices, and saw how the practices introduced by the project such as diversifying crops—also helped manage those risks.

Frequency of demand

In certain contexts, the frequency with which women and men needed to carry out activities to reduce disaster risk had a bearing on whether or not they sustained them. When people were required to frequently take part in an activity, such as act on a warning of an impending hazard and evacuate to a cyclone shelter—as long as they were also convinced of its effectiveness—they tended to continue to do it. This appeared to be most relevant for sudden-onset hazards, such as cyclones, for which people were required to recall and follow established protocols quickly.

Prompts

The external prompts and reminders that participants received were also among the most important factors for sustaining resilience-building activities. These ranged from being reminded by other members of a savings group to attend the fortnightly meeting (**Guatemala**), to receiving visits from village task force members to be encouraged to carry out household preparedness activities (**Vietnam**), or receiving evacuation instructions over a public address system (**Bangladesh**). These examples suggest that prompts and reminders are relevant both in contexts where the next hazard occurrence is unknown, as well when a hazard is imminent. Some serve as a means to encourage people to do something that might otherwise be deprioritized, such as going to a meeting. Others serve to motivate people to take actions that require significant effort, such as moving their family and livestock to an emergency shelter.

Connectivity

When projects connect participants with a trusted entity that will remain active in risk reduction and in contact with them after the project ends, this has a strong effect on sustainability. In **Vietnam**, for example, CRS' partner was the People's Committee of Dien Ban, which continued to be present in the communities and remind people of the household preparedness activities they should do throughout the year. In **Bangladesh**, the synergy created between the local EWS mechanism, the village disaster risk management team and the government's Cyclone Preparedness Programme helped to sustain drills and clear communications between the national meteorological office and the communities. The entity's authority or credibility was also likely to be an important factor.

The interaction of prompts, frequency of demand and connectivity appeared to be a powerful and mutually reinforcing combination of factors. It also appeared to benefit from project implementation over multiple years—all the projects lasted for between 2 and 2.5 years—as this offered more time for habits, routines and connections to become established.

Customs (or habits) and culture, social approval and other factors contribute to the sustainability of resilience-building activities.

While possibly less important to sustaining DRR actions than those described above, customs (or habits) and culture, social approval and

other factors can play a role. For example, in **Guatemala**, participants were accustomed to propagating, or seeing others propagate, small coffee plant nurseries through Anacafé-driven activities, so it seemed normal to them to continue operating the nurseries of the hybrid variety established during the CRS project. In **Bangladesh**, the encouragement of neighbors and family members replaced that of CRS and Caritas staff after the project ended, motivating women in particular to continue to use house-strengthening techniques. In **Vietnam**, some women were motivated to continue household preparedness because it enabled them to fulfil their role of ensuring their families' basic needs were always met.

Facilitation style affects the degree to which new DRR skills continue to be used after a project ends.

The way in which participants are taught new techniques affects whether or not they continue to use them without technical support, after a project has ended. In **Bangladesh** and **Vietnam**, where participants continued to use house-strengthening practices learned during the project, they attributed their mastery of the techniques to the practical, participatory teaching style of the project staff and the visual materials they used. Also, the collaborative style of learning together used in Vietnam reinforced a sense of a collective effort that benefitted the community, which in turn motivated participants to continue the practices.

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|------------|---|---------------|-----------------------|---------|------------------------|---------------------------------------|--------------------|--------|--------------|-------------------------|-------------------------|
| Vietnam | Livestock Preparedness | × | | | × | | | | | | |
| | Strengthening early warning systems | | | × | | × | | | × | | y approach |
| | Household-level disaster preparedness | × | | × | | | | × | × | Basic needs | articipator |
| | House Buinedthening | × | × | × | × | | | | × | Facilita- tion style | Ц |
| | אסיל לחיסטפא לפא אסיל | | | | | | | | | | |
| Bangladesh | Raised vegetable gardening | × | | | × | | × | | | Economic benefits | |
| | House Brinsdîtening | × | | | × | | × | | | | Facilita- tion style |
| | Strengthening early warning systems | × | | × | × | | | | × | | |
| | squorg grive2 | × | | × | | | | | | | |
| emala | Crop diversification | | × | | | | | | | efits | |
| Guate | Grafting coffee seedlings | × | × | | | | × | | × | nomic ben | |
| | Coffee plant nurseries | | × | | | × | | | | ECO | |
| | Factor | Effectiveness | Risk understanding | Prompts | Frequency of demand | Customs (or habits) and culture | Social approval | Policy | Connectivity | Other influences | |

Recommendations for Enabling Women and Men to Stay Resilient

GENERAL RECOMMENDATIONS

Engage women and men in setting their own resilience goals, measuring progress and planning for sustainability

Using accessible language, ask women and men what disaster resilience means to them and what will enable them to become more resilient. Design the project activities and budget to accommodate their common and different priorities. Engage women and men in identifying their own progress indicators and in monitoring progress, and adjust the project design and exit strategy in response to their feedback.

Raise awareness of effectiveness

In locations where hazards occur with relative frequency, including during project implementation, encourage project participants to collectively evaluate the results of using the new practices shortly after each hazard event. Consider using locally appropriate methods to disseminate this information, to raise awareness among other community members and potentially motivate them to replicate the techniques.

Invest in enhancing risk understanding

When promoting disaster risk reduction practices in communities where major hazards occur infrequently, or in communities affected by multiple, interdependent risks, ensure that the project includes sufficient time for participatory risk analysis. Understanding risks will enable participants to appreciate the appropriateness of the practices that the project is promoting and encourage them to continue to use them until their effectiveness becomes apparent in a hazard event. Also, listen to participants' own understanding of the risks they face, including risks not directly associated with natural hazards, and adjust the project design to address them as holistically as possible.

Design projects that reduce risk while enhancing livelihoods

Use a participatory approach to ask women and men about challenges to their livelihoods and how they think these could be addressed. Discuss how to generate economic benefits and build resilience to hazards, and agree on actions that aim to accomplish both objectives. Monitor them and keep exploring ways to make them mutually beneficial. Using accessible language, ask women and men what disaster resilience means to them and what will enable them to become more resilient.

Foster multiple sources of prompts and reminders

Through participatory assessment, design regular monitoring plans, and identify the entities, groups and situations that could prompt participants to carry out risk-reducing activities, especially after the project ends. Consider the role that local government, community-based organizations, and social networks could play, and include strategies to engage them, such as formal responsibilities in project implementation, and social events that enable participants' families, friends and neighbors to become involved and contribute to sustaining the behaviors and practices that sustain resilience.

Make connections with local organizations and authorities, and foster the development of relevant policies

Ensure the project is informed by and contributes to local DRR/DRM plans, and that it is connected to local structures. During implementation, explore how the local organizations and authorities could take on responsibility for parts of the project and for sustaining them in the longer term. Build the capacity of relevant staff within their organizations, and consider providing resources that would facilitate their ongoing involvement, such as donating equipment when the project ends. Build in learning and knowledge-sharing processes and invite representatives of local organizations and authorities to participate, thereby opening up opportunities for integration of the project's approach into their plans and policies.

Find synergies with local customs and culture

Before designing a project, carry out a highly participatory assessment using a methodology that takes into account social and cultural elements. In the communities where your organization intends to work, ask women and men what customs and values are important to them, and in what ways the project could contribute to sustaining positive local customs and culture, with the goal of encouraging people to sustain resilience-building activities after the project ends.

Tailor facilitation styles and materials to audience needs

Build the capacity of project staff and community mobilizers to use participatory approaches and teaching techniques that are appropriate for the literacy level, skills, culture, age and gender of their intended audiences. Monitor what kind of teaching methods are most effective in enabling participants to learn the practices or techniques that the project seeks to introduce, and adapt these accordingly.

Plan for medium-term engagement

Design and aim to secure funding for multi-year resilience-building projects as many of the factors that increase sustainability—such as effectiveness, frequency of demand, establishing prompts and strengthening connections—are more influential over time.



Consider the role that local government, community-based organizations, and social networks could play in prompting communities to continue resiliencebuilding activities, and include strategies to engage them.

Design disaster response and recovery projects to support disaster resilience

After major disasters, plan for rapid support that bolsters community capacities and those of local organizations with which the project has established positive connections. This should enable rapid recovery as well as generate learning on how prior resilience-building measures affected the hazard's impact.

Build in post-project support to sustain resilience

Find opportunities to plan for light-touch support to local partners and communities where resilience projects have ended. This might include actions to reinforce positive influences on sustainability, such as prompts and connections, as well as supporting learning processes to reinforce perceptions of effectiveness. Make adjustments to any techniques that are not achieving what they intended.

SECTOR-SPECIFIC RECOMMENDATIONS

Livelihoods

In contexts where people face structural obstacles to improving their livelihoods—such as lack of direct access to markets—consider accompanying or following resilience projects with longer-term livelihoods programming that directly tackles these obstacles. In Guatemala, for example, CRS is supporting the communities that benefited from the project in this study to roast, package and market their own coffee, cutting out intermediaries and enabling the farmers to earn more for their efforts.

To avoid disappointing losses, ensure that income-generating initiatives include appropriate risk reduction measures for the hazards to which they are exposed. For example, raised vegetable gardens such as those promoted in Bangladesh should be elevated enough to withstand higher-than-average flood levels, especially considering the impacts of climate change on hazard patterns.

Household-level disaster preparedness

Consider including a savings and loans component—using CRS' Savings and Internal Lending Communities methodology—in all resilience-building projects, but especially those with a livelihoods component, to ensure that people learn to systematically set aside resources for emergencies and hazard events that are more severe than usual, and invest in their own disaster resilience. This will enable the project to help people to intentionally address residual risk, the risk that remains despite all the resilience-building activities.

Cash for work

Link post-disaster or longer-term resilience-building cash-for-work activities with organizations or authorities that may be able to continue them, such as village-level committees that have access to government funding. This could become an important recovery or social protection mechanism for communities in which a resilience project has ended.

Early warning systems

Ensure that the different priorities and perceptions of women and men are taken into account in projects that include early warning activities. Find out what is most important to them such as learning the protocols, accessing food and cooking facilities in the evacuation location, having time to gather and protect their material assets, and assisting and rescuing the vulnerable—and provide training that is tailored to men's and women's needs as well as disseminating information through channels accessible to everyone.

House strengthening

The participation of all family members is very important for the continuation of activities related to the construction and maintenance of the family home such as moving earth for plinths and tying roofing, not least because these as most easily done when several people work together. Intentionally involving family members in specific training sessions could be helpful for ensuring that techniques are learned by multiple members of a household.

Consider including strategies to move beyond words of encouragement from neighbors and friends, to practical assistance for those who find it more difficult to maintain house-strengthening activities. By providing more opportunities for community members to learn the techniques, and raising awareness of what prevents some people—such as single women from continuing to apply them, it may be possible to ensure that the more vulnerable households are supported.



RESPONSES AT A GLANCE

This study highlighted the similarities and important differences in the ways the women and men in the project areas understood resilience, and what drove or enabled them to continue to be resilient. Men and women sometimes offered significantly different answers to the same open-ended questions they were asked in this study. Here we show where they agreed, and also where they differed.

Coffee plant nurseries

| Risk un How do | derstanding bes having a nursery reduce risk? | |
|--------------------------|--|---|
| We | We grow a disease-resistant variety e renovate our farms with young disease-resistant plants We raise seedlings in bags to make them grow faster | We grow a disease-resistant variety We use a different/new variety The new plants are healthier |
| Econon Why dia | nic benefits d you continue to tend your nursery? | |
| İ | To keep up the renovation process To get income by selling seedlings To avoid buying coffee plants | To keep up the renovation process To get income by selling seedlings To have healthy plants |
| | To improve/expand the farm To avoid losing my farm | To improve/expand the farm To avoid losing a harvest |
| | We did it before the project To help my family | • |
| | | l |

Customs (or habits) and culture Interview with CRS staff

"Some people have had nurseries for a long time. Anacafé promoted them. But they used smaller bags, and we explained how the larger bags helped the root system to grow strong."

Grafting coffee seedlings

Risk understanding

How does grafting reduce risk?

| The graft resists disease | The graft resists disease |
|---|-----------------------------|
| | |
| The graft is longer-lasting | The graft is longer-lasting |
| • | |
| The graft produces a higher-quality plant | It is a better investment |
| | |
| The graft allows plant to be better nourished | |
| The graft produces more beans | |
| ••••••••••••••••••••••••••••••••••••••• | |
| Effectiveness/Economic benefits Why do you continue to graft? | |



Social approval

Who or what reminds you to continue grafting since the project ended?

| Myself Family members Members of my savings group Seeing my neighbors do it | Myself Family members Family members Members of my savings group Members of my cooperative Former Caritas promoters Anacafé Seeing the renovated plantations |
|--|--|
| | |

Social approval

What do people say about you continuing to graft?

| lt's good | lt's good |
|---------------------------------------|-------------------------------|
| | |
| It's necessary | It's necessary |
| - | • |
| It improves the coffee plant | It improves the coffee plant |
| | |
| Nothing | Nothing |
| | |
| They encourage me to teach others | They encourage me to continue |
| | |
| They admire me because it's difficult | It's difficult |
| | |
| | They are happy to help me |
| | |

Crop diversification

Risk understanding

How does crop diversification reduce risk?

| Less exposure to diseases |
|--|
| |
| I am less vulnerable as I have additional income |
| |
| I can use income for fertilizer |
| |
| I have an alternative income source |
| |
| It compensates for rust losses |
| |
| By-products can be used for coffee production |
| |
| |

Economic benefits

Why do you continue to use crop diversification?



I like this activity

It gives me income to pay coffee workers

It provides an alternative income source

It's more profitable (more money for less work and lower-cost/no inputs)

The added crops can be consumed at home

I have space to diversify

Savings groups

Effectiveness

Why are savings groups effective?

| • | I can buy fertilizer and products to prevent rust | I can buy fertilizer and products to prevent rust |
|------|--|--|
| l ca | n get a loan for fertilizer and products to prevent rust | I can get a loan for fertilizer and products to prevent rust |
| | I can access the group's fund for emergencies | I can access the group's fund for emergencies |
| | Group discussions help to solve problems | Group discussions help to solve problems |
| | Savings groups are not connected to reducing risk | Savings groups are not connected to reducing risk |
| | I can buy more plants | I can get a low-interest loan |
| | I can attend training on preventing crop diseases | I learned to save |
| | I can save money for lean times between crops | I can save for family needs |

| | • |
|---|---|
| Prompts Who or what reminds you to continue saving? | |
| SILC group members | SILC group members |
| Family members | Family members |
| Myself | Myself |
| Former Caritas project staff | Former Caritas project staff |
| Regular meetings | |
| | |



RESPONSES AT A GLANCE

Early warning system

Frequency

How often do you take part in early warning activities?



Effectiveness

Why does the early warning reduce risk?

| Enables us to go to the shelter in time | Enables us to evacuate (ourselves and others) in time |
|--|---|
| Enables us to protect livelihood assets | Enables us to save animals/assets |
| Makes us aware of the imminent danger | Makes us aware of the imminent danger |
| Alerts us to take food stores to the shelter | We were trained the protocols/signals |
| | Enables us to alert others |

Prompts and connectivity

Who or what reminds you to follow early warnings now that the project has ended?

| • Family | Family |
|---|---|
| | |
| Neighbors | Neighbors |
| | • |
| Nobody/myself | Nobody/myself |
| | |
| Village disaster team and committee members | Village disaster team and committee members / CCP |
| | |
| | Former Caritas project staff |
| | |
| | Friends |
| | |
| | |

House strengthening

Effectiveness

Why does house strengthening reduce risk?



Raised plinth keeps out flood waters

house from being blown down

Raised plinth keeps out flood waters

Pillars and cross-bracing prevent house from being blown down

Ties prevent roof from being blown off

Ties prevent roof from being blown off







RESPONSES AT A GLANCE

House strengthening

Effectiveness and risk understanding

How does house strengthening reduce risk?

| Prevents roof from flying off | Prevents roof from flying off |
|----------------------------------|---|
| Protects house from water damage | Protects house from water damage |
| Protects assets from damage | Protects assets from damage |
| Protects our health in disasters | Saves human lives |
| | Protects us from incurring major expenses after a storm |
| | |

Prompts and connectivity

••

What or who reminded you to strengthen your home after the project ended?



| I knew it was useful | I knew it was useful |
|--|---|
| | |
| Practical exercises not just theory | Training sessions, meetings and drills |
| | |
| Helpful materials | Materials were contextually relevant and easy to understand, checklist available straight after training) |
| Government support | They trained masons too |
| | |
| Support from CRS | Techniques were easy and used local materials |
| • | |
| Other meetings repeated the training information | Longstanding engagement of CRS in community |
| | |
| • | |

Frequency of demand

How often do you strengthen your home?



Once a year (including 7 'before the storm season')

Once a year (including 10 'before the storm season')
Two years ago
Regularly

Household-level disaster preparedness

Effectiveness and risk understanding

How does household-level preparedness prevent or reduce losses in floods and typhoons?

| į |
|--------|
| ough 🗖 |
| |
| |
| |
| |

Other influence: Basic needs

Why do you still take part in household-level disaster preparedness?



Prompts, policy and connectivity

Who or what reminds you to do it after the project ended?



Early warning system

Customs and Culture

Why do you still take part in the early warning system?



Prompts and Connectivity

Who or what reminds you to take part in the EWS since the project ended?



Livestock preparedness



.

....

How does livestock preparedness prevent losses?

| The animal is on a raised platform | The animal is on a raised platform |
|---|------------------------------------|
| | |
| The shelter is stronger | The shelter is stronger |
| | |
| Food can be stored in the shelter | Food can be stored in the shelter |
| | |
| The project included vaccination | The project included vaccination |
| | |
| • | |
| | |

Frequency of demand/non-disaster benefits

Why have you continued to take part in livestock preparedness since the project ended?





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