Habitat for Humanity®

Disaster Resilience and Recovery Shelter Catalogue

Building Resilience

Thank you

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Shelter Catalogue Collection

In memory of **Maria Luisa Zanelli**.

Foreword

In August 1992, hundreds of homes were obliterated by Hurricane Andrew in south Florida, USA. Significantly, 27 homes built by Habitat for Humanity in Dade County weathered the storm with window damage and water intrusion but no structural damage. This was the first encounter between Habitat for Humanity and a major disaster event. In 1998, Habitat started responding to disasters, beginning with hurricanes Mitch and Georges in Central America and the Caribbean. Since then, Habitat has responded to more than a hundred disaster events and has implemented dozens of resilience-building projects in varied contexts around the world.

Habitat focuses its responses along the shelter continuum, providing a path for disaster-affected people and communities to envision an incremental process of reconstructing both homes and lives. We call this holistic approach "Pathways to Permanence."

Over the past several decades, Habitat has helped thousands of disaster-impacted families transform feelings of grief, despair and loss into active participation and agency of their own recovery through the distribution of shelter materials and tools; training; facilitation of transitional accommodations; home repairs; the construction of new, resilient homes; and the provision of technical assistance.

Habitat has continued to adapt to the changing needs of survivors. Recognizing that responding to disasters is not enough, Habitat also has implemented initiatives to build the resilience and preparedness of communities before a disaster strikes. Every home built by Habitat strives to follow best practices and code compliance to mitigate the impact of natural hazards and includes adaptations to the changing climate and environmental conditions. The same applies to home improvement projects in existing communities and settlements. Issues around land tenure and property are also addressed, as these constitute key components of a resilient housing solution.

Introduction

FIJI: Emergency shelter materials prevent displacement of families until long-term solutions can be implemented.

Published in 2013, the first edition of the *Habitat for Humanity Disaster Response Shelter Catalogue* collected more than 60 case studies describing a breadth of Habitat disaster response projects around the world. To account for housing disaster resilience and recovery projects implemented since 2013, we have designed a series of five thematic editions. This catalogue, the third in the series, is dedicated to Habitat's evolving work on disaster and climate resilience in the face of increasingly complex natural hazards and changing weather patterns.

Resilience, as defined by the United Nations, is "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management." Resilient housing and settlements are central to this concept; they constitute the foundation of safe, thriving communities capable of both anticipating shocks and stress and facilitating rapid recovery after disaster events.

Habitat for Humanity champions a holistic and integrated "Pathways to Permanence" approach to building housing resilience to disasters and climate impacts. This encompasses not only the physical structures and their surrounding environment, but also critical elements such as community engagement, capacity building, supportive policies, appropriate technologies, and crucial social considerations in the pursuit of reducing vulnerability.

A key tool in this work is the participatory approach for safe shelter awareness, or PASSA, a methodology developed by the International Federation of Red Cross and Red Crescent Societies, or IFRC, and adopted by the Habitat for Humanity network as a primary tool for engaging with the communities where we work. PASSA empowers communities to understand their local risks and collaboratively develop and implement feasible solutions through participatory action planning. This successful methodology has expanded significantly in recent years, with tailored versions for young people and women, the integration of information technology, and the incorporation of vital water and sanitation components all further strengthening its impact.

Lessons learned

We can identify several avenues of learning from Habitat's resilience building. From the case studies presented in this edition, we would like to highlight the following:

- **Disaster-resilient communities are those that can cope, respond and recover after a disaster with limited external assistance and within a limited time frame.** Habitat seeks to minimize the gap between emergencies and development by increasing the focus on resilience building within the communities we serve, thereby strengthening their ability to initiate early recovery processes as soon as possible.

- **Building capacity for safer construction skills is an effective way to promote and facilitate the ability of communities to recover from disaster events.** By increasing the number of community members with improved construction skills, Habitat ensures that those involved in self-recovery are able to rebuild their homes with enhanced approaches. Resilience is created when you build back better (and safer) rather than just re-creating the vulnerable conditions that existed before the disaster. The design of all Habitat homes should be informed by risk and include locally adopted disaster- and climate-resilient solutions.

- **Secure land tenure is one of the most powerful elements of resilience,** and not only because it fulfills the fundamental need for psychological safety by protecting occupants from the risk of eviction. Property rights are also essential to the facilitation of access to adequate housing, food security and livelihoods. As we learned from the BRACED case study in Portmore, Jamaica, published within **Working in Urban Environments**, securing and regularizing land tenure is a key motivator for households to invest in incremental improvements to their homes and community.

- **Participatory methodologies** such as PASSA and community-based disaster risk management, or CBDRM, are key tools to engage communities, bring awareness to their exposure to risks, and create plans to mitigate and prepare for disasters. PASSA and PASSA Youth, with their emphasis on shelter and settlements, are sound methods for delivering community action plans oriented toward tackling disaster risk. In the near future, Habitat plans to make minor but important modifications to the PASSA process components to foster more inclusive participation of vulnerable groups and to include specific focuses on certain programmatic areas, such as water, sanitation and hygiene and climate change adaptations, along with cross-cutting issues such as protection and gender inclusion.

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Reflection

INDONESIA: Core housing under construction. The skeleton follows the recommendations for safe construction, both in the concrete blocks' plinth and in the lightweight steel structure for walls and roofing.

INDONESIA: Completed core housing. The interior floor is elevated with respect to the exterior to prevent the entry of torrential rainwater.

PUERTO RICO: Annotations and drawings made by participants in a PASSA workshop.

FIJI: Wooden housing under construction as part of the communities' safe shelter training program, observing the recommendations to ensure resistance, such as treated wood of adequate sections and metallic hardware (diagonals and hurricane straps).

PUERTO RICO: Distributed shelter kits include tools and fasteners to repair the damaged houses.

PUERTO RICO: A webpage was developed to implement PASSA, offering tools tailored to the island's context.

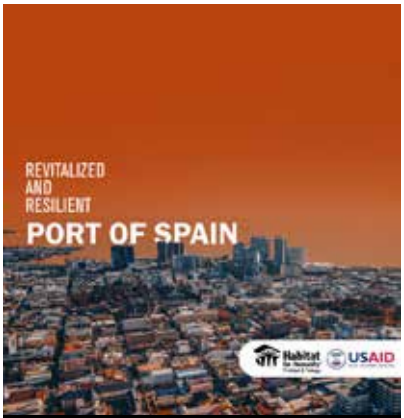
VIETNAM: A Habitat staff member takes part in a needs assessment mission in the aftermath of Typhoon Noul.

VIETNAM: Men and women participate in a training course on safe, asbestos-free construction.

VIETNAM:. Men and women participate in training on safe construction.

VIETNAM: Teams properly and safely dismantle unhealthy asbestos sheeting roofs.

VIETNAM: Beneficiary selection criteria supported the most vulnerable households.



TRINIDAD AND TOBAGO: This action plan was developed for the country's capital, Port of Spain.

Countries where Habitat works

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Bolivia
Bosnia and Herzegovina*
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Habitat locations featured in the catalogue series

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1. Habitat Bangladesh
2. Habitat Dominican Republic
3. Habitat Fiji
4. Habitat Germany
5. Habitat Guatemala
6. Habitat Haiti
7. Habitat Honduras
8. Habitat Hungary
9. Habitat India
10. Habitat Indonesia
11. Habitat Jamaica (Closed)
12. Habitat Jordan
13. Habitat Malawi
14. Habitat Mexico
15. Habitat Nepal
16. Habitat Nicaragua
17. Habitat Paraguay
18. Habitat Peru
19. Habitat Philippines
20. Habitat Poland
21. Habitat Romania
22. Habitat Vietnam

Habitat for Humanity International area offices

1. Africa
2. Asia and the Pacific
3. Europe and Middle East
4. Latin America and the Caribbean

Intervention types

Each case study in this report details intervention types that fall into the following broad categories, denoted by the icons in the table below.

Icon	Intervention category
	**Non-Food Items (NFIs) Distribution**
	**Temporary Shelter Support**
	**Technical Assistance**
	**Construction**
	**Basic Services and Community Infrastructure**
	**Capacity Building**
	**Market-Based Interventions**
	**Influence**
	**Livelihoods**

Habitat for Humanity

Earthquakes • 2018

Sajang Lombok Island, Indonesia

Types of intervention

Construction

Capacity building

Community infrastructure

Project targets

- **1,000 households** (approximately 5,000 individuals).
- **Transitional shelter size:** 18 square meters.

Stakeholders

- **Implementing organization:** Habitat for Humanity Indonesia.

Timeline

Late July–early August 2018: Two earthquakes strike Lombok.

August 2018: Rapid assessment and targeting intervention location.

September 2018: Community assessments, beneficiary selection.

November 2018–April 2019: Emergency WASH activities. Selection of families for transitional shelter.

February 2019: Household toilets and a transitional shelter model are built in Gumantar village.

April–October 2019: Construction of transitional shelters.

Summary

After two significant earthquakes struck Lombok in July and August 2018, Habitat for Humanity Indonesia focused on access to safe water and sanitation and constructed a water reservoir and toilets, while the government planned permanent housing. Later, after recognizing the needs of those excluded from the government's housing program, Habitat Indonesia helped 96 households build culturally sensitive transitional shelters, prioritizing the needs of women, children, and people with disabilities. The project faced difficulties because of simultaneous relief activities from another response. Lessons learned included how invaluable partnerships and open communication are to an effective disaster response.

Background

On August 5, 2018, a magnitude-7.0 earthquake struck the resort island of Lombok. The earthquake triggered damage to 76,765 houses, killed 515 people, displaced 431,416 individuals, and caused an economic loss of more than US$500 million. The provincial government issued a decree to shift quickly from emergency response to recovery and reconstruction.

When the disaster occurred, Habitat Indonesia didn't have a presence in the Central Sulawesi province. Months later, another major earthquake affected other locations in the same province.

Project programming

The project's initial phase focused on addressing immediate water, sanitation and hygiene, or WASH, needs rather than shelter. This was due to the government's plans for rapid, permanent housing construction. Key WASH activities included providing safe water access to 1,628 households through a new reservoir, constructing 21 communal toilets, distributing hygiene kits to 80 households, and delivering hygiene promotion and WASH training to 162 individuals.

At a subsequent stage, Habitat Indonesia shifted its focus, recognizing that many families had been left out of the government's recovery program or faced significant delays. With additional funding, Habitat constructed 96 transitional shelters and 297 household toilets in several villages. The design of these shelters was developed with respect for local culture, with specific consideration for the needs of women and children, and with a commitment to ensuring accessibility for people with disabilities.

Implementation

The shelter intervention began with a community damage and needs assessment, which combined a review of existing data with rapid field assessments to identify real needs. A Community Recovery Committee was established, bringing together community leaders, local authorities and Habitat Indonesia to select households, organize meetings and informally supervise construction. As family selection criteria were developed, standard procedures were adapted to local contexts and aligned to the most pressing needs. To promote transparency, the list of people receiving transitional shelter assistance was announced publicly.

A detailed implementation plan was developed, including a detailed timetable, based on proposed interventions and donor requirements. Habitat's field staff regularly monitored project implementation and reported results to management. Despite this systematic approach, the project experienced delays due to simultaneous earthquake relief efforts in Central Sulawesi, underscoring the need for improved coordination and resource management across multiple projects.

Lessons learned and promising practices

- **Importance of partnerships:** Directly managing projects in remote regions without an existing local presence proved difficult, which emphasized the critical need to build and seek out partnerships with local organizations in disaster-prone areas.
- **Resource management and focus:** Handling multiple, simultaneous large-scale projects like the one in Central Sulawesi created a significant strain on resources, ultimately slowing down the Lombok project. These initiatives would have benefited from strategic resource allocation and potentially a more limited scope of the concurrent disaster responses.
- **Effective communication:** Open discussions with leadership to address challenges and propose solutions were a success. These discussions led to clear recommendations for partnering with other organizations, and they demonstrated the value of transparent internal communication.

Habitat for Humanity

Tropical Cyclone Winston • 2016

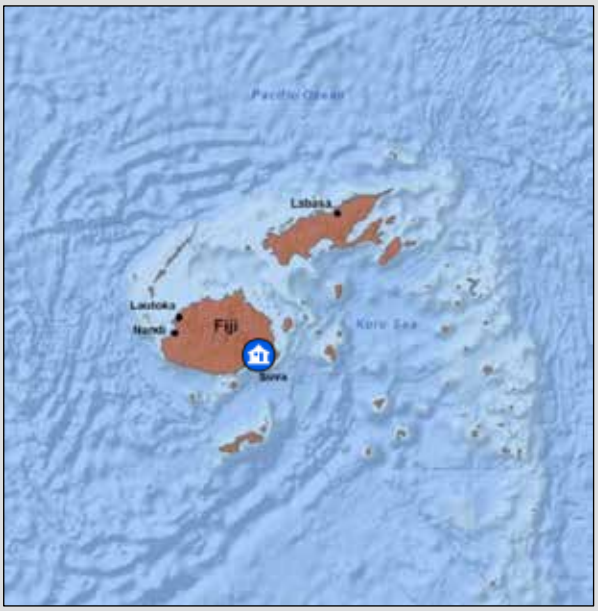
All Divisions • Fiji

Types of intervention

Non-food items distribution

Construction

Capacity building



Project targets

- **40,000 people.**
- **Emergency shelter kit distribution to 7,250 households** (approximately 36,250 individuals).
- **88 households** through shelter repairs.
- **460 pit latrines and emergency showers.**
- **108 Build Back Safer courses** for 1,750 participants across 211 communities.
- **108 core houses** built (21 square meters, toilet not included).

Stakeholders

- **Implementing organization:** Habitat for Humanity Fiji.
- **Partners:** National Disaster Management Office (NDMO).

Timeline

February 2016:
Tropical Cyclone Winston makes landfall, leading to a state of emergency declaration.

March 2016:
The first Shelter Cluster meeting is held to coordinate relief efforts.

March 2016:
Distribution of emergency shelter kits begins.

September 2017:
All Build Back Safer training sessions are completed.

Summary

In the aftermath of Category 5 Cyclone Winston, Habitat for Humanity Fiji took a comprehensive approach to disaster management and actively participated in the entire cycle from response to recovery. Their efforts spanned co-leadership of the shelter cluster, distribution of essential supplies, emergency repairs to homes and sanitation facilities, and the construction of new homes. The cornerstone of their intervention was the Build Back Safer training program, which fostered long-term recovery by empowering communities with the knowledge and skills to build disaster-resilient homes. This undertaking faced significant challenges because of the dispersed nature of affected communities and the sheer volume of training being delivered concurrently.

Background

Fiji, a small island nation in the South Pacific, is frequently hit by cyclones and floods. A significant number of its residents, around 40,000 annually, are affected by these hazards. Many live in substandard housing, with over 15% of the population residing in informal settlements.

In February 2016, Category 5 Cyclone Winston hit Fiji. Winds over 300 kilometers per hour (186 mph) tore buildings apart and sent debris flying. The cyclone caused extensive flooding, landslides, and storm surges up to 5 meters high. In the end, it damaged or destroyed over 31,200 homes.

Habitat Fiji has a long history of responding to disasters, dating back to Cyclone Tomas in 2010. They stand as the sole organization in the country undertaking comprehensive housing resilience and recovery interventions in the wake of such events.

Project programming

Habitat Fiji supported the coordination of the shelter response as co-lead of the Shelter Cluster, along with the International Federation of Red Cross and Red Crescent Societies, or IFRC.

The response was designed in alignment with Habitat's Pathways to Permanence strategy:

- **Emergency shelter kit distribution** for families whose homes were damaged or destroyed.
- **Shelter repairs and emergency water, sanitation and hygiene, or WASH,** through the provision of pit latrines and showers.
- **Build Back Safer one-week intensive courses** across 211 communities, learning and building core houses.

Recognizing that the lack of technical knowledge of the affected population hindered safe reconstruction, Habitat Fiji launched the Build Back Safer, or BBS, training program, which became the cornerstone of this intervention. It was designed to empower communities not only for immediate recovery but also to build long-term resilience by training local carpenters, who would be able to provide guidance and technical assistance to families rebuilding their homes and to facilitate knowledge transfer within the community.

The program was inclusive and welcomed all members of the community, including women, people with disabilities, and young people. This intensive five-day program equipped participants with both theoretical knowledge and practical skills in crucial construction techniques to construct safer homes, focusing on seven key areas: site assessment, foundations, strong joints, tie-downs, bracing and robust roofing.

The culmination of the hands-on training involved helping a family in the community build a cyclone-resistant incremental house. This tangible model served as a living learning center for community members, allowing them to revisit it after the training concluded. BBS billboards also were installed alongside each structure, providing a permanent reference point for key construction techniques.

This initiative complemented the government's cash assistance program by equipping families with the skills and knowledge to build cyclone-resistant homes.

Implementation

Habitat Fiji collaborated extensively with other organizations through the Fiji Shelter Cluster, which minimized service duplication and created a unified approach to meeting essential needs across the impacted regions.

Working in close collaboration with local authorities and communities, Habitat Fiji conducted **community consultations** to pinpoint the most vulnerable populations needing help. They integrated data from government agencies with their own on-the-ground assessments.

Habitat Fiji significantly expanded its operations, including project management, procurement and personnel, to manage the entire disaster recovery. The carpentry team quadrupled in size, and an Australian volunteer expert was brought in to help develop and implement the BBS training program.

Securing the necessary construction materials for the program proved to be a major obstacle. Limited local supplies meant that materials must be imported, including containers of pine from New Zealand. **Coordinating transportation** for both materials and personnel across diverse locations presented a significant challenge. An expansion of the vehicle fleet was hampered by the scarcity of licensed drivers in Habitat Fiji.

Ensuring effective knowledge transfer to communities proved challenging for some experienced carpenters, who were experts in their fields but not accustomed to teaching. By pairing carpenters who have technical expertise with skilled instructors, Habitat Fiji created a balanced and successful approach to the design of the training program.

Coordination across the communities was vital to the delivery of more than 100 training sessions over an 18-month period. With limited or no network connectivity, **careful planning and coordination** allowed BBS teams to lead instructional classes simultaneously in 15 different locations.

The project received support from the local community through the provision of sand and gravel, accommodation for the Habitat Fiji team, and meals prepared with food supplied by Habitat Fiji for all BBS training participants.

Unfortunately, participation in BBS training was lower than expected. Several factors contributed to this, including the need for residents to prioritize paid work or other commitments. The expected number of female participants was also not reached because of traditional gender roles. The transportation of participants to the BBS core house construction sites was also problematic because of distances from some communities and the high cost and lack of availability of group transportation.

While some participants had begun rebuilding their homes using BBS techniques, widespread adoption was hindered by **delays in the delivery of construction materials provided by the government**. In many cases, only partial deliveries arrived, with insufficient resources to complete disaster-resistant houses.

Lessons learned and promising practices

- **Overall, the effectiveness of the BBS program was limited by external factors beyond Habitat Fiji's control.** However, evidence of knowledge sharing within the community suggested potential for long-term impact in promoting safer construction practices. For instance, despite incomplete rebuilds, 75% of surveyed BBS participants assisted other community members in constructing their homes, including some using government-provided materials. This helped spread BBS knowledge within the community. Additionally, 73% of surveyed homes involved non-BBS participants working alongside BBS participants, indicating broader dissemination of knowledge beyond the direct training program.
- **The BBS training program identified areas for improvement,** including insufficient equipment and safety gear, which hindered participation for all trainees. Additionally, although carpenters felt confident delivering technical skills, data collection during training was inconsistent, making program evaluation challenging. Finally, participants – particularly newcomers to construction – suggested extending the current five-day training program to allow for deeper comprehension and skill development.

Habitat for Humanity®

Hurricanes Irma and Maria • 2017

Puerto Rico, United States of America

Types of intervention

Technical assistance | Construction | Capacity building

Project targets

- Over **20,000 individuals** served.
- **3,000 shelter repair kits** distributed.
- Over **850 construction interventions** completed.
- **3,000 individuals** and **2,100 workers** engaged in capacity building.
- **618 households** served through tenure assistance.

Stakeholders

- **Implementing organizations:** Habitat for Humanity International and Habitat for Humanity of Puerto Rico.
- **Partners:** SBP, University of Puerto Rico, El Enjambre, Proyecto ENLACE, Interamerican University of Puerto Rico, Center for the New Economy, Puerto Rico Department of Housing, Fundación Fondo Acceso a la Justicia, and local municipalities and community-based organizations.

Timeline

September 2017: Hurricanes Irma and Maria strike Puerto Rico.

December 2017: Shelter repair kits are distributed.

May 2018: Main funding is secured.

December 2018: Repair program kicks off.

Early 2020: Earthquakes and COVID-19 pandemic strike.

June 2020: Program is reforecast and additional programs are launched.

September 2023: Main programs are completed.

Summary

Puerto Rico, an island prone to tropical storms and earthquakes, suffered two devastating storms in 2017. Hurricanes Irma and María prompted the establishment of the Puerto Rico Recovery Program, or PRRP, by Habitat for Humanity International and its Puerto Rico affiliate in 2018.

This program, backed by $63 million in private funding, aimed to provide safe, affordable and resilient housing; to address housing vulnerabilities; and to foster community resilience through a holistic, systems-oriented approach.

Despite shifting needs, administrative hurdles and cascading disasters, the PRRP improved physical safety, mental health and social capital for beneficiaries while increasing community engagement and resilience.

Its participatory, data-driven model serves as a blueprint for future equitable and sustainable recovery efforts.

Background

The island of Puerto Rico, a territory of the United States of America and the smallest of the Greater Antilles in the Caribbean, is in a region prone to hurricanes and earthquakes. Habitat Puerto Rico was established in 1997 and was considered a small affiliate before the hurricanes.

In 2017, hurricanes Irma and María devastated Puerto Rico. After María struck as a Category 4 hurricane, crossing the island from southeast to northwest, 715,000 homes were reported affected in the territory where the poverty rate exceeds 43%, according to the U.S. Census. The approach to recovery had to be holistic, because, in addition to the post-storm devastation and the island's preexisting poverty levels, a significant number of residents were unable to prove homeownership. These issues and the inadequate construction workforce on the island made planning and implementation challenging.

Project programming

The Puerto Rico Recovery Program had four main programmatic objectives:

- **Construction:** Supporting individuals, households and communities as they maintain and return to safe, affordable housing that reduces vulnerability and increases resilience as quickly as possible. Over 800 homes were repaired in 30 communities across 22 municipalities.
- **Capacity building:** Building the capacity of the housing stakeholders in Puerto Rico, including a local construction workforce and institutions, to reach scale in the recovery process and to build back safer with resilience. This objective also included households and communities.
- **Secure tenure:** Improving security of tenure in Puerto Rico by helping households that lacked a clear title to their property. More than 600 households were able to obtain legal documentation proving that they own their homes.
- **Knowledge management and advocacy:** Consolidating and sharing learning from the program through practical knowledge products and advocacy efforts that will support the scaling up and replication of housing recovery programming within Puerto Rico.

The project integrated disaster risk reduction issues in a robust way.

Disaster risk assessment

- Implementing participatory approaches to identify environmental risks and ensure that mitigation strategies are appropriate to the context.

Building resilient communities

- Improving infrastructure such as drainage systems and emergency shelters.
- Working with communities and local organizations to strengthen the disaster response network.
- Engaging community involvement through workshops and participatory design of mitigation projects.

Building resilient homes

- Following the "Pathways to Permanence" approach to provide support through housing reconstruction.
- Securing land rights and improving transitional shelter solutions.
- Ensuring that both repaired and new homes can withstand the natural hazards to which Puerto Rico is exposed.

Knowledge sharing and capacity building

- Providing training programs for local builders, volunteers and homeowners that cover safe construction practices and disaster preparedness.
- Collaborating with stakeholders to improve housing policies and systems and increase overall community resilience.
- Developing a participatory approach for safe shelter and settlements awareness, or PASSA, toolkit tailored to the island context.

Implementation

The Puerto Rico Recovery Program was a testament to **collaborative strategy**, executed through a close partnership between Habitat for Humanity International and Habitat for Humanity of Puerto Rico. Responsibilities were carefully divided to leverage each organization's respective strengths. Habitat for Humanity International took the lead on the large-scale implementation of the repair program, bringing significant resources and logistical capabilities. In parallel, Habitat Puerto Rico focused on vital community-level work, including community outreach, participant selection and crucial participant relationship management, ensuring that the program remained deeply connected to the needs of local residents.

The program's foundation was built on a **comprehensive needs assessment** conducted in March 2018 by local and disaster recovery experts, which was critical for understanding the concerns of Puerto Rican communities and formulating an effective recovery strategy. Consultants meticulously examined the construction sector, identifying existing barriers to affordable housing and those exacerbated or created by the hurricanes. Their findings highlighted not only the immense number of damaged homes but also a significant lack of skilled labor capable of addressing the housing shortage. Widespread title issues also proved to be a major obstacle, preventing many Puerto Ricans from accessing much-needed recovery assistance. These challenges were compounded by the island's dire economic situation, as Puerto Rico declared bankruptcy in 2017.

Early in the response, Habitat invested in **occupational safety certification training** for over 1,400 individuals to address the labor shortage. To further bolster the construction workforce, a 5½-week "Habitat Builds Puerto Rico" construction boot camp was established for those interested in entering the sector, and nearly 400 individuals completed the program. Ensuring the longevity of repairs was also a priority, and over 500 participants in the repairs program received home maintenance training to help them maintain the durability of their newly restored homes.

To build resilience, Habitat implemented the PASSA disaster risk reduction methodology in eight high-risk communities, directly helping over 2,100 people. Habitat also developed **an online toolkit** to help other communities and organizations replicate the methodology.

Advocacy efforts focused on the permitting system and the flow of government recovery funds, and on positioning Habitat Puerto Rico as an expert on affordable housing on the island. Knowledge management included monitoring and evaluation of implemented programs and research on collective tenure. These efforts led to **systemic changes** and research that will advance affordable housing on the island in the future.

The PRRP also **established partnerships** with organizations that have local experience in specific projects. These alliances expedited the delivery of aid to more families. Among the most impactful were:

- SBP, which led the completion of some of the repairs projects.
- Fundación Fondo Acceso a la Justicia, which provided legal assistance integral to the tenure program.
- The University of Puerto Rico School of Law, which carried out research on collective tenure clearance mechanisms.
- The Center for the New Economy, which guided the implementation process of the advocacy plan.

Because of the long-term nature of the program, many external factors affected the execution of the projects and became challenges. These included pauses caused by earthquakes, the COVID-19 pandemic and Hurricane Fiona. These challenges were overcome thanks to a program design with a clear mission and a strategy adaptable to change.

The program incorporated a **gradual exit strategy** that emphasized sustainability, local empowerment and system-level change. The transfer processes were tailored to communities, community organizations and authorities to ensure continuity of impact. New houses were accompanied by detailed guidance on maintenance and minimizing future vulnerabilities. Participants in the **secure tenure program** received title deeds or legal rights. The program promoted cooperation with municipalities and local governments throughout its implementation, which facilitated harmony with broader local recovery plans and allowed for a smoother transition. Mitigation projects and community-based interventions were handed over to local organizations with greater skills and resources. The program built the operational and governance capacities of community organizations, ensuring that they could take on a more significant role in post-program recovery efforts. Partnerships with NGOs and private-sector donors ensured continued support for community projects and community-based interventions.

Lessons learned and promising practices

The Puerto Rico Recovery Program yielded invaluable insights, highlighting several key lessons and promising practices for future housing disaster resilience and recovery efforts:

- **Community-centered approach:** Prioritize genuine engagement with municipalities, local organizations and residents. This collaborative approach ensures that resources are directed to where they're most urgently needed and benefit the families who require support most. Understanding the community's unique context is paramount.
- **A person-centered, trauma-informed approach:** Many people have a history of trauma — in this case Hurricane Maria and its aftermath. This approach also recognizes how those experiences show up in recovery efforts and responds by centering the needs of community members; prioritizing safety; and intentionally integrating trust building, joint decision-making and equity into the initiatives. It is important that workers have a firm grasp of trauma-informed practices when working with individuals who have experienced the shocking effects of having lost their homes. Train workers in the construction industry on how to navigate the delicate environments in which they are operating.
- **Co-creation of post-recovery plans:** Empowering communities to co-design their post-recovery plans is crucial. This allows residents to identify their most pressing needs, collaboratively build effective risk-mitigation strategies, and establish safe practices that are truly relevant and sustainable within their specific context.
- **Flexible and generous funding:** For donors, providing multiyear, low-barrier general operating support is incredibly impactful. Reducing stringent requirements across the funding continuum allows implementing organizations to be agile. Flexible funding is particularly critical in high-risk environments like Puerto Rico, where programmatic interventions must remain adaptive to constantly changing needs and unexpected events.
- **Multiplying effects and sustainability:** Acknowledge and consider, as part of the impact repertoire, the multiplying effects that interventions can have on the health and well-being of participants. However, be aware that some of these outcomes may have a limited life span. Plan, if feasible, for ongoing support to extend the life span of these wider outcomes.
- **Good stewardship:** Support residents in navigating the property laws and regulations of their local landscapes. This guidance is essential for them to properly access any available government assistance, helping to overcome bureaucratic hurdles that often hinder recovery.

Habitat for Humanity

Typhoon Noul • 2020

Quang Binh and Ha Tinh provinces • Vietnam

Types of intervention

Non-food items distribution | Capacity building

Project targets

- **70 households** through shelter repairs.
- **87 household representatives, 9 local builders, 6 local officials (58 women in total)** through the provision of training.
- **Shelter/housing solution size:** 50 square meters.

Stakeholders

- **Implementing organization:** Habitat for Humanity Vietnam).
- **Partners:** Thua Thien Hue Provincial Red Cross.

Timeline

September 2020:
Typhoon Noul strikes central Vietnam.

Needs assessments and targeting of locations to intervene.

Assessment of roofing.

October–November 2020:
Training on disaster-resistant construction and asbestos removal.

Beneficiary selection process.

December 2020–May 2021:
70 households receive support for roof repairs.

Summary

Habitat for Humanity Vietnam coordinated with Thua Thien Hue Red Cross and the local authorities to serve 70 families who were severely affected by Typhoon Noul from December 2020 to May 2021 through the provision of housing repair kits and training on house repairs that incorporated effective disaster risk reduction techniques. Moreover, Habitat Vietnam used the disaster response project as an opportunity to promote communitywide education on the health risk of asbestos.

Background

Typhoon Noul struck the central provinces of Vietnam on Sept. 18, 2020, and six provinces — Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien Hue and Da Nang — were seriously impacted. Quang Tri and Thua Thien Hue provinces were hit hardest, with six deaths, 112 people injured and more than 22,729 houses damaged.

The typhoon disproportionately impacted poor and marginalized households because of preexisting vulnerabilities and limited resources for post-disaster repairs. Many damaged houses were already constructed with weak materials such as improperly installed iron sheets or asbestos-containing fibro-cement sheets. These households often lacked the resources to repair their homes using sturdier materials and proper techniques, leaving them vulnerable to future storms and strong winds.

Project programming

- **Habitat Vietnam's assessments** revealed that recovery efforts in the target communities were inadequate. Many families lacked resources and were repairing their homes with vulnerable materials such as damaged or cracked fibro-cement sheets and improper techniques. This left households with partial to complete roof damage in dire need of proper support.
- **"Build Back Safer" skill and knowledge transfer:** Community members, including beneficiaries and local masons, gained valuable skills and knowledge in disaster-resistant construction and asbestos safety. The project fostered a broader movement toward safer construction practices, with local authorities and community members adopting improved techniques and materials. Training participants acquired technical knowledge that could lead to new livelihood opportunities in skilled construction services.
- **Asbestos awareness:** A comprehensive program educated the community on the health risks of asbestos-containing materials, including safe removal practices and the formation of local monitoring groups.
- **Direct assistance for repairs:** 70 households received repair kits, resulting in safer and more resilient housing. The beneficiaries were households whose houses had been affected by the typhoon and who were still living in unsafe conditions, with priority given to vulnerable groups such as elderly or female-headed households or households with children, pregnant women or people with disabilities.

Implementation

Habitat Vietnam worked closely with Thua Thien Hue Provincial Red Cross to identify and select the most heavily affected communes within Phu Vang District in Thua Thien Hue province.

Subsequently, Habitat Vietnam assessed and categorized the roofing needs of the households affected by the disaster within the two communes.

The beneficiary selection process was carefully conducted. Collaborating with local authorities, they assessed and recommended households meeting specific criteria. From an initial list of 120 potential recipients, Habitat Vietnam conducted further verification and chose the 70 most vulnerable families for the housing repair intervention.

The repair kits included corrugated iron sheets, screws, wire and pliers, ridge caps, and flat sheet iron panels for added wind resistance. Although the materials were primarily intended for roof repair, the iron sheets offered other possibilities (e.g., walls, temporary sanitary privacy or water collection), allowing families to decide what best suited their situation, provided they received appropriate guidance and support. In addition, if a family did not need a particular item, it could redistribute it to another family in need, thus maximizing the impact of the resources provided.

Habitat Vietnam developed training modules tailored to the specific conditions and cultural context. These modules were meticulously reviewed to ensure they met Habitat standards and local needs, which involved collaboration with both Habitat for Humanity International and specialized local agencies like the Department of Construction and Health. Habitat Vietnam delivered training for 102 community members, including 58 women, 70 representatives of beneficiary households, 17 community members, six local officials and nine local masons.

Habitat implemented a comprehensive program to educate the community about the health risk of asbestos-containing materials. They also conducted safety simulations for trained masons on removing and disposing of hazardous asbestos roofing sheets. This equipped the masons with practical skills, and a video of the training was distributed as a community educational tool.

Lessons learned and promising practices

Promising practices

- In addition to helping 70 families repair their homes, **this program sparked a communitywide movement toward safer construction**. Households used their training to repair their homes with new materials such as

heat-resistant steel, and this shift inspired others. Community members and even local authorities adopted these practices, and local policies were implemented to encourage the replacement and avoidance of unsafe fibrocement sheets. This project demonstrates the power of disaster recovery efforts to not only rebuild individual homes but also foster long-term community resilience.

- **Comprehensive training, community monitoring groups and regular evaluation played crucial roles in this project.** Although initial training was provided, some homeowners needed further technical assistance to complete more complex repairs. Community monitoring groups filled this gap by offering guidance and insights to ensure homes were built safely. Additionally, the inclusion of community members in the creation of materials about asbestos health risks ensured that the communication tools addressed local concerns. This approach led to the adoption of new behaviors and built a foundation for future efforts to raise awareness about health and safety.

Lessons learned

- The project's success depended heavily on **conducting accurate needs assessments and securing strong support from local authorities**. This ensures interventions are tailored to genuine needs and have necessary backing.
- Recognizing the challenges posed by a limited time frame, **the project underscored the importance of extended implementation periods.** These would allow for thorough preparation, particularly for community engagement activities. Rushed planning and implementation of activities caused by tight deadlines can lead to insufficient preparation and lower participation, as evidenced by the project’s experience with events coinciding with seasonal or political events. Careful planning and consideration of the local context are crucial for maximizing community engagement and project effectiveness.
- **The project's success hinged on adaptability and teamwork.** The ever-changing nature of disaster situations demanded flexibility and adjustments to the initial plan. This required close collaboration with local authorities and stakeholders to ensure efficient resource allocation, manage community expectations, and meet government standards. This ultimately ensured the project aligned with community needs and achieved its overall objectives.

Habitat for Humanity

Resilient Cities Initiative • 2021

Port of Spain, Trinidad and Tobago

Types of intervention

Technical assistance

Influence

Project targets

- **3,705 individuals** engaged in community development.
- **27,365 individuals** benefitting from city taskforce programming.

Stakeholders

- **Implementing organization:** Habitat for Humanity Trinidad and Tobago, Habitat for Humanity International's Latin America and the Caribbean Area Office.
- **Partners:** The Port of Spain City Corporation, Office of Disaster Preparedness and Management, Ministry of Planning and Development, Ministry of Housing and Urban Development, Ministry of Works and Transport, GIS Society of Trinidad and Tobago, and Ministry of National Security.

Timeline

April–October 2021: Completion of first stage, "Knowing Better."

October 2021: Publication of baseline.

November 2021–April 2022: Completion of second stage, "Planning Better."

April 2022: Publication of action plan.

Summary

Port of Spain, Trinidad and Tobago, despite its small residential population, faces significant risks due to a large daily influx of commuters and inadequate resilient infrastructure. To address this, USAID's Bureau for Humanitarian Assistance, or USAID/BHA, and Habitat for Humanity collaborated on a project under the United Nations Office of Disaster Risk Reduction, or UNDRR, "Making Cities Resilient 2030" program. The initiative aimed to bolster the capabilities of both governmental and nongovernmental actors, accelerating the city's journey toward resilience by enhancing decision-making, city planning and disaster risk reduction. This was achieved through extensive stakeholder engagement, including community-driven planning, the use of a GIS platform for data sharing, and the establishment of a city taskforce, all guided by UNDRR's "Ten Essentials for Making Cities Resilient" scorecard to develop a comprehensive city action plan.

Background

Port of Spain, the capital of the Caribbean twin-island nation of Trinidad and Tobago, is exposed to a range of natural and technological hazards. Port of Spain presents a unique situation because of its low residential population. Over the past two decades, the city has experienced rapid growth, increasing its estimated resident population from around 50,600 in 2004 to approximately 85,000 today, a growth rate of roughly 68%. This contrasts with a daily influx of 350,000 commuters from surrounding areas, making the volume of this commuting population a crucial consideration.

This rapid growth has not been matched by adequate investment in resilient infrastructure and governance systems. To address this, USAID/BHA partnered with Habitat for Humanity to initiate UNDRR's Resilient Cities 2030 program, laying the groundwork for larger-scale resilience efforts. Habitat for Humanity Trinidad and Tobago was established in 1997; disaster resilience is one of the organization's key programs.

Project programming

The purpose of the intervention was to cultivate a national cohort of stakeholders with the knowledge and readiness to initiate and implement disaster risk reduction mandates.

The overarching project goal was to strengthen the capabilities and foster a sense of ownership among both governmental and nongovernmental actors in Trinidad and Tobago, thereby accelerating Port of Spain's journey toward becoming a UNDRR Resilient City 2030, a process guided by the strategic framework of "cities knowing better, cities planning better, and cities implementing better."

The project aimed to achieve three key outputs:

- To actively contribute to resilience-informed decision-making, enhance the functionality of city services, and improve governance within the Port of Spain Corporation.
- To establish the necessary groundwork for improved city planning and implementation, ultimately strengthening Port of Spain's overall resilience.
- To advance local commitment and capacity for disaster risk reduction planning through the development of strategic partnerships and networking, the implementation of robust monitoring and evaluation processes, and the creation of a national body of engaged and committed stakeholders.

Implementation

To achieve the project objective, it was necessary to engage a wide range of stakeholders from across the city in the development and implementation of the action plan. They included communities; municipalities; national agencies; entities responsible for services and management of public facilities within the city; the business sector; and other stakeholders such as NGOs, community-based organizations, academia, the media and faith-based organizations.

The project implemented the following critical activities:

- **Stakeholder meetings and strategic consultancy meetings:** The list of stakeholders comprised 12 representatives of national government agencies, 17 municipal employees, three academics, two civilians, four media professionals and 77 community representatives — a total of 115 stakeholders.
- **Virtual labs**: Critical think tanks aimed to foster innovative solutions for urban challenges, particularly for Port of Spain's resilience, in addition to tackling issues faced by other countries in Latin America and the Caribbean and further afield.
- **Community engagement:** This project prioritized gathering input from young people in St. Ann's River, Belmont, Southern Port of Spain and Woodbrook, employing the participatory approach for safe shelter and settlements awareness, or PASSA, to analyze disaster risk at the community level and develop community-driven disaster risk reduction and recovery plans.

- **Georeferenced information system (GIS):** A map-based digital tool developed by Habitat called the Territorial Information Management System Platform, or TIMSP, integrated all collected and generated data during the project. It enabled secure interagency information sharing and fostered community participation.
- **Establishment of the city task force:** A strategic assembly of principal decision-makers in their respective agencies.
- **Surveys and interviews:** Using technology to gather, organize and share information among all stakeholders.
- **Baseline assessment:** Providing an early snapshot of Port of Spain's resilience status and drawing from five key information sources: existing resilience documents, international benchmarks, interviews with key personnel, relevant policy documents, and community-level assessments (PASSA). The assessment employs a UNDRR scorecard with 47 indicators to evaluate progress against the **Ten Essentials for Making Cities Resilient**.
- **Development of the city action plan:** The UNDRR Ten Essentials scorecard was used to provide a checklist for increasing urban resilience, an especially useful tool for cities in the early stages of development.

Lessons learned and promising practices

- **A more inclusive task force:** While the core task force's strategic composition was very commendable, a broader representation is crucial for effective participatory planning and implementation. Therefore, a mechanism should be established to encourage the engagement of practitioners in relevant sectors — including the media, academia, business and nonprofit sectors — who are not directly involved with the core team.
- **The importance of community-driven resilience:** Empowering communities to actively participate in building their own resilience is crucial for overall city resilience. The PASSA methodology's success demonstrates the value of engaging communities and elected officials, and similar exercises should be implemented citywide, with their plans integrated into the broader city resilience strategy.
- **The benefits of an expanded TIMSP functionality:** The Territorial Information Management System Platform should be used beyond its GIS capabilities, leveraging its project management and information-sharing potential.
- **A reconsideration of the policy development timeline:** Developing and enacting policy is a complex and lengthy process that cannot be completed within one year.

A family shares a meal outside of their house in Siem Reap, Cambodia.


XFB

When disasters devastate communities, the use of resilient construction techniques and materials can minimize damage to homes. In some situations, these resilient homes are clearly visible among destroyed buildings; they are the few intact structures in the midst of piles of debris.

Habitat for Humanity®

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