

Building Climate Resilient Communities in the Dominican Republic

Introduction

The Dominican Republic faces increasing climate-related risks, including hurricanes, flooding, extreme heat, and infrastructure vulnerabilities. In response, the Building Climate Resilient Communities in the Dominican Republic project was launched by Columbia University faculty and Dominican partners to strengthen community preparedness and recovery capacity.

The project aimed to design, pilot, and integrate community resilience centers into public programs, plans and emergency response unit of the Dominican Republic. Resilience centers (see Figure 1) are multifunctional spaces that provide education, health support, emergency coordination, and post-disaster recovery services - into national government programs in the Dominican Republic. The project centered initially on the Cristo Rey neighborhood of Santo Domingo, and was ultimately piloted in multiple sites, with the intention to create a scalable model applicable across the country.

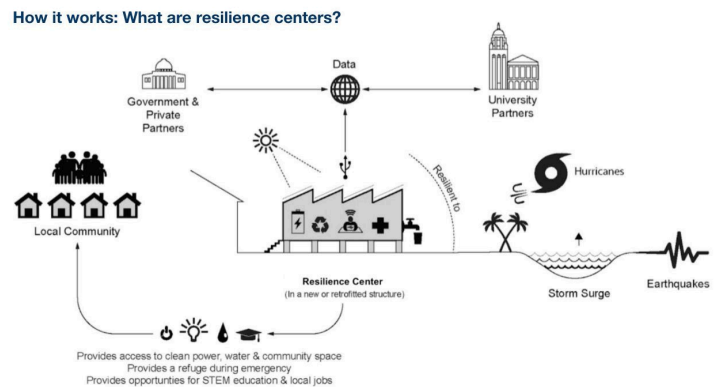


Figure 1.

Background

The project was the result of CWP-facilitated consultations among academic, governmental, and community leaders in the Dominican Republic and the United States focused on disaster risk reduction and response. The idea of designing and prototyping resilience centers to build communities' capacities to prepare for and respond to natural disasters emerged as promising concept. The opportunity to design such a resilience center in Santo Domingo, Dominican Republic, was supported by the Mayor's Office in Santo Domingo, Ayuntamiento del Distrito Nacional (ADN), and two Dominican-based universities – the Instituto Tecnológico de Santo Domingo (INTEC) and Universidad Iberoamericana (UNIBE). After a period of collaborative project development, Columbia World Projects (CWP) made the commitment to support the development of a "blueprint" for a model resilience center in Cristo Rey, a dense, mixed-use, semi-industrial neighborhood in Santo Domingo where there has been strong interest by the community and the municipality to support such an effort.

While the initial project design was to pilot the Center in one neighborhood in Santo Domingo, the project evolved toward national-level integration. As the team worked across levels of government, they gained the support of key ministries, including the Ministry of Environment and Natural Resources. The project team ultimately secured government commitment to pilot resilience centers in several communities through the Ministry's 'resilient eco-heroes' and 'community technology center' programs.

Objectives

The project pursued the following objectives:

- ✓ **Develop** a replicable blueprint for community resilience centers
- ✓ **Strengthen** climate and health literacy among youth, women, and local leaders
- ✓ **Establish** governance and financing structures to support long-term resilience programming
- ✓ **Integrate** resilience centers into national disaster preparedness, environmental planning, and public health strategies
- ✓ **Build** a multi-sector coalition spanning government, academia, civil society, and the private sector

Methods

The project methodology combined research, community engagement, and policy collaboration:

Assessments: Literature reviews, site visits, interviews, surveys, and participatory mapping (Photo 1) were conducted and data was analyzed and shared with key stakeholders.

Stakeholder engagement: Regular meetings with government entities, community-based organizations (Photos 2 & 3), academic partners, and private-sector leaders were held to garner support, collect inputs and share assessment findings and recommendations.

Capacity building: Climate and disaster first-aid training delivered to 121 community members in Santo Domingo with U.S. academic and Dominican partners through a train-the-trainer model.

Policy integration: Development of a three-year national program design, operational plan, and governance recommendations.

Pilot implementation: Collaboration with national government agencies to support integration of the resilience center model into existing programs and initiatives.



Photo 1



Photos 2 & 3

Project Accomplishments and Results

The Blueprint

During the initial phase, the project developed a comprehensive blueprint for a community resilience center in Cristo Rey, drawing on extensive research, assessments, and consultations. The team conducted four major assessments—examining physical and digital infrastructure, health systems, social dynamics, and policy frameworks—to understand the community’s vulnerabilities and strengths. These assessments relied on a combination of literature reviews, interviews, surveys, participatory mapping, site visits, and data analysis. The findings informed the design of an integrated model for resilience centers that addressed energy reliability, social cohesion, health preparedness, and disaster response coordination (Figures 2-4).

How it works: An Everyday Community Center

Everyday resilience-building programs will address root causes of vulnerability, increase knowledge and social cohesion, and position the community to better respond to crisis. The Center will:

- Serve as a safe, open community space and hub
- Provide training to increase knowledge and skills
- Serve as a central hub for people to find social services information and resources
- Support research to better understand the community's needs

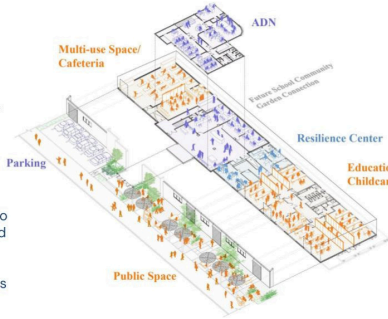


Figure 2.

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How it works: A Refuge During Disasters & Disruptions

During disasters and disruptions, the Resilience Center will:

- Serve as a hub for centralized, community-level information
- Provide basic services and supplies
- Provide space for COE satellite operations
- Assemble and support a community crisis response team

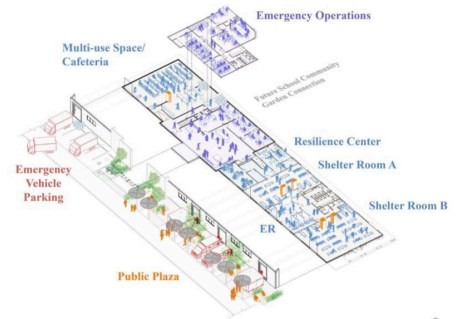


Figure 3.

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How it works: A Place for Post-Disaster Recovery, Research & Education

Post-disaster, the Resilience Center will:

- Continue to provide basic services
- Serve as a hub for ongoing support of basic necessities (first aid, mental health support, clean drinking water, food distribution, shelter capacities, etc.)
- Serve as an information hub and link community members to needed service and support
- Offer community space for NGOs and community organizations to operate
- Conduct post-disaster analysis with the community

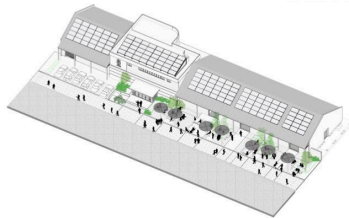


Figure 4.

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Partnership

Columbia University faculty, Dominican academic institutions, municipal leaders, private-sector partners, and community organizations contributed to the process, building a broad coalition committed to the project's goals. Public dissemination efforts, including presentations, a formal design report (Columbia World Projects, 2023), and high-level engagement with the President of the Dominican Republic and the Administrative Ministry of the President, further strengthened the project, built buy-in, and led to integration of the model into government agencies.

Community Engagement

Findings from the health and community assessments revealed the need for increased knowledge and capacity among community members to be able to prepare for and respond to health and other risks associated with climate change. The project team delivered a series of community climate and health trainings in Cristo Rey, designed to build local capacity and deepen understanding of the intersection between climate change and health. The trainings, delivered through a train-the-trainer model, reached 121 community members—primarily women and youth—and equipped nine local health providers from Dominican partner organizations to replicate the program independently. Participants demonstrated increased knowledge about climate-related health risks, greater confidence in preparedness strategies, and stronger communication skills for sharing information within their communities (Weinstein, et al., 2025).



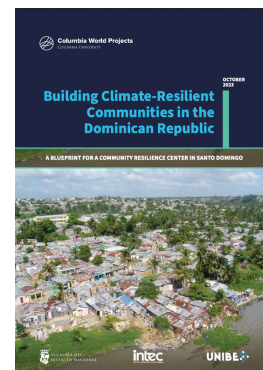
Community Member Workshop

Sustainability

The project team worked closely with government officials to advance policy and implementation planning. Following the 2024 presidential election, engagement with national ministries resumed, eventually leading to the endorsement of the resilience center program by the Ministry of Environment and Natural Resources. With support from key advisors in the national government, the project team prepared design materials, a three-year national program plan, integration of the resilience center initiative into government budgeting processes, and collaborated with ministry staff and advisors to translate the blueprint principles into the initial pilot sites. The government has allocated \$242,900 to support the initial implementation of pilot resilience centers located within Community Technology Centers, existing infrastructure of the Ministry designed to build technological capacity and job readiness among youth. These developments signaled a significant step toward institutionalizing community resilience programming at a national scale.

Key Outputs

- Technical reports on physical, digital, energy, health, and social infrastructure.
- Resilience Center Blueprint ([English](#) and [Spanish](#)). *Pictured left.*
- Blueprint dissemination event in partnership with American Chamber of Commerce of the Dominican Republic (AMCHAM-DR).
- Community Climate & Disaster First Aid training with 121 individuals and 9 organization trained and translated curriculum and training materials.
- Three-year national program plan and preliminary governance model.
- A seminar course with six urban planning students at Columbia’s Graduate School of Architecture, Planning and Preservation Resilient Caribbean: Prototyping a Hub for the Dominican Republic
- A peer-reviewed publication in the International Journal of Environmental Research and Public Health



Significance

The Dominican Republic experiences some of the highest disaster vulnerability in the Western Hemisphere. This project addressed urgent gaps:

- Lack of community-level infrastructure for coordinated disaster preparedness and response.
- Limited access to climate and health education for vulnerable populations.
- Non-integrated responsibilities across government environmental, health, and emergency response systems.
- Need for a nationally scalable model that offers long-term benefits for safety, economic stability, and community well-being.

Social Impact Lessons

- **Community trust is foundational.** Local organizers and institutions are essential to program uptake and long-term ownership.
- **Social infrastructure matters as much as physical infrastructure.** Community networks—churches, youth groups, neighborhood leaders—are critical during climate events.
- **Training builds local leadership.** The success of the climate-health training demonstrates how knowledge transfer can expand preparedness capacity.
- **Flexibility is necessary.** Political transitions and institutional changes require adaptive strategies.
- **Partnerships multiply impact.** Collaboration among universities, government ministries, and civil society accelerates adoption and sustainability.

Key Partners and Team

The success of this project relied on a diverse coalition of partners who contributed expertise across urban design, public health, engineering, governance, community development, and emergency response. Dominican academic institutions played a central role in research, data collection, and community engagement, particularly the Instituto Tecnológico de Santo Domingo (INTEC) and Universidad Iberoamericana (UNIBE). Faculty and students from these institutions led the assessments, facilitated local workshops, and provided technical insights critical to shaping the resilience center blueprint. Government agencies—including the Mayor’s Office of Santo Domingo (Ayuntamiento del Distrito Nacional), the Centro de Operaciones de Emergencias (COE), and later the Ministry of Environment and Natural Resources—were essential in aligning the project with public policy and identifying pathways for institutional adoption and national-scale implementation.

The project also benefited from robust participation from non-profit organizations such as Cruz Roja, Profamilia, Fundación Plenitud, and Arcoiris, each contributing knowledge of community dynamics, health systems, and local needs. Private-sector partners, including Banco BHD, ENZO, INICIA, and the American Chamber of Commerce of the Dominican Republic (AMCHAM-DR), provided strategic insights and explored governance and financing mechanisms. Leadership support from public figures, including national government officials, advisors and municipal leaders, further elevated the project's visibility and facilitated high-level engagement.

The project team itself brought together interdisciplinary expertise from U.S. and Dominican institutions. Professor Emeritus **Richard Plunz**, Columbia University faculty member and co-lead, provided foundational vision for resilience-centered design. **Vanessa Espaillet-Lovett** principal at Ella LLC and Columbia University alumnus served as a key advisor and project management lead, leveraging deep knowledge of Dominican urban contexts and stakeholder networks. **Jesús D'Alessandro, Kalil Erazo, Esteban Gonzalez, Ana Celia Gonzalez** and other Dominican university partners ensured that local perspectives shaped every stage of the work. On the public health side, **Dr. Cecilia Sorensen**, professor at Columbia University and Director of the Global Consortium on Climate and Health Education guided health assessment processes and the development and delivery of climate-health training. The Columbia World Projects project management team provided coordination, strategic oversight, and continuity across phases of the work.

Together, these partners formed a collaborative ecosystem that blended academic rigor, community insight, and government alignment—creating the foundation necessary to conceptualize, test, and begin scaling a new model for community resilience in the Dominican Republic.

CWP as a Catalyst

CWP played a critical convening and coordination role across sectors, enabling:

- ✓ **Interdisciplinary** research and design
- ✓ **Engagement** with high-level government officials
- ✓ **Mobilization** of academic expertise from Columbia and Dominican universities
- ✓ **Sustained** dialogue that led to national-level adoption and funding for pilot sites

CWP's involvement positioned the project as a bridge between research, governance, and community implementation.

Next Steps

The Dominican Ministry of the Environment and Natural Resources is working to integrate the resilience center model into their existing programs - resilient eco-heros, an accredited community capacity building program that equips local leaders with knowledge and skills to prepare for and respond to natural disasters and extreme weather events, and community technology centers, local centers that have been designated as community resource hubs for technical training and education for local leaders and youth. The Ministry has identified three initial sites, El Seibo, Santo Domingo and San Cristobal representing coastal, urban and mountainous communities, and plans to expand the program to additional sites including Danjabon and Monte Cristi as the program evolves.

As the program is implemented the Ministry will continue to integrate existing resources and partnerships both within government and the community, as well as with academia, non-profit organizations and the private sector to leverage existing resources and build expertise such that the centers serve as a gold standard for community resilience and can provide a model for communities across the region.

With these next steps, the project is positioned to catalyze a national network of resilience centers, enhancing the Dominican Republic's ability to respond to climate risks and improving long-term community well-being.

References and Resources

A range of reports, assessments, publications, and technical materials informed the design, implementation, and evaluation of this project. These resources capture the interdisciplinary foundation of the work and provide ongoing guidance for future replication and scaling.

Project Reports and Technical Documents

A Blueprint for a Community Resilience Center in Santo Domingo. Columbia World Projects. September, 2023.

Building Climate Resilient Communities in the Dominican Republic: Climate and health analysis and recommendations. Cecilia Sorensen and Kristie Hadley. January, 2023.

Building Climate Resilient Communities in Dominican Republic: Physical and digital infrastructure assessment. Instituto Tecnológico de Santo Domingo (INTEC). December, 2022.

Building Climate Resilient Communities in the Dominican Republic: Policy infrastructure. Monica Sanchez. September, 2022.

Building Climate Resilient Communities in the Dominican Republic: Social infrastructure. Esteban Gonzalez Reyes, Marcos Barinas Uribe, Victoria De-Lancer, Gabriela Read, Domingo Ico Abreu. December, 2022.

Training and Educational Materials

Community Climate and Disaster First Aid Curriculum (English and Spanish), developed by the Global Consortium on Climate and Health Education and UNIBE.

Participant Workbooks and Trainer Guides used across the three pilot training cycles.

Publications

Weinstein, H. N. W., Hadley, K., Patel, J., Silliman, S., Gomez Carrasco, R. Y., Arredondo Santana, A. J., Sosa, H., Rosa, S. M., Martinez, C., Hamacher, N. P., Campbell, H., Sullivan, J. K., Magalhães, D. d. P., Sorensen, C., & Valenzuela González, A. C. (2025). A Train-the-Trainer Approach to Build Community Resilience to the Health Impacts of Climate Change in the Dominican Republic. *International Journal of Environmental Research and Public Health*, 22(4), 650.