



Humanitarian  
OpenStreetMap  
Team



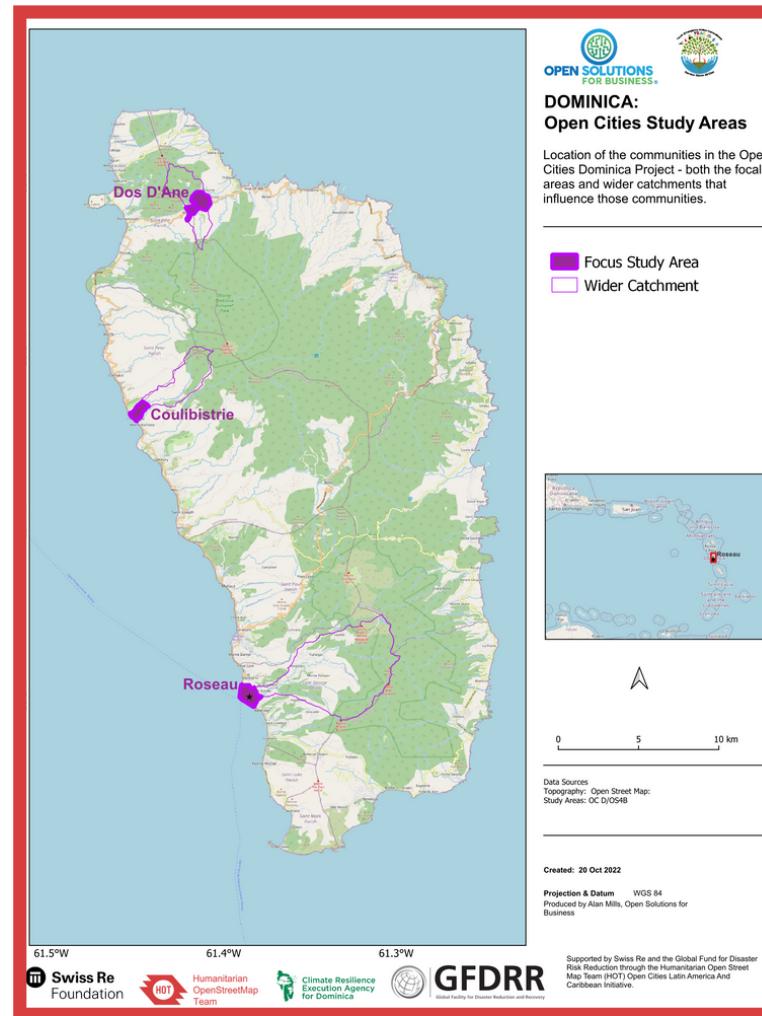
# OPEN CITIES

## Latin America and the Caribbean, Dominica

### IMPACT REPORT

# Introduction

The Commonwealth of Dominica is also known as “the Nature Isle” due to its lush forest nestled in rugged terrain. However, recent extreme storm events have severely impacted and threatened the inhabitants’ way of life as well as the environment. The ravages of Hurricane Maria (September 2017) are still evident around Dominica’s landscape and communities today. The scars and impacts of legacy storms also still present as they notably increase the vulnerability of communities and property owners. While expertise from international agencies and the national government itself have documented and modeled the physical evidence of past events, activity is often concentrated around high impact, high visibility events. This results in a lack of granularity of detail to allow household and community resilience planning.



## Project goals



- 1** To create and publish high-quality open spatial data to inform resilient urban planning that benefits the international risk-modeling community.
- 2** To improve local capacity and institutional development in order to support evidence-based urban resilience interventions.
- 3** To develop specific tools that support interested stakeholders in their use of disaster risk data for their cities.
- 4** To promote interaction and feedback mechanisms and consolidate regional networks through OpenStreetMap and open-source communities.

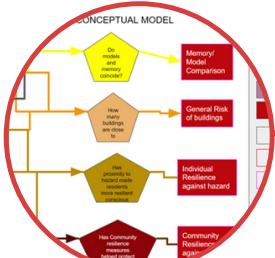
# Development

The primary aim was to provide Dominica's communities and government with more accurate, up-to-date data, information and mapping insight about hazards and their exposure on the people and infrastructure. This would allow better planning for mitigation against disasters and methods in response when events occur. This was developed with pre-interviews with key agencies, identifying their needs and shortfalls in information availability and future program developments. In January 2023, to complement other mapping data, a foundation for a sustainable pool of volunteer mappers was developed. Training was provided for them to improve data collection and analyze the results to identify risk. An example to showcase from targeted neighborhoods was the raising awareness of the utility of OSM as a tool for disaster management. The activities focused on three areas, the capital city Roseau, the flood-prone community of Coulibistrie and the landslide susceptible community of Dos D'Ane. The Project activities fell under four (4) phases as outlined below:



## Phase 2: Training and Mapping

Training sessions were held with the volunteer mappers for data collection platforms such as Vespucci and ODK applications. Mapathons preceded field mapping excursions in the target communities. Confidence was built within the mappers for interoperability between platforms and transitioning to desktop application. This was then supported by data clean up and verification, giving an appreciation of the work performed.



## Phase 4: Narrative and Presentation

TA series of final map outputs and tables were produced for each of the four questions as required, for a number of examples from the Dos D'Ane and Coulibistrie field surveys. The resultant story is a series of maps showing effectiveness of interventions, with supporting spatial information products for more detailed analysis

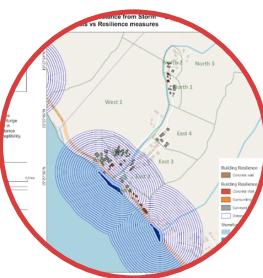
## Phase 1: Desktop Study

This was conducted based on risk, resilience and preparedness information to understand current data, human and capacity, and institutional contexts with the regards to the problem statement that would be addressed by the project. Although the project was set out to cover mainly flood phenomena, data for multiple hazards were utilized for the design. Existing platforms used for information gathering ranged from the global to local, such as OSM, GEOCRIS and Dominode.



## Phase 3: Design

The survey provided data sets depicting community resilience measures stored as points as well as other items including building polygons, building attribute data, and historical damage reports, that are prove useful. The analysis focused on resilience measures and effectiveness, public perception, and frequency of events.





## Outcomes

The project has laid the solid foundations with many key stakeholders including local government and agencies as well as aid organizations, many of which are excited about the project, eager to see the same carried out for their communities. The methodology developed can be duplicated through agencies mandated and interested in vulnerability and risk assessments as well as asset management. Stakeholders have committed to carrying on workflows and insights from this project, along with feedback and recommendations derived. Given that the government of Dominica has committed to make the island the “first climate resilient nation”, projects such as these are timely and well positioned to be long term and key seeds to a successful goal of the government.

It also meant more than 20 government officials trained of the use of open data, and overall a population of more than 15,230 people impacted by the mapping exercise.

## Product

The survey provided four data sets, apart from the community resilience measures stored as points, the other three datasets needed relating to be useful in the analysis:

1. The polygons of the buildings
2. The individual building surveys (to capture information on the building asset itself)
3. The “repeat survey” which recorded multiple records about the building including the history of events affecting the property, the damage and any resilience measures put in place.

Those allowed to produce analysis answering the questions how many buildings are close to hazards; has proximity to hazard made people more resilient and which measure has the community undertaken to be more resilient.

**24**

Tools/products maps

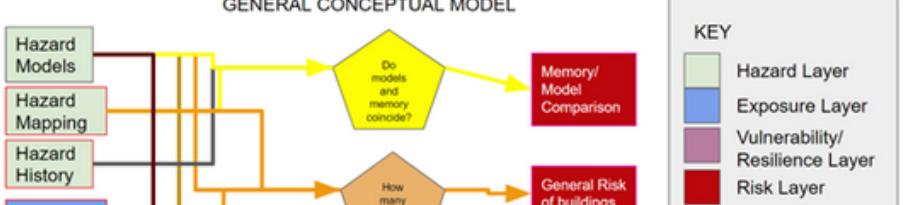
**260**

New features added on the map

**54**

Trained Participants which  
72 % were women

GENERAL CONCEPTUAL MODEL



2017	Maria Events
	Unknown
	Debris Flow
	Rock Slide
	Rock Fall
	StreamSediments
	Marine
Previous Landslide Events	
2015	(after Erika)
2014	
2007	
1990	
1987	



## Lessons learned

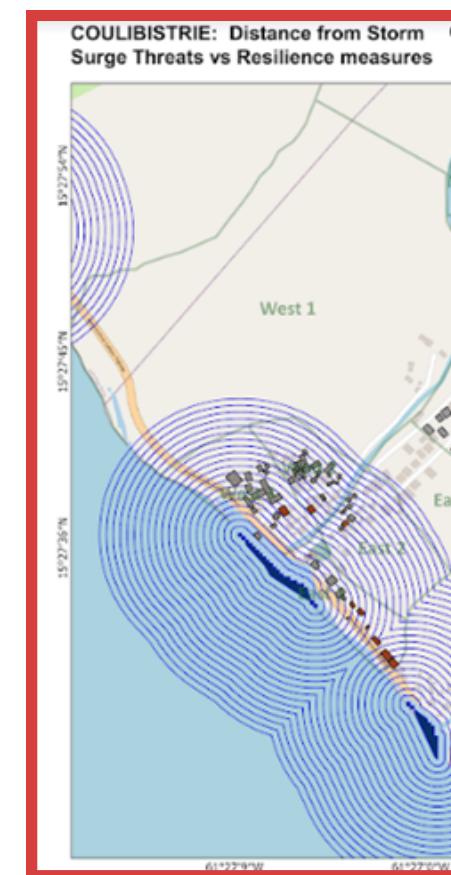
A few recommendations that should be added if the methodology is to be duplicated are listed below:

- Attaining drone imagery at least one month before mapping exercises. High resolution updated imagery helps to better differentiate and identify buildings, roads and watercourses.
- Utilizing the Field Mapping Tasking manager, in initial phases. This assisted in checks and management of resources and time.
- Early community engagement and communication. This was evident in areas where this was done earlier and more formally.
- Community building. This is an ongoing process and perhaps of equal importance to mapping, especially in building a continuous culture of mappers.

## Sustainability plan

The Youth Emergency Action Committee (YEAC) has been identified as the pilot agency of the platform in coordination with the Office of Disaster Management who already have a longstanding partnership. YEAC is now incorporating mapping initiatives, as a core part of their emergency response mandate. The Humanitarian OpenStreetMap Team is in the process of extending their MOU in neighboring island countries, to the Dominica chapter of YEAC to facilitate further training needs.

The CREAD Project (Climate Resilience Execution Agency for Dominica) has agreed to work with its partners in formatting the workflows into their tasks for attending to their list of Most Vulnerable Communities affected by Hurricane Maria. Other foreign agencies operating in Dominica, such as IsraAid have shown interest in utilizing the data and methodology in performing assessments for asset mapping of critical infrastructures on the island.



# We thank you for your ongoing support of our programme



Climate Resilience  
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