

# STRENGTHENING DISASTER ADAPTABILITY THROUGH SOCIAL INFRASTRUCTURE: A STUDY IN PUNTA HERMOSA

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## INTRODUCTION

Over the last few decades, climate change has intensified the frequency and severity of natural disasters. In this context, the Punta Hermosa district in Lima, Peru is highly vulnerable because of its susceptibility to landslides due to their proximity to the Malanche Ravine. Given this, there is an urgent need to develop strategies focused on strengthening community adaptability.



[1] Photograph of residents cleaning up after the landslides in Punta Hermosa in March 2023.

## RESEARCH QUESTION

What is the role of social infrastructure and community interactions in developing adaptability to a natural disaster?

## METHODOLOGY

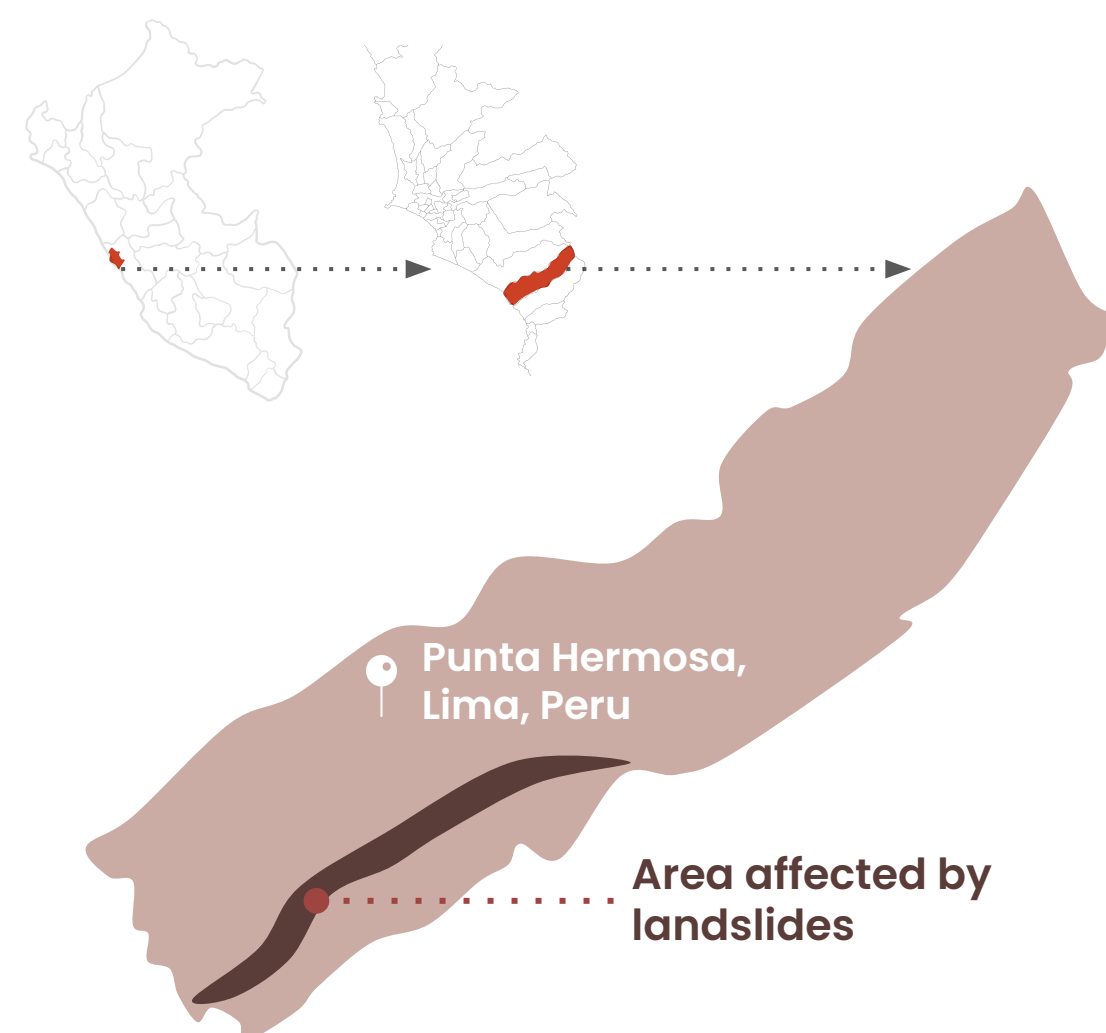
### METHODS

Through a **sequential design**, this study used three main research methods:

- **Survey:** conducted to assess experiences and preferences of 64 residents of 5 affected neighborhoods. Distributed via Facebook and WhatsApp.
- **Literature review and Secondary data collection:** to place the findings in the context of existing research regarding emergency management.

### STUDY SITE

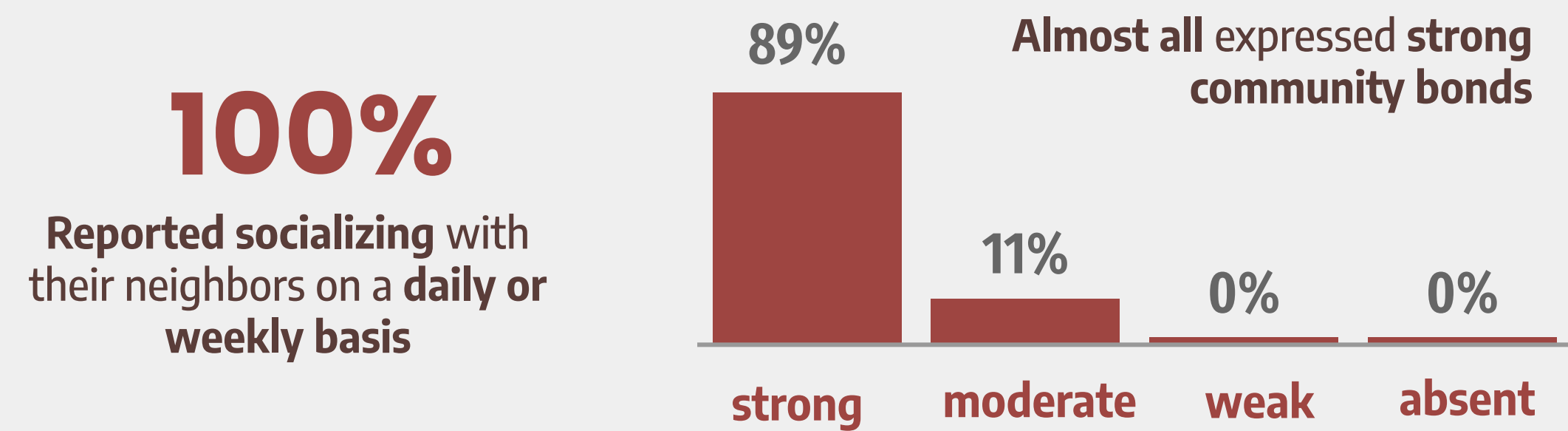
- The population of PH is made up of **15, 874 inhabitants**. [2]
- Landslides are attributed to the **El Niño phenomenon**; which increases rainy seasons and rainfall. [3]
- The five surveyed neighborhoods: **Bolognesi, Eten, Grau, Elías Aguirre and Pimentel.**



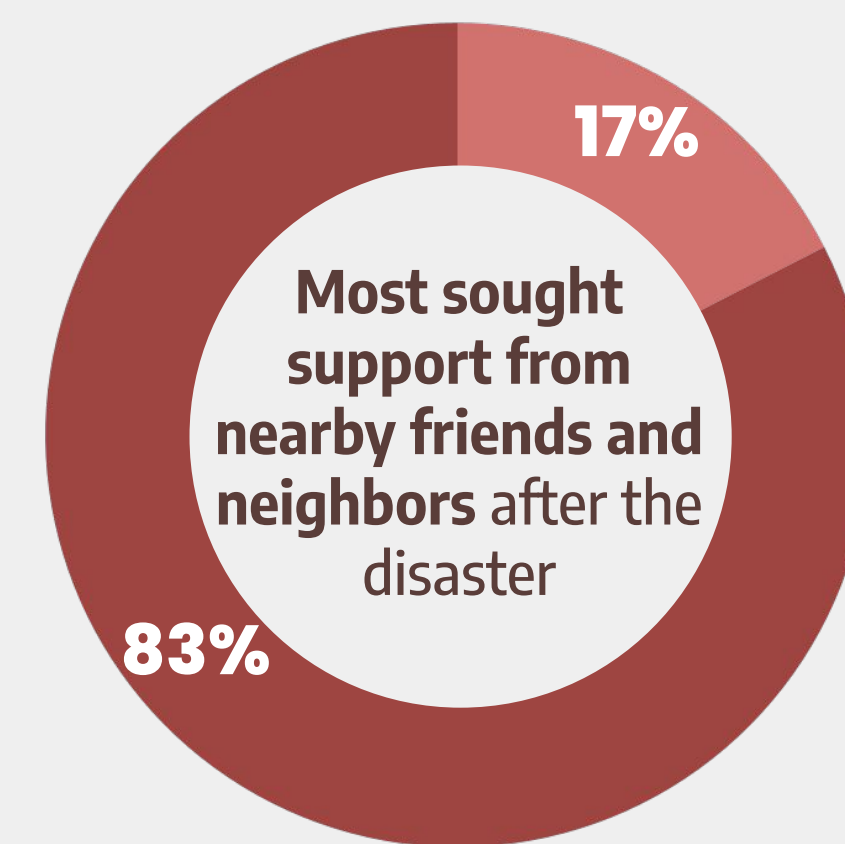
## DATA RESULTS

### SURVEY

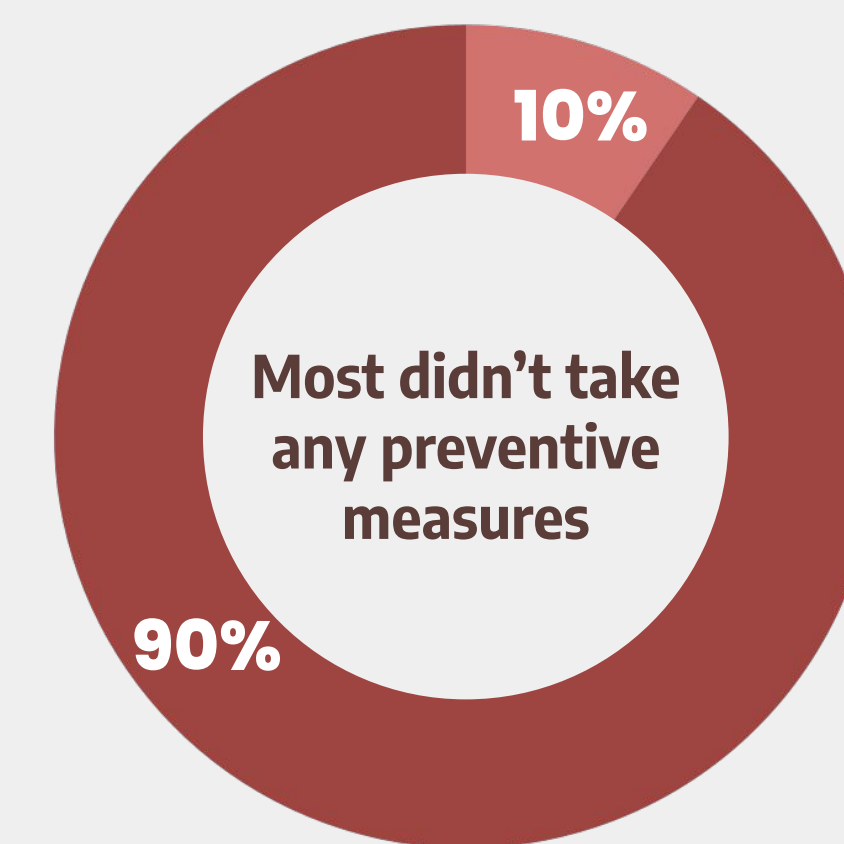
#### 1. SENSE OF COMMUNITY



#### 2. SUPPORT NETWORKS

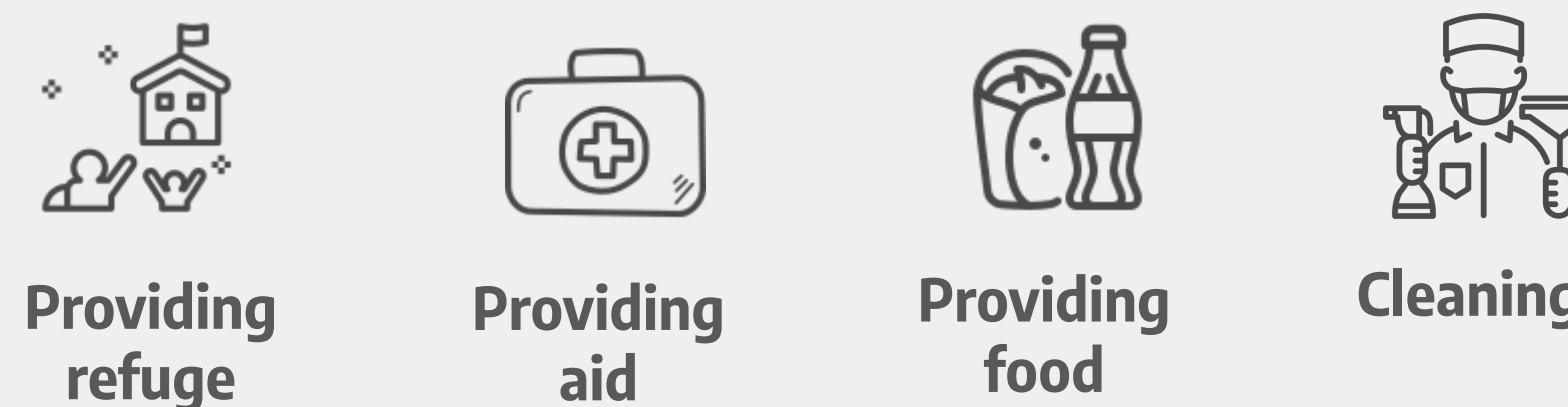


#### 3. PREPAREDNESS MEASURES

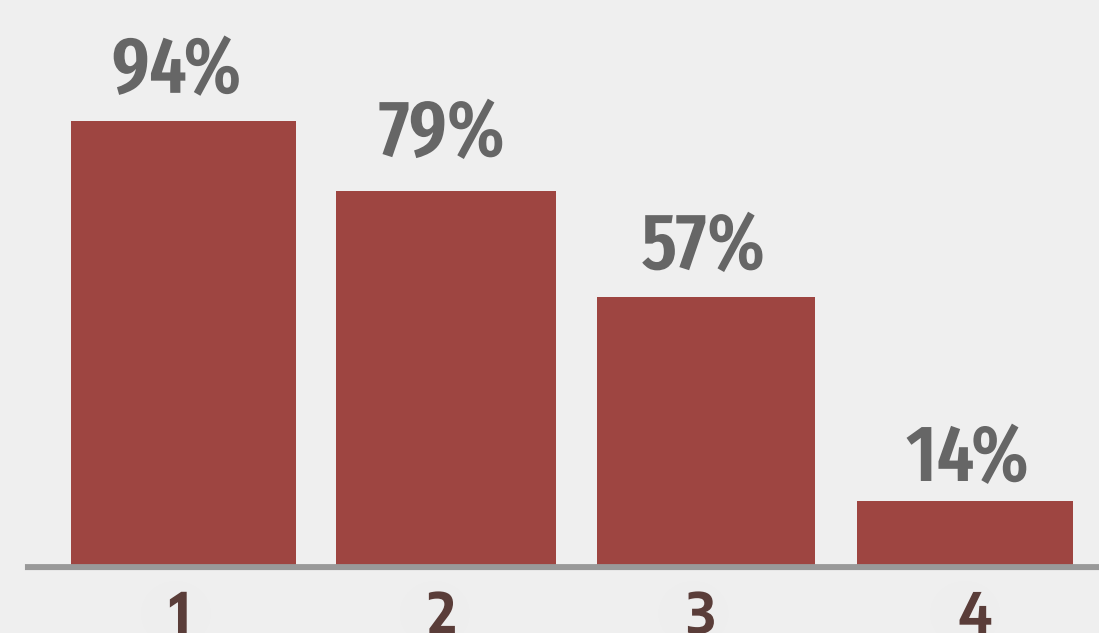


#### 4. RESPONSE MEASURES

**100%** reported being actively involved in actions and initiatives to provide assistance to members of their community such as:

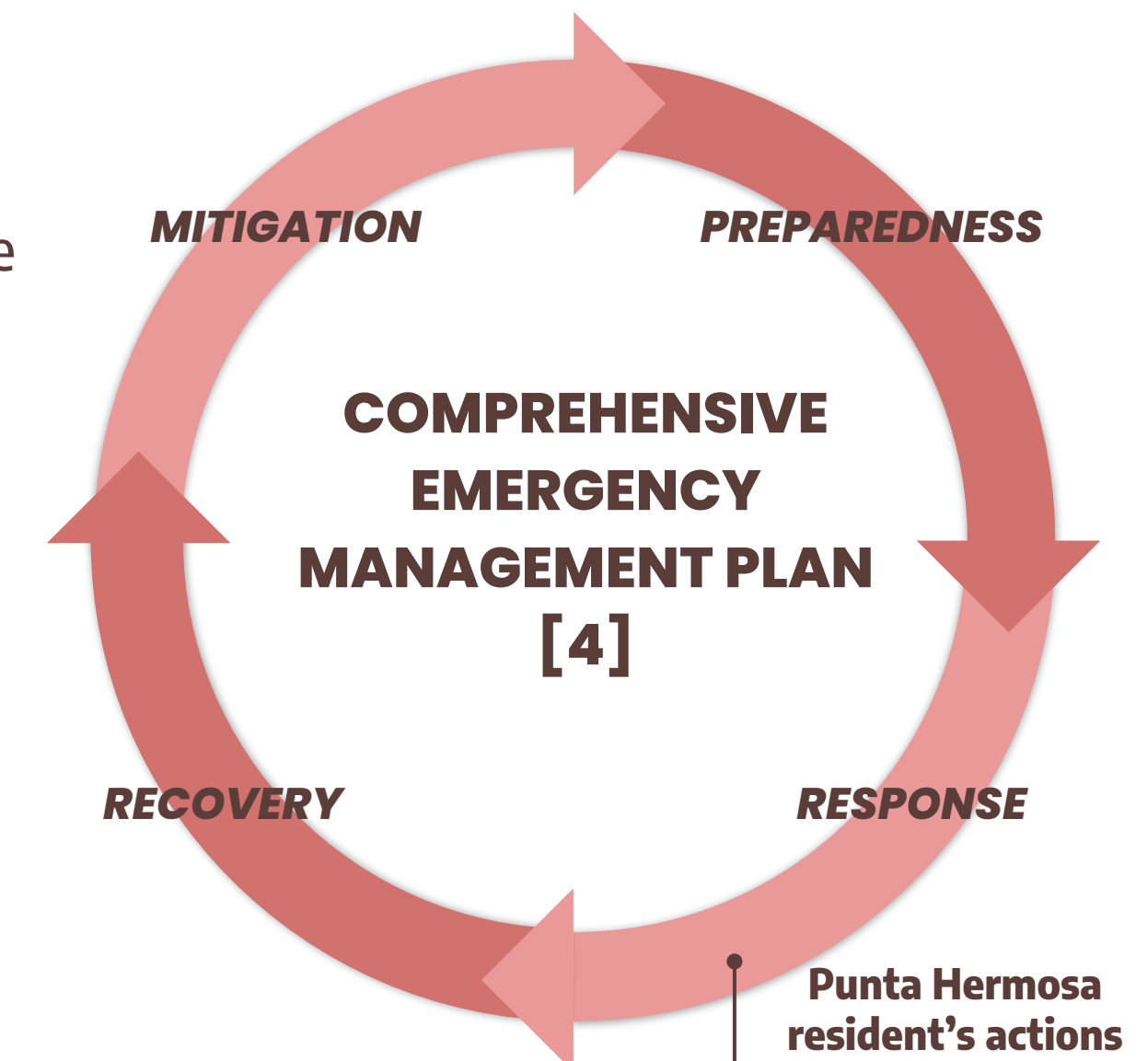


#### 5. PREFERENCES ON SOCIAL INFRASTRUCTURE



## DISCUSSION

The actions carried out by the community align with the **response phase** in accordance with the CEM Plan by the National Governors Association (1979). [4] **Community networks can also facilitate an immediate and more efficient response** to landslides by enabling a rapid assessment of the situation and the effective allocation of resources. [5][6]



## CONCLUSIONS & RECOMMENDATIONS

- 1 **Community interactions play a crucial role in effective emergency management.**  
Pre-existing bonds enhance the likelihood of mutual support when a disaster strikes.
- 2 **Social infrastructure should be strengthened in communities with a high vulnerability to natural disasters.**  
Considering how beneficial social infrastructure could be for disaster-prone communities, as it encourages stronger community networks and a more immediate response to disasters.
- 3 **The municipality and government should consider the preferences of the community and implement them.**  
The community demonstrated a strong sense of community and eagerness to spend quality time with neighbors, which represents an opportunity for the government to enhance resilience to landslides.



References:  
 [1] Alonzo, J. (2023). Punta Hermosa: COEN monitorea probable emergencia tras ruptura de depósito natural de agua. El Comercio. <https://elcomercio.pe/lima/huaco-en-punta-hermosa-coen-monitorea-probable-emergencia-debido-a-ruptura-de-deposito-natural-de-agua-playa-norte-playa-central-lluvias-cidon-yaku-noticia/>  
 [2] INEI. (2017). Censos Nacionales 2017: XII de Población, VII de Vivienda y III de Comunidades Indígenas. Censos 2017. <https://censo2017.inei.gob.pe/>  
 [3] García, L., Guzmán, O., & Hurtado, S. (2020). Hazard map based on the simulation of sludge flow in a two-dimensional model, Case Quebrada Malanche-Punta Hermosa-Lima-Perú. 2020 congreso Internacional de Innovación y Tendencias En Ingeniería (CONIITI), 1-6. <https://doi.org/10.1109/CONIITI15147.2020.9240423>  
 [4] National Governors Association (NGA). (1979). Comprehensive emergency management: a Governor's guide. Washington: [Dept. of Defense], Defense Civil Preparedness Agency. <https://hdl.handle.net/2027/uc1a0000783100>  
 [5] Coppola, D. (2015). Introduction to International Disaster Management (3rd ed.). Elsevier. <https://doi.org/10.1016/C2009-0-64027-7>  
 [6] Fagel, M. J. (2011). Principles of emergency management: Hazard specific issues and mitigation strategies. Taylor & Francis Group.