

BUILDING RESILIENCE IN THE CONTEXT OF RAPID URBANIZATION

A VIEW FROM INFORMAL SETTLEMENTS IN THE PHILIPPINES

ABOUT THE PROJECT

Building Resilience in the Context of Rapid Urbanization: A view from informal settlements in the Philippines (RURBANISE), is a research that aims to strengthen effective responses and capacities of vulnerable communities in the Philippines in the worsening impacts of climate change amidst urbanization that acknowledges the life experiences of its residents.

RURBANISE closely works with member communities of Homeless People's Federation Philippines, Inc. (HPFPI) and their partners to deliver inclusive and practical adaptation actions. The research programme investigates and understand differential vulnerabilities in the context of urbanization, the governance of urban resilience, and how to strengthen local adaptation capacities and knowledge.

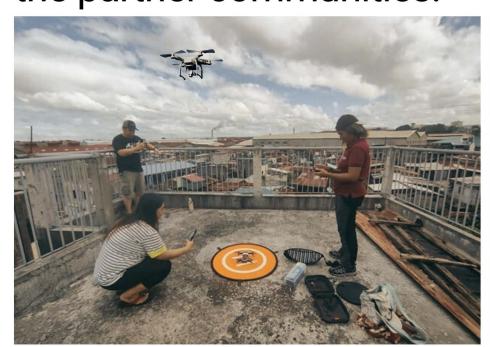
METHODOLOGIES

Development of Vulnerability Assessment Indicator

This method involves conducting focus group discussions with partner communities to identify key factors that contribute to community vulnerabilities.

Hazard Mapping and Modeling

This process uses geographic and statistical tools to analyze potential threats and assess the risks faced by the partner communities.





Community Vulnerability and Capacity Assessment (CVCA) Workshops

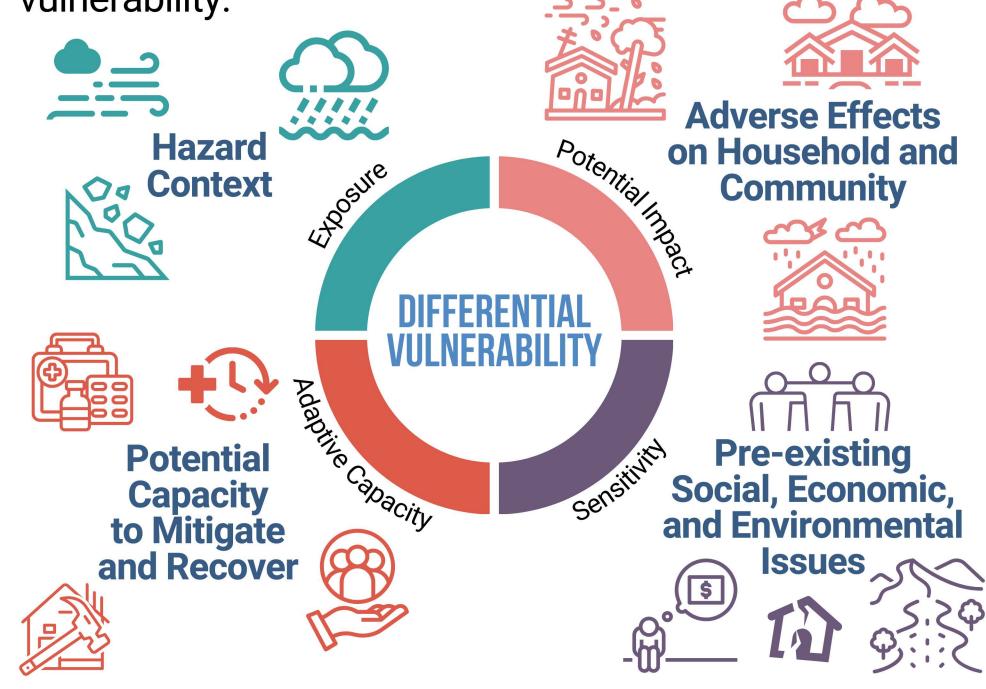
These workshops engage community members in evaluating the strengths, weaknesses, and adaptive capacities of their communities.





Household Surveys

Surveys are conducted at the household level to collect firsthand data on four key aspects of differential vulnerability.







Community-based Policy Evaluation (CBPE)

These sessions aim to assess the community's awareness of, and experiences with, policies that affect them.

• Environmental Hazard Sensors Technology Development and 3D Mapping

These methods will explore advancements in early warning systems and risk management for communities vulnerable to climate-related disasters.

WORK PACKAGES

co-design studio

- investigate heterogeneous patterns of urbanization and differential vulnerabilities
- examine the existing **policy and governance context** at different scales to understand drivers of differential vulnerabilities, enablers, barriers and opportunities for more effective, inclusive and just urban adaptation action
- analyze how current and future action plans of the Homeless People's Federation Philippines, Inc (HPFPI) can catalyze transformative adaptation and address the

structural roots of differential vulnerabilities

facilitate innovation for small-scale adaptation action pilots, bringing together research findings on risks, responses and capacities with local knowledge through a

Access to Land Tenure

Access to Engagement during the Policy Cycle vulnerabilities

AXES OF DIFFERENTIATION

Patterns of Facilitating Access to Resources and **Spatial** Differentiation Infrastructure Self-perceived Challenging Cultures of Identity Characteristics **Exclusion** Relationship **Enabling Inclusive,** to Power Transformative Hierarchies Governance Capacity to Recognizing Influence Experiences, Situations Knowledge, and

• Semi-structured Interviews (SSI) with Government Representatives

These interviews will engage government officials to gather insights on climate adaptation and risk management policies in institutions at the local, regional, and national levels.

HOA Assessment and Organizational Development

A method used to deepen understanding of the organizational capacities of HPFPI and its communities to assist in developing strategic approaches for capacity strengthening and adaptation planning.





GOVERNANCE

RESPONSES

Capacities

• Stakeholder Engagements

Collaboration and partnerships with multi-stakeholder as a means in creating sustainable adaptation strategies and meaningful lasting impact.







Kilometers

ULHOA

Flooding

Smart Tower

Flooding

Severe Wind

Ground Deformation



Figure 1. Philippine Map showing the RURBANISE Partner Communities along with their simulated hazards.

FLOOD HAZARD MAPS (100YR)

Flooding

HPFPI HOA

Ground Shaking

Flooding

Nalum Ville

Ground Shaking

Flooding

Ground Deformation

ASHAI

Flooding

Ground Shakin

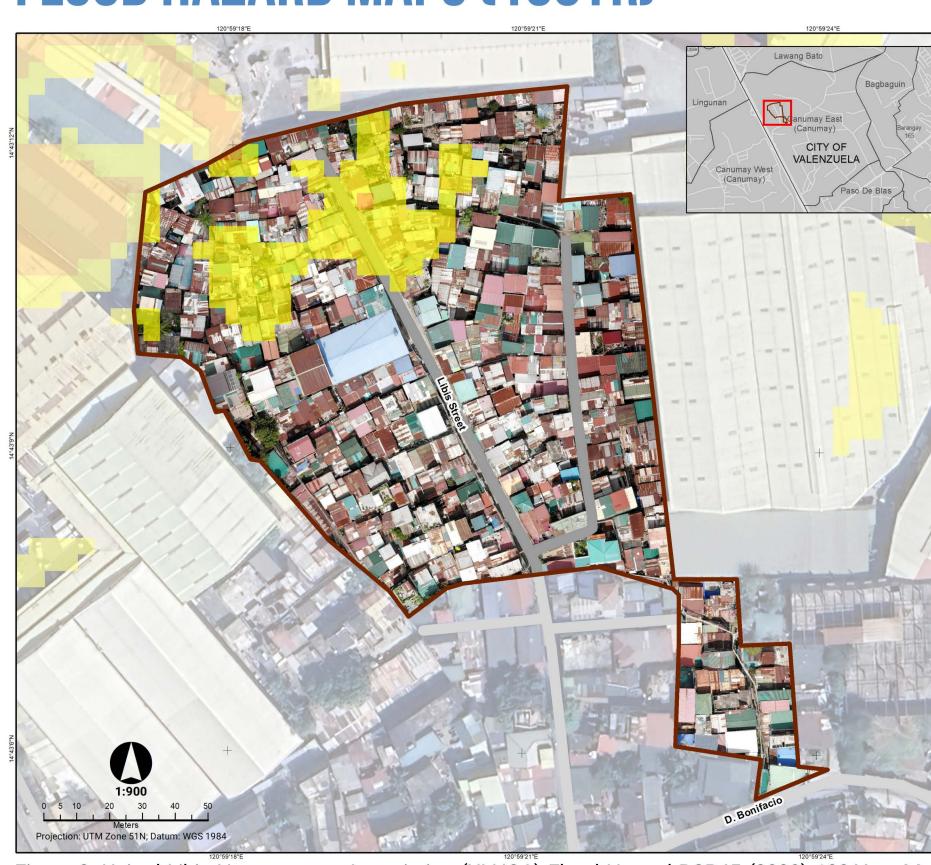


Figure 2. United Libis Homeowners Association (ULHOA) Flood Hazard RCP45 (2039) 100-Year Map, showing projected flood hazards based on climate change-adjusted rainfall projections. The smaller maps illustrate specific flood hazard conditions in Nalumville, Smart Tower, SMASH, CASIDHAI, APSHAI, KABALAKA, and HPFPI HOA1, respectively. Hazard levels range from low to high, indicating areas at risk of flooding over a 100-year return period.



Flood hazard data was generated using elevation, land cover, and rainfall intensity as the main parameters. Integrated river and floodplain models were created using software that simulates the flow of water over a system of square grid elements. Climate change-adjusted rainfall projections (RCP 4.5) from the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) were then translated into daily rainfall values and incorporated into the models. The modeling software utilizes differential equations for continuity and momentum in calculating the volume and velocity of the water flowing across the grid element boundaries.

COMMUNITY VALIDATED MAPS

Uses participatory processes to capture community experiences with hazards

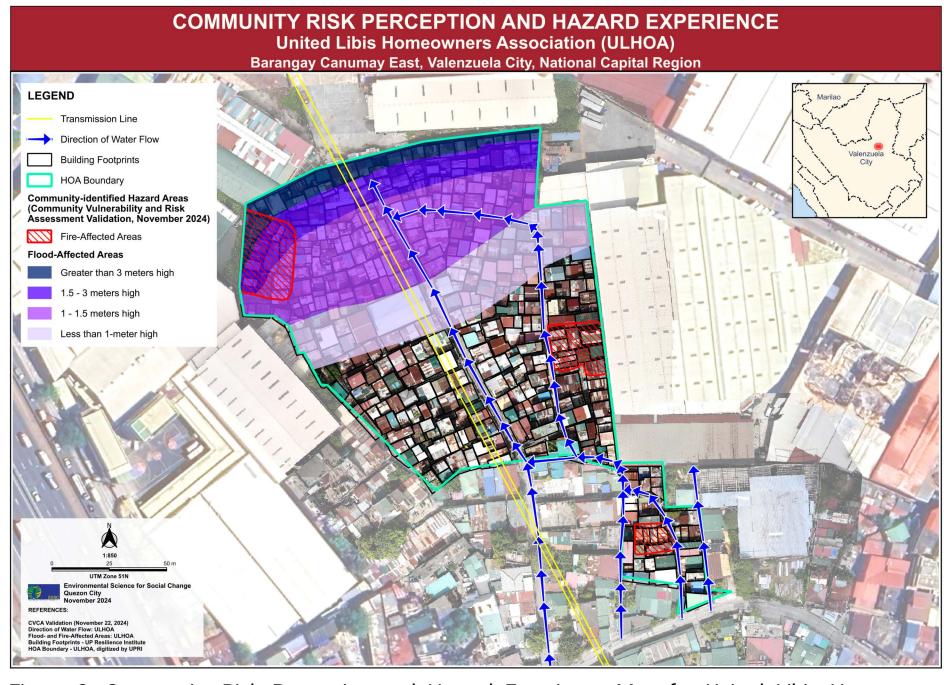


Figure 3. Community Risk Perception and Hazard Experience Map for United Libis Homeowners Association (ULHOA), highlighting community-validated flood hazard areas based on participatory mapping and local experiences. The map illustrates varying flood depths and affected zones, integrating community insights into hazard assessment. The smaller maps depict similar community-validated hazard assessments for APSHAI, CASIDHAI, KABALAKA, Nalumville, and SMASH, respectively, showcasing localized flood risks and vulnerabilities.

