

Risk Index for Climate Displacement (RICD)

RICD HOTSPOT FACTSHEET – MUNICIPALITY OF RODRIGUEZ



Key Takeaways



Floods are the most impactful hazard, with rising frequency and severity, disrupting homes, power and livelihoods.



Displacement is mostly reactive and local, with respondents citing **safety concerns, housing damage** and **electricity loss** as key reasons for moving.



Displaced and non-displaced households use similar adaptive strategies, like house elevation and drainage, but with limited support and resilience gains.



There is a notable presence of trapped population, mostly due to poverty, lack of options and fear of losing land or housing.



Future movement is considered if conditions worsen, particularly after major disasters or if homes become uninhabitable.



Priority areas for intervention should include **secure housing, resilient livelihoods**, and **tailored support for immobile, high-risk populations**. These findings are intended to inform targeted investment windows under the **Climate Catalytic Fund (CCF)** by **identifying context-specific entry points** for building resilience and reducing displacement risk.

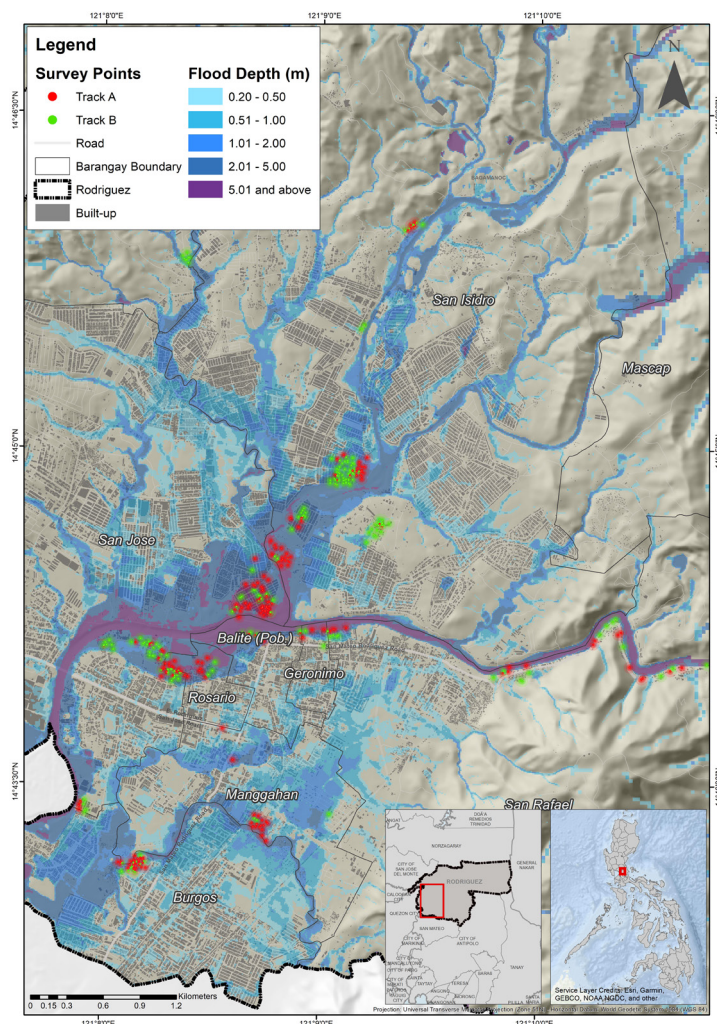


Figure: Location of surveyed households in Rodriguez municipality, Rizal, Philippines. Survey points represent displaced households (Track A, red) and non-displaced households (Track B, green), overlaid on a probabilistic 100-year rain return period flood hazard map showing modeled flood depths.



Hotspot Selection and Survey Methodology

Rodriguez was selected through a **three-tiered** selection process:

- **Level 1:** High climate and displacement risk based on macro-level indicators
- **Level 2:** Historical evidence of recurrent storm and flood-related displacement
- **Level 3:** Feasibility assessed through data availability, and Local Government Unit (LGU) collaboration
- **Validation:** Supported by Department of Social Welfare and Development (DSWD) displacement records and stakeholder consultation

Household surveys were conducted with both displaced and non-displaced populations to understand the **drivers, triggers, and thresholds of climate-induced displacement**. Respondents were selected based on **exposure to climate hazards and past displacement**, using a purposive sampling approach. Data captured **demographics, hazard impacts, mobility patterns, risk perception, and adaptation strategies**. This was complemented by **key informant interviews (KIIs)** and **focus group discussions (FGDs)** to contextualize household-level findings and inform displacement risk modelling.

Location Profile

Country	 Philippines
City / Regency	Municipality of Rodriguez (Montalban)
Province	Region IV-A
Income Classification ¹ (2024)	1 st Class Municipality
Population (2020)	443,954
Average Household Size (2022)	4.39
Land Area (km ²) ² (2021)	172.65
Population Density (persons per km ²) (2023)	2,571
Top 3 Contributing Sectors to GDP (2023)	• Wholesale and Retail Trade (24%) • Manufacturing (20%) • Real Estate and Ownership of Dwellings (11%)

Descriptive Profile of Respondents

Sample Size	Displaced households	221
	Non-displaced households	211
	Total sample size	432
Average Household Size	5.4 people	
Average Monthly Household Income	USD \$216	
Proportion of Households with Home Ownership	54%	
Primary Livelihood Source (top 3)	Construction / Skilled Labor	39%
	Home-based Enterprise	9%
	Formal and Informal Services	8%
Highest Educational Qualification (top 3)	Upper Secondary	46%
	Lower Secondary	23%
	Elementary	17%

1 First Class Municipalities have an average annual income of two hundred million pesos (P200,000,000.00) or more (DOF, 2024)

2 Philippine Statistics Authority uses the estimated land areas from the cadastral survey (certified and provided to the Department of Budget and Management) from the Land Management Bureau, Department of Environment and Natural Resources, as of December 2013 (PSA, 2021)

Climate Hazards Observed

Common hazards experienced over the last 5 years:



Floods
34%



Typhoon / Storms
27%



Heavy rainfall
23%

Changes in hazards above over the last 5 years:

Severity  26%

Frequency  32%

Seasonal shifts  42%

Most impactful hazard over the last 5 years:

Floods  80%

Comparison of Displaced and Non-Displaced Households

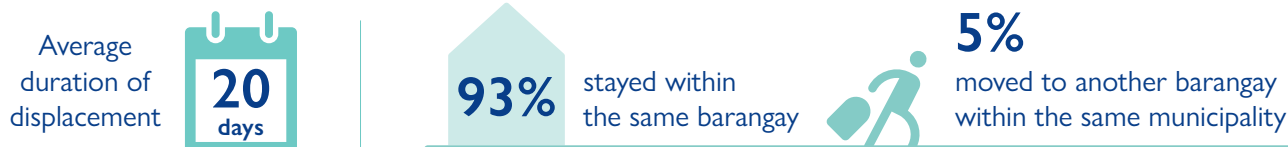
Dimension	Displaced Households		Non-Displaced Households	
Mobility				
Mobility Types Observed	Temporary displacement <i>(Temporarily moved for >7 days and are still unable to return):</i>	2%	Pre-emptive evacuation ³ <i>(Pre-emptively evacuated for ≤ 7 days and have since returned):</i>	33%
	Permanent relocation <i>(Permanently moved and do not plan to return):</i>	1%	Stayed in place <i>(Did not move):</i>	6%
	Returnees <i>Temporarily moved for >7 days and have since returned):</i>	48%		
Impacts from Hazard				
Top 3 Impacts	Safety concerns due to hazard	27%	Safety concerns due to hazard	24%
	Housing damage	13%	Inaccessibility to electricity	11%
	Inaccessibility to transport infrastructure	11%	Income losses	11%
Average Housing Damage ⁴	14%		7%	
Average Asset Loss ⁵	14%		13%	
Adaptation Strategies				
Top 3 Strategies	Elevated my house or moved it to higher ground	23%	Elevated my house or moved it to higher ground	28%
	Improved drainage around the home or community	20%	Stored more food or water in anticipation of shortages	18%
	Stored more food or water in anticipation of shortages	13%	Improved drainage around the home or community	15%
Emergency savings or funds	USD \$102		USD \$104	
Degree of Volition in Moving or Staying				
Volition	I had no choice — I was forced to move.	48%	I feel trapped in staying where I am	46%
	I felt I had very little choice — moving was the only realistic option.	31%	I feel somewhat constrained to stay where I am	14%
	I had some choice, but I felt pressured by the situation.	5%	I felt free in choosing to stay where I am	25%
	I chose to move, but the hazard influenced my decision.	13%	Not sure	15%
	I freely chose to move, and the hazard was not a major factor.	3%		

³ Pre-emptive evacuations (≤7 days) are not classified as displacement as they reflect short-term responses to immediate threats, whereas this analysis seeks to capture longer-term displacement beyond immediate flight.

⁴ Statistical analysis shows an association between housing damage and displacement across all four case sites in Indonesia and the Philippines. However, the figure shown here reflects only the weighted average for Rodriguez, not all sites.

⁵ Statistical analysis shows an association between asset loss and displacement across all four case sites in Indonesia and the Philippines. However, the figure shown here reflects only the weighted average for Rodriguez, not all sites.

Displacement Dynamics



SEQUENCE OF EVENTS LEADING TO DISPLACEMENT



Trapped Populations



60% of non-displaced respondents reported feeling unable to leave due to constraints, indicating they are trapped

TOP 3 REASONS FOR BEING TRAPPED

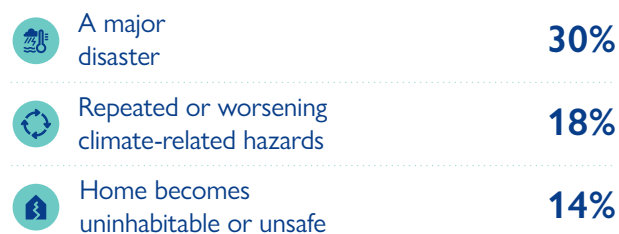


Perceived Future Displacement Risk

TOP 3 WAYS HAZARDS WOULD FORCE HOUSEHOLDS TO MOVE



TOP 3 REASONS HOUSEHOLDS WOULD LEAVE



PLACE HOUSEHOLDS WOULD GO IF THEY NEEDED TO LEAVE



Qualitative Insights from Key Stakeholders

- Many communities experienced **income loss due to climate impacts**, particularly in construction, agriculture, retail, and street vending.
- Adaptation to climate impacts is often constrained by barriers such as **limited skills, education, and financial capital**, though some individuals demonstrated willingness to adapt when provided with **training and support programs**.
- Major challenges in rebuilding homes include **limited budget, lack of income sources, and land documentation issues**, resulting in most reconstructed houses remaining non-resilient.
- Support for non-displaced people, including host families, is limited as **most aid prioritises displaced households**.
- Communities express the need for **long-term housing solutions, sustainable jobs, and better support for informal settlers**, while those considering relocation **prioritise safer, flood-free areas with stable employment, secure housing and government support**.

Applications and Next Steps

INSIGHTS TOWARDS RICD DEVELOPMENT AND BROADER APPLICATION:

- Rodriguez exemplifies coexisting high displacement and immobility, where hazard exposure intersects with poverty and tenure insecurity.
- The presence of permanent relocation and reactive movers underscores the need for RICD to capture both displacement dynamics and barriers to movement.
- Findings point to the value of incorporating volition, economic constraints, and informal tenure risk into index design.
- Insights from Rodriguez can inform disaster risk reduction and adaptation efforts in fast-growing areas with overlapping poverty and hazard risks.

LINKAGE WITH CCF:

- Findings from Rodriguez provide **concrete, data-driven entry points for CCF investment**, especially in secure housing, livelihood recovery, and support to immobile urban households.
- Frequent, reactive displacement due to flooding highlights the need for **early warning systems, evacuation planning, and temporary shelter support**.
- Ongoing housing damage and non-resilient reconstruction point to opportunities for CCF to fund affordable, **flood-resilient housing** for low-income households.
- The high share of **immobile households** facing poverty calls for **area-based assistance** combining livelihoods, basic services, and in-place resilience.

Project Overview

The International Organization for Migration (IOM), the Asian Institute of Technology (AIT), and the University of the Philippines Resilience Institute (UP RI) are jointly developing the Risk Index for **Climate Displacement (RICD)**, working closely with numerous technical experts as part of a co-creation process. This work is being carried out with support from the **Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO)**.

The RICD aims to improve foresight on **climate-induced displacement by mapping and quantifying risk** at national and subnational levels.

The results are intended to inform both the development of RICD and strategic initiatives such as the **Climate Catalytic Fund (CCF)**, which **supports interventions to address climate-induced displacement**.

