

Risk Index for Climate Displacement (RICD)

RICD HOTSPOT FACTSHEET – MUNICIPALITY OF BAGAMANOC



Key Takeaways



Typhoons and storms are the most damaging hazards, with increasing severity and frequency causing repeated losses - damaging homes, disrupting power and eroding livelihoods – and making recovery difficult.



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



Both displaced and non-displaced households adopt similar, low-cost adaptation strategies – e.g. house elevation, drainage improvements and vegetation planting – but without external support, these will be insufficient in coping with the climatic hazards.



There is a notable presence of trapped population, mainly due to lack of money, fear of property loss, or having nowhere to go.



Future mobility is conditional, with households most likely to move after major disasters or if homes become unsafe, but many remain tied to land, livelihoods, or family.



Priority areas for intervention should target resilient livelihoods, evacuation systems, and tailored support for immobile rural populations facing repeated climate shocks. 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.

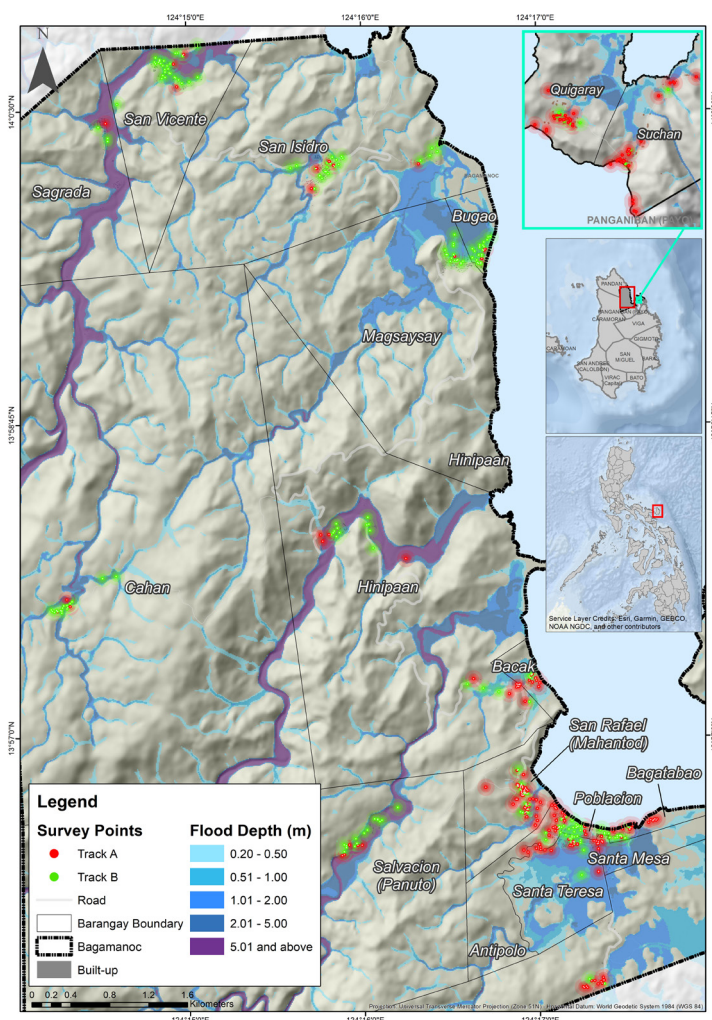


Figure: Location of surveyed households in Bagamanoc municipality, Catanduanes, Philippines. Survey points represent displaced households (Track A, red) and non-displaced households (Track B, green), overlaid on a probabilistic 100-year rain return period flood hazard map showing modeled flood depths.



Hotspot Selection and Survey Methodology

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

- **Level 1:** High exposure to coastal and storm hazards, combined with rural vulnerability indicators
- **Level 2:** Repeated displacement from typhoons (e.g. Maysak (Quinta) - 2008, Typhoon Nock-ten(Nina) - 2016, Kammuri (Tisoy) - 2019, Goni (Rolly) - 2020)
- **Level 3:** Feasibility assessed through Local Government Unit (LGU) engagement and data from Department of Social Welfare and Development (DSWD)
- **Validation:** DSWD 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
Municipality / City	Municipality of Bagamanoc
Province	Catanduanes
Region	Region V
Income Classification ¹ (2024)	4 th Class Municipality
Population (2020)	11,086
Average Household Size (2022)	4.25
Land Area (km ²) ²	80.74
Population Density (persons per km ²) (2020)	137
Top 3 Contributing Sectors to GDP (2023)	• Construction (35%) • Wholesale and Retail Trade (10%) • Education (7%)

Descriptive Profile of Respondents

Sample Size	Displaced households	263
	Non-displaced households	280
	Total sample size	543
Average Household Size	4.5 people	
Average Monthly Household Income	USD \$181	
Proportion of Households with Home Ownership	53%	
Primary Livelihood Source (top 3)	Agriculture and Crop Farming	29%
	Fisheries / Aquaculture	15%
	Construction / Skilled Labor	13%
Highest Educational Qualification (top 3)	Undergraduate Degree	39%
	Upper Secondary	28%
	Lower Secondary	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:



Typhoon / Storms
42%



Floods
23%



Heavy rainfall
18%

Changes in hazards above over the last 5 years:

Severity  32%

Frequency  31%

Seasonal shifts  37%

Most impactful hazard over the last 5 years:

Typhoon / Storms  90%

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>	10%	Pre-emptive evacuation ³ <i>(Pre-emptively evacuated for ≤7 days and have since returned)::</i>	34%
	Permanent relocation <i>(Permanently moved and do not plan to return):</i>	10%	Stayed in place <i>(Did not move):</i>	17%
	Returnees <i>(Temporarily moved for >7 days and have since returned):</i>	29%		
Impacts from Hazard				
Top 3 Impacts	Safety concerns due to hazard	26%	Safety concerns due to hazard	20%
	Housing damage	23%	Housing damage	18%
	Inaccessibility to electricity	7%	Inaccessibility to electricity	11%
Average Housing Damage ⁴	16%		10%	
Average Asset Loss ⁵	14%		12%	
Adaptation Strategies				
Top 3 Strategies to Past Hazards	Elevated my house or moved it to higher ground	36%	Elevated my house or moved it to higher ground	25%
	Improved drainage around the home or community	17%	Planted trees or vegetation to reduce flooding	17%
	Planted trees or vegetation to reduce flooding	14%	Improved drainage around the home or community	16%
Emergency savings or funds	USD \$111		USD \$114	
Degree of Volition in Moving or Staying				
Volition	I had no choice — I was forced to move.	41%	I feel trapped in staying where I am.	15%
	I felt I had very little choice — moving was the only realistic option.	22%	I feel somewhat constrained to stay where I am.	27%
	I had some choice, but I felt pressured by the situation.	3%	I felt free in choosing to stay where I am.	43%
	I chose to move, but the hazard influenced my decision.	31%	Not sure.	15%
	I freely chose to move, and the hazard was not a major factor.	2%		

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 Bagamanoc, 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 Bagamanoc, not all sites.

Displacement Dynamics

Average
duration of
displacement



87%

stayed within
the same barangay



13%

moved to another barangay
within the same municipality

SEQUENCE OF EVENTS LEADING TO DISPLACEMENT



86%

A hazard
occurred, we
immediately left



6%

Cumulative
impacts of
multiple hazards
influenced
our decision



2%

Waited a while
after hazard,
then decided
to leave



2%

Displaced
multiple times
due to repeated
hazards/unsafe
returns



2%

Other



1%

Conditions
worsened,
we eventually
decided to leave



1%

Planned to
stay, but
were forced
by authorities/
landowners

Trapped Populations



42% of non-displaced respondents
reported feeling unable to leave due to
constraints, indicating they are trapped

TOP 3 REASONS FOR BEING TRAPPED



37%

lack of money
and resources



13%

no place
to go



13%

fear of losing land/
home/property

Perceived Future Displacement Risk

TOP 3 WAYS HAZARDS WOULD FORCE HOUSEHOLDS TO MOVE



Safety concerns
due to hazards

24%



Housing
damage

21%



Inaccessibility to
electricity

8%

TOP 3 REASONS HOUSEHOLDS WOULD LEAVE



A major
disaster

33%



Repeated or worsening
climate-related hazards

18%



Home becomes
uninhabitable or unsafe

15%

PLACE HOUSEHOLDS WOULD GO IF THEY NEEDED TO LEAVE



79%

Move but stay within
the same barangay



11%

Move to another barangay,
in the same municipality

Qualitative Insights from Key Stakeholders

- Frequent and intense hazards disproportionately affect low-lying and coastal areas, with **farmers and fisherfolk** particularly vulnerable to their impacts
- Most displaced communities have their basic needs met during disasters and evacuation, but many **face challenges in accessing recovery support afterward**.
- **Most houses rebuilt after disasters lack resilience**, as many are constructed from light or temporary materials. Only a few households are able to upgrade to concrete or semi-concrete structures, mainly constrained by limited budgets and the high cost of building materials. Decisions to move are mainly driven by severe hazard impacts on housing and **opportunities for safer relocation, employment, or education**, though many remain due to strong ties to family, livelihoods, and community.

Applications and Next Steps

INSIGHTS TOWARDS RICD DEVELOPMENT AND BROADER APPLICATION:

- Bagamanoc's frequent short-term displacement highlights the need for RICD to capture cyclical mobility in remote, rural coastal areas.
- The large trapped population with low financial reserves underscores the importance of including immobility and economic precarity as core vulnerability indicators.
- Clear links between livelihood, housing losses, and displacement offer insights for model development and calibration in identifying displacement hotspot.
- Findings can inform land use planning, zoning and resource allocation for disaster preparedness management, particularly under different climate scenarios.

LINKAGE WITH CCF:

- Findings from Bagamanoc provide **concrete, data-driven entry points for CCF investment**, especially in disaster preparedness, resilient livelihoods and inclusive rural adaptation.
- Frequent, short-term displacement due to storms points to the need for evacuation infrastructure and **early warning systems** in remote coastal areas.
- Loss of income and difficulty recovering after storms underscore the need for CCF to invest in resilient, **shock-responsive livelihoods** in rural hazard-prone areas.
- Many households remain trapped due to poverty, social ties, and fear of loss, pointing to the need for **inclusive resilience support that reduces immobility** and builds coping capacity.

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**.

