

Risk Index for Climate Displacement (RICD)

RICD HOTSPOT FACTSHEET – MAKASSAR CITY



Key Takeaways



Floods are the most common and damaging hazard, with rising frequency and severity disrupting homes, transport and livelihoods.



There is a notable presence of trapped population, mainly due to lack of money, no relocation options, or fear of losing property.



Displacement is short-term and local, with respondents citing **safety risks**, **housing damage** and **inaccessibility to water supply/transport infrastructure** as key reasons for moving.



Some communities are open to moving, especially after major disasters, but decisions often depend on livelihood needs and hazard severity.



Displaced and non-displaced households use similar adaptation strategies, such as house elevation and drainage improvements, though support remains limited.



Priority areas for intervention should target urban flood adaptation, early warning systems, and support for immobile or low-capacity households. 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 in urban coastal settings.

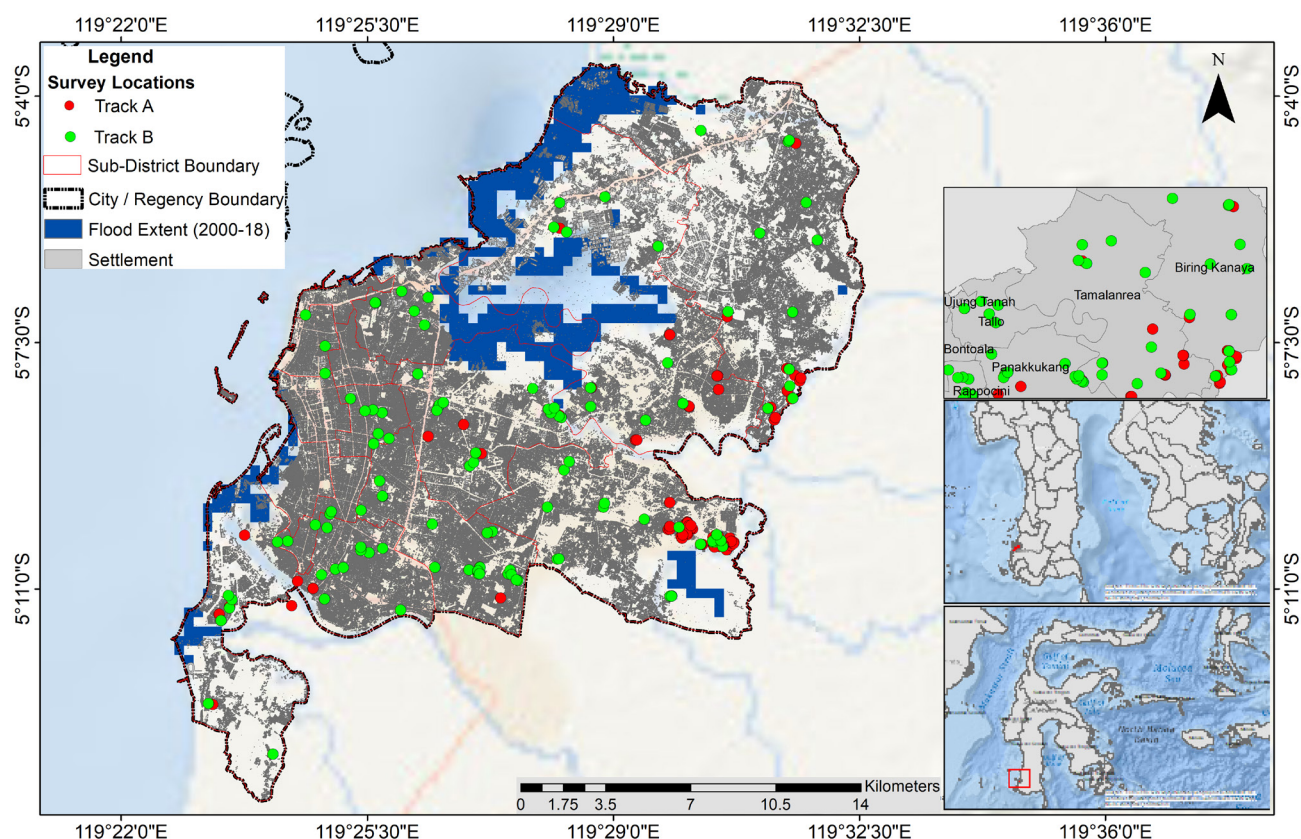


Figure: Location of surveyed households in Makassar city, Indonesia. Survey points represent displaced households (Track A, red) and non-displaced households (Track B, green), overlaid on a historical flood extent map of observed flood events from 2000-2018.

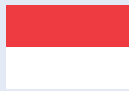
Hotspot Selection and Survey Methodology

Makassar City was selected through a three-tiered selection process:

- **Level 1:** High climate risk (macro-level composite risk using IPCC AR5: Hazard x Exposure x Vulnerability)
- **Level 2:** Clear evidence of historical displacement, including flood-related events
- **Level 3:** Feasibility assessed through IOM field presence, data availability, and accessibility
- **Validation:** Through local 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	 Indonesia
City / Regency	Makassar City
Province	South Sulawesi
Average Per Capita Expenditure	IDR 1,803,710
Population (2023)	1,474,393
Total labor force (2023)	651,832
Land Area (km ²)	175.77 km ²
Population Density (persons per km ²) (2023)	8,388
Top 3 Contributing Sectors to GDP (2023)	• Wholesale and Retail Trade (20%) • Manufacturing (19%) • Construction (19%)

Descriptive Profile of Respondents

Sample Size	Displaced households	161
	Non-displaced households	241
	Total sample size	402
Average Household Size	5.1 people	
Average Monthly Household Income	USD \$273	
Proportion of Households with Home Ownership	71%	
Primary Livelihood Source (top 3)	Construction / Skilled Labor	13%
	Informal / Household-Based Sources	13%
	Public Services	11%
Highest Educational Qualification (top 3)	Upper Secondary	45%
	Undergraduate Degree	35%
	Graduate Degree	7%

Climate Hazards Observed

Common hazards experienced over the last 5 years:



Floods
47%



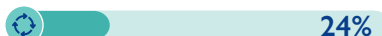
Heavy rainfall
36%



Drought
10%

Changes in hazards above over the last 5 years:

Severity  27%

Frequency  24%

Seasonal shifts  3%

Most impactful hazard over the last 5 years:

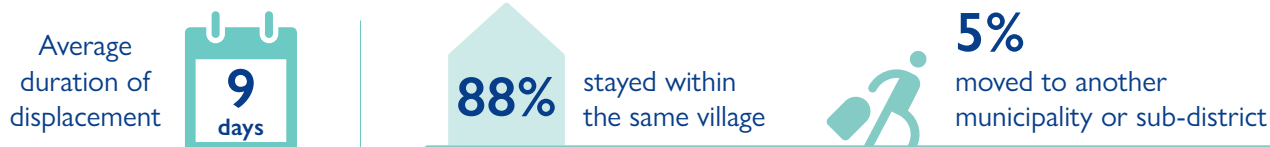
Floods  74%

Comparison of Displaced and Non-Displaced Households

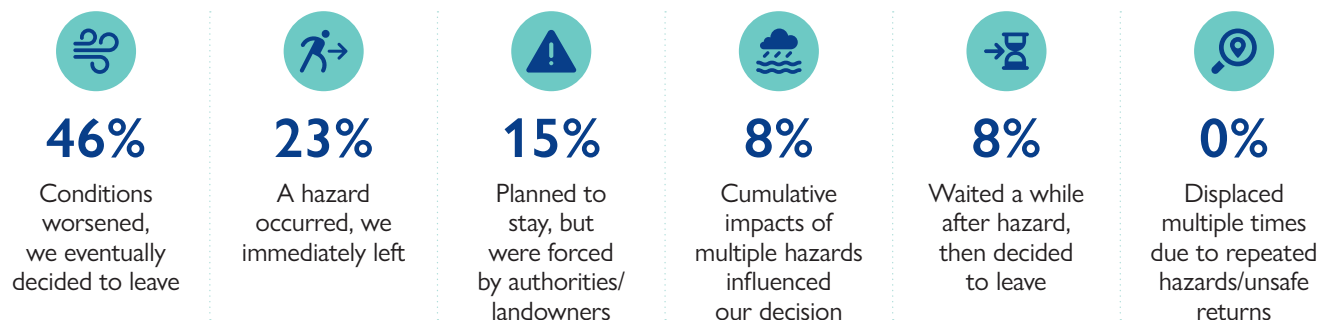
Dimension	Displaced Households		Non-Displaced Households	
Mobility				
Mobility Types Observed	Temporary displacement (<i>Temporarily moved for > 7 days and are still unable to return</i>):	1%	Pre-emptive evacuation ¹ (<i>Pre-emptively evacuated for ≤ 7 days and have since returned</i>):	15%
	Permanent relocation (<i>Permanently moved and do not plan to return</i>):	3%	Stayed in place (<i>Did not move</i>):	45%
	Returnees (<i>Temporarily moved for > 7 days and have since returned</i>):	36%		
Impacts from Hazard				
Top 3 Impacts	Safety concerns due to hazard	43%	Housing damage	20%
	Housing damage	16%	Safety concerns due to hazard	17%
	Inaccessibility to transport infrastructure	7%	Inaccessibility to water supply	12%
Average Housing Damage ²	10%		6%	
Average Asset Loss ³	10%		7%	
Adaptation Strategies				
Top 3 Strategies	Elevated my house or moved it to higher ground	55%	Elevated my house or moved it to higher ground	40%
	Improved drainage around the home or community	16%	Improved drainage around the home or community	12%
	Planted trees or vegetation to reduce flooding	7%	Built protective barriers	10%
Emergency savings or funds	USD \$151		USD \$194	
Degree of Volition in Moving or Staying				
Volition	I had no choice — I was forced to move.	50%	I feel trapped in staying where I am	10%
	I felt I had very little choice — moving was the only realistic option.	16%	I feel somewhat constrained to stay where I am	15%
	I had some choice, but I felt pressured by the situation.	2%	I felt free in choosing to stay where I am	47%
	I chose to move, but the hazard influenced my decision.	27%	Not sure	29%
	I freely chose to move, and the hazard was not a major factor.	5%		

- 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.
- 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 Makassar, not all sites.
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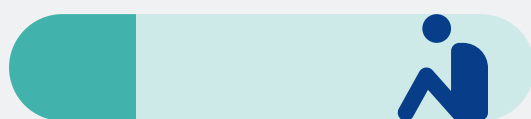
Displacement Dynamics



SEQUENCE OF EVENTS LEADING TO DISPLACEMENT

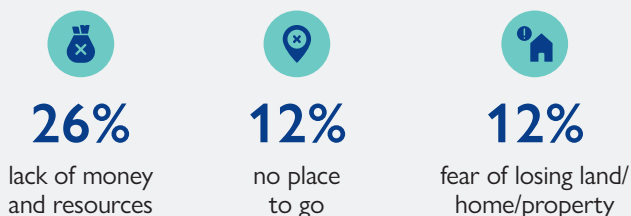


Trapped Populations



24% of non-displaced respondents reported feeling unable to leave due to constraints, indicating they are trapped

TOP 3 REASONS FOR BEING TRAPPED

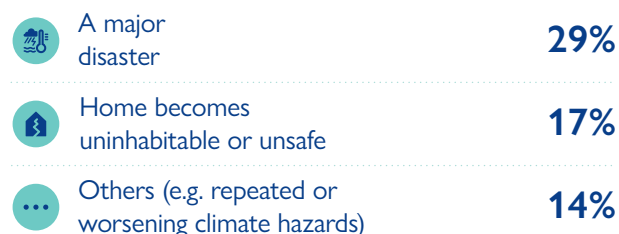


Perceived Future Displacement Risk

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

- Communities affected by climate impacts **learned to adapt their livelihood sources**, such as farmers in Manggala and Romang Tangaya who switch to fishing during floods when fields become submerged.
- There is currently **no financial support for housing recovery** in Makassar, prompting communities to adapt by building second floors to protect their belongings during floods.
- Communities typically **stay in their homes during minor floods**, elevating furniture and only evacuating when floodwaters reach waist height.
- Makassar **continues to attract migrants** from Sulawesi and Eastern Indonesia seeking employment opportunities, indicating future population growth.

Applications and Next Steps

INSIGHTS TOWARDS RICD DEVELOPMENT AND BROADER APPLICATION:

- Makassar highlights the need for RICD to capture short, urban displacement cycles where even brief floods cause disruption.
- The prevalence of slow-onset displacement and reactive moves underscores the importance of tracking cumulative impacts in dense urban areas.
- The presence of trapped populations points to the need for indicators on immobility and informal recovery capacity.
- Findings from Makassar can support urban planning and disaster risk reduction strategies beyond RICD, particularly in other fast-growing coastal cities experiencing infrastructure-related displacement risk.

LINKAGE WITH CCF:

- Findings from Makassar provide concrete, data-driven entry points for CCF investment, especially in disaster preparedness, urban adaptation, and locally led solutions.
- Frequent short-cycle flood displacement in dense urban zones points to the need for infrastructure upgrades like drainage, shelters, and flood-proof housing.
- Reactive evacuation patterns highlight the value of investing in community-based early warning systems and preparedness planning.
- Immobile and low-capacity households underscore the need for inclusive adaptation measures, including tenure security and social protection.

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**.

