# Tanzania

# DARAJA Endline Evaluation Report for the Lloyd's Register Foundation Turning World Risk Poll Data into Action Project

February 2026

# Outline


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**In-Text Citation:** (Resurgence, CCI and TMA, 2026)

# List of Acronyms

| | |
|---|---|
| DARAJA | Developing Risk Awareness through Joint Action |
| FGD | Focus Group Discussions |
| KII | Key Informant Interview |
| LRF | Lloyd's Register Foundation |
| TBC | Tanzania Broadcasting Channel |
| TMA | Tanzania Meteorological Authority |
| WCI | Weather and Climate Information |
| WRP | World Risk Poll |

# Objectives

To understand the climate hazards faced by target communities and the impact of the DARAJA project on access, understanding and use of weather and climate information services (WCIS).

1. To understand key climate risks faced by communities in Dar es Salaam

2. To examine the impact of the DARAJA project on access, understanding and use of WCIS by the target communities

# Description of settlements (1/2)

- The data were collected from four settlements in Dar es Salaam where the DARAJA project was implemented:

**Kigogo:**

- Communities report frequent flooding and rising heat as key concerns to residents.
- Disaster committees are more consistently active, facilitating information flow and supporting early action at the household level.
- Government interventions to improve infrastructure, specifically upgrading roads and bridges, may significantly reduce future flood impacts and also enhance community resilience.

**Karakata:**

- Highly flood-prone, with repeated losses driving strong awareness of climate change and associated risks.
- Disaster committees are active during flood events, supporting information sharing and early action, though no formal early plans exist.

# Description of settlements (2/2)

- The data were collected from four settlements in Dar es Salaam where the DARAJA project was implemented:

**Kombo:**

- Experiences recurrent flooding and increasing heat, but community responses are constrained by limited resources and weak institutional support.
- Disaster committees exist but are less active, relying heavily on individual effort rather than structured systems

**Mji Mpya:**

- Flood impacts are intensified by poor drainage and sanitation failures, increasing disease risk and stress among households.
- Early actions are mainly household-led, with limited visibility and reach of disaster committees across the settlement

# Methods

## Qualitative data

| Focus Group Discussions | Key Informant Interviews (KIIs) |
|---|---|
| **120+ participants** across 16 groups (130: total of 72 male and 58 female participants - baseline): 2024 (128: total of 72 male and 56 female participants - endline): 2026 | **6 key informants** (total of 4 male and 2 female key informants-baseline): 2024 (total of 4 male and 2 female key informants-endline): 2026 |
| Women only; youth; men only; and disaster committees in four settlements in Dar es Salaam (Kigogo, Karakata, Mji Mpya and Kombo) | Disaster Coordinators-4<br>Red Cross- 1<br>Teacher – 2<br>Local leaders – 4<br>Media - 1 |

### Data analysis

Thematic analysis

- Phrases and key themes emerged from the KIIs and FGDs were analysed
- Comparison between baseline and endline findings were made where possible (estimated proportions)
- Verbatim quotes were extracted and used to complement key findings

# Key Findings

# Climate Change a Threat in the Next 20 Years

Perceiving climate change to be a threat in the next 20 years-%

- Climate change now seen as serious and worsening
- Perception mainly driven by repeated flooding experiences
- Clear sense that risks are increasing over time
- Nevertheless, most youth slightly less alarmed where infrastructure improved

| Variable | Baseline (%) | Endline (%) | Direction of change |
|---|---|---|---|
| Climate change perceived as serious threat | 79 | 85 | ▲ Increase |

*"The Msimbazi River used to be small, but now it has expanded and swept away houses"* –FGD Men, Karakata.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Key climate hazards (1/3)

*"Rain no longer makes us happy; it makes us worried"- FGD Men, Kigogo.*

Key informants also universally identified flooding as a key hazard followed by heat.

*"Flooding is the most prevalent hazard in Dar es Salaam informal settlement"- KII, Disaster Coordinator, Kinondoni Municipality.*

## Flooding as the Dominant Hazard

- Flooding remains the dominant risk across the settlements, consistent with the WRP national-level findings (Figure 1)
- Seen as unpredictable and more frequent
- Linked to river expansion and poor/diversion of drainage channels
- Floods results in property and house damage, disrupt livelihoods and schooling
- Psychological stress reported such as living in fear whenever it rains & lack of sleep

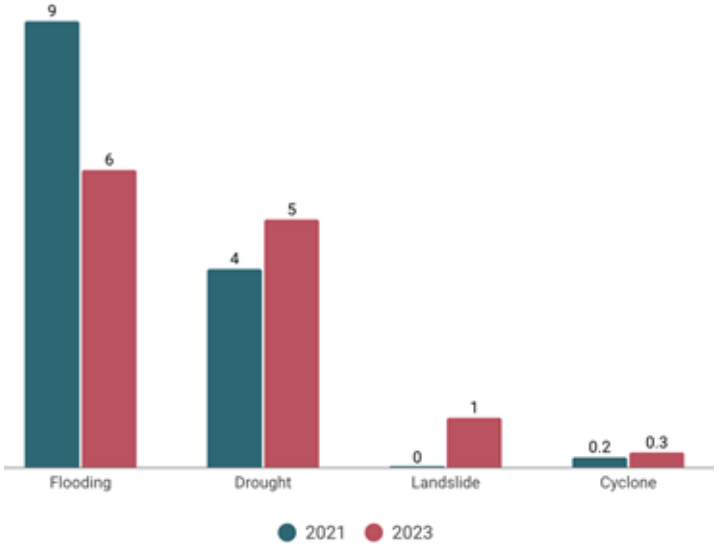


Figure 1: WRP Data Findings (%)

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

2023 WRP Data- % of total respondents **[1002]**
2021 WRP Data- % of total respondents **[1000]**

# Key climate hazards (2/3)

*"People become very restless and unproductive when it comes to work due to heat"*- KII, Community Development, Vingunguti ward.

## Extreme Heat as an Escalating and Persistent Concern

- Heat increasingly recognised as a serious hazard
- Affects sleep, health, and productivity
- Among schoolchildren heat results in fainting, rashes, headaches
- Strongly linked to housing density, lack of open spaces and lack of trees
- Heat experienced as constant, not seasonal
- Women, children and the elderly are more vulnerable

| Variable | Baseline (%) | Endline (%) | Direction of change |
|---|---|---|---|
| Heat recognised as a serious problem | 62 | 75 | ▲ Increase |

*"During extreme heat, we sleep outside because inside the house is unbearable."* – FGD Disaster Committee, Kombo.

*"There are no trees anymore; that is why the heat is too much."* — FGD Men, Kigogo

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Key climate hazards (2/3)

Other Hazards Identified

- Disease outbreaks (malaria, diarrhoea)
- Illegal emptying of pit latrines contaminating water sources
- Damage to infrastructures such as roads and drainage channels

"*Floods fill the toilets and dirty water spreads everywhere. That is how diseases start*"- FGD Women, Karakata.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Access to weather and climate information (WCI) 1/2

*"SMS is the best because even if electricity is off, the message still reaches you"- FGD Men, Kombo.*

Access to weather forecasts/early warnings

- Access to forecasts improved
- SMSs powered by DARAJA now the dominant access channel
- SMSs preferred due to speed and reliability
- WhatsApp seen as secondary to SMS
- TV remains important but limited by power cuts
- Radio declining in relevance, contrary with the WRP national-level findings (Figure 2)

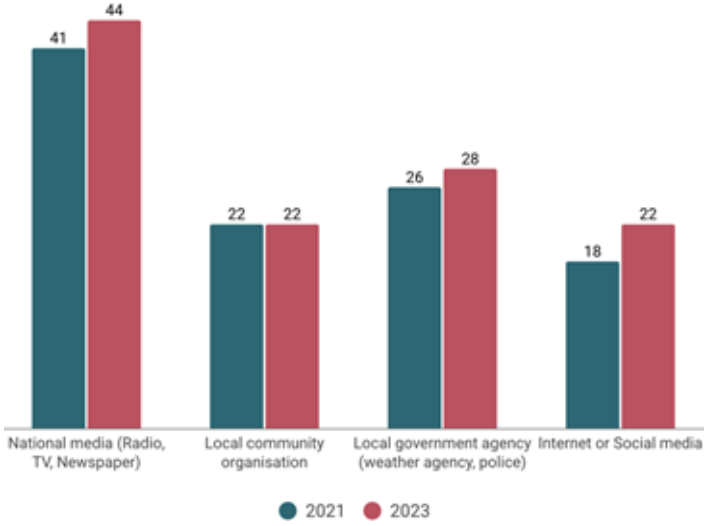


Figure 2: WRP Data Findings (%)

| Variable | Baseline (%) | Endline (%) | Direction of change |
|---|---|---|---|
| Access to early warnings/forecasts | 75 | 85 | ▲ Increase |

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

2023 WRP Data- % of total respondents **[1002]**
2021 WRP Data- % of total respondents **[1000]**

# Access to weather and climate information (WCI) 2/2

The notice board was also identified as another way of accessing weather forecasts.

WCI channels among key informants

| Channel | Mention by | Strength |
|---|---|---|
| Social media (ie WhatsApp) | 3 KIIs | Fast & trusted |
| SMS | 2 KIIs | Direct to leaders and communities |
| National media (Television & Radio) | 3 KIIs | Broad reach |
| Letters (formal govt chain) | 1 KII | Official confirmation |

- Among the interviewed key informants, WhatsApp is the main channel to access WCI and now central to coordination at municipal and institutional levels.

"*After I receive forecast information from TMA WhatsApp group, I share it with the Municipal disaster committees*." — KII, Disaster Coordinator, Kinondoni Municipality.

"I access weather forecasts through DARAJA WhatsApp group… it is very easy to access." — KII, Teacher, Mapinduzi Primary School.

# Trust in early warning information

Trainings through DARAJA helped to strengthen understanding of forecast information especially among key informants.

*"Through the DARAJA project we were trained on how to interpret the weather forecasts, and now it is easy for us to understand and explain them to others."*— KII, Teacher, Mapinduzi Primary School.

## Trust in early warning information

- Trust has improved since baseline
- Official sources (TMA & popular media outlets) most trusted
- Sender identification is critical
- Information from unknown sources reduce credibility
- Trust influences action

| Variable | Baseline (%) | Endline (%) | Direction of change |
|---|---|---|---|
| Trust in early warning information | 40 | 65 | ▲ Increase |

*"Our main source of climate information is TMA"* – KII, EFM Radio.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Use of early warnings to take early actions (1/2)

While immediate heat coping strategies are behavioural (i.e., hydration, reduced exposure), participants also identified tree planting as a medium- to long-term environmental adaptation strategy aimed at reducing settlement-level heat intensity.

*"If we had more trees, the place would not be this hot."* — FGD Youth, Kombo

Early action based on forecast information received

- Most FGD participants indicated that they used forecasts to take early action
- Early actions mostly household-level
- Moving belongings to safe places is the common action across all settlements ahead of flooding
- Other actions for flooding: protecting documents with plastic bags; relocating children and elderly; strengthening house structures; clearing drainage channels and sharing warnings with neighbours
- Actions for heat- sleeping outside at night; reducing outdoor work during hot hours; increasing water intake; keeping children indoors and seeking shade and ventilation

| Variable | Baseline (%) | Endline (%) | Direction of change |
|---|---|---|---|
| Forecasts used for action | 40 | 70 | ▲ Increase |

*"When we hear that heavy rain is coming, we put our things on top and prepare the children so that water does not destroy everything"*- FGD Women, Mji Mpya.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Use of early warnings to take early actions (2/2)

Early actions among key informants

**For flooding**

- Drainage cleaning campaigns
- Evacuation planning
- Bridge construction & riverbank reinforcement
- Sandbags along river
- Timetable adjustment at school
- Calling parents to collect children

**For heat**

- Drinking water breaks
- Changing/adjusting timetable at school
- Advising vendors to change business
- Encouraging hydration
- Media inviting doctors to advise public

"*We use the information to give orders to people living along Msimbazi river to evacuate*." — KII, Disaster Coordinator, Kinondoni Municipality.

"*Introduce drinking water break during extreme heat*." — KII, Teacher, Mapinduzi Primary School.

# Early warning – early action gap

Persistent Early Warning → Early Action Gap

**Among FGD participants**

- Not all who receive warnings act
- Message fatigue also reported
- Limited understanding of forecast probability constrain early actions
- Some wait until flooding starts
- Youth more likely to ignore alerts

"*Some people don't read the messages; they delete them*"- FGD Youth, Kigogo.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

**Among key informants**

*Capacity Constraints*

- "*At the municipal level we only have one individual dedicated to disaster management*."—KII, Disaster Coordinator, Kinondoni Municipality

*Need for More Timely Updates*

- "*Our main source of climate information is TMA. They usually provide 24-hour forecasts. I wish those forecasts could be broken down into 12-hour intervals or even updated every six hours so that information is more timely*" — KII, EFM Radio

*Scaling Needed*

- "*DARAJA project need to be scaled up to other parts of Kinondoni*." — KII, Disaster Coordinator, Kinondoni Municipality

# Level of preparedness

Generally, key informants demonstrated that the DARAJA project helped institutionalisation of early warning into governance and planning as well as transition from reactive coping to structured preparedness

"*We adjust the school timetable when we receive extreme weather information*" - KII, Teacher, Mapinduzi Primary School.

"*We mobilise the community to clean the drainage systems before the rains.*" - KII, Community Development, Vingunguti ward.

Disaster Preparedness

- Disaster preparedness has generally increased across all settlements
- This preparedness is mostly driven by experience
- Most FGD participants indicated relocation as the immediate option
- Families discuss what to do before floods
- Nevertheless, most families do not have proper early action plans in place
- Poverty limits families to take early action even when they are aware of possible actions
- Disaster committees very active in some areas particularly Kigogo and Karakata

"*We discuss with the family, so everyone knows what to do when floods come*"- FGD Women, Karakata.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Economic value of early actions

*"People have lost hope because floods feel unavoidable now"*- FGD Disaster Committee, Karakata.

"If we move our things before water comes, we do not lose them and we do not spend money buying them again." — FGD Women, Karakata

Value of taking early actions

Early action was consistently associated with economic savings, particularly through preventing damage to household belongings and reducing post-flood recovery costs:

- Early action reduces losses
- Savings reported across FGDs
- Reduced damage to household assets
- Avoided medical expenses
- Value understood by communities
- Reported savings ranging from 50,000 to 1,000,000 Tanzanian Shillings per event

*"By preparing early, I saved money that I would have used to replace my things"*- FGD Men, Kigogo.

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Preferences: And improvements (1/3)

"*We don't just need messages; we need to understand them*" - FGD Youth, Kombo

"*If they tell us clearly what to do, people will follow the instructions*" - FGD Women, Karakata

## Suggested improvements

- Direct TMA → community links: FGD participants expressed a desire for more direct engagement with the TMA to improve access to trusted and timely information, while also enabling two-way communication and feedback on forecasts.
- Send warnings early
- Improve the format and text to make the messages clearer: this entails improving the current forecast message template for communities to easily understand the forecasts
- Trainings on how to interpret forecasts to communities
- Drainage improvement and river management
- Clear identification of message sender (source), as this enhances trust & hence early action

"*The disaster committee should be linked directly with TMA, so information comes straight to us*" - FGD Disaster Committee, Mji Mpya

"*Sometimes we hear information from people, not from the source*" - FGD Women, Kigogo

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Preferences: And improvements (2/3)

"*SMS is better because it reaches everyone, even those without smartphones*" - FGD Women, Kigogo

## Preferred channels

- Clear preference for direct, fast, and reliable channels
- Mobile-based channels now dominate
- Preferences shaped by power availability, cost, and trust
- No single channel fits all groups hence multi-channel dissemination system is ideal

| Channel | Preference level | Reason |
|---|---|---|
| SMS Alerts | Very high | Fast, reliable, works without electricity or data |
| Television | High | Trusted source, visual explanations |
| WhatsApp | Moderate | Fast sharing within committees |
| Radio | Low - moderate | Declining use, timing issues |
| Community leader/ announcement | Low | Limited reach, slower dissemination |

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Preferences: And improvements (3/3)

"*Weekly information helps us think, but daily warnings help us act*" - FGD Disaster Committee, Kigogo

"*The heat is becoming too much, but we are never warned about it.*" - FGD Women, Karakata

## Preferred forecast type

- Communities prefer impact-based and actionable forecasts
- Short-term forecasts are prioritised over seasonal outlooks
- Clear guidance on what to do increases likelihood of action

| Channel | Preference level | Reason |
|---|---|---|
| Short-term rainfall & flood alerts (daily forecasts) | Very high | Allows immediate preparation and movement of assets |
| Flood-specific warnings (river level, overflow risk) | Very high | Directly linked to main hazard experienced |
| Location-specific forecasts (settlement-level) | High | Generic city-wide forecasts seen as less useful |
| Clear action-oriented messages (what to do) | High | Reduces confusion and delays |
| Seasonal climate outlooks | Low- moderate | Too general and difficult to interpret |

"*If we knew in advance that it would be extremely hot, we could plan our work better*" - FGD Youth, Kigogo

2024 baseline: total FGD participants **[130]**
2026 endline: total FGD participants **[128]**

# Summary

- ➔ FGDs sample snapshot:
  - ◆ Baseline in 2024: 130 FGD participants (72 male and 58 female)
  - ◆ Endline in 2026: 128 (72 male and 56 female)
- ➔ KIIs sample snapshot:
  - ◆ Baseline in 2024: six KIIs (4 male and 2 female)
  - ◆ Endline in 2026: six KIIs (4 male and 2 female)
- ➔ Climate risks intensified; floods and heat now dominate lived experience.
  - ◆ Flooding: disrupt livelihoods, schooling and cause property damage.
  - ◆ Extreme heat: results in sickness and reduced productivity

# Summary

- ➔ WCI access: improved significantly
  - ◆ Channels shift from radio/TV → SMS alerts
  - ◆ Among institutional stakeholders, WhatsApp use to access WCI is growing
  - ◆ Understanding improved but more trainings still needed
- ➔ Use of WCI: Early action increased, but gaps remain in understanding and timing
  - ◆ Flooding: moving belongings in safe places; protecting critical documents plastic bags, clearing drainage channels and adjusting timetables at school
  - ◆ Extreme heat: sleeping outside at night; reducing outdoor work during hot hours and increasing water intake

# Summary

➔ What Communities Are Asking For:

- Direct TMA → community links (speed, trust, clarity & feedback)
- Daily forecasts vs seasonal forecasts
- Send warning early before impact
- Clear, action-oriented messages
- Impact-based forecasts (flood & heat)
- Prefer SMS and television to access forecasts

# THANK YOU