Advisory Note for Cities

El Niño Preparedness

An Anticipatory Action Framework for City Leaders

Turning climate forecasts into local action for city and municipal governments.



THE URBAN IMPERATIVE

El Niño does not flood cities, unprepared cities flood themselves

What turns a seasonal probability into a crisis?



Informal settlements



Clogged drains



Fragmented institutions





Humanitarian crisis

From Forecast to Action

A forecast only matters once it becomes “expect X, here, by this month.”



FORECAST

Seasonal signal, downscaled to ward level

TRIGGER

Pre-agreed threshold releases money and mandate

ACTION

Drains cleared, stocks moved, households warned

The trigger releases money and mandate automatically

Six Core Elements

Early Warning & Forecast Uptake

Turn forecasts into ward-level terms

Impact-Based Scenarios

Plan for consequences, not rainfall

Triggers & Anticipatory Financing

Move money before impact

Clear Institutional Roles

Who convenes, who declares, who spends

Sector-Specific Preparedness

Drainage, housing, health, WASH and more

Safe Havens & Community Mobilization

Retrofit havens; mobilize youth and sport groups

SECTION 1

From Forecast to Action



1.1
Early Warning & Forecast Uptake

1.2
Alert & Sensitization

1.3
Institutional Roles

1.1 Early Warning & Forecast Uptake

01

Subscribe to met services

- Sign a formal data-sharing agreement
- Request ward-level downscaling
- Name a liaison officer at city hall

02

Translate forecasts locally

- “Expect X mm in these wards by Month Y”
- Map flood-prone blocks to rainfall thresholds
- Use local farming and cultural calendars

03

Build a city forecast desk

- Planning, health, drainage and emergency staff
- Weekly risk bulletin in watch periods
- Color-coded risk maps by ward

1.2 Alerts That Reach the Last Mile

Broadcast through community radio

- Standing airtime agreements
- Scripts in the languages of at-risk wards
- Solar and wind-up radios for wards

Organize messaging networks

- Ward-level WhatsApp broadcast trees
- Maps, short video and voice notes
- Correct rumors within hours

One message, many channels

- Identical wording on every channel
- Name the hazard, ward, action and deadline
- One named spokesperson

An alert that changes from channel to channel is not an alert. It is a rumor with an official logo.

1.3 Clear Institutional Roles

Settle these before the emergency.

A  **Who convenes?**

One point of command, such as the City Manager or Deputy Mayor. No committees voting mid-crisis.

B  **Who declares?**

Pre-assign the legal authority to declare, with a clear threshold and a defined exit.

C  **Who spends?**

Pre-authorize spending ceilings that activate on trigger. Audit after, not before, for the first 72 hours.

SECTION 2

Impact-Based Scenarios & Triggers

Plan against consequences, not rainfall anomalies.



Displaced households



Flooded settlements



Cholera outbreaks



Crop failure



Road collapse

The Three Scenarios

Each has a quantified trigger, set actions, and an expected impact.

MODERATE

Above-normal rains, localized flooding

500–2,000

households displaced

SEVERE

Widespread flooding, infrastructure stress

5,000–15,000

households displaced

WORST CASE

Mass displacement, disease outbreak

20,000+

households displaced

Moderate: Localized Flooding

60%

TRIGGER · SEASONAL FORECAST

probability of above-normal rainfall in two or more city wards

ANTICIPATORY ACTIONS

- Activate ward drainage inspection teams
- Clear waste from known choke points
- Open radio slots and ward messaging
- Confirm safe haven readiness
- Put youth and sport teams on standby
- Pre-position cholera treatment supplies

EXPECTED IMPACT

500–2,000
households temporarily displaced

10–15%
settlement roads impassable

2–3
cholera cases in flood zones

Localized
peri-urban crop losses

Severe: Widespread Flooding

70%

TRIGGER · FORECAST OR OBSERVED

probability of >150% of normal rain over 50%+ of the city. OR 100 mm+ in 72 hours with drains at 80% capacity

ANTICIPATORY ACTIONS

- Declare city preparedness; release 50% of fund
- Force-clear major drainage channels
- Open gazetted safe havens; verify WASH
- Evacuate highest-risk settlement blocks
- Hourly radio bulletins, one verified voice
- Activate 24/7 emergency operations center

EXPECTED IMPACT

5,000–15,000
households displaced

30–50%
settlement roads destroyed

2+
neighborhoods with cholera

30%+
of wards with school closures

Intermittent
power and water failures

Worst Case: Systemic Failure

>80%

TRIGGER · FORECAST OR OBSERVED

strong El Niño in an analog year (e.g., 1997–98). OR 200 mm+ in 48 hours with dam or river breach risk

ANTICIPATORY ACTIONS

- Release 100% of forecast-based financing
- Pre-emptively evacuate high-risk settlements
- Open all safe havens plus overflow sites
- Stockpile 30-day food, medical, WASH reserves
- Declare city-wide emergency; seek global aid
- Maximum disease surveillance, mobile clinics

EXPECTED IMPACT

20,000+
households displaced

60%+
settlement areas uninhabitable

Widespread
cholera and typhoid outbreak

2+
critical systems fail totally

2+ weeks
of halted economic activity

Triggers Need Financing

Without financing arranged in advance, a trigger is just an alarm nobody can act on.

Contingency Funds

2%

of annual capital budget, recommended for high-risk cities

- Ring-fenced line, released within 24 hours
- Legally protected from reallocation

Forecast-Based Financing

6–12

months to negotiate and calibrate triggers

- Actions funded automatically at threshold
- Partners: Red Cross/Red Crescent, WFP

Parametric Insurance

72 hrs

critical cash-flow window after impact

- Pays on rainfall or river level, not damage
- Premiums can be nationally subsidized

Action Checklist for City Leaders

SELF-ASSESSMENT

- ☐ Contingency fund with 24-hour release and legal protection
- ☐ Three scenarios drafted with quantified triggers
- ☐ Simulation exercise in the last 12 months
- ☐ Stockpiles inventoried and mapped
- ☐ Safe havens gazetted with named site managers
- ☐ Forecast-based financing agreement signed
- ☐ Roles matrix (convene, declare, spend) gazetted
- ☐ Community early warning active in all settlements
- ☐ Mutual-aid agreements with neighbors and utilities
- ☐ Radio agreements signed; messaging trees tested

SECTION 3

Key Urban Sectors

What to do and what not to do. Cities fail in cascades, so treat these sectors as one integrated system.



Drainage & Solid Waste

DO

- Clear drains before the rains
- Remove waste from choke points weekly
- Map settlement drainage gaps with residents
- Pre-position sandbags and portable pumps

DON'T

- Wait for the first flood to act
- Rely only on heavy equipment
- Dump cleared waste back in drains
- Trust formal maps in informal areas

Clear drains before the rainy season, not during floods.

Housing & Informal Settlements

DO

- Inspect at-risk housing before the season
- Mark buildings on unstable slopes or floodplains
- Pre-negotiate temporary shelter spaces
- Prioritize women-headed and disabled households

DON'T

- Evict without safe alternatives
- Ignore tenant households
- Demolish during the rainy season
- Assume all informal housing is equally unsafe

Tenants are often the most vulnerable and least visible.

Safe Havens: Identify & Retrofit

DO

- Register sites and have engineers assess them
- Retrofit and equip: roofs, latrines, water, lighting
- Design for all: ramps, secure rooms for women and girls
- Gazette with a site manager and capacity

DON'T

- Designate havens without inspecting them
- Assume a large school is safe
- Open a haven without water, sanitation or light
- Choose sites that flood or get cut off

Safe havens are a dry-season job, not an emergency purchase.

Health & WASH

DO

- Pre-position ORS, IV fluids and cholera test kits
- Protect water sources: raise wells, seal boreheads
- Stockpile chlorine tablets at ward level
- Train health workers on early warning signs

DON'T

- Wait for the first confirmed cholera case
- Leave open-defecation areas in flood zones
- Hand out treatment supplies without demonstration
- Assume sewerage reaches informal settlements

By the first confirmed cholera case, it is already an outbreak.

Urban Agriculture & Livelihoods

DO

- Pre-distribute flood-tolerant seed varieties
- Plan early, assisted harvest for high-risk plots
- Link farmers to SMS and voice alerts
- Pre-register vulnerable households for cash transfers

DON'T

- Treat urban agriculture as non-essential
- Wait for visible crop failure to release support
- Forget informal workers who lose income first
- Overlook women, who dominate urban farming

Urban farming feeds cities and employs thousands.

Education & School Continuity

DO

- Plan for schools that double as shelters
- Prepare continuity: remote packets, shifted schedules
- Inspect school buildings for flood risk
- Train teachers in psychosocial first aid

DON'T

- Close all schools city-wide automatically
- Use schools as shelters with no reopening plan
- Forget children with disabilities
- Assume every family can learn remotely

Closure also means lost school meals and higher dropout risk for girls.

Critical Infrastructure

DO

- Inspect substations, treatment plants and towers
- Pre-position generators and fuel at hospitals and pumps
- Keep redundant radio and satellite communications
- Pre-identify alternate transport corridors

DON'T

- Assume infrastructure is too important to fail
- Ignore informal power connections
- Skip full-load tests of backup generators
- Overlook exposed fiber and telecom cables

CASCADE No power → No water pumping → No health care → No communication

Youth & Sport Mobilization

DO

- Register youth groups and clubs as ward response teams
- Assign trained roles: drains, alerts, evacuation
- Issue gear and ID: gloves, boots, vests
- Stipend sustained work and insure volunteers

DON'T

- Mobilize only at the point of crisis
- Send untrained volunteers into floodwater
- Route mobilization through patronage
- Overlook young women's teams

Register and train before the trigger, not after.

Evidence from UN-Habitat

40+ countries of urban emergency response, focused on informal settlement resilience. Cities that invest in pre-crisis coordination, not just infrastructure, recover faster.

Haiti, 2010
Post-earthquake

Targeted

shelter and WASH distribution

- Rapid neighborhood profiling in Port-au-Prince
- Community-led mapping reached dense blocks first

Mozambique, 2019–21
Urban flooding

40%

less displacement (estimated)

- Drainage pre-cleared in Maputo's settlements
- Ward committees with pre-authorized spending

COVID-19, 2020–22
Urban response

80+

municipalities adapted measures

- City-to-city learning networks
- Street-level targeting, not blanket lockdowns

THE OVERARCHING LESSON

Urban preparedness is a governance function



Forecast → Trigger → Action

UN-Habitat & IGAD — Advisory Note for Cities