CLIMATE RISK BRIEFING

Climate & Non-Climate Impact Drivers

Coastal Iloilo City Facing the Risk of Very Strong El Niño

10-Minute Briefing · Western Visayas Context

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What We Will Cover

01 **Coastal Iloilo Context**
Geography, exposure & key vulnerabilities

02 **Very Strong El Niño**
What it means for the Philippines & Visayas

03 **Climate Impact Drivers**
Drought, heat, rainfall shifts, storm intensity

04 **Non-Climate Drivers**
Urbanization, subsidence, water systems, land use

05 **Compound Risks & Responses**
Cascading impacts and practical pathways

Coastal Iloilo City at a Glance

Geography

- Highly urbanized coastal city
- Regional center of Western Visayas
- ~78 km² land area, 180 barangays
- Low-lying zones along Iloilo River & coast

Exposure

- Dense populations in coastal & riverine areas
- 21 barangays (~97k people) storm-surge exposed
- 72 barangays high flood risk
- Groundwater-dependent water supply

Recurring Stress

- El Niño water crises: 2007, 2009, 2015, 2019, 2024
- Urban heat island intensifying
- Land subsidence ~9 mm/year in key districts
- Watershed degradation (Maasin)

Very Strong El Niño: What It Means

Definition & Outlook

El Niño is the warm phase of the El Niño–Southern Oscillation (ENSO).

A “very strong” event typically features large positive sea-surface temperature anomalies in the central/eastern Pacific and produces:

- Below-normal rainfall across much of the Philippines
- Prolonged dry spells and drought risk
- Elevated temperatures and heat stress
- Potential for stronger tropical cyclones when systems do form

Local Relevance

PAGASA has flagged moderate-to-very-strong El Niño conditions that can persist into early 2027.

For Western Visayas and Iloilo City this historically translates into:

- Water-supply stress and rationing
- Agricultural losses (rice, high-value crops)
- Heightened heat-related health cases
- Compound risk when dry periods overlap with other hazards

Climate Impact Drivers Under Strong El Niño

Drought & Dry Spells

Below-normal rainfall, longer consecutive dry days, reduced river and reservoir levels. Past events triggered city-wide water crisis declarations.

Extreme Heat

Higher temperatures amplified by urban heat island. Heat-index values into “Danger” levels; surge in heat-related medical cases.

Water Security Stress

Declining surface and groundwater availability. Heavy reliance on Metro Iloilo Water District and groundwater extraction.

Typhoon Intensity Risk

Warmer oceans can fuel stronger tropical cyclones when systems develop, raising storm-surge and wind risk for coastal barangays.

Agricultural & Fishery Shock

Crop losses (rice, high-value crops) and reduced catch; food-price and livelihood pressure on urban and peri-urban households.

Ecosystem Stress

Mangrove, seagrass and wetland degradation; reduced natural coastal protection and water-quality buffering.

Non-Climate Impact Drivers That Amplify Risk

1. **Rapid Urbanization & Built Form**

   Expansion of impermeable surfaces, high-density coastal and riverine development, and heat-retaining materials intensify flooding and urban heat.

2. **Land Subsidence**

   Satellite data show ~9 mm/year sinking in districts such as Mandurriao and La Paz. Combined with sea-level rise, this raises long-term inundation risk.

3. **Watershed & Water-System Weaknesses**

   Degraded Maasin watershed reduces dry-season yield. Over-extraction of groundwater and limited storage capacity leave the city vulnerable to multi-month dry spells.

4. **Drainage & Flood Infrastructure Gaps**

   Aging or inadequate drainage, clogged waterways, and incomplete flood-control systems turn moderate rainfall into urban flooding even outside peak monsoon.

5. **Socioeconomic Vulnerability**

   Informal settlers and low-income coastal communities have limited adaptive capacity, higher exposure to heat, water shortages, and storm surge.

6. **Governance & Policy Timing**

   Short-term focus on flood control sometimes outpaces long-term water-security investments, leaving recurring El Niño cycles under-prepared.

How Climate & Non-Climate Drivers Interact

El Niño does not act in isolation. It multiplies existing structural vulnerabilities — turning manageable stress into cascading crises across water, health, livelihoods and coastal safety.

Heat + Urban Form

Urban heat island + El Niño heat → higher heat-index, more heat illness, greater energy demand for cooling.

Drought + Water System

Reduced rainfall + limited storage + over-extraction → water rationing, health and economic disruption.

Storm + Coastal Exposure

Warmer seas + low-lying dense settlements + subsidence → higher storm-surge and inundation potential.

Dry Spell + Livelihoods

Crop/fishery losses + informal economy dependence → food insecurity and social stress.

Documented Impacts in Iloilo & Western Visayas

P2.9 B
Crop damage Western Visayas (2024 El Niño)

P1.5 B
Iloilo Province share of regional agricultural loss

924
Heat-related cases recorded in a 5-week period (2026)

72
Barangays at high flood risk (CDRA)

Additional observations

- Repeated “state of imminent water crisis” declarations linked to El Niño (2007, 2009, 2015, 2019, 2024).
- Urban green areas and city-maintained landscapes suffered heavy mortality during prolonged dry periods.
- Coastal communities remain the most exposed to storm surge; low-income groups have lowest adaptive capacity.

How Iloilo City Is Preparing

Institutional	Nature-Based & Green	Water & Infrastructure	Health & Community
• El Niño Task Force	• Project TRANSFORM canopy expansion	• Rainwater harvesting in priority barangays	• Heat-case monitoring & public advisories
• Urban Greening Task Force	• Urban gardens & pocket parks	• Drainage declogging campaigns	• Cooling hubs for vulnerable groups
• Crisis Management Council expanded to heat & El Niño	• Mangrove & wetland restoration advocacy	• Support for watershed rehabilitation	• Barangay DRRM activation & early warning
• Institutionalized heat-safety protocols	• Sponge-city elements in planning	• Solar irrigation & storage investments (regional)	• Multi-hazard science forums

Priority Actions for Resilience

1. **Treat water security as critical infrastructure**

   Accelerate watershed restoration (Maasin and upstream), expand storage and rainwater harvesting, and regulate groundwater extraction.

2. **Integrate climate into land-use and coastal planning**

   Limit new high-density development in surge- and flood-prone zones; enforce setbacks; prioritize nature-based coastal protection.

3. **Scale urban cooling and green infrastructure**

   Expand canopy cover, permeable surfaces, and “sponge city” measures to reduce heat and manage runoff simultaneously.

4. **Strengthen anticipatory action & early warning**

   Link PAGASA ENSO forecasts to pre-positioned water, health and livelihood support before dry conditions peak.

5. **Protect the most exposed communities**

   Target informal coastal and riverine settlements with heat, water and evacuation support; improve housing and livelihood options.

6. **Close the policy–implementation gap**

   Align short-term flood-control projects with long-term drought and heat strategies so investments reduce both extremes.

KEY TAKEAWAY

Very strong El Niño is a climate hazard that becomes a local crisis only when it collides with non-climate drivers — urbanization, subsidence, weak water systems, and social vulnerability.

Reducing risk requires simultaneous action on both the climate signal and the structural conditions that turn that signal into impact.

Thank you · Questions welcome