Development of Timor-Leste's

Subnational Children's Climate Risk Index - Disaster Risk Model

Dili, Timor-Leste | 23 September 2026

Climate and disaster risks affect children differently

PHYSICAL SENSITIVITY

Children are more susceptible to heat, disease, malnutrition and environmental hazards.

CRITICAL DEVELOPMENT STAGES

Disruption during childhood can affect health, learning and development throughout life.

DEPENDENCE ON SERVICES

Children rely on caregivers and functioning health, education, WASH, nutrition and protection systems.

Understanding where exposure and vulnerability overlap helps direct resources to the children and communities most at risk

TIMOR-LESTE CONTEXT

UNICEF · CHILDREN'S CLIMATE RISK REPORT 2026

UNICEF identifies Timor-Leste as one of the Small Island Developing States facing both high exposure to climate-related hazards and elevated levels of child vulnerability.

The report highlights the importance of subnational assessments that combine hazard exposure with child-specific vulnerability indicators to identify where children face the greatest climate risks and to support evidence-based, targeted investment.

What is CCRI-DRM ?

The Timor-Leste CCRI-DRM compares the relative climate and disaster risk faced by children across the country's 13 municipalities.

It combines two dimensions of risk:

Children's Climate Risk Index - Disaster Risk Management

Pillar 1: Exposure to Shocks and Hazards

- Climatic hazard
- Non-climatic hazard

Pillar 2: Child Vulnerability

- Lack of coping capacity
- Child Health and Nutrition
- Education
- WASH
- Child protection
- Livelihoods & social protection

WHAT IT CAN BE USED FOR

EVIDENCE BASED PLANNING

Identify the municipalities where children face the highest relative risk, to prioritise investment and resources.

SECTOR-SPECIFIC INTERVENTIONS

Target programming in health, nutrition, education, WASH, child protection and social protection.

MUNICIPAL RISK & PREPAREDNESS

Use municipality risk profiles and automated reports to support local planning and disaster preparedness.

CROSS-SECTORAL COORDINATION

Reveal where multiple hazards and vulnerabilities overlap, supporting joined-up, coordinated decision-making.

The CCRI-DRM is a composite index model, not a forecast. It ranks municipalities by relative risk using the indicators and data available at the time of analysis; it does not predict specific events, timelines, or magnitudes of impact. Results should inform not replace local knowledge, further assessment, and government judgement in planning and resource allocation.

Development of Timor - Leste's Subnational CCRI-DRM

01

Desktop study

National and international hazard, census, health, nutrition and administrative datasets were reviewed to develop the prototype.

02

Inception workshop

22 APRIL 2026, DILI

The proposed CCRI-DRM framework and indicators were reviewed by representatives from government, academia and development partners to ensure their relevance, technical soundness and alignment with national priorities.

03

Data and model refinement

APRIL TO JUNE 2026

The team refined indicators, data sources and methods using national data and stakeholder recommendations.

04

Validation and technical training

22 TO 25 JUNE 2026, DILI

The hazard datasets and derived exposure layers were technically reviewed and validated by DNMG, CPA, DNCC and INETL.

National counterparts were also trained on the CCRI-DRM methodology, indicator calculation procedures and supporting calculation workbook.

05

National launch

23 SEPTEMBER 2026

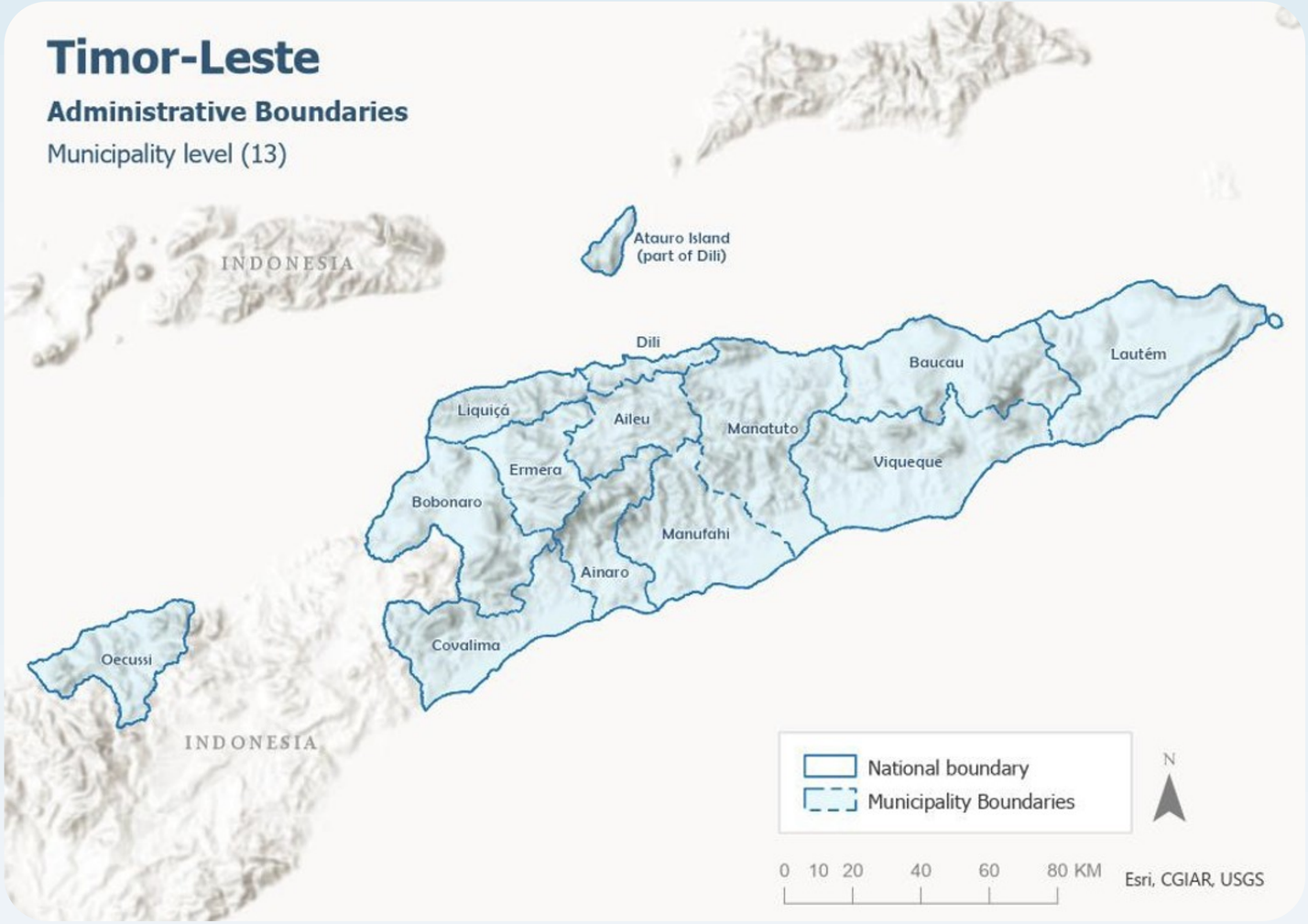
The project hands over the findings, platform and model to the Government of Timor-Leste and partners.

Analytical Scale

Assessed at the municipal (Admin 1) level

Timor-Leste's 13 municipalities were selected as the analytical unit through consultation with INETL, UNICEF, the project team and stakeholders participating in the inception workshop.

This aligns the assessment with national planning and reporting systems and the availability of consistent data.

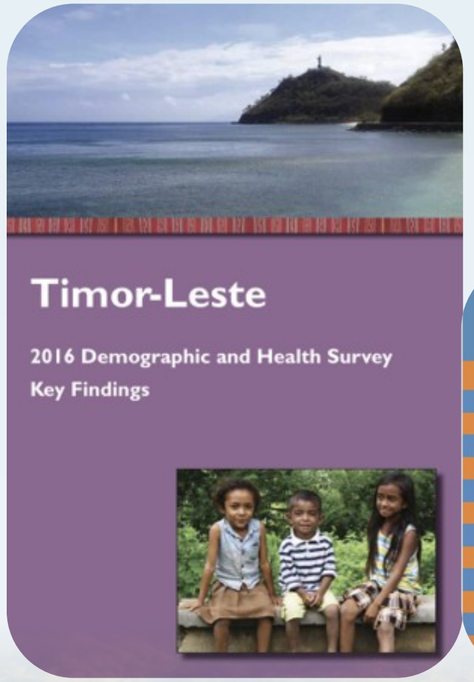


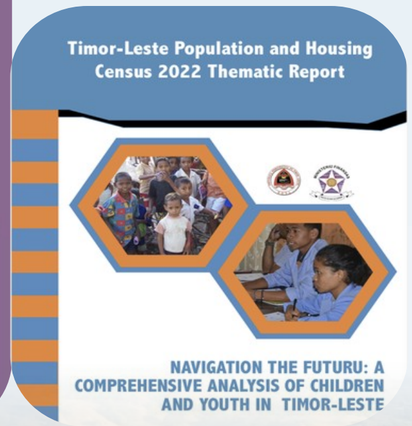
Where does the data for CCRI-DRM come from ?

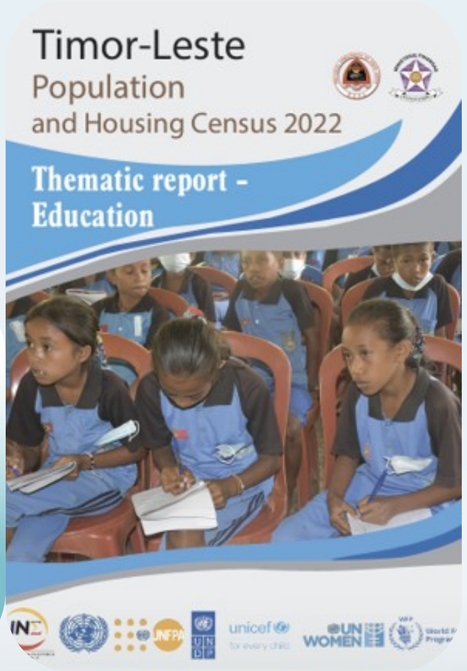
The CCRI-DRM draws on national household surveys, censuses, administrative records and geospatial datasets.

Pillar 1: Exposure draws mainly on the CPA and UNDP Multi-Hazard Vulnerability and Risk Assessment, supplemented by global hazard datasets and Ministry of Health dengue surveillance data.

Pillar 2: Child Vulnerability draws mainly on national surveys and censuses, supported by administrative data such as the Ministry of Education's EMIS.







Children’s Exposure to Shocks and Hazards

PILLAR 1

Measures the spatial distribution and relative intensity of climatic and non-climatic hazards affecting children in each municipality.

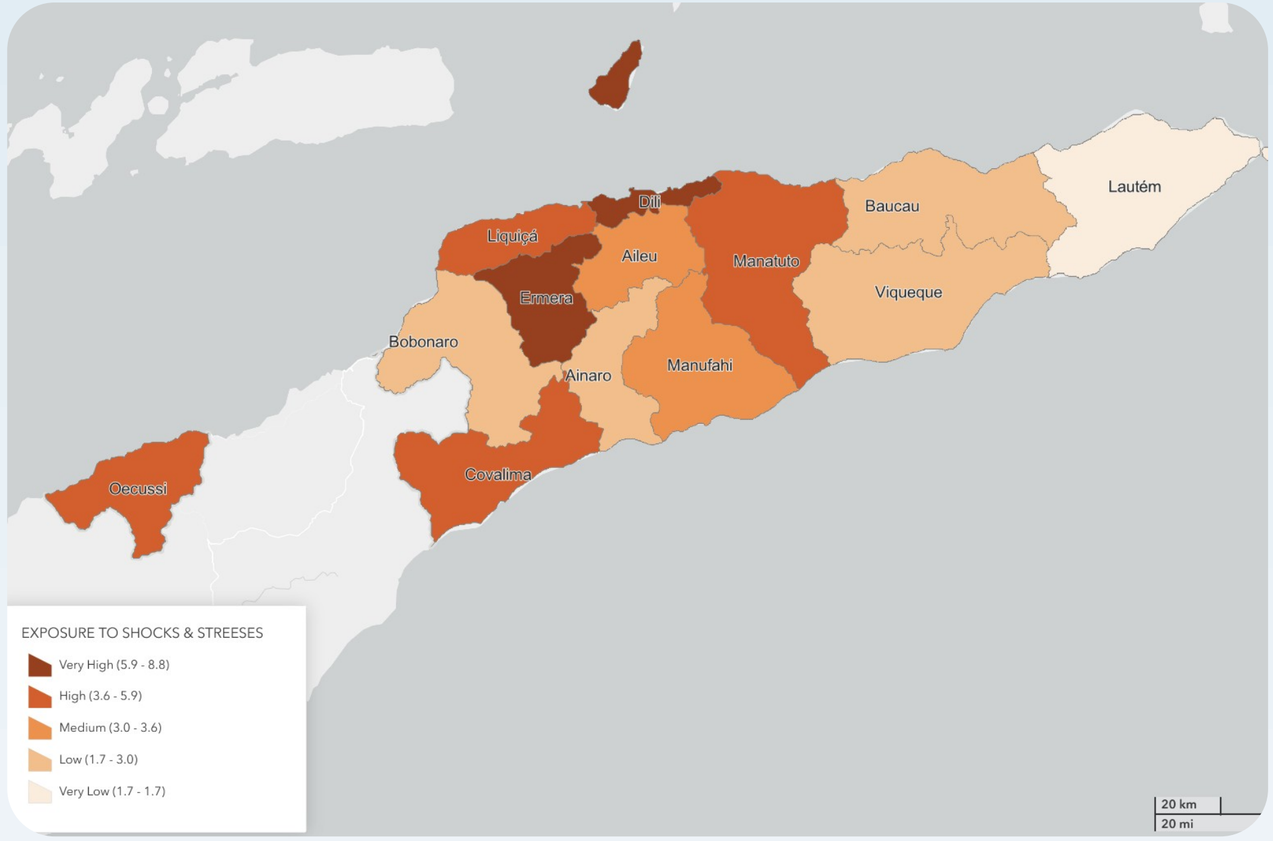
8 INDICATORS

Climatic Hazard

- Riverine Flood
- Coastal Flood
- Heat Stress
- Landslide
- Tropical Cyclone - Wind

Non-Climatic Hazard

- Earthqauke
- Dengue Fever
- Diarrhea Prevalence



Pillar 1 exposure classification by municipality

Key Hazard exposure rankings

PILLAR 1 Municipalities with the highest relative exposure across priority hazards

Riverine Flood

Inland flooding from heavy rainfall & river overflow.

01	Dili	02	Covalima	03	Viqueque	04	Manufahi

Heat Stress

Extremely high temperatures affecting health and well being.

01	Dili	02	Viqueque	03	Covalima	04	Baucau

Coastal Flood

Flooding from storm surge, high tides and coastal inundation.

01	Dili	02	Oecussi	03	Covalima	04	Liquica

Tropical Cyclone

Strong winds from tropical cyclones and severe storms.

01	Aileu	02	Covalima	03	Dili	04	Liquica

Landslides

Slope failure triggered by heavy rainfall & earthquakes.

01	Ermera	02	Liquica	03	Dili	04	Aileu

Priority municipalities for multi-hazard action

PILLAR 1 These municipalities recur across multiple climate and disaster hazards, indicating higher risk for children and a need for integrated government action.

Dili *Multi-Hazard hotspot*

Stands out across multiple hazards with elevated risk from riverine flood, heat stress, coastal flood and tropical cyclone winds.

Riverine Flood | Heat Stress | Coastal Flood | Tropical Cyclone

Covalima *Multi-Hazard hotspot*

Recurs strongly in riverine flood, heat stress, coastal flood and tropical cyclone winds, indicating high and compounding risks.

Riverine Flood | Heat Stress | Coastal Flood | Tropical Cyclone

Ermera *Landslide hotspot*

The leading landslide hotspot and already high overall exposure municipality, indicating compounding risk for children.

Landslide

Liquica and Aileu *Recurrent hazard*

Both municipalities are recurrent hotspots for tropical cyclone and landslide exposure.

Tropical Cyclone | Landslide

Viqueque *Climate hazard hotspot*

An important municipality for riverine flood and heat stress, with elevated risk for children from these hazards.

Riverine Flood | Heat Stress

Prioritise multi hazard planning where repeated hazard hotspots coincide with high child exposure

Focus resources, strengthen preparedness and invest in resilient infrastructure for the municipalities that face multiple, compounding hazards.

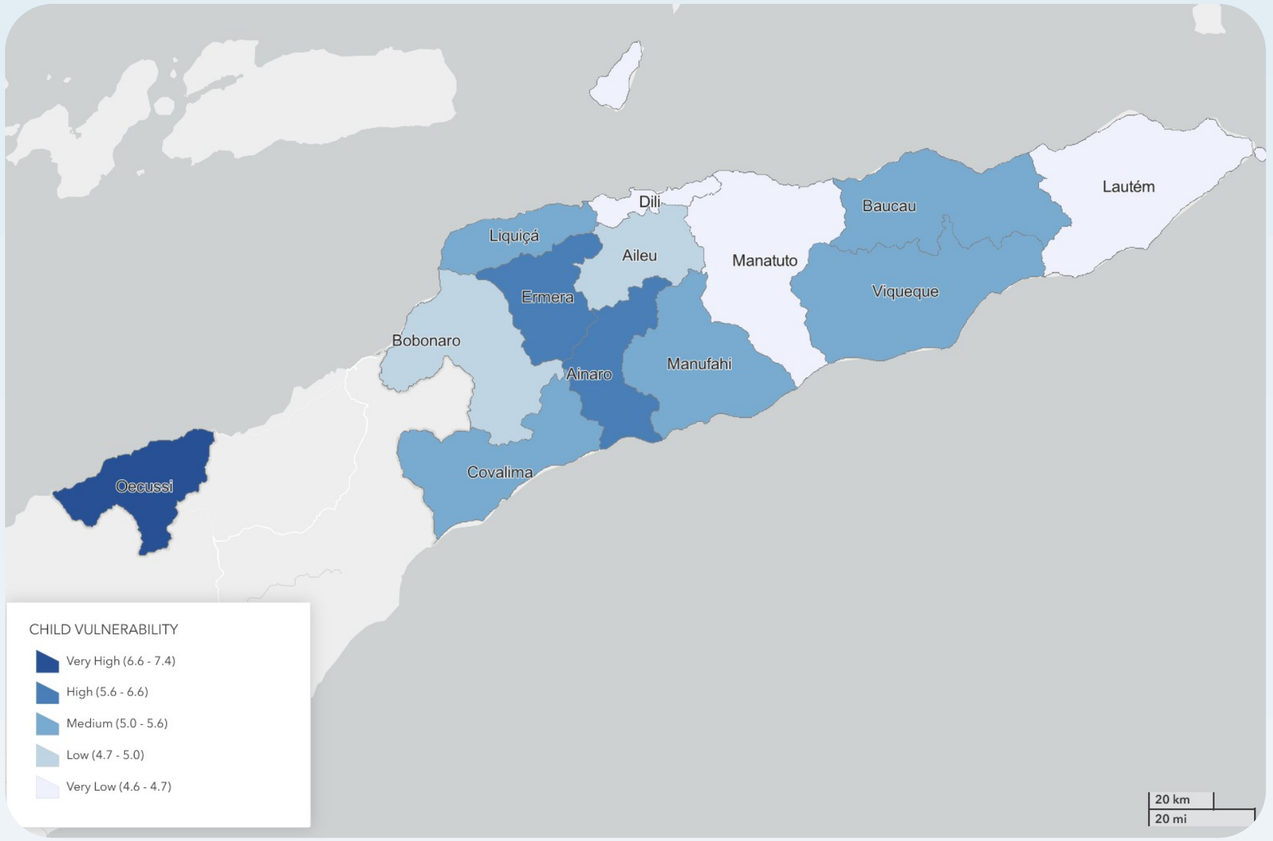
Child Vulnerability

PILLAR 2

Captures the social, economic, environmental and institutional conditions that shape children's capacity to anticipate, cope with and recover from shocks.

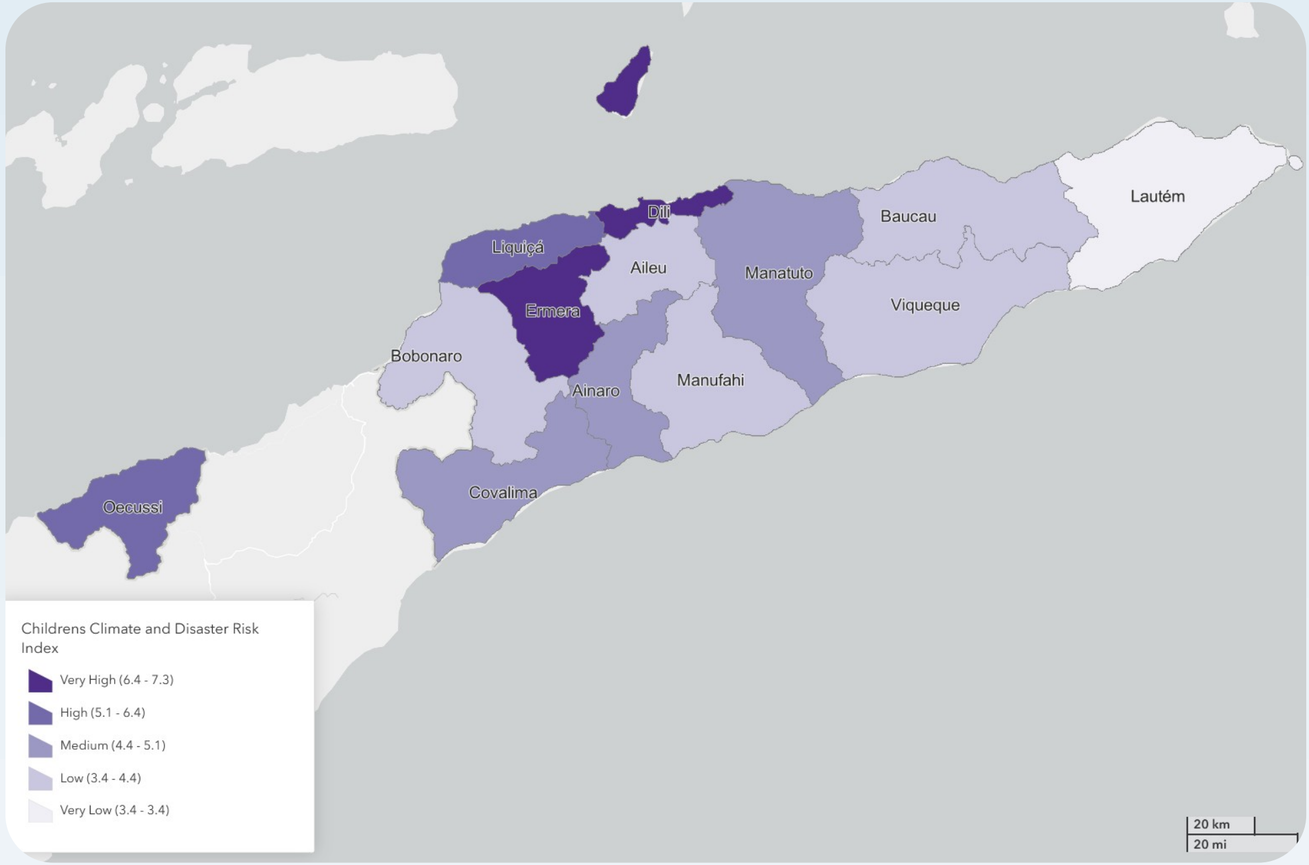
56 INDICATORS

08 Lack of coping capacity	22 Child health and nutrition
07 Education	10 Water, Sanitation, & Hygiene
03 Child protection	06 Livelihoods & social protection



Pillar 2 vulnerability classification by municipality

Demonstration: Exploring the results through the platform



Link:
Timor-Leste - The Children's Climate Risk Index – Disaster Risk Management (CCRI-DRM)

MAP

Compare spatial patterns

FILTER

Explore pillars and components

PROFILE

Review municipality-level drivers

Automated Report

Support planning and reporting

Key Findings

The Timor-Leste CCRI-DRM shows that climate and disaster risk varies across municipalities and is shaped by different combinations of exposure and vulnerability.

Highest overall risk

Dili and Ermera stand out, with Liquica and Oecussi also showing elevated relative risk

Exposure Hotspots

Exposure is relatively stronger in Ermera, Dili, Liquica Oecussi, Manatuto and Covalima.

Vulnerability Hotspots

Oecussi stands out mostly strongly for child vulnerability, followed by Ermera and Ainaro

Planning Implications

Different municipalities require tailored action, combining risk reduction with stronger child focused services and resilience.

Ermera Municipality

An example of how multiple dimensions of risk combine to increase climate and disaster risk for children.

6.8 VERY HIGH
CCRI-DRM Score

6.9 VERY HIGH
Exposure Score

6.6 HIGH
Vulnerability Score

WHAT THE ERMERA PROFILE SHOWS

01

Multiple hazards drive exposure

Ermera records Very High exposure. Landslide and diarrhoea prevalence stand out in the profile, with substantial earthquake exposure as well.

02

Vulnerability compounds the risk

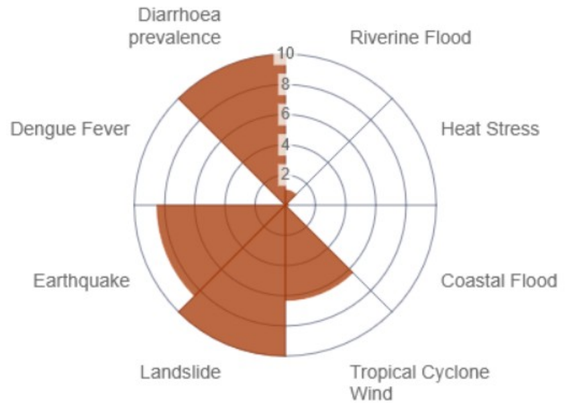
The municipality also records High child vulnerability. Child protection and livelihoods and social protection emerge as important dimensions of vulnerability.

03

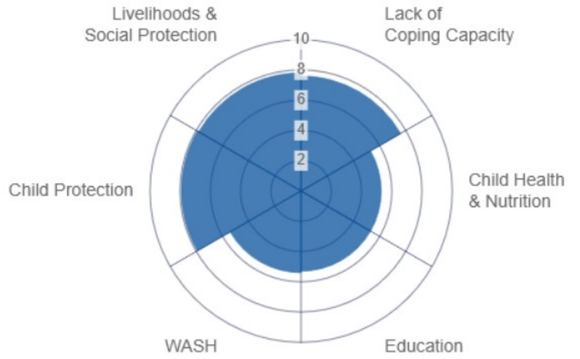
The overlap raises overall risk

Addressing multiple hazards alongside underlying vulnerabilities can support more comprehensive child-focused risk reduction.

HAZARD PROFILE



VULNERABILITY PROFILE



Maintaining and strengthening the model

Regular data updates

Refresh indicators when new census, survey, administrative or hazard data become available.

National stewardship

Maintain clear institutional roles for data ownership, validation and platform management.

Progressive refinement

Improve geographic detail and fill documented data gaps as national information systems strengthen.

Obrigadu barak