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**NATIONAL
RESILIENCE
COUNCIL**

RESILIENT LOCAL GOVERNMENT UNIT PROGRAM

ADOPT-A-CITY INITIATIVE

BARANGAY RESILIENCE BINGO SCORECARD LAUNCHING, ORIENTATION & BASELINING

August 21 – 23, 2024

Foodega, Brgy. Del Carmen, Iligan City



National Resilience Council



NRCPhilippines



info@resiliencouncil.ph



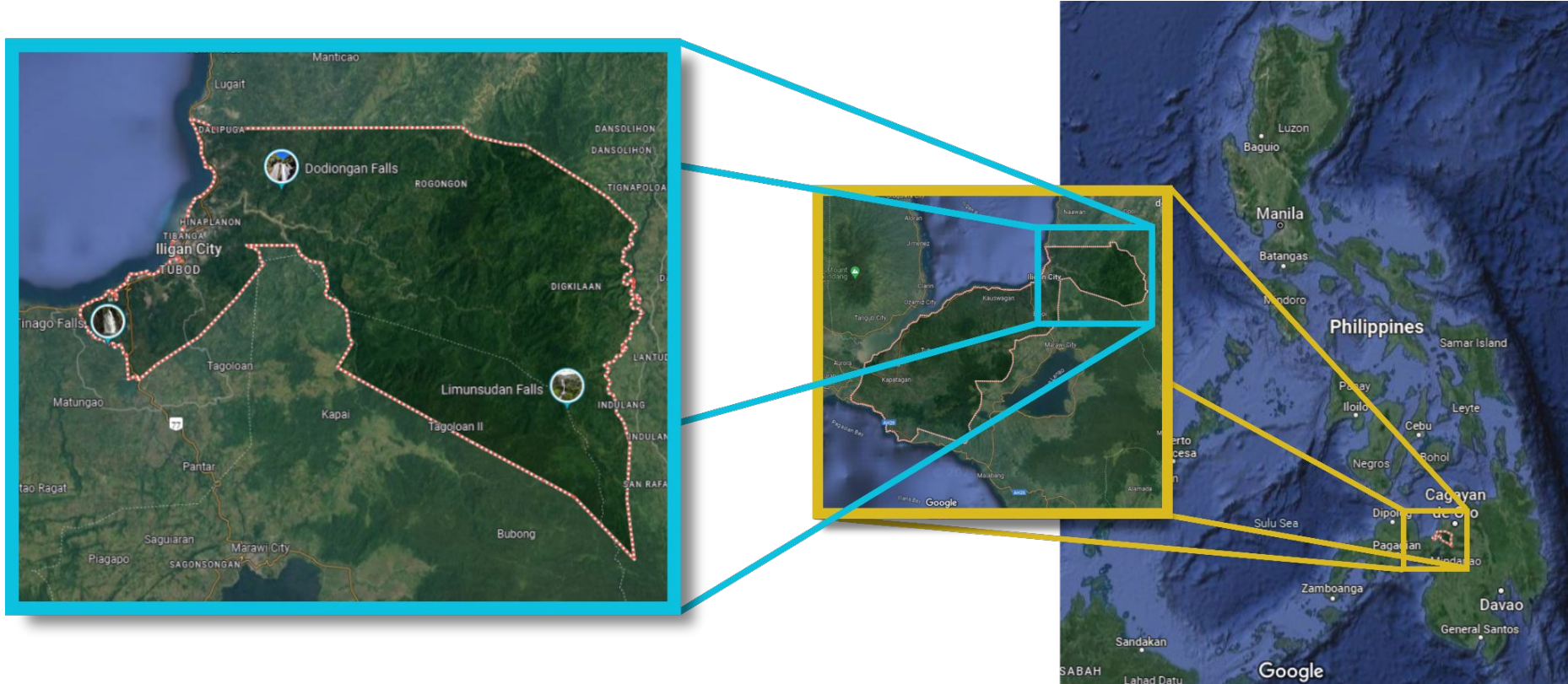
nationalresiliencouncil



ILIGAN

RISK PROFILE

Location



Socio-Pol-Eco Profile



Population: 363,115

Population Density: 450/km²

Poverty Incidence: 11.80%

Urban Economic Primacy:

GDP: ₱77.015 billion

Unemployment rate: 7.6% (2020)

Underemployment rate: 5.7% (2020)

Risk Governance:

Politically Independent from Lanao del Norte

44 barangays



WHAT IS RISK?

$$\text{RISK} = f(\text{hazard, exposure, vulnerability, coping capacity})$$



HAZARD

Geophysical,
meteorological,
social, technological,
political



EXPOSURE

Susceptibility,
frequency to a
disaster



VULNERABILITY

How great the
impact will be on an
individual or group



COPING CAPACITY

Ability of a
community to
respond to a
disaster

$$\text{RISK} = \frac{\text{HAZARD} \times \text{EXPOSURE} \times \text{VULNERABILITY}}{\text{COPING CAPACITY}}$$



HAZARD
Event



EXPOSURE
Infrastructure,
Population,
Livelihoods

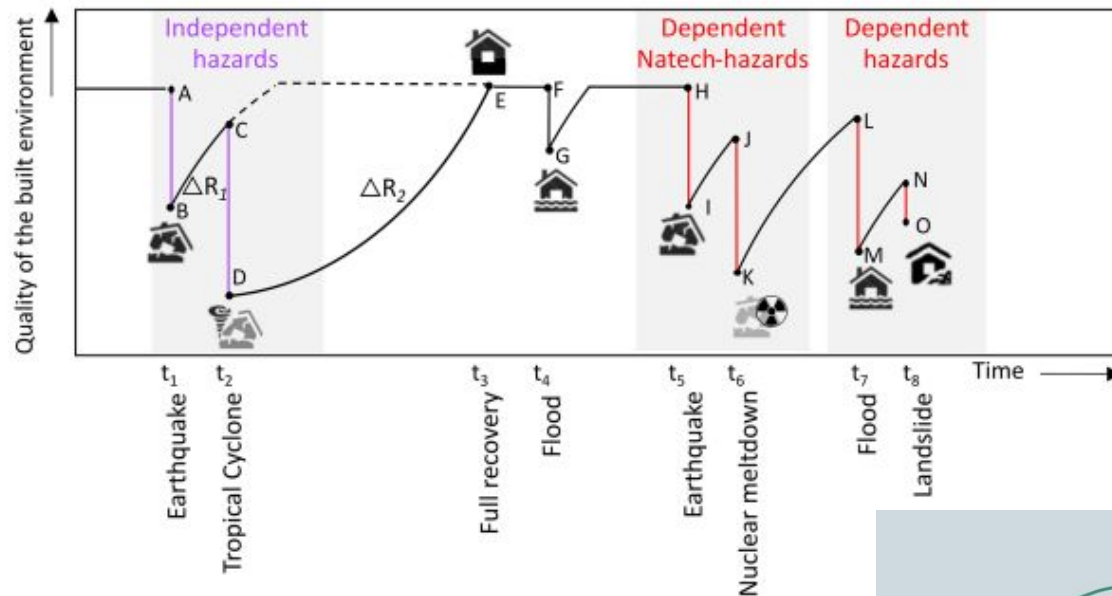


VULNERABILITY
Social
Political
Academic

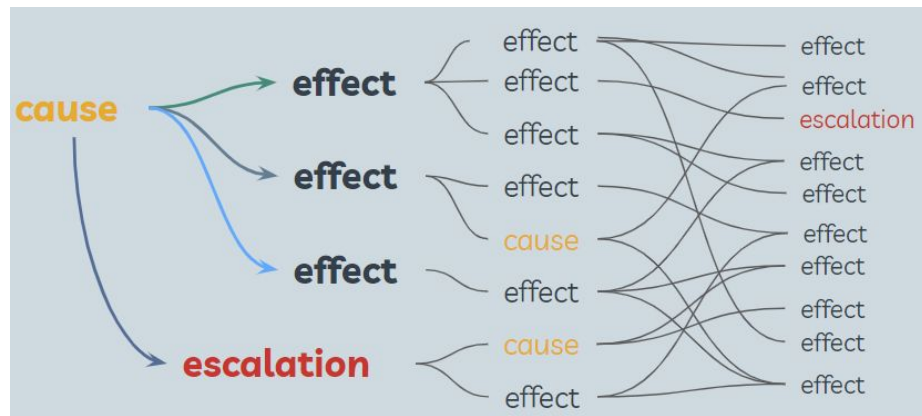


COPING CAPACITY
Mitigation,
Adaptation
Resiliency

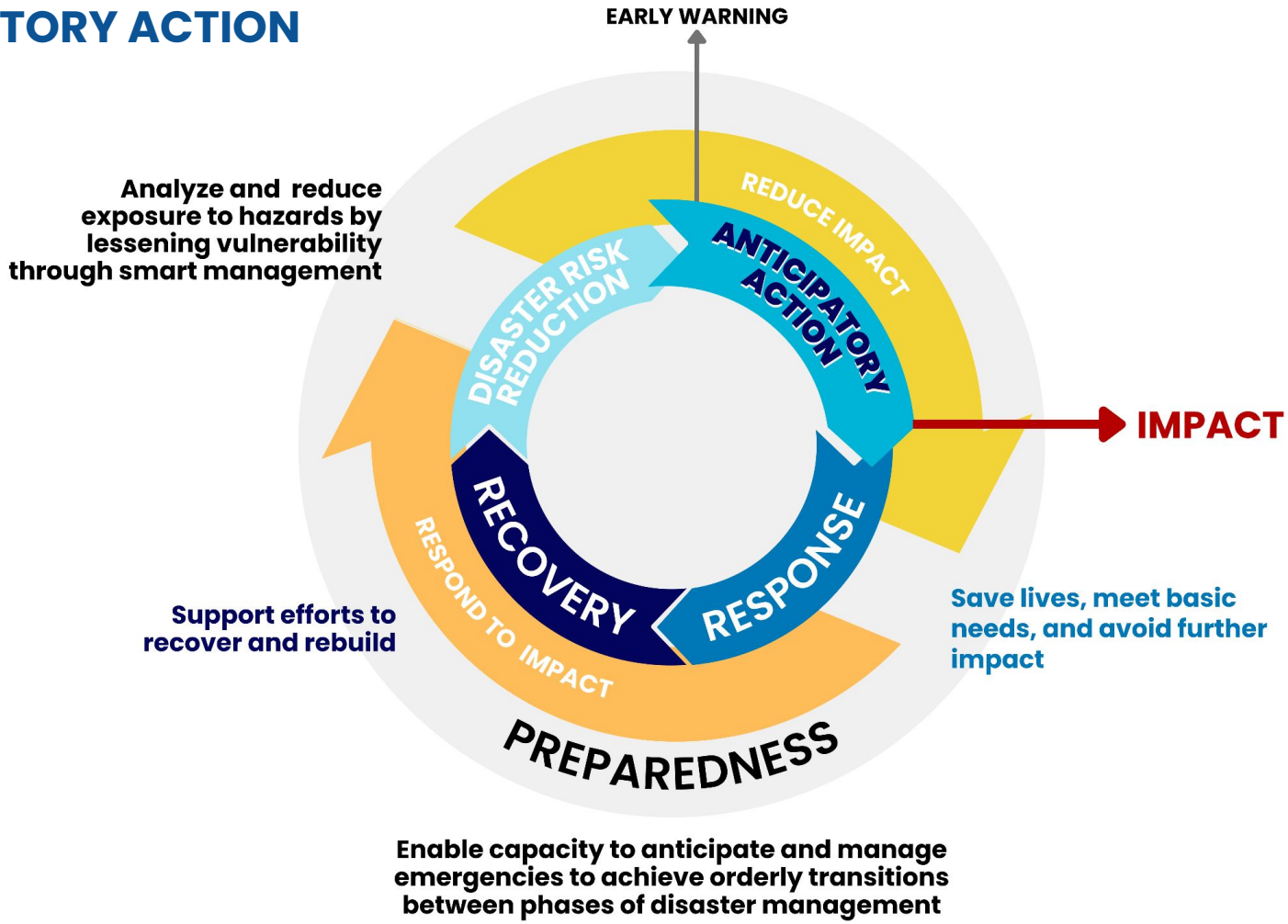
Cascading Disasters



Cascading events delay society's full recovery from a disaster, resulting in a lack of preparation for the next one.



ANTICIPATORY ACTION



Adapted from Tozier dela Poterie, A., et al (2021)

City Demographics

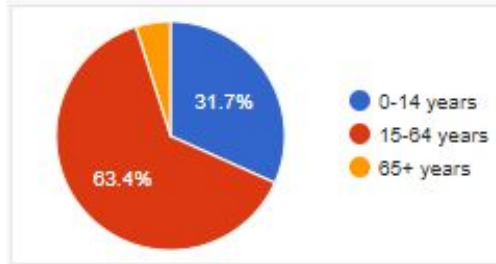
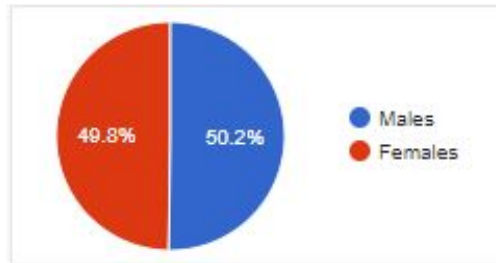
ILIGAN

Name	Status	Population Census 1990-05-01	Population Census 2000-05-01	Population Census 2010-05-01	Population Census 2015-08-01	Population Census 2020-05-01
Iligan	City	226,568	285,061	322,821	342,618	363,115

Iligan

- **363,115** Population [2020] – Census
- **532.2 km²** Area
- **682.3/km²** Population Density [2020]
- **1.2%** Annual Population Change [2015 → 2020]

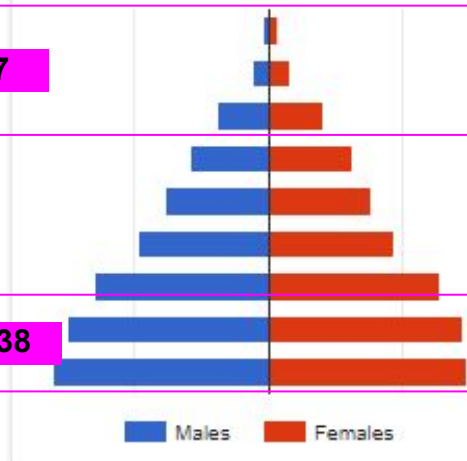
Iligan: city of the Philippines – Inception: 1609 – Elevation: 262 m – [Official Website](#) – Local dialing code: 63 – Postal code: 9200



Gender (C 2020)	
Males	181,922
Females	180,260

Age Groups (C 2020)	
0-14 years	114,884
15-64 years	229,497
65+ years	17,801

Age Distribution (C 2020)	
80+ years	2,448
70-79 years	7,266
60-69 years	19,653
50-59 years	30,514
40-49 years	38,537
30-39 years	47,628
20-29 years	64,698
10-19 years	73,989
0-9 years	77,449

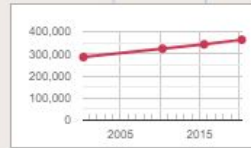
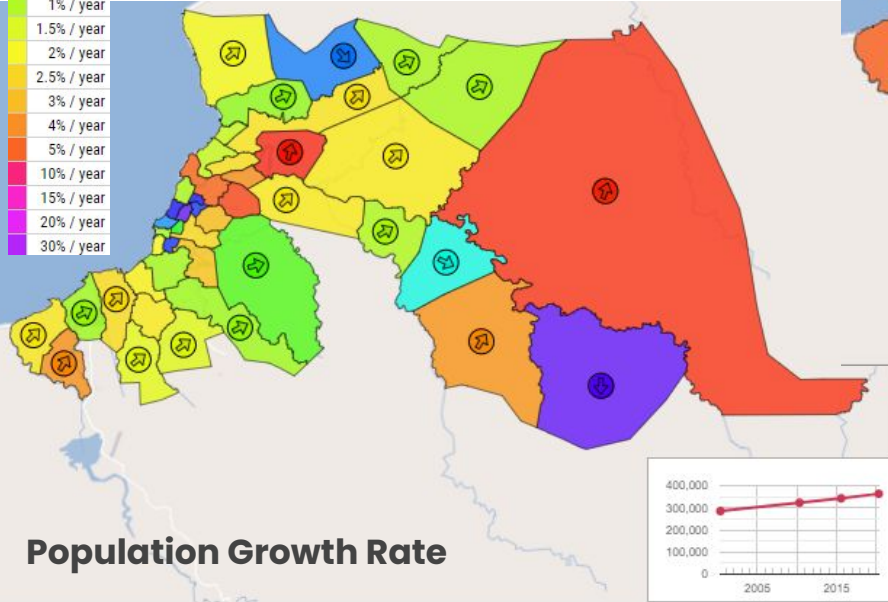
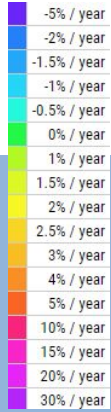
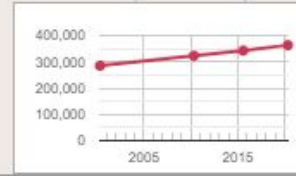
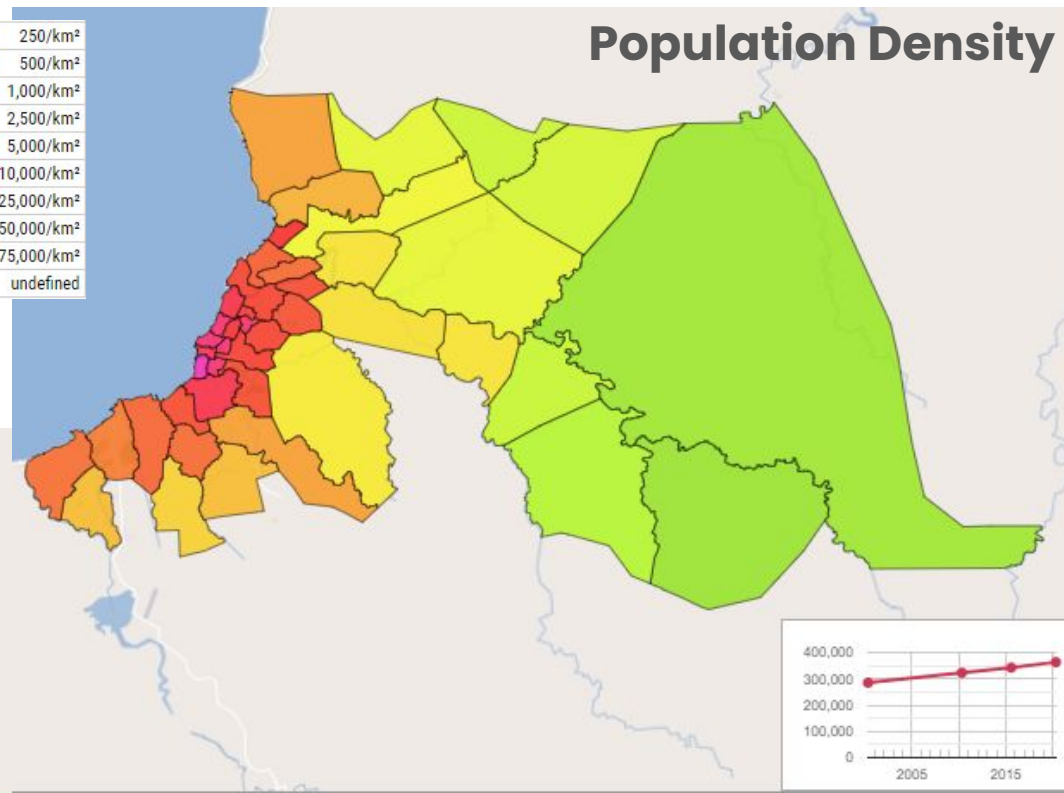


Total number of ≤19 years old and ≥60: **180,805**
% vulnerability (minors and seniors): **~50%**

City Demographics

ILIGAN

Population Density



Population Growth Rate

Source:

https://www.citypopulation.de/en/philippines/manilacity/admin/?mode=density&map=osm_dlr&opacity=1

Flood

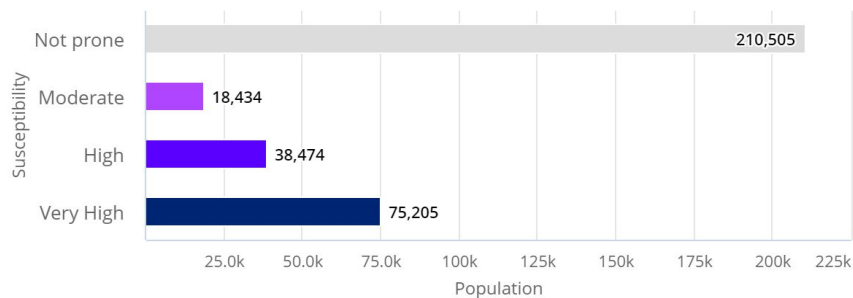
Total Population Prone to Flood:
132,113 out of 342,618 (38.56%)

Source: GeoanalyticsPH



Population Prone to Flood

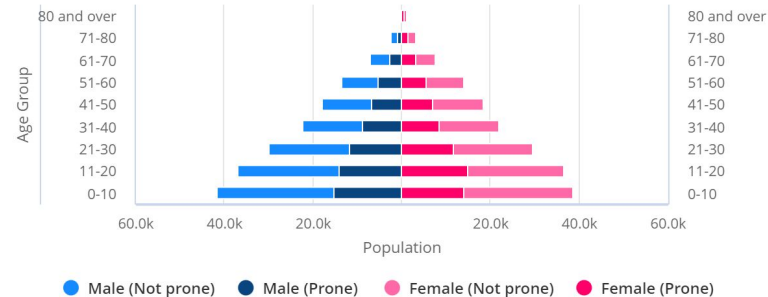
Iligan City, Lanao del Norte, Region X (Northern Mindanao)



GeoAnalyticsPH

Population Prone to Flood

Iligan City, Lanao del Norte, Region X (Northern Mindanao)

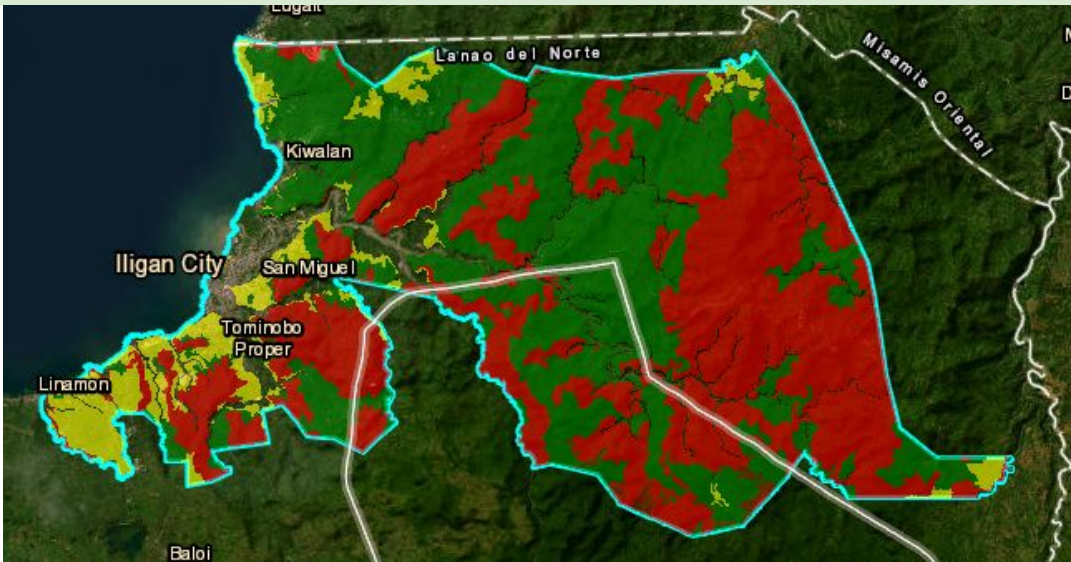


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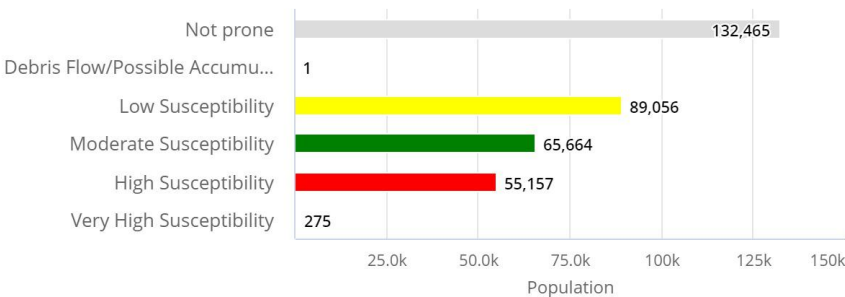
Rain-Induced Landslide

Total Population Prone to Rain-Induced Landslides:
210,153 out of 342,618 (61.34%)

Source: GeoanalyticsPH

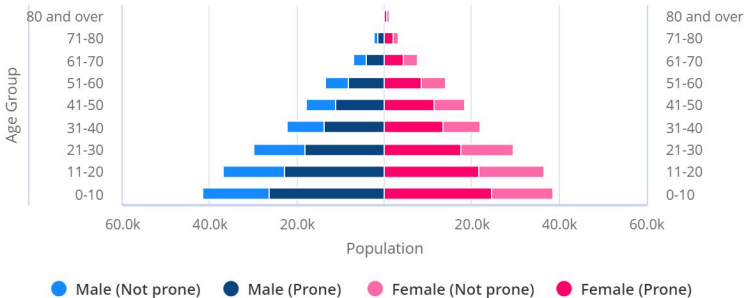


Population Prone to Rain-Induced Landslide
Iligan City, Lanao del Norte, Region X (Northern Mindanao)



GeoAnalyticsPH

Population Prone to Rain-Induced Landslide
Iligan City, Lanao del Norte, Region X (Northern Mindanao)



GeoAnalyticsPH



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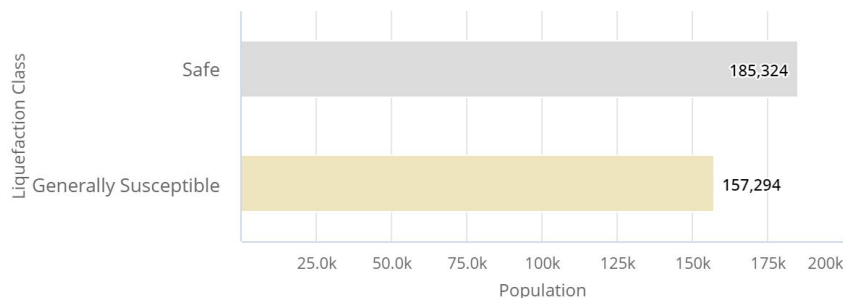
Liquefaction

Total Population Prone to Liquefaction:
157,294 out of 342,618 (45.91%)

Source: GeoanalyticsPH

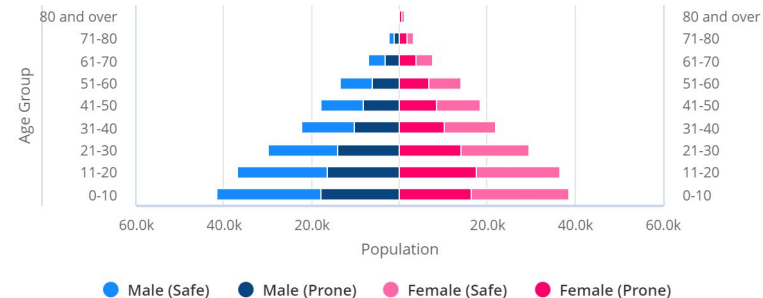


Population Prone to Liquefaction
Iligan City, Lanao del Norte, Region X (Northern Mindanao)



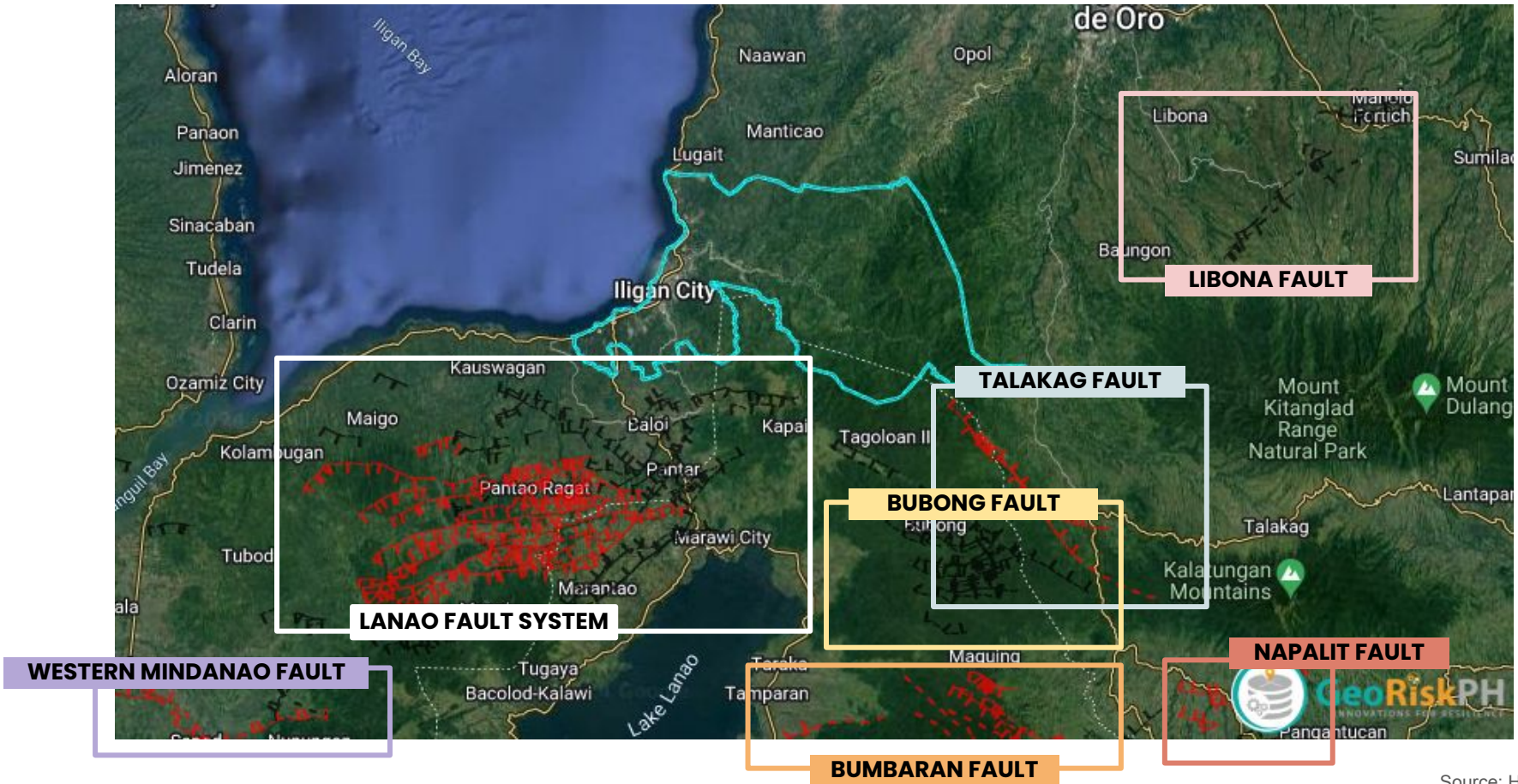
GeoAnalyticsPH

Population Prone to Liquefaction
Iligan City, Lanao del Norte, Region X (Northern Mindanao)



GeoAnalyticsPH

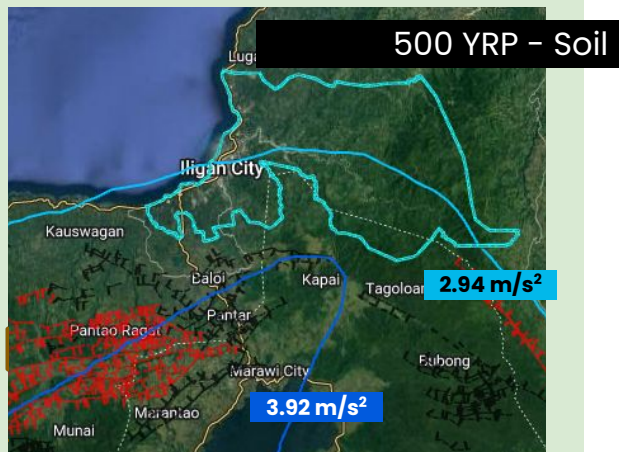
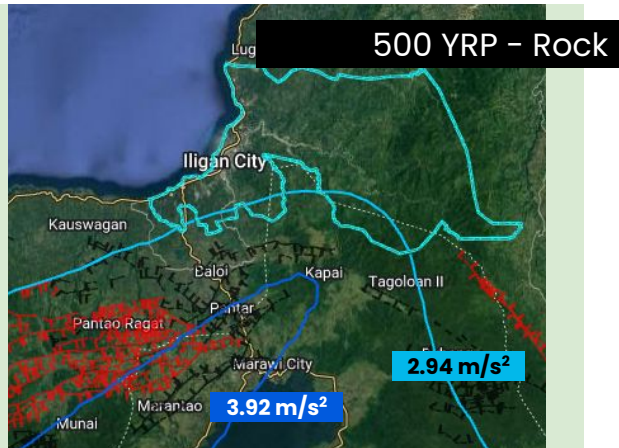
Seismicity – Faultlines



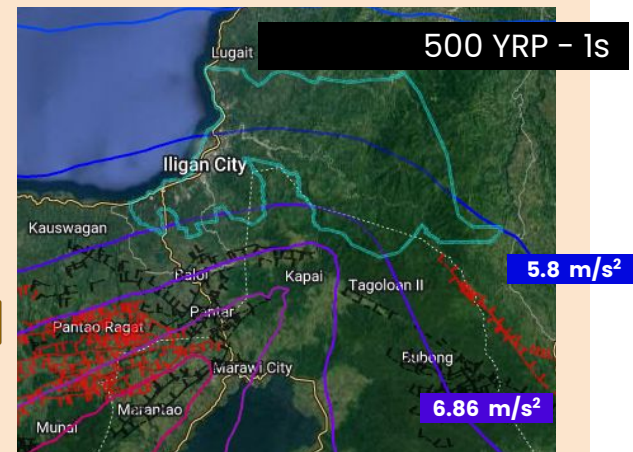
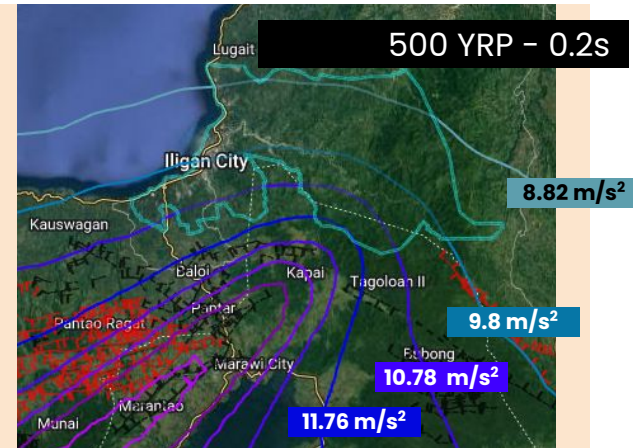
Seismicity – Ground Movement

Source: HazardHunter

PEAK GROUND ACCELERATION



SPECTRAL ACCELERATION



SUDDEN ONSET

may be a single, discrete event that occurs in a matter of days or even hours.

DISASTER RISK AND RESILIENCE



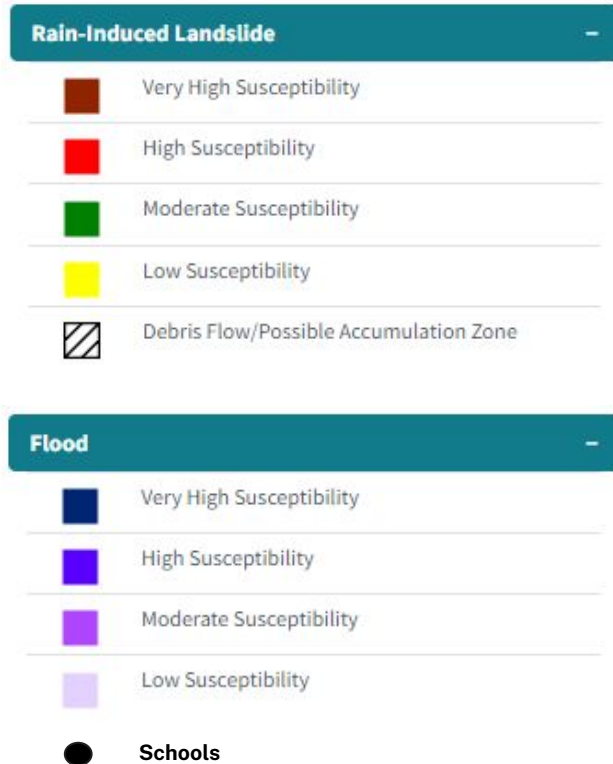
SLOW ONSET

Events evolve gradually from incremental changes occurring over many years or from an increased frequency or intensity of recurring events

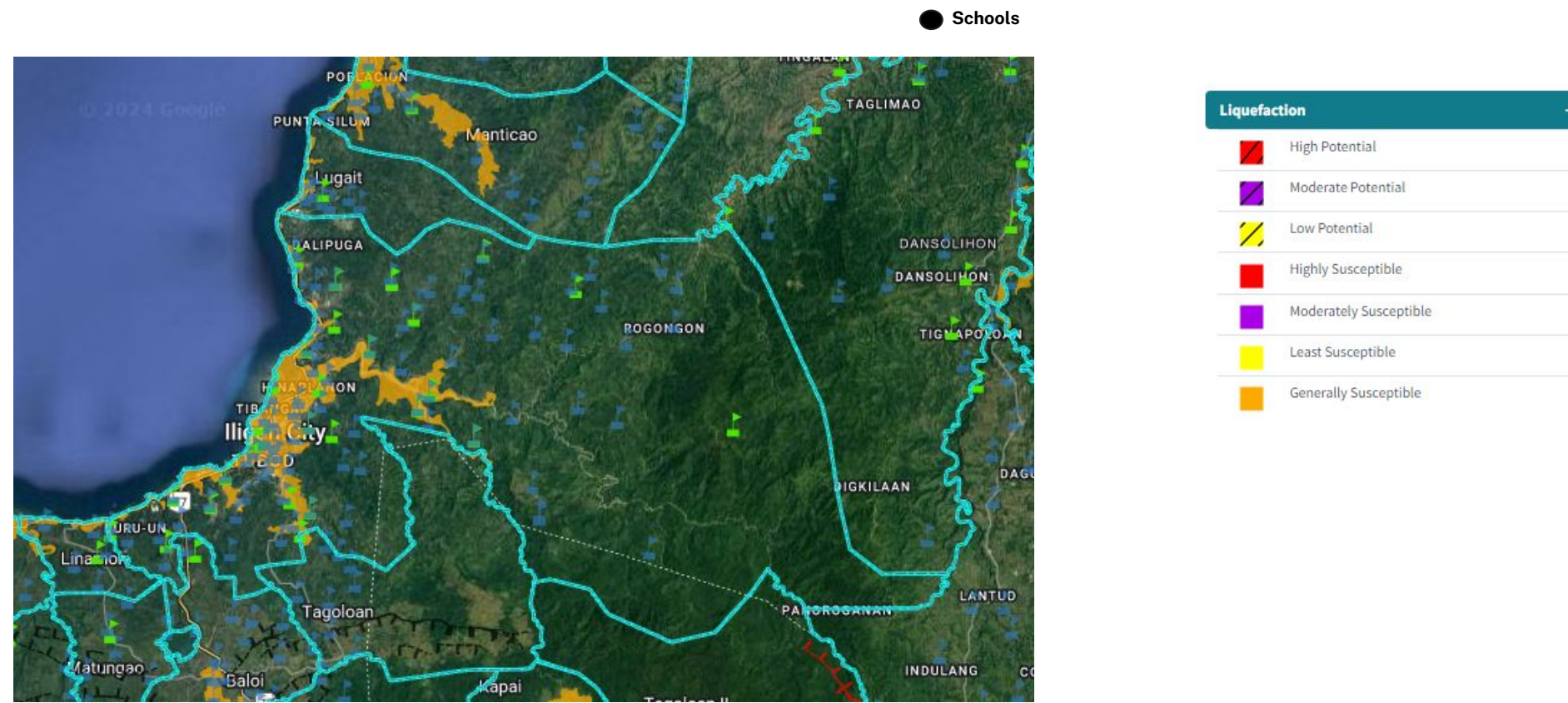
CLIMATE CHANGE ADAPTATION



Location of schools vs hydrometeorological hazards



Location of schools vs seismic hazards



Location of health centers vs hydromet hazards

Rain-Induced Landslide

- Very High Susceptibility
- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility
- Debris Flow/Possible Accumulation Zone

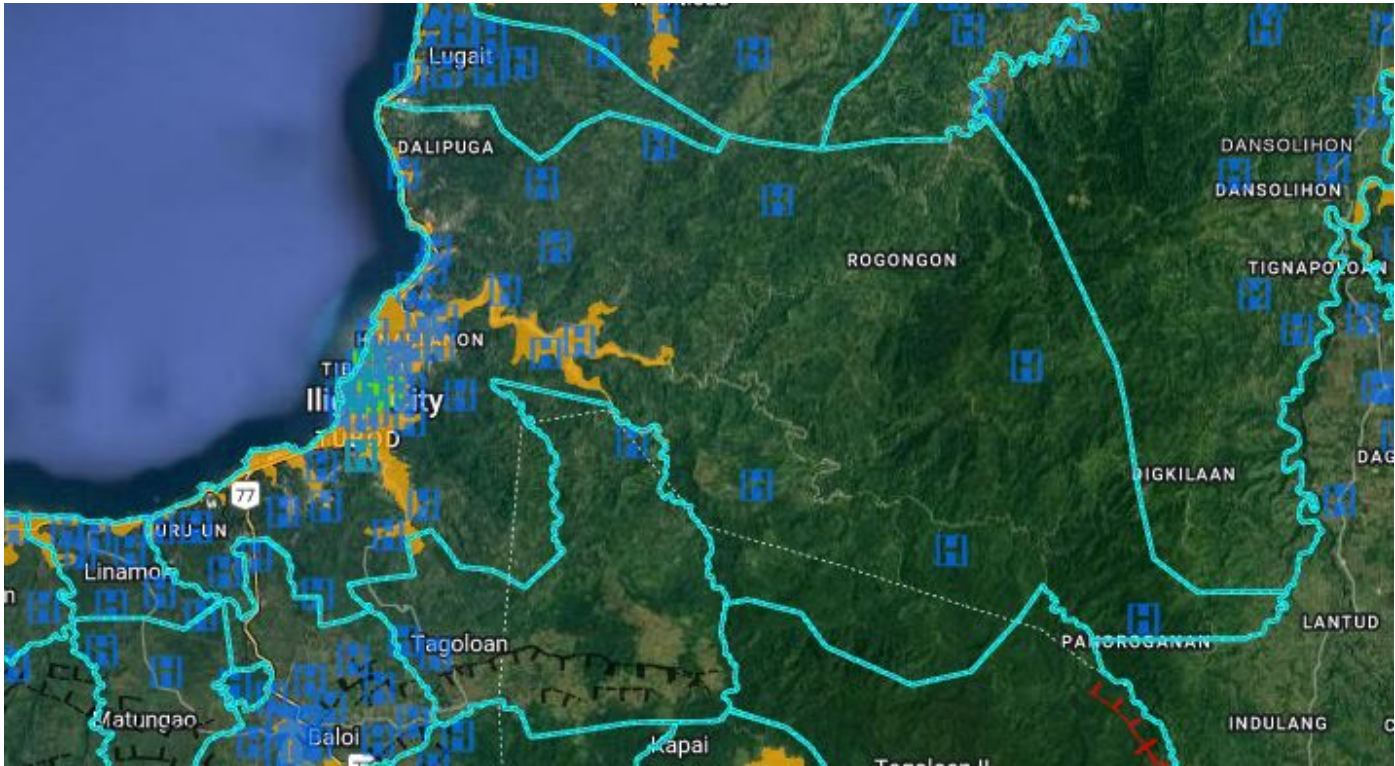
Flood

- Very High Susceptibility
- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility



◆ Health Centers

Location of health centers vs seismic hazards



Liquefaction	
	High Potential
	Moderate Potential
	Low Potential
	Highly Susceptible
	Moderately Susceptible
	Least Susceptible
	Generally Susceptible

◆ Health Centers

Source: HazardHunterPH

Risk Profile



	Seismic	Hydrometeorological
Schools in safe zones	34	1
Schools in low to med susceptibility	78	60
Schools in high to very high susceptibility	0	51
Health Centers in safe zones	24	3
Health Centers in low to med susceptibility	29	22
Health Centers in high to very high susceptibility	0	28

Vulnerability Factors (Social)

Unemployment Rate (%)		
Estimate (%)	Standard Error (%)	Coefficient of Variation (%)
7.6	0.05	0.7

Underemployment Rate (%)		
Estimate (%)	Standard Error (%)	Coefficient of Variation (%)
5	0.05	0.93

Highest Grade/Year Completed and Sex
No Grade Completed
Pre-School
Special Education
Elementary
1st - 4th Grade
5th - 6th Grade
Graduate
High School
Undergraduate
Graduate
Post-Secondary
Undergraduate
Graduate
College Undergraduate
Academic Degree Holder
Post Baccalaureate
Not Stated

Marital Status
Single
Married
Widowed
Divorced/ Separated
Common- Law/ Live-in

Functional Difficulty
Seeing
Hearing
Walking
Remembering or Concentrating
Self-Caring
Communicating Using his/her Usual (Customary) Language

Vulnerability Factors (Household facilities)

Kind of toilet facility

Flush to septic tank

Flush to piped sewer system

Bucket/pail system

Flush to pit latrine

Flush to open drain

Flush to unknown
depository/place

Ventilated improved latrine

No facility/bush/field

Pit latrine with slab

Hanging toilet/hanging latrine

Pit latrine without slab/open pit

Composting toilet

Others

Source of drinking water

Water refilling station

Own use faucet community water
system

Shared faucet community water
system

Bottled water

Own use tubed/piped deep well

Peddler

Shared tubed/piped deep well

Tubed/piped shallow well

Protected well

Unprotected well

Protected spring

Unprotected spring

Rainwater

Surface water

Peddler

Others

Appliances, Devices, and Vehicles

Refrigerator/ freezer

Stove with oven/gas range

Microwave oven

Washing Machine

Air Conditioner

Electric fan and other cooling

Radio/radio cassette

Television

CD/DVD/VCD player

stereo set/ karaoke/ videoke

Landline/wireless telephone

Mobile phone

Tablet

Personal Computer

Car/van/jeep/truck

Motorcycle/scooter/tricycle

Bicycle/pedicab

Motorized boat/banca

Non-motorized boat/banca

Vulnerability Factors (Housing and Infrastructure)

Building Types
Single House
Duplex
Apartment/accessoria/rowhouse
Condominium/condotel
Other multi-unit residential
Commercial/industrial/agricultural
Institutional living quarter

Number of Floors
One floor
Two floors
Three floors
Four floors
Five to 10 floors
11 floors or more

Outer Walls
Concrete/brick/stone
Wood
Half concrete/brick/stone and half wood
Galvanized iron/aluminum
Bamboo/sawali/cogon/nipa
Asbestos
Glass
Makeshift/salvaged/improvised materials

Roof
Galvanized iron/aluminum
Concrete/clay tile
Half galvanized iron and half concrete
Wood/bamboo
Cogon/nipa/anahaw
Asbestos
Makeshift/salvaged/improvised materials

