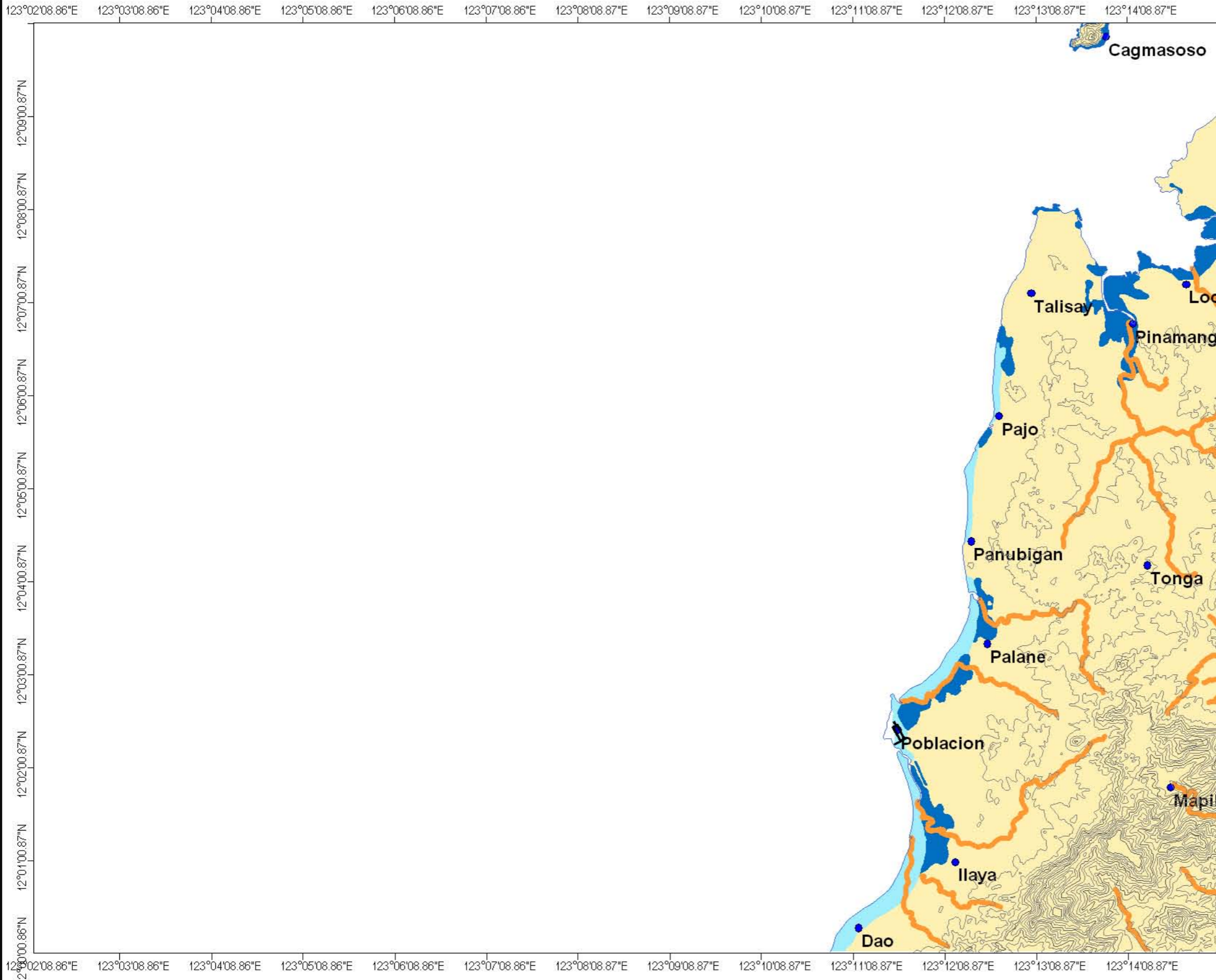


FLOOD SUSCEPTIBILITY MAP OF BALUD QUADRANGLE



MAP LEGEND:
Flood Hazard Zones:

- non flood prone areas
- occasionally to rarely flooded areas
- regularly to frequently flooded areas
- sea

EXPLANATIONS:

Flood hazard susceptibility zones were derived based on the geomorphological analysis of landforms and fluvial systems. Information on flood occurrences, flood depths, duration of inundation as well as topographic information supported the geomorphologically based flood hazard mapping.

Regularly to frequently flooded areas :

Areas that are frequently flooded. Mere heavy rains of 1 to 2 days could bring about flooding in these areas. Moderate to strong typhoons could submerge these areas 0.5 to 2.0 m. in flood waters for a few days to a few weeks. This type of floods occurs on lake margins, the backswamps and fluvial basins and on abandoned river channels. Housing development in these areas is recommended.

Occasionally to rarely flooded areas :

Areas that become inundated during moderate to strong typhoons with high intensity-long duration rains. Flood depths vary from a few centimeters to 1 m. Floods last from a few hours to a few days.

Non Flood Prone Areas :

Areas with no known or reported flood occurrences except low lying areas adjoining rivers and creeks.

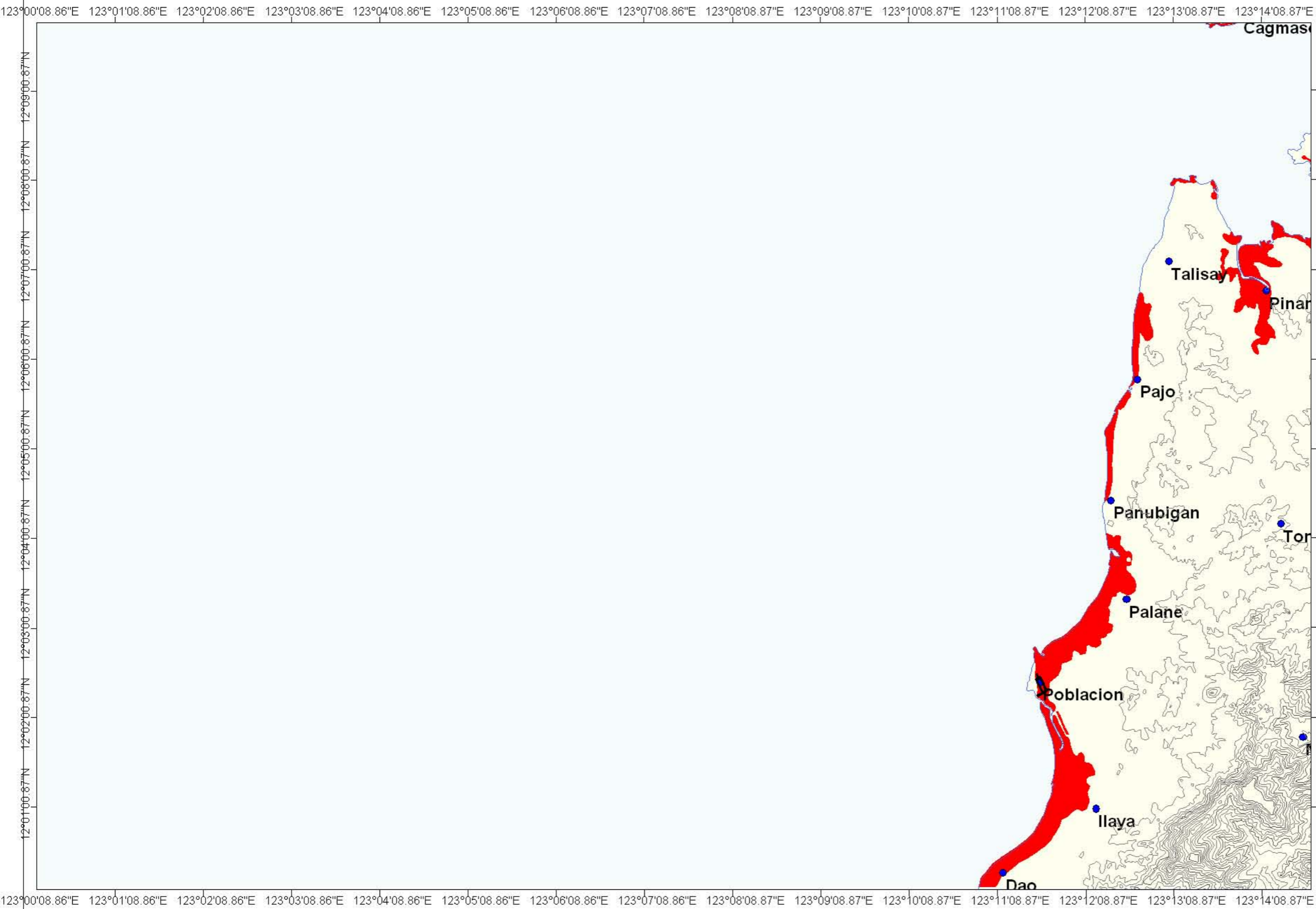
Areas prone to Bank Erosion :

Field data collection by : D. R. Dizon, E. Basilan, J Malto, M Miraballes
 Geomorphological Interpretation by : D.R. Dizon
 Digital cartographic processing by : D.R.Dizon
 GIS processing by : D.R.Dizon
 Checked by: A.E.Dayao
 Approved by : R.A. Juan

Other sources of Information :
 1:50,000 NAMRIA Topographic Map
 1951 B/W Aerial Photographs



LIQUEFACTION POTENTIAL MAP OF BALUD QUADRANGLE



MAP LEGEND : Liquefaction Hazard Zones :

- areas where liquefaction is likely
- areas where liquefaction is not likely
- sea

EXPLANATIONS :

There are no reported liquefaction occurrences in the study area based on several field interviews. However, zones of different liquefaction potential were derived based on the geomorphological analysis of the study area following methodology by Iwasaki and Yasuda.

Areas where Liquefaction is Likely:
Areas where liquefaction is likely to occur include riverbeds, old or abandoned riverbed and meanders and river terraces. These areas are not suitable for housing development. Multi-storey buildings should be required geotechnical studies addressing or mitigating the possible effects of liquefaction.

Areas where Liquefaction is not Likely:
Areas where liquefaction is unlikely to occur. Most parts of the Balud Quadrangle Map Sheet is not prone to liquefaction because of the presence of underlying bedrock.

Field data collection by : D.R.Dizon, M.Miraballes, J. Malto, E. Basilan
 Geomorphological Interpretation by : D.R.Dizon
 Digital cartographic processing by : D.R. Dizon
 GIS Processing by : D.R. Dizon
 Checked by : R. A. Juan
 Approved by : R.A. Juan

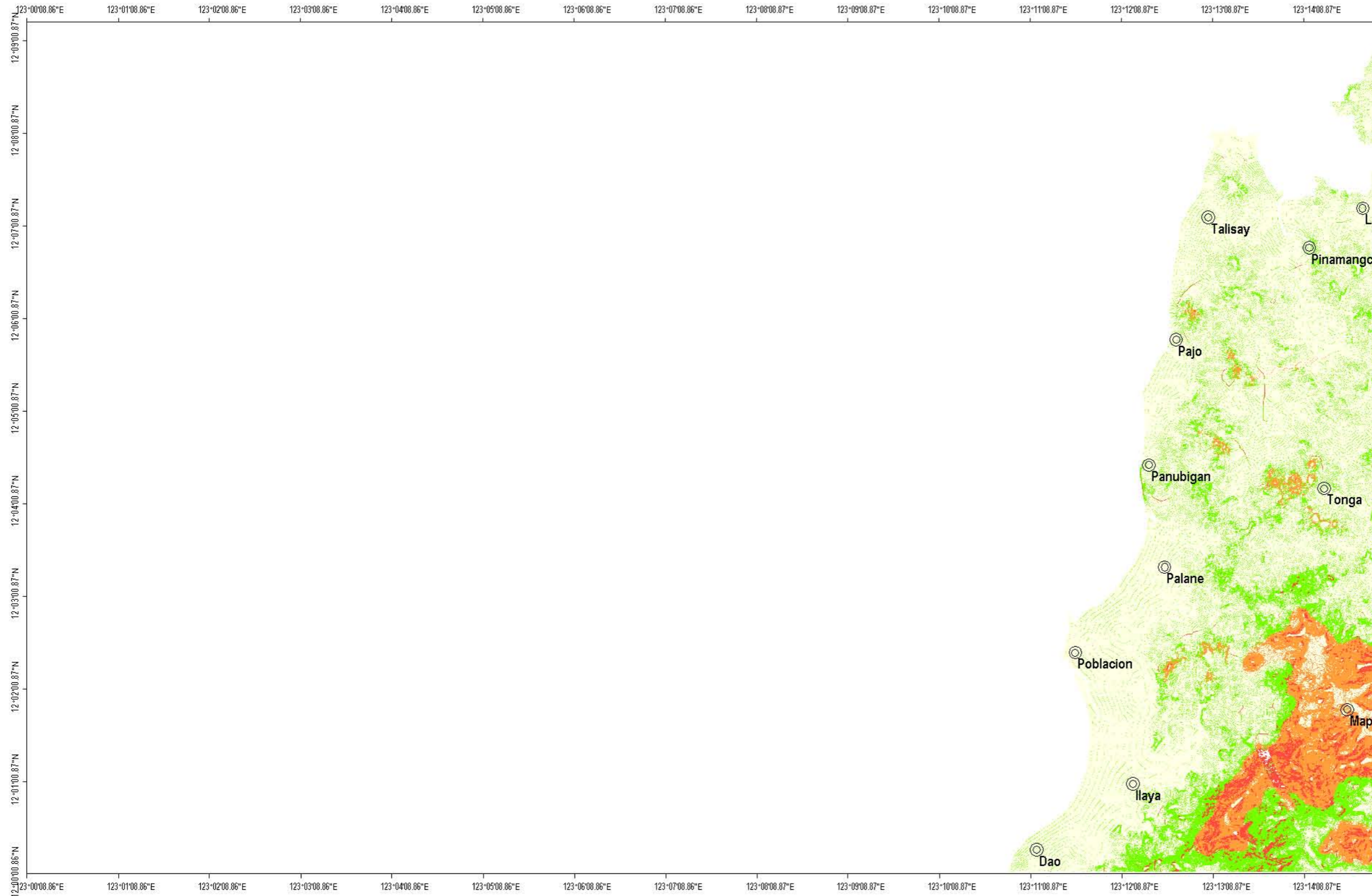
Other sources of information :
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 1951 B/W Aerial photos



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 2009



LANDSLIDE SUSCEPTIBILITY MAP OF BALUD QUADRANGLE



LEGEND:

Landslide Susceptibility

- Low to Absent
- Low Susceptibility
- Moderate Susceptibility
- High Susceptibility

— 10
— fault
— river
— road

EXPLANATIONS:

Landslide hazard susceptibility zones were derived through qualitative map combination using lithology, geomorphology, slope gradient, road distance and fault distance. GIS was used in the map combination and subjective weights were assigned to each unit in the parameter map.

Areas with High Susceptibility to Landslides :
Areas with equally high probability of occurrences of mass movements particularly rock slides, debris slides and slumps. Very steep to nearly vertical slopes and areas along fault lines are rated high susceptibility areas and are unsuitable for housing development and human settlement.

Areas with Moderate Susceptibility to Landslides :
Areas having moderate likelihood of occurrence of landslides and are recommended for more detailed engineering geological and geohazard assessment prior to housing development.

Areas with Low Susceptibility to Landslides :
Areas where the occurrence of

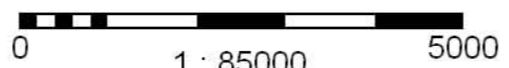
landslides is low.

Field data collection by : D. R. Dizon, E. Basant, J. Malto, M. Mirabelles
GIS processing by : D.R.Dizon
Checked by : A.E.Dayao
Approved by : R.A. Juan

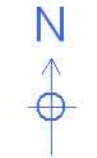
Other sources of Information :
1:50,000 NAMRIA Topographic Map



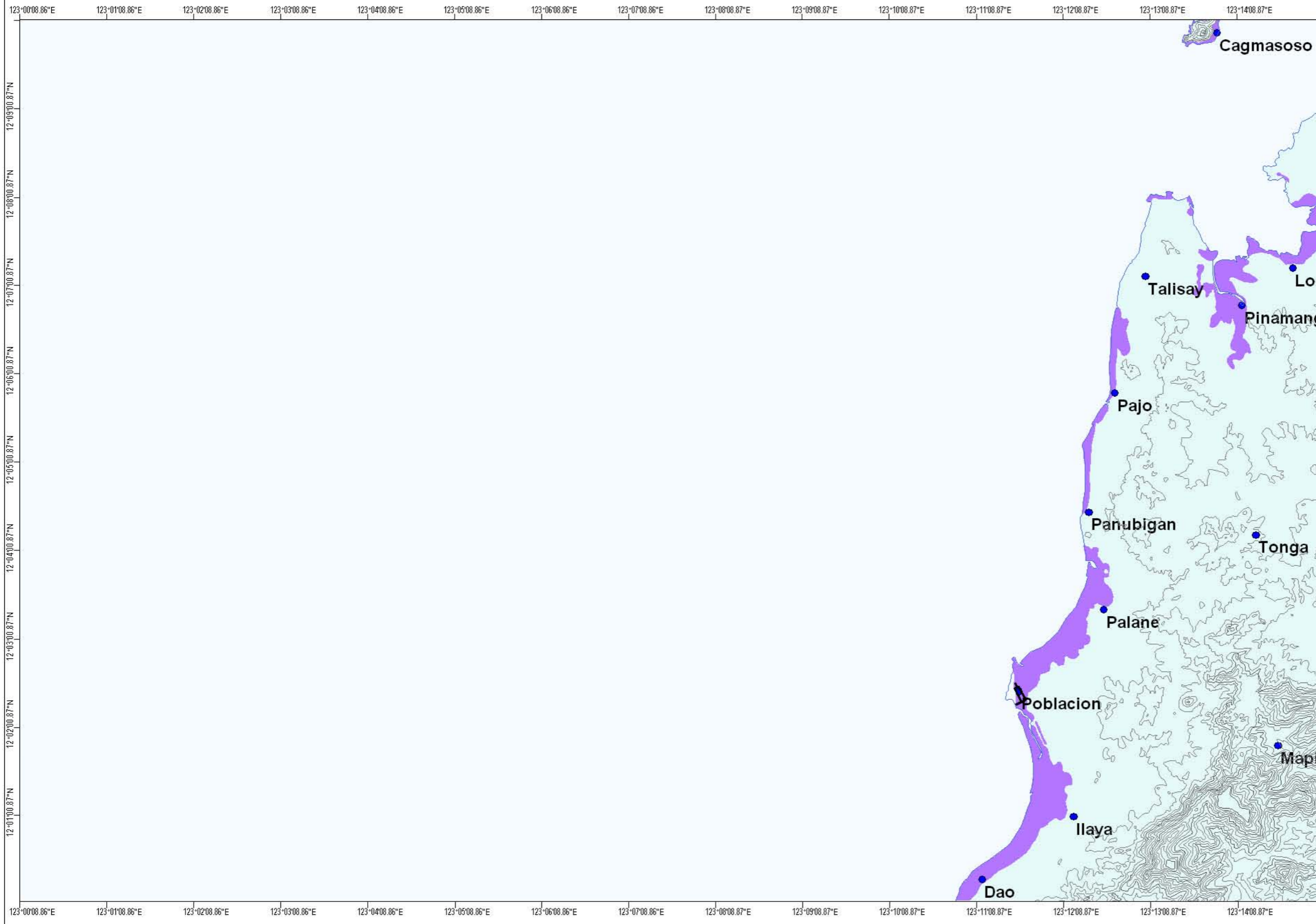
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GROUND SETTLEMENT SUSCEPTIBILITY MAP OF BALUD QUADRANGLE



MAP LEGEND :

Ground Subsidence and Ground Settlement Susceptibility Zones :

- areas not prone to ground settlement/subsidence
- areas susceptible to ground settlement

EXPLANATIONS :

Susceptibility map for ground subsidence due to karst of solution processes was primarily derived from the lithologic map of the study area. Areas of possible ground settlement were delineated through the analysis of the geomorphology of the study area, the sub-surface soils and the ground water levels.

Areas Susceptible to ground settlement : areas where fluvialite sands, silts and clays coupled with shallow ground water table are site of possible ground settlement. ground settlement may be reduced through appropriate foundation design. Buildings having 3 storeys or more should be tested for settlement and/or consolidation. Buildings having 5 storeys or more should undergo detailed geotechnical studies.

Areas not susceptible to ground settlement or ground Subsidence: Areas where the possibility of ground settlement or ground subsidence is low or absent.

Field data collection by : D. R. Dizon, J. Malto, M. Miraballes, E. Basilan
 Geomorphological Interpretation by : D. R. Dizon
 Digital cartographic processing by : D.R. Dizon
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Other sources of information :
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