

RISING SEA LEVEL AND COASTAL EROSION

Rising seas is one of the climate change effects that threaten coastal areas. As sea level rises, coastal erosion is expected to accelerate. In the Philippines, sea level rise is expected to be faster than the global average due partly to the influence of the trade winds' capacity to increase ocean currents and water levels. Coastal engineering works that interfere with the transport of sediments for beach nourishment are the most common cause of accelerated and long-term coastal erosion. Under extreme weather conditions, rapid coastal erosion that leads to property and infrastructure losses, can indeed be devastating. Such losses reflect the inappropriate construction of property within dynamic coastal environments that were thought to be stable.

SOME FIELD MANIFESTATIONS OF RISING SEA LEVEL AND/OR COASTAL EROSION

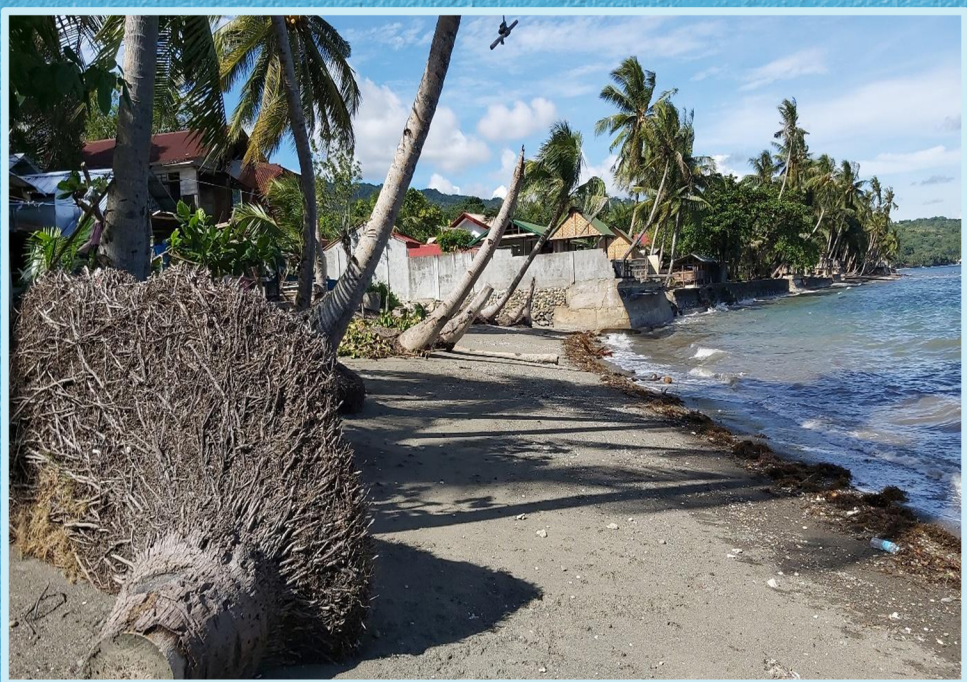
Wave Escarpment



Presence of notch due to wave undercutting of slope



Narrow beach in response to rising sea level



Exposed Tree Roots



Diminished beach sediments overlying the bedrock



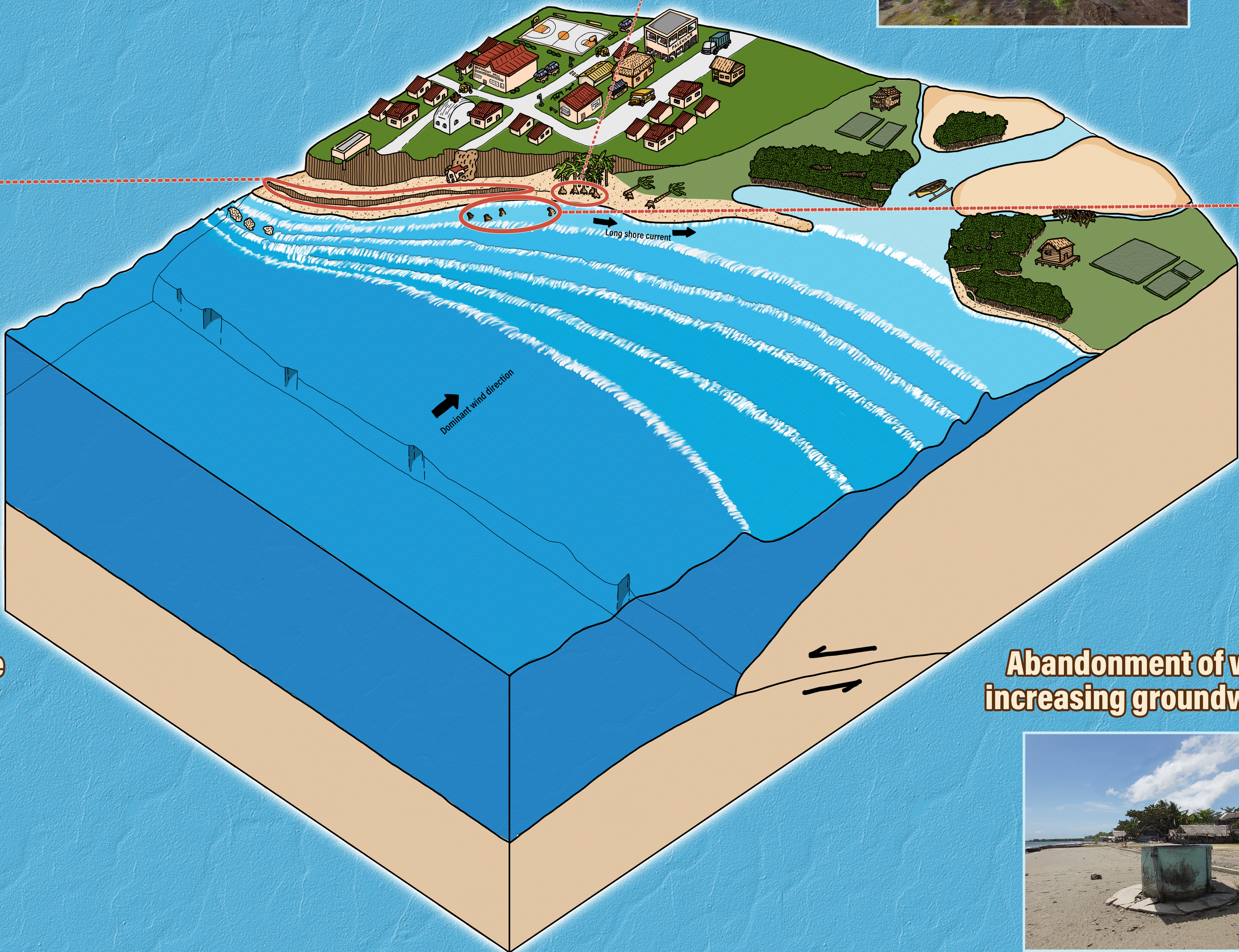
Remnant of vegetation/trees that used to line the coast



Increased tidal flood levels

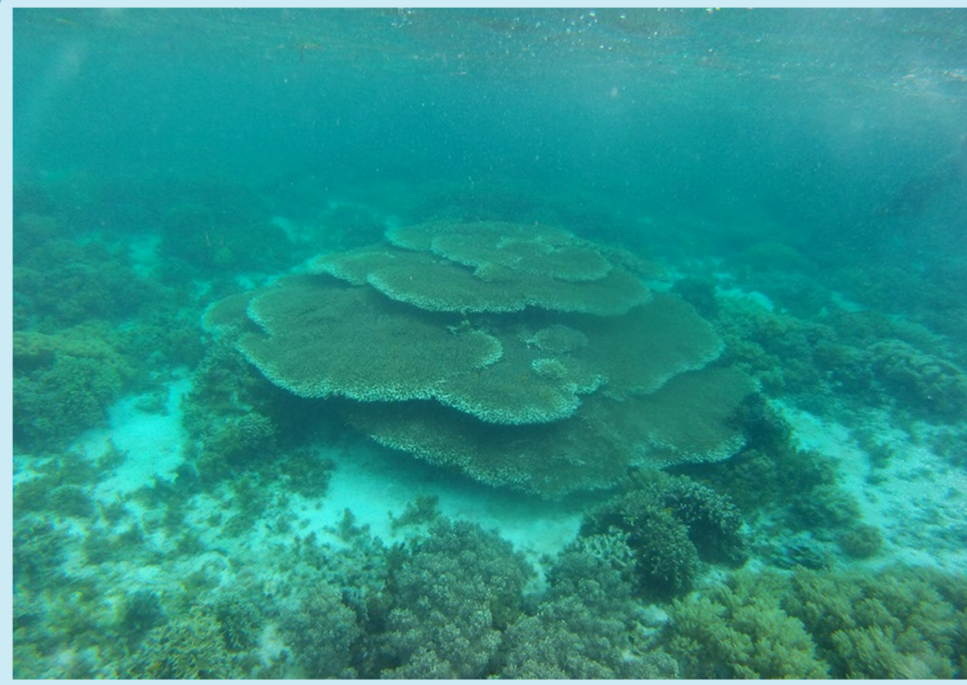


Abandonment of wells due to increasing groundwater salinity



COMMON ANTHROPOGENIC ACTIVITIES THAT ENHANCE COASTAL EROSION

Extraction/Destruction of Coral Reefs



Coral reef showing signs of deterioration, including bleaching.



Coral reefs extracted and used as makeshift coastal defense against wave impacts.

Coral reefs significantly reduce (by as much as 95%) the energy of waves hitting the coast. The gathering, harvesting, collecting and/or exporting of ordinary coral is prohibited under Presidential Decree 1219.

Inappropriate Design and Construction of Coastal Protection Structures

SEAWALLS: Seawalls isolate the coastal process from transporting sediments to adjacent coastlines through longshore drift. When this happens, adjacent areas would experience coastal erosion. In addition, when seawalls are constructed on eroding beaches, the erosion may continue so that the beach in front of the seawall can become very narrow or disappear completely.

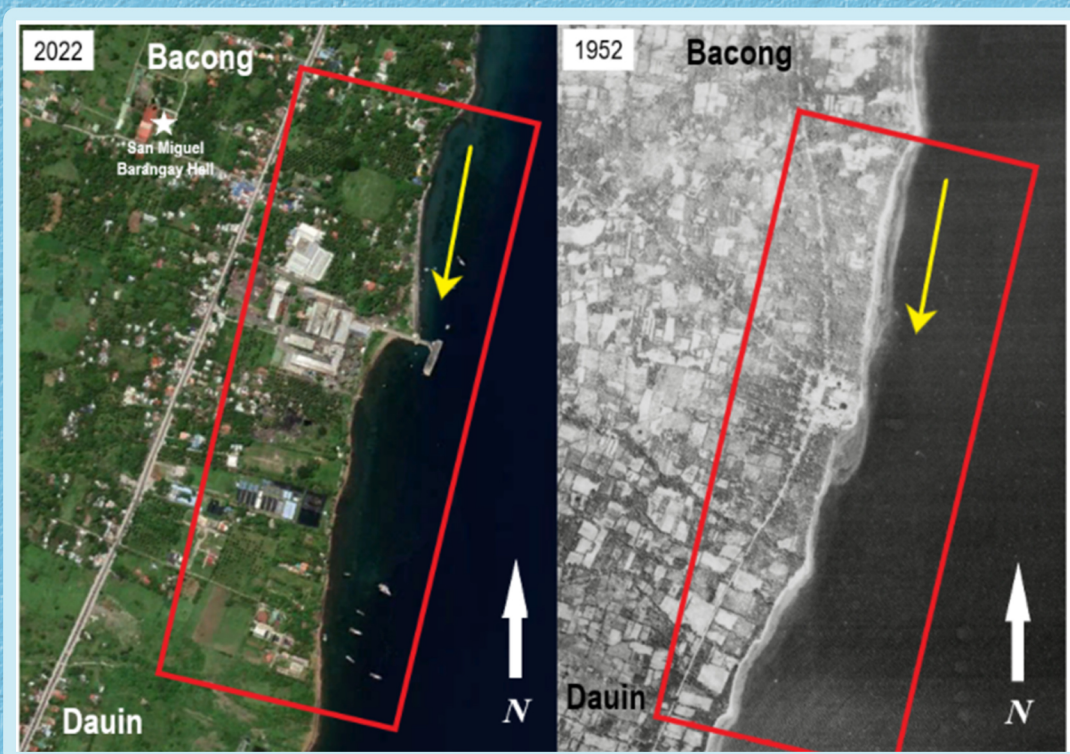


Removal of Mangroves Due to Change in Land Use or Increased Human Settlement



STRUCTURES BUILT PERPENDICULAR OR OBLIQUE TO THE SHORE

Solid-based Port



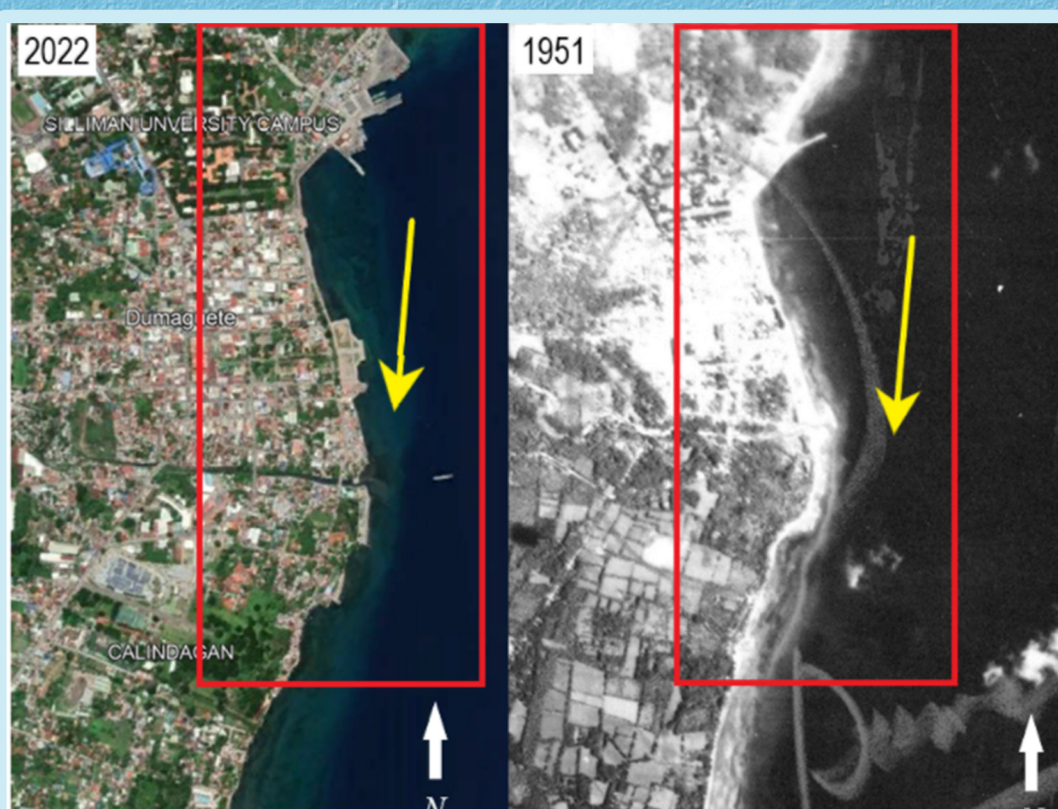
This impede sediment transport alongshore causing erosion on the downdrift side.

Groins



Groins allow sediment accretion on the upward side and erosion on the downdrift side.

Reclamation



Reclamation may disrupt the transport of sediments alongshore. When this happens, coastal erosion can happen.



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APRIL 2022 EDITION

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