

THE DROWNING LAND

The world's fourth most populous nation has 17,000 islands and 50,000 miles of coastline, parts of which are disappearing as sea levels rise. Words and pictures by GARRY LOTOLUNG.

With most of Indonesia's small islands only one metre above sea level, many coastal areas are already seriously threatened by climate change. Deforestation, land reclamation, and illegal extraction of groundwater by industry make these areas even more vulnerable to rising sea levels. Experts predict that before 2050, thousands of small islands and millions of houses will disappear.

In Karawang Regency, on the northern coast of West Java, about 100 km from Indonesia's capital Jakarta, the coast around Cemarajaya village has been slowly but steadily eroding for two decades now. Over 300 households have been displaced and more are following. The ocean has engulfed thousands of hectares of land around some villages in this area, and at least one hamlet has completely sunk below sea level.



Yusuf outside his house in Cemarajaya.

Engulfed

Back in the 1990s the village drew significant income from a tourism project at Pisangan Beach, but this is now just a memory. As the sea rose that land first morphed into fish ponds and mangrove forests, before becoming entirely submerged. Households have been cut off from the land as bridges and roads sink below sea level, forcing villagers to adapt and survive in new ways. Former farmers are now fishermen. Residents are surrounded by seawater, often even inside their homes.

Cemarajaya Village has lost 500 to 800 meters of land from the current coastline. Older villagers remember the fish ponds, housing complex, and small soccer field that have disappeared due to rising sea levels. Even 20 year old Yusuf has witnessed drastic change in his lifetime, as mangroves became unable to

stem the strong tidal waves, making abrasion and subsidence inevitable. Over the last two decades residents have begun to build embankments and raise their houses to prevent flooding. The government has also placed long breakwaters and sandbags along the coastline, but the fight against rising sea levels looks unlikely to be won.

Almost every day, the sea now floods the village, which is eroding with each passing tide. Villagers have seen their once-productive land disappear, and are staring at a bleak future where the probability of them becoming climate refugees looms large.

Lost Livelihoods

Simonet village is situated in Pekalongan, Central Java. Ten years ago the sea here was several hundred metres away, but the coastline is getting ever closer to the residential areas. Some residents have already fled their ancestral lands, while others continue to live with the regular flooding of their houses. Residents who have remained in permanently inundated areas due to their socioeconomic status, are faced with the task of transforming their livelihoods to withstand these climate impacts.

The Greater Pekalongan Area on Java's north coast is home to 1.2 million people. The rapid rate of land subsidence here, estimated at 10–17 cm per year (2012–2018), combines with rising sea levels to make the area especially vulnerable to flooding. Historically, the area experienced an average sea level rise of 5 mm per year, higher than the Java Sea's 3.9 mm.



A villager walks on sandbags beside a road submerged by flood waters at Pisangan Beach, Cemarajaya.

Bandengan village, home to some 200 families and located about one kilometre from the beach, has for the past ten years been flooded by sea water because of rising sea levels.

Lukman, 25, said houses in the village which were surrounded by rice fields have now been inundated with seawater, as the land subsided and the sea rose.

Like many others, Lukman and his family have lost their farmland. Flooding has destroyed fields in nearly all parts of Pekalongan, and farmers have had to head to the city in search of new livelihoods.



Top: Simonet village. Above left: Lukman and his house, Bandengan village. Above right: Flooded road and farmland, Jeruksari village, Pekalongan. Below: Abandoned Wal Adhuna mosque, Muara Baru area, North Jakarta.

