

# COASTAL CITIES IN SOUTHEAST ASIA SINKING FASTEST COULD WORSEN IMPACTS OF SEA LEVEL RISE: STUDY

🕒 September 21, 2022 📍 World 👁 0 Views



SINGAPORE — Southeast Asian coastal cities are sinking the fastest in the world, which could amplify the impact — such as massive flooding — of impending sea-level rise, a recent study has found.

Sea levels are rising worldwide as Earth's ice sheets melt and warming seawater expands. Sinking land or land subsidence can exacerbate the problem, a team of international scientists led by Nanyang Technological University (NTU) found.

Ms. Cheryl Tay, a PhD student at NTU's Asian School of the Environment and the Earth Observatory of Singapore, noted that the many coastal cities in Asia are centers of growth and rapid urbanization today. This has increased the demand for groundwater abstraction to meet the growing water demand.

This, in turn, is causing the land to sink rapidly, said Ms Tay, the first author of the research study, conducted in collaboration with the University of New Mexico, ETH Zurich and NASA's Jet Propulsion Lab, administered by the California Technological Institute.

From 2014 to 2020, satellite images of 48 coastal cities worldwide were processed, showing that the mean sink rate was 16.2 mm per year. In some towns, land was sinking at 43mm a year, and land subsidence can vary at the neighborhood level, Ms Tay said.

The global mean sea level rise is currently 3.7 mm per year.

The results were published in the journal Nature Sustainability in September.



Data from the team's study shows that Jakarta is sinking at a rate of 4.4mm per year and Ho Chi Minh City at 16.2mm. Reports have shown that excessive groundwater abstraction was the main cause of land subsidence in both cities.

In Ho Chi Minh City, the concentration of high-rise buildings in areas with weak foundations has also contributed to subsidence.

Combined with extreme rainfall and sea-level rise caused by climate change, land subsidence could lead to more frequent, intense and prolonged flooding in vulnerable locations in the next few years, Ms Tay said.

"Floods can disrupt businesses and damage property and infrastructure. In extreme cases, persistent flooding can affect livelihoods by damaging productive agricultural land and forcing populations to relocate when places become uninhabitable," she added.

In Singapore, mean sea level is rising at a rate of 3mm to 4mm per year, with 2020 data from Meteorological Service Singapore showing sea level here has risen 14cm since pre-1970 levels.

Climate projections have shown that mean sea level around Singapore is expected to rise by up to 1 m by 2100. This could be as high as 4m or 5m if other impacts such as storm surges (abnormal rise in water from storms) – which occur two to four times a year – are taken into account.

A comparison conducted by the researchers in coastal cities around the world showed that the fastest rates of relative local land subsidence are concentrated in Asia, particularly Southeast Asia.

Source link