

Why Ocean Waves are Destroying the Danang Coast

Experts have warned that the eastern shore of Danang will be even more severely damaged if urgent remedies are not implemented soon. The Danang Department of Natural Resources & Environment announced that several parts of the city's 16-km long shoreline have been seriously eroded. The problem first became apparent in 2017 and 2018 and has worsened ever since.



The coast of the Ngu Hanh Son district underwent severe erosion, starting in December 2020.

Photo: TAN VIET

Ever more worrying coastal erosion

The most severe shoreline erosion has occurred near the Ngu Hanh Son district resorts, caused by the impact of battering waves during the successive storms of late 2020. Many coconut trees and several buildings have been washed away, also damaging or threatening some other permanent buildings further inland.

Mr. Nguyen Hoa, Chairman of the Ngu Hanh Son People's Committee, explained that erosion usually happens at the end of the year, during the storm season. At that time, the rush of cold air causes giant waves to develop at the same time as the arrival of the northeastern monsoons.

During the dry season, meanwhile, the southwestern monsoons predominate, the sandy beaches quickly recover and by late August each year, the beach is at its largest. *"This annual cycle explains why the Danang shoreline has previously been relatively stable, in spite of the erosion,"* he added.

For the long-term, the Danang Department of Natural Resources & Environment says a full scientific assessment will be required to come up with proactive solutions to reduce the adversity. This would be an in-depth, expert independent study and the Department will inform the People's Committee of its plans to implement it. But, for now, the Department will continue tracking, monitoring and updating them regularly on timely solutions.

Construction too close to the shore

In an interview, Architect Ho Duy Diem, Chairman of the Association for the Protection of River Basins and Seas in Vietnam, blames the erosion of the Danang coast on construction projects too near the shoreline. The waves transmit huge amounts of energy and, when they meet a gently sloping, long beach or lines of trees, they gently wash over them. If they first come into contact with permanent concrete buildings or embankments however, they will gradually destroy those obstacles.

"Waves impacting solid obstructing walls, cause whirlpools, vaults and the subsidence or collapse of those barriers," said Mr. Diem. *"You can't take away the energy but you can reduce it. Unfortunately, previous administrations permitted the construction of restaurants and resorts too close to the shoreline, the beaches narrowed and lost their ability to reduce the wave energy."*

One solution is the recreation of the original long sandy beaches to function as natural soft dikes. Another way is to plant Casuarina woods along the shores. *"Planting trees is a hundred times more advantageous than wasting money on embankments,"* Mr. Diem stressed.

Groundwater overexploitation

Dr. Nguyen Thi Minh Phong, Dean of Environmental & Chemical Engineering, expounded that another important cause of the disappearing Danang coastline is groundwater overexploitation by high-rise buildings. After many years of investigating water resources, Ms. Phuong pointed out that originally, groundwater in Danang could be easily located at a depth of only 1.2 meters. Nowadays, however, it is completely running out. She gives an example of a 500 m² building near the sea, pumping out 200 mng³

of water a day into city drains. New buildings appear year round and the amount of lost groundwater is huge, in addition to the water originally lost after crews dug their own wells during the actual construction process.

“The loss of groundwater along the sea causes sand subsidence, accelerating and worsening erosion,” Ms. Phuong warns. *“Our surveys show that the stretches of coast being eroded most are those with the most oceanfront high-rise buildings. If we let this happen, how can we still have beaches in the future?”*

Ms. Phuong believes that Danang must immediately stop groundwater depletion by restricting construction until resources have been recovered. The city should also measure saltwater incursion, erosion speed and scale to come up with appropriate solutions.

In 2019, the Danang Party branch proposed a pilot project to construct a seaside walkway along the coast, in front of the eastern resorts. After continuing erosion, however, the Danang authorities are seeking further advice before proceeding with this project.

Under any circumstances, Ms. Phuong believes that the authorities should clamp down on and punish construction work squandering the vital groundwater, and also inspect hotels to detect the possible illegal digging of wells to extract water for their guests.

Eleven five-star resorts close to the sea

The Danang Department of Tourism has counted 11 five-star seafront resorts, and others nearby, forming a wall along Vo Nguyen Giap and Truong Sa streets, including the Crowne Plaza, Olalani and the Hyatt Regency. Hundreds of other multi-story can also be found just inland from them.

The Danang Department of Natural Resources & Environment is applying for the establishment of a coastal protection corridor in Danang. *“Creating a corridor with an established distance from the beach will help reduce and control coastal erosion, climate change and rising sea levels,”* they explained. *“Danang will be able to limit damage to property and infrastructure along the seafront, balancing economic development issues and the fight against natural disasters.”*

(Media Center)