

River Sand Mining is Increasingly Massive, Researchers Urge Tighter Oversight

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Wednesday, July 22, 2026 | 4:30 PM WIB



The high demand for urbanization, infrastructure development, river degradation, and public safety means that sand and gravel mining in rivers continues to occur (doc. Unsplash/Mukovhe Mavhungu)

Suara.com - Rapid urban growth, road and infrastructure development require vast quantities of **sand** . However, excessive extraction of sand from **rivers can cause environmental damage**.

This phenomenon prompted researchers at Nanyang Technological University to conduct a more in-depth study. They believe the problem could be better managed if the government had acted quickly to detect sand **mining** earlier.

The results of a study published in the journal Reviews of Geophysics revealed that river sand and gravel mining is a challenge that continues to be faced today.

The high demand for urbanization, infrastructure development, river degradation, and public safety means that mining continues to occur.

They found that annual sand and gravel mining often exceeded natural sediment limits.

This can cause the riverbed to deepen. Furthermore, riverbanks become more fragile, causing the groundwater level to drop.

The deterioration of river quality also impacts the quality of the water produced. Furthermore, the boundary between saltwater and freshwater becomes blurred. This blurring of boundaries can contaminate estuaries, deltas, and even clean water wells belonging to coastal residents.

Furthermore, the changes caused by mining have spread to infrastructure damage: bridges, roads, and buildings. Meanwhile, the disturbed river habitat can impact agriculture, fisheries, and even livelihoods.

The lead researcher, Edward Park, stated that river sand mining is indeed a serious problem. However, solutions to address this issue are equally important.

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“Sand is crucial for urban growth, including in Singapore and Southeast Asia, but its mining can put pressure on rivers and the communities that depend on them,” he said.

The NTU team urged the government to address this issue better, such as setting reasonable limits for river sand mining or conducting field surveys.

“Our review suggests the government could better manage this by treating sand mining as a watershed issue, using satellite monitoring, field surveys, and sediment balance analysis to decide where mining can take place, how much can be extracted, and which areas should be protected,” he added.

Data Inequality in Sand Mining

The need for sand continues to increase along with urban expansion and the construction of housing, transportation networks, and coastal protection in various countries.

However, many countries still lack basic data for river sand mining management.