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Article Title: Indonesia, Brazil biggest culprits in tropical forest loss linked to industrial mining: study

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<https://www.cnn.com/2022/09/14/world/indonesia-brazil-forest-loss-deforestation-mining-intl-hnk/index.html>

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LondonIndustrial-scale mining for materials such as coal, gold, and iron ore is spurring tropical deforestation, with once-impenetrable forest cleared for mines and access roads, new research shows.

In the first study to quantify the impact of industrial mining on tropical forest loss, an international team of scientists found that just four countries are largely to blame: Brazil, Indonesia, Ghana and Suriname.

together, the four forest-rich nations accounted for roughly 80% of tropical deforestation caused by large-scale mining operations from 2000 to 2019, according to the study published on Monday in the journal Proceedings of the National Academy of Sciences.

While at least 70% of deforestation is done to clear land for agriculture, the scientists called out industrial mining as an emerging concern due to the growing global appetite for minerals used in clean-energy technologies to combat climate change.

"The energy transition is going to require very large amounts of minerals -- copper, lithium, cobalt -- for decarbonized technologies," said coauthor Anthony Bebbington, a geographer at Clark University in Massachusetts.

"We need more planning tools on the parts of governments and companies to mitigate the impacts of mining on forest loss."

Already, mines worldwide extract more than twice the amount of raw materials than they did in 2000, the study said.

For the study, the researchers studied global satellite images and data tracking forest loss alongside location information for industrial-scale mining operations from the past two decades. The study did not measure the impacts from small-scale and artisanal mining, which can also be a challenge as pollution goes unregulated.

Overall, there were 26 countries responsible for most of the world's tropical deforestation since 2000.

But around industrial mining sites, the four countries dominated. The biggest losses were in Indonesia, where coal mines on the island of Borneo have expanded to meet fuel demand from China and India.

Ghana and Suriname also showed high deforestation rates around gold and bauxite mines delivering material used in aluminum and other products. In Brazil, gold and iron ore extraction drove mining deforestation.

Mining operations often clear forests to make room for expanding extraction sites and tailing storage facilities, as well as to build access roads and settlements for miners.

Road-building and development activities are often not included in environmental impact assessments, conducted before a mine is approved, said environmental engineer Juliana Siqueira-Gay at the sustainability nonprofit Instituto Escolhas in Brazil, who was not involved in the study.

SISR Explanation

S - Setting

What is the setting/place this article is written about?

Indonesia and Brazil

I - Impact

How has this place changed because of global climate change?

It hasn't people are just removing the trees for land.

S - Sense

What senses did you use to understand this change?

I used my eyes to see that the people are cutting down trees and removing animals' homes in order to gain different types of materials.

R - Research & Reflect

How has this change impacted you? How does it make you feel?

This has impacted me because the people cut down the trees and now the trees won't be able to absorb the heat leading the earth to get hotter. It makes me feel angry because I don't want to sweat and be all sticky.

Add Pictures/Drawings to add to your story.

