Study on climate-damaging palm oil production in Indonesia shows push for industrialization

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Understanding governments' motives is crucial to strengthening climate action. Indonesia, the world's fourth largest country by population, has the biggest rainforests after Brazil and the Congo Basin. But it has cleared huge areas in the past 20 years to produce palm oil which is used in biscuits, chocolate, candles, cosmetics and instant soups.

The climate-damaging palm oil boom immediately brought many jobs, and a new study, published in the *Journal of the Association of Environmental and Resource Economists*, examines a broader motive of the government: a push for industrialization.

The study was carried out with contributions from the Berlin-based climate research institute MCC (Mercator Research Institute on Global Commons and Climate Change). "Climate protection in the Global South does not fall from the sky," says Nicolas Koch, head of the Policy Evaluation Lab at MCC and one of the authors of the study.

"If you want to advance it, you have to understand the mechanisms of political economy that lead governments to deliberately push development processes that are problematic from a global perspective. Here we shed light on the thorny question of positive effects of the Indonesian palm oil boom on general economic development. And, unfortunately, we find some."

The study draws on partly confidential data on 1,150 palm oil mills in Indonesia—almost the entire sector—as well as on the 20,000 medium-sized and large companies in the broader Indonesian manufacturing sector. Using sophisticated statistical methods, it investigates the extent to which the opening of new palm oil mills has influenced industrialization outside the palm oil supply chain.

To filter out the cause-effect relationship, the research team works with a treatment group and a control group, as they would in a laboratory. They compare the development of industrial enterprises in regions with new mill investment and those without for the period 2005 to 2015, and excludes false logical conclusions by means of robustness checks.

Investment in such a mill is usually around 100 million US dollars and is accompanied by the cultivation of oil palms, which originally came from West Africa, on about 10,000 hectares (about 24,700 acres) of land. The central finding of the study is that it has considerable effects: on average, it increases sales by 15% in the entire industry of the corresponding region, outside the palm oil value chain, and both labor productivity and total factor productivity rise by 13%.

A major reason for this is the road infrastructure built in the course of the investment, which also benefit the rest of the economy. Although wages for workers increase locally, which tends to slow down industrial development, this effect is greatly mitigated by migration within Indonesia and therefore is not a factor.

As carefully as the study filters out the push effect of the palm oil boom statistically, it can by no means be deduced that Indonesia has done well with this strategy in terms of society as a whole. Firstly, the research team points out that investments in new roads, for example, would also have had positive effects on the economy without the palm oil boom. It could well be that a different kind of economic development in the area would have promoted industry even more.

Second, the climate impacts of rainforest clearing in Indonesia also affect the country itself. "Whether the government has really acted in the national interest is doubtful," MCC researcher Koch says. "This question would have to be explored by a comprehensive cost-benefit analysis that also takes into account social and ecological climate damage in Indonesia."

More information: Sebastian Kraus et al, Spillovers to Manufacturing Plants from Multimillion Dollar Plantations: Evidence from the

Indonesian Palm Oil Boom, *Journal of the Association of Environmental and Resource Economists* (2023). DOI: 10.1086/727196

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