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# Demand for chocolate causes more illegal deforestation than people realise

New maps show the extent of the destruction in big cocoa-producing countries

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THE COCOA supply chain, much like a high-end bar of chocolate, is complex, opaque and a little nutty. Farmers, mainly in West Africa, sell their crop to local intermediaries, who in turn sell to exporters. These exporters sell to chocolate manufacturers and traders, often in Europe, who themselves are backed by investors in London and New York.

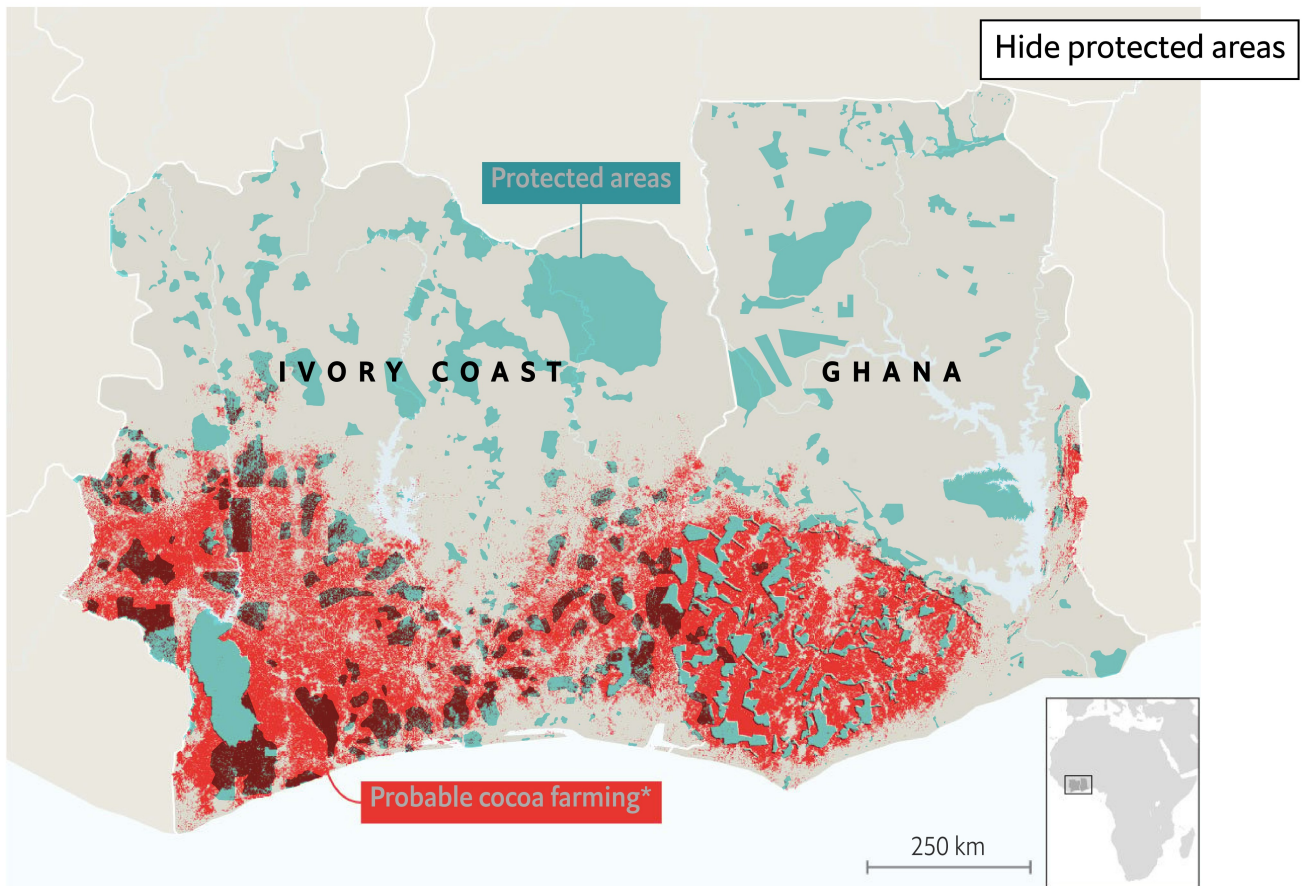
Such complexity means that farmers often receive only around 5% of a chocolate bar's retail price. It also makes it difficult to track unsavoury practices in the production of these sweet treats. The use of child and forced labour is rife, as is illegal tree felling. A recent paper published in *Nature Food* finds that some of these harms may be worse than previously thought. Official figures underestimate the number of cocoa farms in West Africa, and so the effect that the industry has on deforestation.

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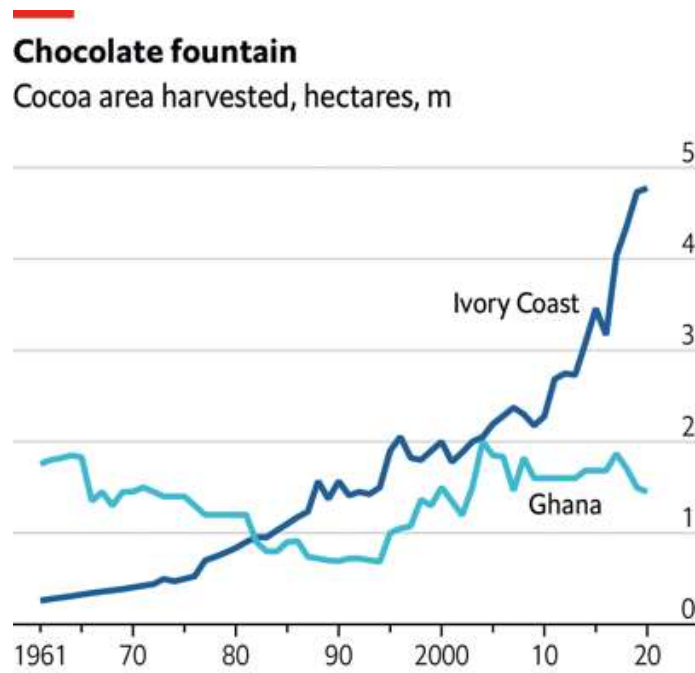


Sources: IUCN; "Satellite-based high-resolution maps of cocoa planted area for Côte d'Ivoire and Ghana", by N. Kalischek et al., 2023; UNEP-WCMC

\*Measured in Oct 2018-Dec 2021

Nikolai Kalischek of the Swiss Federal Institute of Technology in Zurich and a group of colleagues set out to map deforestation driven by cocoa farming across Ivory Coast and Ghana, which together produce two-thirds of the world's cocoa. To generate their map, they combined data on the known locations of certain cocoa plantations with high-resolution satellite imagery. Using this data they trained a computer model to predict the likelihood that each location on the map is home to a cocoa farm. They then checked their work, by comparing it with a partially hand-labelled map of Ghana and an on-the-ground investigation in Ivory Coast. Their map turned out to be accurate nearly 90% of the time.

It showed that cocoa farms make up 13.8% of the land area of Ivory Coast, and 11.4% of Ghana (4.45m and 2.71m hectares, respectively). For Ivory Coast these numbers roughly match figures from the UN's Food and Agriculture Organisation, but for Ghana estimates using the new method are nearly 70% higher than previously thought.



Source: FAO

The Economist

The map-makers also found that 30% of farms in Ivory Coast and 7% in Ghana were planted on what should be protected forest. The soils on recently cleared forest are especially fertile (if only temporarily), which gives farmers high yields in the short run. In the Tano Ehuro and Manzan forest reserves in Ghana, for example, illegal cocoa farming is taking place on half to three-quarters of their areas. Using their map, the researchers showed that since 2000 the growing of cocoa has caused more than 37% of forest loss in protected areas of Ivory Coast and 13% of deforestation in reserves in Ghana. Ivory Coast is thought to have lost more than 90% of its forest cover since 1950, and Ghana may have lost more than 65%.

Production of cocoa exploded in the 1900s, driven by choco-fever in Europe and America, and has continued to grow. (Ivory Coast and Ghana are not themselves big consumers.) In theory governments and corporations have been trying to stop cocoa-driven deforestation for years, both by giving farmers incentives not to chop down trees and by enforcing stricter regulations. Unfortunately, it seems they have not yet stamped out the bitter practice.

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