

The EU Deforestation Regulation and Cocoa: What's the Impact?

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Introduction

Agricultural land expansion is the main driver of deforestation, accounting for 90% of global deforestation. This significantly contributes to greenhouse gas emissions and biodiversity loss. A large part of agriculture-linked deforestation is attributed to the production of cattle, cocoa, coffee, palm oil, and rubber. As a major consumer of these products, the European Union (EU) is partly responsible for the associated deforestation. To meet its responsibility and minimise deforestation and forest degradation caused by EU consumption, the EU, as part of its flagship policy framework called the European Green Deal, has enacted the “Regulation on Deforestation-free Products” (EU 2023/1115) or Deforestation Regulation (EUDR), which entered into force on 29 June 2023. This due diligence regulation represents a transformative approach which not only comprises measures to reduce the direct impact of EU imports on deforestation but also seeks to fundamentally change the way commodities are produced, traded, and consumed in order to protect global forests, promote sustainable land use practices and improve livelihoods.

In essence, the EUDR requires that importers (and exporters) of the commodities listed above, and products derived from these, such as leather, tyres, and chocolate, must provide proof that the raw materials are not associated with deforestation or have contributed to forest degradation. Therefore, importers must submit a due diligence statement which presents the complete trace of the commodity's supply chain, from the field to the EU border. Using GPS information, the importer must show that the commodity does not originate from land which has been deforested after 31 December 2020. This implies any conversion of forests (FAO definition) into agricultural land including agroforestry systems. Moreover, the EUDR demands that the products are produced in compliance with the origin country's national laws, such as land, environment, human rights, and labour laws. Entry to the EU market of commodities not complying with the EUDR will be prohibited from 30 December 2024 for large and medium enterprises and from 30 June 2025 for micro and small businesses.

The EUDR could have strong, wide-ranging impacts on the producers and trade of these products. The present study investigates the implications of the EUDR in the context of the cocoa supply chain with a focus on trade. Cocoa is produced exclusively in tropical rainforest

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regions, which are recognized as biodiversity hotspots, and these rainforests play a crucial role in mitigating climate change. Côte d'Ivoire and Ghana, the world's biggest cocoa producers, have already lost the larger parts of their forests and cocoa farming is strongly linked to the continuing deforestation. Cocoa is predominantly produced by poor smallholder farmers who are strongly dependent on the sales of cocoa. The cocoa trees are traditionally planted on virgin forest land and are economically viable over a lifespan of about 30 years, when the farmer would convert another piece of forest land to a new plantation, due to exhaustion of soil nutrients and susceptibility of the plot to diseases. This is no longer possible under the EUDR, if the harvest is to be sold to the EU. Moreover, cocoa farms located in protected areas are not unusual but violating national law and thus their produce is not compliant.

Against this background, the present study investigates how the EUDR might affect cocoa production, prices and trade patterns and finally uses this data to infer impacts on cocoa farmers' incomes.

Methods and Data

To this end, we develop a global, bilateral trade and market model for cocoa and semi-processed cocoa products, that is, cocoa beans, liquor, butter, and powder. Each region is represented by supply and demand functions for these four product markets. The supplies of the processing stages are linked by fixed extraction coefficients. In the first processing stage, cocoa beans are ground to cocoa liquor. The liquor can be directly used in chocolate production or further processed by pressing the liquor, yielding butter, and pulverising the left-over cake, yielding powder. Therefore, there is demand by other industries for all products except the beans. Regions are linked by imports and exports where imports from multiple regions are governed by Armington functions. Final demand for chocolate and other cocoa products is not modelled due to the lack of data.

To model products compliant with the EUDR, the above structure is duplicated for products which currently are traceable and compliant with the rules. The link between the product variants arises through the crop land, which farmers distribute between the compliant and non-compliant varieties depending on price differences, and consumers who can choose between the two variants.

The data for the model is compiled from the International Cocoa Organization, Euromonitor, and the FAO. Estimates for elasticities and some other coefficients are taken from the literature.

Counterfactual scenarios simulate different narratives regarding the introduction of the EUDR and combine these with price policies as recently introduced jointly by Côte d'Ivoire and Ghana.

Expected Results

The EUDR could have wide-ranging implications for the cocoa supply chains if implemented effectively. While the EU market is the largest cocoa market in the world, it is not guaranteed that many cocoa producers and supply chains will adapt and become EUDR-compliant. Which producing countries do adapt, and which do not, depends on various factors and might cause dramatic shifts in trade patterns across the globe and, ultimately, this also could have strong impacts on prices and thus farmer incomes. The results from this study should be of interest to all stakeholders involved in the cocoa market for getting a better idea about potential alternative outcomes of this important policy change.