Brazil-EU under the EUDR: Shaping Global Sustainability and Trade

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Abstract: Forests are essential for global sustainability, serving as critical reservoirs of terrestrial biodiversity and playing a key role in mitigating climate change. The EU Regulation 2023/1115 (EUDR) aims to address deforestation and environmental degradation by restricting the trade of commodities linked to these issues, showcasing the EU's extraterritorial regulatory influence. This article analyses the potential impact of the EUDR on Brazil, the EU's largest supplier of soy, coffee, and cattle, shedding light on the challenges and opportunities it poses for fostering sustainable trade relations. It delves into the concept of "embedded deforestation," the importance of forest preservation for sustainable development, and the mechanisms within the EUDR designed to advance global sustainability.

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Additionally, it examines the regulation's potential limitations and critiques, offering a comprehensive view of its implications and challenges.

Keywords: Deforestation; EUDR; Global Supply Chains; Extraterritorial effects; Brazil; forest preservation.

Brasil-UE bajo el EUDR: modelando la sostenibilidad global y el comercio

Resumen: Los bosques son esenciales para la sostenibilidad global, actuando como reservorios críticos de biodiversidad terrestre y desempeñando un papel clave en la mitigación del cambio climático. El Reglamento de la UE 2023/1115 (EUDR) tiene como objetivo abordar la deforestación y la degradación ambiental restringiendo el comercio de productos vinculados a estos problemas, destacando la influencia reguladora extraterritorial de la UE. Este artículo analiza el impacto potencial del EUDR en Brasil, el mayor proveedor de soya, café y ganado de la UE, destacando los desafíos y las oportunidades que plantea para fomentar relaciones comerciales sostenibles. Examina el concepto de "deforestación incorporada," la importancia de la preservación forestal para el desarrollo sostenible y los mecanismos dentro del EUDR diseñados para promover la sostenibilidad global. Además, se exploran las posibles limitaciones y críticas a la regulación, ofreciendo una visión integral de sus implicaciones y desafíos.

Palabras clave: Deforestación; EUDR; Cadenas Globales de Suministro; Efectos Extraterritoriales; Brasil; Preservación de Bosques.

Brasil-UE no âmbito do EUDR: moldando a sustentabilidade global e o comércio

Resumo: As florestas são essenciais para a sustentabilidade global, atuando como reservatórios críticos da biodiversidade terrestre e desempenhando papel fundamental na mitigação das mudanças climáticas. O Regulamento 2023/1115 da European Union Deforestation Regulation (EUDR) tem como objetivo combater o desmatamento e a degradação ambiental restringindo o comércio de produtos ligados a esses problemas, destacando a influência regulatória extraterritorial da União Europeia (UE). Neste artigo,

analisamos o possível impacto da EUDR no Brasil, o maior fornecedor de soja, café e gado da UE, destacando os desafios e as oportunidades que ela representa para a promoção de relações comerciais sustentáveis. Examinam-se o conceito de "desmatamento incorporado", a importância da preservação das florestas para o desenvolvimento sustentável e os mecanismos da EUDR destinados a promover a sustentabilidade geral. Além disso, exploram-se as possíveis limitações e críticas à regulamentação, oferecendo uma visão abrangente de suas implicações e desafios.

Palavras-chave: desmatamento; EUDR; cadeias de suprimentos globais; efeitos extraterritoriais; Brasil; preservação florestal.

1. Introduction

Forests are indispensable to global sustainability, housing most of the terrestrial biodiversity and providing critical environmental, economic, and social benefits. Their conservation is fundamental to achieving the Sustainable Development Goals (SDGs) outlined in the United Nations' Agenda 2030, which underscores the interconnectedness of forests and sustainable development. Despite their importance, forests—particularly tropical ones—face mounting threats from deforestation and degradation, driven largely by agricultural expansion and the increasing global demand for commodities. The European Union (EU), one of the largest economic blocs and a major consumer of deforestation-linked products, has taken a leading role in developing policies to combat this pressing issue.

Regulation EU 2023/1115 (EUDR),[1] developed within the framework of the European Green Deal, stands out as one of the EU's most ambitious initiatives to address global deforestation. It seeks to prohibit the placement on the European market, as well as the export, of key commodities and their derivatives associated with deforestation and forest degradation. Targeting products such as soy, cattle, cocoa, coffee, palm oil, rubber, and wood, the EUDR reflects the EU's determination to reduce

[1] Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the Making Available on the Union Market and the Export from the Union of Certain Commodities and Products Associated with Deforestation and Forest Degradation and Repealing Regulation (EU) No 995/2010.

its environmental footprint by addressing the deforestation embedded in global supply chains.

This regulation highlights the EU's acknowledgment of the connection between its consumption patterns and global deforestation, particularly in countries like Brazil. As the EU's largest supplier of soy, coffee, and cattle, Brazil plays a critical role in this trade dynamic. However, the country also faces severe deforestation, especially in the Amazon and Cerrado regions, creating a dual challenge: sustaining its agricultural exports while adapting to the EUDR's stringent requirements. Compliance with the regulation demands significant changes to Brazil's agricultural and forestry practices, potentially imposing financial and logistical burdens on local producers.

While the EUDR demonstrates the EU's leadership in promoting global sustainability, its implementation raises broader questions about the extraterritorial impacts of such policies. Critics warn that the regulation may act as a unilateral trade barrier, disproportionately affecting developing countries like Brazil, worsening economic disparities, and fostering tensions within international trade systems. The proposal to include contentious mechanisms, such as the "no risk" category, has further fuelled debate, with some arguing it favours EU member states at the expense of equitable treatment for producer nations.

This article seeks to explore the significance of the EUDR as a legal tool to combat deforestation and environmental degradation on a global scale, emphasizing its extraterritorial effects. Brazil, as the EU's largest trading partner within the scope of the EUDR, serves as a focal point for this analysis, surpassing other major economies such as China and the United States in terms of relevance. By examining the critical role of forest preservation in achieving sustainable development, analysing the concept of "embedded deforestation," and assessing the mechanisms outlined in the regulation, this discussion aims to provide a comprehensive view of the EUDR's potential, limitations, and implications for global sustainability.

2. Forests and Environmental Sustainability

Forests are essential for achieving the Sustainable Development Goals (SDGs), and the United Nations' Agenda 2030 recognizes the critical connection between forests and sustainable development. Forests cover 31 % of the Earth's land surface and provide several environmental, economic, and social benefits vital to humanity, housing 80 % of terrestrial biodiversity

and serving as a source of livelihood and income for about one-third of the world's population.[2] Tropical forests are highly diverse and complex ecosystems, home to more than half of the world's plant and animal species, despite covering only 6 % of the Earth's surface. The Amazon Rainforest is the largest tropical forest in the world. The Legal Amazon covers an area equivalent to approximately 58.9 % of Brazil's territory.[3] The neotropical Atlantic Forest supports some of the highest levels of species richness and endemism globally, but it has also suffered significant forest loss. The Brazilian Atlantic Forest is highly fragmented, with only 12-16 % of its original forest cover remaining. It spans 17 of the country's 26 states and is home to more than 60 % of Brazil's population.[4] Soil biodiversity is severely affected by human activities, with over 75 % of the Earth's land area already degraded, and more than 90 % projected to become degraded by 2050.[5]

Given the critical importance of forests, the UN General Assembly proclaimed the Decade on Ecosystem Restoration in 2019, which extends until 2030. As part of the UN Framework Convention on Climate Change (UNFCCC), the REDD+ initiative (Reducing Emissions from Deforestation and Forest Degradation) was launched to mitigate climate change by reducing greenhouse gas emissions from deforestation and forest degradation, particularly in developing countries.[6] This mechanism functions by providing financial compensation to developing nations that successfully

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[2] United Nations, "Keeping Forests Standing Protects Health and Boosts Global Goals," March 21, 2023, https://news.un.org/en/story/2023/03/1134677.

[3] IBGE, "IBGE Updates Municipal Borders in Legal Amazon Map," *Agência de Notícias*, 2021, https://agenciadenoticias.ibge.gov.br/en/agencia-news/2184-news-agency/news/30975-ibge-atualiza-limites-de-municipios-no-mapa-da-amazonia-legal-2.

[4] Fabio Rui Scarano and Paula Ceotto, "Brazilian Atlantic Forest: Impact, Vulnerability, and Adaptation to Climate Change," *Biodiversity and Conservation* 24, no. 9 (2015): 2319–2331.

[5] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, ed. Eduardo Brondizio, Josef Settele, Sandra Díaz, and Hien Ngo (Bonn, Germany: IPBES Secretariat, 2019), 1148 pages, https://www.ipbes.net/global-assessment.

[6] Aarti Gupta, Till Pistorius, and Vijge J.Marjanneke, "Managing Fragmentation in Global Environmental Governance: The REDD+ Partnership as Bridge Organization," *International Environmental Agreements: Politics, Law and Economics* 16, no. 3 (2016): 355–374.

reduce emissions associated with deforestation.[7] In 2021, 110 countries, responsible for 85 % of the world's forests, signed the Glasgow Declaration on Forests and Land Use, committing to eradicating both legal and illegal deforestation by the end of the decade. Aligning with these efforts, the Convention on Biological Diversity (CBD) set an ambitious target in 2022 to protect 30 % of the planet and restore 30 % of degraded ecosystems, transforming them into special conservation areas.

Despite these international measures, deforestation and forest degradation,[8] driven by consumption and agricultural expansion, continue to progress at an alarming rate, significantly contributing to the global climate crisis. Deforestation refers to the conversion of forested areas into lands for agricultural use, whether caused by human actions or natural processes. Forest degradation, on the other hand, involves structural changes to forest cover, including the transformation of primary forests or naturally regenerating forests into forest plantations, wooded areas, or planted forests.[9]

The threats to the world's forests represent one of the greatest challenges to sustainability today.[10] Deforestation, aside from being a major cause of biodiversity loss, can have devastating impacts on the livelihoods of the most vulnerable populations, such as indigenous peoples, who rely heavily on forest ecosystems for their survival.[11] The Americas region showcases a mosaic of indigenous agricultural production, small-scale

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[7] Sabine Reinecke; Till Pistorius; Michael Pregernig. 'UNFCCC and the REDD+ partnership from a networked governance perspective' (2014) Environmental Science & Policy, 30–39.

[8] Deforestation refers to the conversion of forested areas into lands for agricultural uses, whether this conversion is caused by human activities or natural processes. On the other hand, forest degradation involves structural changes in forest cover, including the transformation of primary or naturally regenerating forests into forest plantations, wooded areas, or planted forests. See Arts. 2(3) and (7) of Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the Making Available on the Union Market and the Export from the Union of Certain Commodities and Products Associated with Deforestation and Forest Degradation and Repealing Regulation (EU) No 995/2010.

[9] Art. 2 (3) and (7) of Regulation (EU) 2023/1115.

[10] Communication COM(2019) 352 final from the Commission, *Stepping up EU Action to Protect and Restore the World's Forests*, July 23, 2019.

[11] FAO, *The State of the World's Forests 2018: Forest Pathways to Sustainable Development*, http://www.fao.org/3/a-i9535en.pdf.

farming, and large-scale agriculture, all deeply rooted in the biodiversity of the American tropics and mountainous regions.[12]

2.1. Embodied Deforestation and the Consumption of Commodities

In the EU, new political debates are emerging around the concept of "embodied deforestation," a term increasingly used to link deforestation to consumption. This term refers to the deforestation embedded as an externality associated with the production of goods, commodities, or services.[13] A study commissioned by the European Commission in 2013 estimates that the EU is responsible for 10 % of global "embodied deforestation," with this consumption primarily stemming from imports.[14]

The same study reveals that most deforestation associated with international trade is linked to the trade of agricultural products. During the period analysed (1990-2008), one-third of all deforestation embedded in globally traded agricultural products was consumed by the EU economy. The main sources of this deforestation are concentrated in specific regions and key commodities, with Brazil being one of the largest contributors, particularly in oilseeds and cattle. In Brazil, three-quarters of the soya and about one-sixth of the cattle produced on deforested land are exported.[15]

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[12] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), *The IPBES Regional Assessment Report on Biodiversity and Ecosystem Services for the Americas*, ed. Jake Rice, C. S. Seixas, Maria Elena Zaccagnini, M. Bedoya-Gaitán, e N. Valderrama (Bonn, Alemanha: Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2018), 656 páginas, https://www.ipbes.net/assessment-reports/americas. Brazil, USA, Mexico, Canada, Honduras, Peru, Argentina, Ecuador, Dominican Republic, Colombia and Guatemala are amongst the top 10 producers of commodities.

[13] Janice Weatherley-Singh and Aarti Gupta, "'Embodied Deforestation' as a New EU Policy Debate to Tackle Tropical Forest Loss: Assessing Implications for REDD+ Performance," *Forests* 9, no. 12 (2018): 751.

[14] The EU was the world's largest importer of embodied deforestation between 1990 and 2008. Although China has surpassed the EU in absolute terms, the EU is still the largest importer per capita. See European Commission, *The Impact of EU Consumption on Deforestation: Comprehensive Analysis of the Impact of EU Consumption on Deforestation*, https://pure.iiasa.ac.at/id/eprint/14868/1/1. %20Report %20analysis %20of %20impact.pdf.

[15] European Commission, *The Impact of EU Consumption on Deforestation*, https://pure.iiasa.ac.at/id/eprint/14868/1/1. %20Report %20analysis %20of %20impact.pdf.

The primary factor driving "embodied deforestation" linked to EU consumption is the importation of oilseeds, which is strongly tied to deforestation in the countries of origin. Approximately 70 % of deforestation linked to agricultural products comes from the importation of these commodities and their derivatives. Most of this impact is concentrated in the production of soya oilcake and soya beans, which together account for 82 % of the total, and palm oil, which accounts for 17 %. Other significant groups include stimulants such as coffee and cocoa (12 %) and rubber (6 %). The EU's imports of soya oilcake primarily come from Brazil, which accounts for 60 % of the total, followed by Argentina at 21 %.[16]

Another study suggests that the EU is one of the largest importers of products derived from illegal deforestation, with about a quarter of agricultural commodities related to illegal deforestation in international trade destined for the region. This includes 27 % of soya, 18 % of palm oil, 15 % of cattle, and 31 % of leather. In 2012, the EU imported approximately 6 billion euros in cattle, leather, soya, and palm oil associated with illegal deforestation, with more than half of the total value of these agricultural imports coming from Brazil and an additional quarter from Indonesia. Soya and palm oil account for nearly two-thirds of the total value of imports, while bovine products (cattle and leather) make up less than a fifth.[17]

According to the study commissioned by the European Commission, when considering net deforestation imported by the EU through plantations, Brazil is responsible for nearly 50 % of the deforestation embedded in EU consumption, followed by Argentina (9 %), Nigeria (6 %), and both Indonesia and Paraguay (5 % each).[18] The document further highlights that Brazil and Indonesia are responsible for a third of global deforestation, with indirect land-use changes significantly exacerbating this scenario. Several factors contribute to deforestation, including economic, political, institutional, technological, cultural, and demographic influences.[19]

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[16] European Commission, *The Impact of EU Consumption on Deforestation*, https://pure.iiasa.ac.at/id/eprint/14868/1/1.%20Report%20analysis%20of%20impact.pdf.

[17] FERN, *Stolen Goods: EU's Complicity in Tropical Deforestation* (2015), https://www.fern.org/fileadmin/uploads/fern/Documents/Stolen%20Goods_EN_0.pdf.

[18] European Commission, *The Impact of EU Consumption on Deforestation*, https://pure.iiasa.ac.at/id/eprint/14868/1/1.%20Report%20analysis%20of%20impact.pdf.

[19] Helmut J. Geist and Eric F. Lambin, *What Drives Tropical Deforestation?* LUCC Report Series No. 4, 2001.

For instance, the expansion of agricultural land for soya production in southern Brazil is one of the primary reasons for the expansion of cattle operations in the Amazon rainforest biome, as cattle ranches are being "pushed" into the Amazon by soya cultivation in their former production areas.[20] Analyses by the Brazilian Agricultural Research Corporation (Embrapa) and the National Institute for Space Research (INPE) reveal that in 2008, 63 % of deforestation in Brazil's Legal Amazon was used for cattle pasture, while only 5 % was allocated to agricultural production.[21] Indeed, the unsustainable use of forests and land-use change are the largest sources of anthropogenic greenhouse gas emissions in most developing countries. In Brazil, for example, the land-use sector accounts for more than 50 % of total domestic emissions.[22]

The source of embedded deforestation imported into the EU varies depending on the type of land use that leads to deforestation. However, Brazil stands out as one of the major contributors to deforestation, particularly deforestation for pasture and agricultural land. About 74 % of deforestation embedded in the imports of ruminant livestock products (from pasture deforestation) to the EU originates from Brazil, and 40 % of embedded deforestation in agricultural product imports also originates from Brazil.[23]

Recent studies show that 64.5 % of Brazilian territory is still covered by native vegetation, while 32.5 % of the country is occupied by agriculture and livestock. Between 1985 and 2023, forest cover was the type of native vegetation that lost the most area in Brazil, while pasture and agriculture were the land uses that expanded the most. Despite these changes, Indigenous Lands remain the most preserved areas, covering 13 % of the national territory. During the same period, these lands lost less

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[20] David M. Lapola, Ruediger Schaldach, Joseph Alcamo, and Joerg A. Priess, "Indirect Land-Use Changes Can Overcome Carbon Savings from Biofuels in Brazil," *Proceedings of the National Academy of Sciences* 107, no. 8 (2010): 3388–3393.

[21] Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) and Instituto Nacional de Pesquisas Espaciais (INPE), *Levantamento de Informações de Uso e Cobertura da Terra na Amazônia: Sumário Executivo* (2011), https://www.embrapa.br/busca-de-publicacoes/-/publicacao/905481/sumario-executivo-levantamento-de-informacoes-de-uso-e-cobertura-da-terra-na-amazonia.

[22] Reinecke, Pistorius, e Pregernig, "UNFCCC and the REDD+ Partnership," 30–39.

[23] European Commission, *The Impact of EU Consumption on Deforestation*, https://pure.iiasa.ac.at/id/eprint/14868/1/1.%20Report%20analysis%20of%20impact.pdf.

than 1 % of their native vegetation, in contrast to private lands, which experienced a 28 % loss.[24]

Among the main commodities imported by the EU, soya stands out as one of the most significant both economically, due to the large volume of imports from third countries, and environmentally, given the severe consequences its production has directly and indirectly driven in terms of significant changes in land use and biome coverage.[25] In 2023, the EU imported approximately €15.5 billion worth of soya and its derivatives from third countries, with €7.6 billion sourced from Brazil. This Latin American country dominates the EU soya oilcake market, accounting for 60 % of the total. Additionally, Brazil is the EU's second-largest partner in soya sales, including crushed soybeans, with 38 % of imports—second only to the United States, which accounts for 45 % of sales.[26] Nearly all deforestation embedded in soya imports originate from South America, with around 77 % of the deforestation embedded in soya products imported by EU countries traced back to Brazil.[27]

Wood products with embedded deforestation, which constitute a very small proportion of total embedded deforestation imports, mainly come from Brazil (48 %) and Cameroon (12 %), followed by some sub-Saharan and Asian countries. The largest share of embedded deforestation enters the EU through imported wood pulp (45 %), of which approximately 80 % comes from Brazil and 14 % from Indonesia. For manufactured wood products, Indonesia, Brazil, and other Asian countries are the main sources of embedded deforestation in wood products imported into the EU, though their contributions are relatively small.[28]

It is noteworthy that the EU does not significantly depend on imported wood from third countries, as its internal trade is robust, ensuring

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[24] Mapbiomas, *Coleção 9: Mapeamento Anual de Cobertura e Uso da Terra no Brasil entre 1985 a 2023*, https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2024/08/Fact_Colecao-9_21.08-OK.pdf.

[25] Ramon Felipe Bicudo da Silva et al., "Socioeconomic and Environmental Effects of Soybean Production in Metacoupled Systems," *Nature: Scientific Reports* 11 (2021): 18662.

[26] Eurostat, "TEIET130," 2023, https://ec.europa.eu/eurostat/web/products-datasets/-/teiet130.

[27] European Commission, *The Impact of EU Consumption on Deforestation*, 80, https://pure.iiasa.ac.at/id/eprint/14868/1/1. %20Report %20analysis %20of %20impact.pdf.

[28] European Commission, *The Impact of EU Consumption on Deforestation*, 157, https://pure.iiasa.ac.at/id/eprint/14868/1/1. %20Report %20analysis %20of %20impact.pdf.

a comfortable level of self-sufficiency. Of the approximately €49 billion worth of wood imported in 2023, only 23 % came from third countries, while 77 % originated from intra-EU trade.[29] Additionally, the small portion that is imported is diversified among supplier countries, providing additional security in terms of supply should the need arise to rely on alternative sources.

Coffee is another key commodity, and Brazil's leadership in coffee trade with the EU underscores the strategic importance of this product in the commercial relationship between the two regions. In 2023, Brazil accounted for 34 % of the total volume imported by the European market, solidifying the EU as the primary destination for Brazilian coffee exports, which represent 51 % of the country's trade in this product.[30] In absolute terms, the EU imported approximately €10.6 billion worth of coffee from third countries in 2023, of which €3.2 billion came from Brazil.[31] When analysing trade flows of embedded deforestation in agricultural products imported by the EU, stimulants such as coffee and cocoa account for around 12 % of the environmental impact. Although this figure is significant, it is relatively modest compared to the impact of oilseeds like soya, which account for approximately 70 % of embedded deforestation.[32]

Cattle products are equally important to the European market. Bovine products and their derivatives are strongly associated with pasture expansion, driven by the consumption of livestock products, particularly ruminant livestock, which accounts for 14 % of deforestation. In the EU, the consumption of livestock products, especially meat, is the main factor behind cumulative deforestation linked to agricultural and livestock use. Agricultural products such as soya oilcake, commonly used as animal feed, contribute to 44 % of associated deforestation. When analysing final consumption, both in terms of origin and destination, processed meat imports from Brazil represent the second-largest factor of deforestation in the EU. Regarding leather products, Brazil is the main source of embedded

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29 Eurostat, "TEIET130," https://ec.europa.eu/eurostat/web/products-datasets/-/teiet130.

30 Ministério do Desenvolvimento, Indústria, Comércio e Serviços (MDIC), *Comex Stat: Estatísticas de Comércio Exterior* (2023), https://comexstat.mdic.gov.br/pt/geral.

31 Eurostat, "TEIET130," https://ec.europa.eu/eurostat/web/products-datasets/-/teiet130.

32 European Commission, *The Impact of EU Consumption on Deforestation*, 79, https://pure.iiasa.ac.at/id/eprint/14868/1/1.%20Report%20analysis%20of%20impact.pdf.

deforestation, though its contribution is relatively smaller compared to other commodities.[33]

The increased consumption of meat, combined with global population growth, has driven changes in dietary habits in developed countries.[34] Studies suggest that replacing 25–50 % of meat, egg, and dairy consumption in the EU could reduce livestock production by up to 50 % and greenhouse gas emissions by up to 40 %.[35] Nevertheless, in 2023, the EU imported approximately €3.6 billion worth of meat from third countries, with Brazil emerging as its largest commercial partner. About 20 % of cattle imported by the EU originated from Brazil, which also leads in exports of other prepared or preserved meat, meat offal, and blood of cattle, accounting for 82 % of the volume imported. Moreover, Brazil was the largest exporter of cattle leather, further processed after tanning or crusting, representing 22 % of the EU's total imports in this segment.[36]

3. The EUDR Regulation and its Extraterritorial Effects

As the production and consumption of forest and agricultural products become increasingly globalized, with complex supply chains, regulating and governing sustainability in production presents growing challenges for states.[37] In light of the fragmentation and inadequacy of an effective international approach to addressing deforestation-related factors tied to global commodity chains, points of intervention often arise in developed countries, such as those in the EU. These nations have been leveraging their unilateral regulatory power to impose environmental policies that effectively set global behavioural standards by requiring third-country

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[33] European Commission, *The Impact of EU Consumption on Deforestation*, 29-30, 136, 157, https://pure.iiasa.ac.at/id/eprint/14868/1/1. %20Report %20analysis %20of %20impact.pdf.

[34] Pierre Sans and Pierre Combris, "World Meat Consumption Patterns: An Overview of the Last Fifty Years (1961–2011)," *Meat Science* 109 (2015): 106–111.

[35] Henk Westhoek et al., "Food Choices, Health and Environment: Effects of Cutting Europe's Meat and Dairy Intake," *Global Environmental Change* 26 (2014): 196–205.

[36] Eurostat, "TEIET130," https://ec.europa.eu/eurostat/web/products-datasets/-/teiet130.

[37] Janice Weatherley-Singh and Aarti Gupta, "'Embodied Deforestation' as a New EU Policy Debate to Tackle Tropical Forest Loss: Assessing Implications for REDD+ Performance," *Forests* 9, no. 12 (2018): 751–772.

producers to meet specific requirements to access the attractive European market.

With the aim of making a difference not only in terms of the Union's contribution to deforestation but also in the global fight against irreversible deforestation and climate change, the EU developed Regulation (EU) 2023/1115 (EUDR) within the framework of the European Green Deal.[38] This regulation prohibits the placing on the EU market and the export of seven key commodities and their derivatives associated with deforestation and environmental degradation: cattle, cocoa, coffee, palm oil, rubber, soya, and wood. This measure aligns with the EU's environmental policies, which seek to create a multilateral system where sustainable trade is a key factor in the ecological transition, helping to combat climate change and biodiversity loss.

The EU's environmental policy is transversal and a priority. The European Green Deal emphasizes that trade policy can support the EU's ecological transition, serving as a platform for dialogue with trading partners on climate and environmental action. Its main goal is to position Europe as the pioneering continent in achieving carbon neutrality by 2050. The commitment to sustainability has also been reinforced in the EU's trade agreements, with particular emphasis on actions related to climate change.

The EUDR, effective since June 29, 2023, was initially set to take effect on December 30, 2024. However, on October 2, 2024, the European Commission proposed a 12-month delay to allow more time for preparation.[39] The European Parliament approved this postponement on November 14, 2024, along with additional amendments. Under the revised timeline, large operators must comply by December 30, 2025, and small enterprises by June 30, 2026. Parliament also introduced a "no risk" category for countries with stable or growing forest areas,[40] a move criticized as green protectionism that could exacerbate tensions

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[38] European Commission, *Communication COM(2019) 640 Final: The European Green Deal*, December 11, 2019.

[39] European Commission, *Proposal for a Regulation of the European Parliament and of the Council Amending Regulation (EU) 2023/1115 as Regards Provisions Relating to the Date of Application (COM/2024/452 Final/2)*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024PC0452R%2801%29&qid=1728920687420.

[40] European Parliament. (2024). *Resolution TA-10-2024-0031*. Retrieved from https://www.europarl.europa.eu/doceo/document/TA-10-2024-0031_EN.pdf.

with producer countries outside the EU.[41] This amendment proposal has faced significant criticism, as the change in risk ratings would effectively grant EU-forested countries preferential treatment. This approach is seen as a form of green protectionism, likely to intensify resentment among producer countries outside the EU.[42]

Thus, considering these amendments, Article 29 of the EUDR would establish that the benchmarking system should be based on a four-tier system for classifying countries as low, standard, high, or no risk. The Commission is tasked with completing a country benchmarking system by June 30, 2025.[43] For these changes to take effect, the agreed text must be formally approved by both the Council and the Parliament and subsequently published in the EU Official Journal.

Although it is not yet fully applicable, its repercussions in the business world are already evident. For instance, the Chief Financial Officer of Danone[44] publicly stated that the French company has halted its purchase of Brazilian soy for sustainability reasons, in anticipation of the new environmental rules introduced by the European Union Deforestation Regulation (EUDR). This announcement drew immediate reactions from stakeholders, including the Brazilian government, which issued an official statement emphasizing the rigor of due diligence processes implemented by national companies.[45] According to the government, these companies adhere strictly to international traceability standards, ensuring compliance with sustainable practices.

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41 Reuters. (2024, November 14). *European Parliament approves one-year delay to EU anti-deforestation law*. Reuters. Retrieved from https://www.reuters.com/business/environment/european-parliament-approves-one-year-delay-eu-anti-deforestation-law-2024-11-14/.

42 Reuters, "European Parliament Approves One-Year Delay to EU Anti-Deforestation Law," *Reuters,* November 14, 2024, https://www.reuters.com/business/environment/european-parliament-approves-one-year-delay-eu-anti-deforestation-law-2024-11-14/.

43 European Parliament, *Resolution TA-10-2024-0031*, https://www.europarl.europa.eu/doceo/document/TA-10-2024-0031_EN.pdf.

44 Reuters, "France's Danone Cuts Out Brazilian Soya Ahead of Tough New EU Rules," *Reuters,* October 25, 2024, https://www.reuters.com/business/retail-consumer/frances-danone-cuts-out-brazilian-soy-ahead-tough-new-eu-rules-2024-10-25/.

45 Secretaria de Comunicação Social, "Official Response to Recent Statements by European Agrifood Companies," *Governo do Brasil,* October 30, 2024, https://www.gov.br/secom/en/latest-news/2024/10/official-response-to-recent-statements-by-european-agrifood-companies.

Danone, on the other hand, clarified its position through a public statement,[46] asserting that it continues to purchase Brazilian soy, but in full alignment with both local and international regulations. The company's move was framed as part of its broader strategy to ensure its supply chains are free from deforestation risks and are in line with emerging global sustainability expectations.

This incident has highlighted the growing tensions between European environmental regulations and trade practices in producer countries. It underscores how policies like the EUDR are already influencing corporate decision-making, even prior to their full implementation. Furthermore, it points to the complex interplay between governmental assurances about sustainability and the precautionary measures taken by multinational companies, which are increasingly driven by consumer expectations, regulatory trends, and reputational concerns.

Indeed, according to Article 3 of the EUDR, operators wishing to market in the EU base products or derivatives of coffee, cocoa, palm oil, rubber, soya, cattle, and wood on the EU market must meet three requirements: i) ensure that their products are free from deforestation; ii) ensure that production complies with the relevant legislation of the producer country; and iii) submit a due diligence statement. In other words, the EUDR requires that all stages of the supply chain for any of these products be free of deforestation activities. Analysing the aspects of the EUDR reveals a complex interaction of definitions, actors, and processes, which demands an in-depth exploration to understand its nuances and specific challenges, especially for producers outside the EU who will be impacted by this European regulation.

This new legal instrument was developed to address the shortcomings identified in the repealed Regulation (EU) No. 995/2010,[47] which, despite its intentions, failed to prevent and reverse illegal logging and associated trade or significantly reduce the consumption of illegally sourced wood in the EU. The EUDR introduces a paradigm shift concerning the

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[46] Danone Brasil, "Nota oficial da Danone Brasil sobre soja," *Danone Brasil*, October 30, 2024, https://corporate.danone.com.br/Nota-Oficial-da-Danone-Brasil-sobre-Soja.

[47] Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 Laying Down the Obligations of Operators Who Place Timber and Timber Products on the Market.

Timber Regulation, expanding its scope and promising to be a more effective response in combating deforestation.

The EUDR has opted to rely on internationally agreed concepts, particularly those defined by the United Nations Food and Agriculture Organization (FAO). By adopting the FAO's definition of forest,[48] more than 3 million km² of native vegetation in South America could be left vulnerable to deforestation, representing approximately 28 % of the remaining natural ecosystems in seven South American biomes (Amazon, Cerrado, Chaco, Atlantic Forest, Pampas, and Pantanal)—an area five times the size of France. According to a study by MapBiomas, at least 16 % of the Amazon would be exposed to deforestation or forest degradation, an area equivalent to twice the size of Spain. Regarding Brazilian biomes, in the Caatinga, more than 90 % of the vegetation would have no protection, while in the Pantanal, a World Heritage site, and the Cerrado, more than 74 % of areas would not fall under the definition of forest.[49]

Particularly, the Cerrado is a biodiversity hotspot and one of the world's most dynamic agricultural regions. It has already lost half of its native vegetation due to agribusiness expansion. Between 2000 and 2020, 91 % of native vegetation conversion for soya cultivation occurred in non-forest natural ecosystems,[50] with more than half of the soya farms in the Cerrado deforested beyond the limits[51] established by the new Brazilian

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[48] Food and Agriculture Organization of the United Nations (FAO), *Forest Resources Assessment Working Paper 194: Terms and Definitions. FRA 2025* (2023), https://openknowledge.fao.org/server/api/core/bitstreams/a6e225da-4a31-4e06-818d-ca3aeadfd635/content. According to the Article 2.4 EUDR 'forest' "means land spanning more than 0,5 hectares with trees higher than 5 meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ, excluding land that is predominantly under agricultural or urban land use".

[49] MapBiomas, *Technical Note: Potential Impacts of Due Diligence Criteria on the Protection of Threatened South American Non-Forest Natural Ecosystems. Version 2–July 2022*, https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2023/08/Nota_Tecnica_UE_07.07.2022.pdf.

[50] MapBiomas, *Technical Note: Potential Impacts of Due Diligence Criteria*, https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2023/08/Nota_Tecnica_UE_07.07.2022.pdf.

[51] Lisa L. Rausch et al., "Soy Expansion in Brazil's Cerrado," *Conservation Letters* 12, no. 6 (2019): 1–10. The Cerrado has relatively limited legal protection, especially when compared to the Amazon biome. Under Brazil's Forest Code, agricultural use is allowed on 65-80 % of properties with Cerrado vegetation, whereas only 20 % is permitted on

Forest Code.[52] As a result, these regions would not be covered by the European regulation, meaning that commodities produced in these areas may not be deforestation-free, as they would not be included in the definition of forest and, therefore, of forest degradation, severely restricting the environmental preservation goals.

Notably, Recital 41 of the EUDR not only establishes obligations related to combating deforestation and forest degradation but also emphasizes that these obligations must respect human rights and the rights of indigenous peoples and local communities, both in the EU and in third countries. This is a highly sensitive issue, as if the Regulation results in negative impacts on the livelihoods of small producers, indigenous peoples, and local communities in producer countries, it could compromise progress toward the Sustainable Development Goals, especially SDG 1 (poverty eradication), SDG 2 (zero hunger), with a focus on Target 2.3, and SDG 10 (reduced inequalities).[53] Without placing livelihoods and socioeconomic inclusion at the heart of the analysis, we risk transforming food systems to achieve environmental and nutritional goals "on the backs of the rural poor".[54]

Moreover, given the significant extraterritorial impacts of the European regulation, Latin American governments have expressed scepticism, arguing that it imposes unilateral trade measures that could create trade barriers for developing countries, thereby threatening the international trade system.[55] Additionally, several countries have raised concerns about certain EUDR rules with the Technical Barriers to Trade (TBT) Committee, which oversees the implementation of the Agreement on Technical Barriers to Trade at the World Trade Organization (WTO). The TBT was officially

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most Amazon properties. Additionally, only 8 % of the Cerrado is covered by protected areas, in contrast to 46 % of the Amazon.

[52] Law No. 12.651 of May 25, 2012, The Law for the Protection of Native Vegetation, popularly known as the New Brazilian Forest Code.

[53] Eliza Zhunusova et al., "Potential Impacts of the Proposed EU Regulation on Deforestation-Free Supply Chains on Smallholders, Indigenous Peoples, and Local Communities in Producer Countries Outside the EU," *Forest Policy and Economics* 138 (2022): 1–9.

[54] Benjamin Davis, Leslie Lipper, and Paul Winters, "Do Not Transform Food Systems on the Backs of the Rural Poor," *Food Security* 14, no. 4 (2022): 729–740.

[55] The Belém Declaration, signed on August 9, 2023, by the presidents of the eight countries that are part of the Amazon Cooperation Treaty Organization, is known as the "Amazon Summit."

notified by various countries (STC 807)[56] regarding the application of the European regulation. This is a pre-contentious phase, where WTO members use the TBT Committee to discuss "specific trade concerns" (STCs) related to specific laws, regulations, or procedures affecting their trade, assisting in resolving trade frictions without resorting to formal WTO disputes.[57]

Based on the arguments presented by countries at the TBT Committee meetings in March and June 2024 and November 2023,[58] it is possible to identify some concerns, such as the "One-Size-Fits-All" model, strongly criticized by Brazil, the United States, Australia, India, Colombia, Paraguay, and Argentina. These countries argue that the EUDR's uniform approach disregards the specificities and local conditions. They contend that the uniform application of rules does not reflect the different ecological and socioeconomic realities of exporting countries, imposing unnecessary and disproportionate restrictions, such as increased costs for exporters and importers, as well as producers and consumers. Brazil, in its statements, argues that although these costs are certain, the EUDr, on its own, would have no positive impact on deforestation rates and could even produce other adverse effects, such as increasing poverty, diverting resources, and hindering the achievement of the SDGs. It further suggests that the European Commission develop differentiated compliance and due diligence regimes for commodities and products originating from small producers in developing countries, given that EU small and medium-sized enterprises receive more flexible treatment.

Despite the criticism, Brazilian coffee growers see the EUDR as an opportunity to expand their market share in Europe, as Brazil has a more advanced technical and regulatory framework compared to other exporting countries,[59] positioning it more favourably to meet the Regulation's

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[56] India, Indonesia, Australia, Mexico, New Zealand, Paraguay, United States, Canada, and Colombia raised concerns against the European Union at the TBT Committee, receiving support from Ecuador, Argentina, Guatemala, Indonesia, Australia, Mexico, New Zealand, Panama, Peru, Russian Federation, Singapore, Türkiye, Brazil, and Costa Rica.

[57] Kateryna Holzer, "Addressing Tensions and Avoiding Disputes: Specific Trade Concerns in the TBT Committee," *Global Trade and Customs Journal* 14, no. 3 (2019): 102–116.

[58] World Trade Organization, "TBT: European Union – Deforestation-Free Products (ID 807)," *WTO Trade Concerns Database*, https://tradeconcerns.wto.org/en/stcs/details?imsId=807&domainId=TBT.

[59] Deutsche Welle, "Como Cafeicultores do Brasil se Preparam para Lei Antidesmate da UE," https://www.dw.com/pt-br/

requirements. The Brazilian Coffee Exporters Council (Cecafé), the main representative of Brazilian coffee exporters responsible for over 96 % of green bean exports, has reaffirmed its commitment to sustainable coffee trade in the European market. As a best practice, Cecafé launched a website[60] entirely dedicated to the Regulation, aiming to assist producers in adapting to the new procedures required by the EUDR.

The adoption of the EUDR is a recent and underexplored case of a shift in the EU's transnational regulatory policy. There has not yet been a systematic analysis addressing its emergence, design, adoption, and expected impacts on national policies and business practices.[61] The new Regulation revives the debate on this unique phenomenon of the extraterritorial reach of EU rules, which influence third countries and seek to establish global standards through its unilateral regulatory power. This trend, observed in areas such as competition, digital economy, financial markets, and the environment, raises the question of whether the EU truly seeks to promote multilateral cooperation and strengthen global governance or if it is, in fact, prioritizing the protection of its own economic interests, creating barriers to access the European internal market,[62] and placing commercial competitiveness and economic growth above its normative aspirations.[63]

The issue of the extraterritorial reach of EU legislation has been widely discussed in specialized doctrine,[64] which seeks to understand the

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como-cafeicultores-do-brasil-se-preparam-para-lei-antidesmate-da-ue/a-69952744.

60 Brazilian Coffee Exporters Council (CECAFÉ), https://www.cecafe.com.br/eudr/en/.

61 Laila Berning and Metodi Sotirov, "The Coalitional Politics of the European Union Regulation on Deforestation-Free Products," *Forest Policy and Economics* (2024).

62 Nuno Cunha Rodrigues, *A Globalização do Poder Regulatório da União Europeia* (Almedina, 2024), 32.

63 Stavros Afionis and Lindsay Stringer, "The Environment as a Strategic Priority in the European Union–Brazil Partnership: Is the EU Behaving as a Normative Power or Soft Imperialist?" *International Environmental Agreements: Politics, Law and Economics* 14, no. 1 (2014): 47–64.

64 Anu Bradford, "The Brussels Effect," *Northwestern University Law Review* 106 (2012): 1–68; Anu Bradford, *The Brussels Effect: How the European Union Rules the World* (Oxford University Press, 2020); Marise Cremona and Joanne Scott, eds., *EU Law Beyond EU Borders: The Extra-Territorial Reach of EU Law* (Oxford University Press, 2019); Elaine Fahey, *The Global Reach of EU Law* (Routledge, 2017); Hannah L. Buxbaum, "Territory, Territoriality and the Resolution of Jurisdictional Conflict," *American Journal of Comparative Law* 57 (2009): 631–676; Rodrigues, *A Globalização do Poder Regulatório da União Europeia*, 32.

effects and scope of the extraterritoriality of EU law, addressing the topic from different perspectives. Anu Bradford examines the "Brussels Effect" of European legislation, arguing that certain prerequisites[65] are essential to understanding the EU's regulatory behaviour, starting with an analysis of the effects produced outside the EU and then examining its attempt to disseminate rules globally.

In the context of the EUDR, the debate on the extraterritorial effects of the EU's unilateral regulatory power gains new relevance. The EU has increasingly used sophisticated mechanisms to expand and strengthen its legal framework, consolidating its regulatory power at the global level, which requires a study that considers all this complexity. The sui generis nature of the EU highlights that the implementation of rules with extraterritorial reach does not result from traditional military or economic power based on a robust industrial and technological base, but rather from a power that seems to stem from the realization of the rule of law,[66] which guides the EU's functioning.

The actors involved in the gradual expansion of rules with extraterritorial reach increase as international trade relations become more complex and interdependent. In addition to states and political entities promoting the applicability of these rules outside the EU through legislation,[67] private operators, such as transnational companies, also play an important role by establishing, contractually or through practice, standardized rules that apply to all clients and suppliers.[68]

It is clear that the EU is a major importer of commodities and ecological assets from third countries, including those "embedded" in imported products. It uses more than its fair share of global resources, and the extraction, production, and waste management processes to supply

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65 Anu Bradford, "The Brussels Effect," *Northwestern University Law Review* 106 (2012), outlines a set of assumptions necessary for the "Brussels Effect" to take place: (i) market size; (ii) regulatory capacity; (iii) strict enforcement standards; (iv) inelastic targets (producers or products that cannot escape European regulation, such as food goods); and (v) indivisibility (products or operations that cannot be easily adjusted for different markets, thus encouraging the adoption of global standards based on European norms).

66 Rodrigues, *A Globalização do Poder Regulatório da União Europeia*, 351.

67 Rodrigues, *A Globalização do Poder Regulatório da União Europeia*, 352

68 Assemblée Nationale, *Rapport d'Information sur l'extraterritorialité de la législation américaine* 2016, n. 4082, 11, http://www.assemblee-nationale.fr/14/pdf/rap-info/i4082.pdf.

the European market often cause severe environmental impacts in third countries. In summary, the EU's global environmental footprint is large and damaging.[69] And given the global and cross-border nature of many environmental issues, it is not surprising that the expansion of extraterritorial effects is a common feature in various areas of EU environmental law.

4. Conclusion

The EU Regulation 2023/1115 (EUDR) represents a robust and ambitious response from the EU to address the global challenge of deforestation and environmental degradation. By prohibiting the entry into the European market of products associated with deforestation, the EUDR not only reinforces the EU's commitment to environmental sustainability but also reaffirms its role as a global regulator, influencing practices in third countries. Brazil, as the EU's largest trading partner within the EUDR's scope, exemplifies the regulation's potential to drive changes in agricultural and forestry practices on a global scale.

Brazil, as the main exporter of soy, coffee, and cattle to the EU, finds itself in a challenging position. The country faces the need to adapt its agricultural and forestry practices to comply with EUDR requirements, which may involve significant costs for local producers. At the same time, there is a risk that the regulation could create disproportionate trade barriers, exacerbating existing economic and social inequalities in vulnerable regions.

The concept of "embedded deforestation," central to the EUDR, underscores the critical role of forest preservation in sustainable development. Yet, for Brazil, compliance with the regulation entails significant costs for local producers, particularly smallholders, and the potential for disproportionate trade barriers. The controversy surrounding Danone's suspension of Brazilian soy purchases, even before the EUDR takes full effect, illustrates the regulation's far-reaching impact. Such unilateral corporate decisions have already provoked tension between Brazil and the EU, and if other companies adopt similar strategies, broader trade disruptions and geopolitical tensions may ensue.

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[69] Joanne Scott, "Reducing the EU's Global Environmental Footprint," *German Law Journal* (2020): 10–16.

Additionally, the introduction of a "no risk" category by the European Parliament for countries with stable or growing forest areas has raised concerns about green protectionism. While this amendment has yet to receive final approval, critics argue that it could unfairly favour EU member states, creating further disparities for producer countries like Brazil. This approach risks being perceived as inconsistent with the principles of equity and fairness, potentially complicating relations between the EU and developing nations, and hindering the global push for sustainability.

The EUDR also highlights the sophistication of the EU's regulatory power, extending European standards to countries with vastly different ecological, economic, and social contexts. For the EUDR to achieve its ambitious goals, it must be implemented in a way that considers the local specificities of exporting countries. This could involve differentiated compliance mechanisms for small producers and developing nations, as well as revisiting the definitions of "forest" and "forest degradation" to ensure broader ecosystem protection. Addressing these issues would align the EUDR with international debates on sustainability and conservation, enhancing its legitimacy as a global governance tool.

Ultimately, the EUDR's success will hinge on its ability to balance environmental protection with social and economic justice. To avoid undermining multilateral cooperation and exacerbating inequalities, the EU must engage in sustained dialogue with its trading partners and adopt a flexible, inclusive approach. Collaborative global governance, rather than unilateral regulatory measures, will be essential in ensuring the EUDR contributes meaningfully to global sustainability and forest conservation goals.

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