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Challenges and opportunities for Brazilian coffee cultivation arising from EU Regulation 2023/1115 (EUDR)

Sfide e opportunità per la coltivazione del caffè in Brasile ai sensi del Regolamento UE 2023/1115 (EUDR)

EU Regulation 2023/1115 (EUDR) stipulates that in order to enter the European Union, commodities such as cattle, palm oil, soy, timber, cocoa, rubber and coffee as well as their respective products will have to come from deforestation-free areas. As the world's largest coffee producer, Brazil is likely to be one of the countries that will be most affected by the EUDR. The article analyses the implications of the regulation for coffee cultivation in Brazil, comparing the controversial issues that have arisen in the sector. It has been found that the main legal aspects related to the EUDR and the Brazilian coffee sector include the concept of the forest, the role of cooperatives in relation to the definition of operators and traders, the differentiated due diligence regime for small and medium-sized enterprises and the risk criteria for coffee production.

Keywords: coffee cultivation, deforestation, EUDR, coffee agro-industrial system, Brazilian agriculture

Il regolamento UE 2023/1115 (EUDR) impone che merci quali bovini, olio di palma, soia, legname, cacao, gomma, caffè e i loro derivati provengano da aree prive di deforestazione per poter essere immessi sul mercato nell'Unione europea. Considerando che il Brasile è il maggior produttore mondiale di caffè, questo Paese potrebbe risultare particolarmente colpito dall'applicazione dell'EUDR. In tale contesto, gli autori esaminano le possibili implicazioni del regolamento per la coltivazione del caffè in Brasile, comparando le questioni controverse emerse nel settore. Alla fine, essi affermano che gli aspetti giuridici principali connessi all'EUDR e al settore brasiliano del caffè riguardano la definizione di foresta; il ruolo delle cooperative in relazione alla qualifica di operatori economici e commercianti; l'adozione di un sistema differenziato di dovuta diligenza per le piccole e medie imprese; nonché i criteri di rischio per la produzione di caffè.

Parole chiave: coltivazione del caffè, deforestazione, EUDR, sistema agroindustriale del caffè, agricoltura brasiliana

Introduction

Deforestation has decreased considerably since the last decade of the past century, but it continues apace: between 1990 and 2020, around 420 million hectares of forests were degraded worldwide.[1] Livestock farming is one of the main contributors to this,[2] while agriculture itself is responsible for 80% of deforestation in tropical climate zones.[3]

The European Union (EU) is the second largest importer of commodities sourced from deforested areas[4] and therefore one of its first initiatives to promote sustainable forest management was the Forest Law Enforcement, Governance & Trade (FLEGT), introduced in the mid-2000s. In the following decade, the European Parliament adopted the European Union Timber Regulation (EUTR) under EU Regulation 2010/995, establishing guidelines to prevent the importation of illegally logged timber and its by-products.[5]

Recently, the EU has demonstrated determination to reduce its impact on global deforestation and forest degradation through the European Union Deforestation Regulation (EUDR) under Regulation 2023/1115. It establishes measures to restrict the importation of high-risk commodities, in particular cattle, palm oil, soybeans, timber, cocoa, rubber, coffee and their products.[6]

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[1] P. Corona, V. Di Stefano, A. Mariano, *Knowledge gaps and research opportunities in the light of the European Union Regulation on deforestation-free products*, "Annals of Silvicultural Research" 2023, vol. 48, no. 2, p. 1.

[2] SEEG, *Análise das emissões de gases de efeito estufa e suas implicações para as metas climáticas do Brasil: 1970–2021*, 2023, https://energiaeambiente.org.br/produto/analise-das-emissoes-de-gases-de-efeito-estufa-e-suas-implicacoes-para-as-metas-climaticas-do-brasil-1970-2021 [accessed on 7.01.2024], p. 8.

[3] F. Pendrill et al., *Disentangling the numbers behind agriculture-driven tropical deforestation*, "Science" 2022, vol. 377, no. 6611, eabm9267, p. 2.

[4] WWF, *Stepping up? The continuing impact of EU consumption on nature worldwide*, 2021, https://www.wwf.nl/globalassets/pdf/stepping-up-the-continuing-impact-of-eu-consumption-on-nature-worldwide.pdf [accessed on 23.06.2024], p. 3.

[5] L. Berning, M. Sotirov, *Hardening corporate accountability in commodity supply chains under the European Union Deforestation Regulation*, "Regulation & Governance" 2023, vol. 17, p. 6.

[6] S.V. Reijn, *A Qualitative Cross-sectional Study: from EU timber regulation to EU deforestation-free products regulation* (master's thesis), Rijksuniversiteit Groningen, 2022, p. 6.

According to the data from the European Commission, the European consumption of these commodities and products accounts for 19% of all tropical deforestation.[7]

Brazil's exports, due to its prominent role as an international agro-exporter, may be highly impacted by the EUDR. In 2023, Brazil exported roughly €8.5 billion in cattle, €16 million in palm oil, €57 billion in soybeans, €3 billion in wood, €350 million in cocoa and chocolate, €1.4 billion in rubber, and €6.6 billion in coffee.[8] As a result, Brazilian agribusiness ended the year with an accumulated surplus of €157.43 billion, accounting for 49% of Brazil's total exports during the year.[9]

Despite the importance of all the commodities covered by the EUDR for Brazil, we limit our research to the effects of the European regulation on Brazilian coffee cultivation. The reason for this is twofold: a) coffee is Brazil's most exported product to the EU among those listed in the EUDR; and b) unlike other commodities covered by the EUDR, there was no prior specific regulation in the EU on coffee that aimed at combating deforestation.[10] Therefore, our objective is to analyze the opportunities for Brazilian coffee cultivation under the EUDR, as well as to highlight the key controversial legal questions surrounding it.

1. Methodology

We use an Integrative Literature Review (ILR) and a Documentary Research (DR). The ILR involves a planned literature search with explicit criteria, similar to a systematic review. However, the ILR aims to analyze

[7] European Commission, *Minimising the risk of deforestation and forest degradation associated with products placed on the EU market*, 2021, https://environment.ec.europa.eu/system/files/2021-11/SWD_2021_326_1_EN_impact_assessment_part1_v4.pdf [accessed on 1.12.2024], p. 17.

[8] Comex Stat, 2024, https://comexstat.mdic.gov.br/pt/geral [accessed on 23.06.2024].

[9] *Exportações do Agronegócio Fecham 2023 com US$ 166,55 Bilhões em Vendas*, 2024, https://www.gov.br/agricultura/pt-br/assuntos/noticias/exportacoes-do-agronegocio-fecham-2023-com-us-166-55-bilhoes-em-vendas [accessed on 23.06.2024].

[10] We believe that the EUDR may have a greater impact on the coffee supply chain compared to other sectors addressed in the Regulation. Unlike cattle (EU Regulation No. 2017/625), soy and palm oil (EU Directive No. 2018/2001), timber (EUTR), and rubber (EU Directive No. 2009/28), for instance, there was no prior European regulation specifically aimed at combating deforestation on coffee growing. Cf. F. Trentini, *O Desafio Ambiental do Comércio Internacional: o made in UE para os produtos agrícolas entre a Diretiva RED (2001/2018) e o Regulamento EURD (2023/1115)*, "Anuais do XVI Congresso Mundial de Direito Agrário" 2024, pp. 10–11.

a smaller number of articles, but with greater analytical depth and without the need to use statistical analyses.[11] In addition, the ILR is structured in six phases: 1) identification of the topic and elaboration of guiding questions; 2) establishment of inclusion and exclusion criteria for the literature; 3) definition of the information to be categorized; 4) evaluation of the studies included in the review; 5) interpretation of the results; 6) presentation of the synthesis of knowledge.[12] To support our research, we looked for scientific articles in the Scopus database, where only nine articles matching our search string had been identified.[13]

We found that 44.44% of the articles discuss the EUDR and its influence on the domestic legislation of EU partner countries, limiting their examination to mere conceptual aspects of the Brussels Effect,[14] without delving into specific case studies. We also noticed that, among the commodities covered by the EUDR, soy and wood were the only ones to receive particular focus in the articles. Thus, there were no specific papers dedicated to cattle, palm oil, cocoa, rubber or coffee.

In contrast, the DR served as a supplementary methodology, in this case using the official data from the European and Brazilian authorities. Our choice of the DR is justified by two main purposes: first, to identify the potential financial impacts of the EUDR for the EU and its economic

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[11] G.V. Chueke, M. Amatucci, *Métodos de Sistematização de Literatura em Estudos Científicos: bibliometria, meta-análise e revisão sistemática*, "Internext" 2022, vol. 17, no. 2, p. 2.

[12] M.T. de Souza, M.D. da Silva, R. de Carvalho, *Revisão integrativa: o que é e como fazer*, "Einstein" 2010, vol. 8, no. 1, pp. 104–105.

[13] We used the search string "EUDR" or "Regulation 2023/1115" or "Regulation 1115/2023" or "EU 2023/1115" or "EU 1115/2023" in the Scopus database on April 8, 2024. Due to the low number of results, we chose not to develop additional inclusion and exclusion criteria, proceeding with a full-text review of all selected documents.

[14] The Brussels Effect refers to a form of unilateral regulatory globalization, in which norms originating from the European jurisdiction influence economic activities worldwide. This effect can manifest itself in two ways: de facto and de jure. The de facto Brussels Effect occurs when large companies voluntarily adjust their operational and production practices to align with the regulatory standards established by the European Union. On the other hand, the de jure Brussels Effect arises when foreign governments voluntarily adopt and implement European regulations, often due to lobbying efforts by major companies that have adapted their practices to meet the standards of the EU. Cf. A.F. Trevizan, *Exploring The Brussels Effect: the European Union's impact on Brazilian forestry policies*, "Revista de Direito da Faculdade de Direito de Viçosa" 2024, vol. 16, no. 1, p. 12; M.G.B. Lima, A. Schilling-Vacaflor, *Supply Chain Divergence Challenges a Brussels effect from Europe's Human Rights and Environmental Due Diligence Laws*, "Global Policy" 2023, vol. 15, no. 1, p. 2.

partners; and second, to assess the commodities most affected by the new European standard within the Brazilian context.

To estimate the consequences of the EUDR for the EU and its economic partners, we relied on the European Commission's Access2Markets database.[15] This platform enables the filtering of EU exports and imports using Harmonized System (HS) Codes, a numerical standard for classifying traded products comparable to the Mercosur Common Nomenclature (NCM). The EUDR explicitly specifies the HS Codes for the commodities and products it regulates.

We selected the EU's 2023 import data for all HS Codes related to cattle, palm oil, soybeans, wood, cocoa, rubber, coffee, and their products. Moreover, we compiled the 2023 imports by country to identify extra-EU states potentially susceptible to the effects of the EUDR. We identified the United States (representing 16.81% of European imports of these commodities and products); Brazil (13.86%); Indonesia (10.62%); Côte d'Ivoire (7.63%); Malaysia (5.67%); Ukraine (5.14%); Switzerland (4.175); Vietnam (3.21%); the United Kingdom (3.16%); and Ghana (2.11%) as the extra-EU countries most susceptible to the effects of the EUDR.

We also aimed to evaluate the impacts of the EUDR on Brazil, with a particular focus on the coffee Agro-Industrial System (AGS). To this end, we utilized the Comex Stat database,[16] maintained by the Brazilian Ministry of Development, Industry, Trade and Services.[17] By inputting the respective codes into Microsoft SQL Server, we generated spreadsheets correlating Brazilian exports of cattle, palm oil, soybeans, timber, cocoa, rubber, coffee and their products.[18]

Among the commodities and products covered by the EUDR, coffee stood out as Brazil's primary export to the EU in 2023, with 24.99% of its coffee exports destined for the European market. It was followed by timber

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[15] European Commission, *EU trade statistics (excluding United Kingdom)*, Access-2Markets, https://trade.ec.europa.eu/access-to-markets/en/statistics [accessed on 23.06.2024].

[16] Comex Stat, https://comexstat.mdic.gov.br/pt/home [accessed on 23.06.2024].

[17] We compiled data on all Brazilian exports for the 2023 financial year and integrated it into Microsoft SQL Server for better processing, as the data exceeded the row limit supported by Microsoft Excel. We filtered the export information for each of the NCM codes related to the commodities covered under the EUDR.

[18] From this dataset, we filtered the columns "VL_FOB," representing the total value of the operation in US dollars (USD), and "CO_PAIS," representing the destination of the commodities. These two columns were correlated to identify the percentage of Brazilian exports destined for EU member countries, by NCM, compared to the total operations, as shown in Table 1.

Table 1. Brazilian exports in 2023

Commodities/products	Total exports	Exports to the EU
	in €	
Cattle	9,295,439,546.65	366,385,397.05
Palm oil	16,687,892.85	1,003,707.30
Soybeans	61,519,811,967.60	6,746,603,000.55
Timber	3,245,895,549.15	487,470,999.60
Cocoa and chocolate	354,325,445.35	9,503,374.40
Rubber	1,515,903,524.00	48,496,552.85
Coffee	6,983,272,546.65	1,745,055,582.35

Source: own elaboration based on the European Commission's Access2Markets and Comex Stat databases.

(15.02%), soy (10.97%), palm oil (6.01%), cattle (3.94%), rubber (3.20%) and, finally, cocoa and chocolate (2.68%).

We observed that economic relations between Brazil and the EU play a key role in the coffee trade, a commodity likely to be the most affected by the EUDR in Brazil. With this being the case, the following sections will discuss the legal issues that require special attention to maintain o Brazil's competitiveness in the European market.

2. Controversial legal issues for Brazilian coffee cultivation before the EUDR

The EUDR states that relevant commodities cannot enter EU markets unless they are deforestation-free, have been produced in accordance with local legislation, and are accompanied by a due diligence declaration.[19] According to Article 2(13) of the EUDR, deforestation is defined as the conversion of forest to agricultural use, whether caused by anthropogenic activity or not.[20] Furthermore, Article 2(13) sets out the date 31 December 2020 as the cutoff date for the legal definition of deforestation, meaning that

[19] S.E.M. Oliveira et al., *The European Union and United Kingdom's deforestation-free supply chains regulations: Implications for Brazil*, "Ecological Economics" 2024, vol. 17, p. 2; A.B. de Moura, C. Lerin, B.M. Santos, *Impactos extraterritoriais do Regulamento (EU) 2023/1115: a proibição da comercialização de matérias primas e produtos associados ao desmatamento e à degradação florestal*, "Revista de Ciências do Estado" 2023, vol. 8, no. 2, p. 12.

[20] "For the purposes of this Regulation, the following definitions apply: [...] 3. 'deforestation' means the conversion of forest to agricultural use, whether human-induced or not" (Regulation No 2023/115 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 produced on land deforested after this date will be prohibited from entering the European market.[21]

Due diligence systems establish auditing processes to understand the actual and potential implications of corporate activities on human rights, as well as to monitor and address them.[22] The EUDR requires that the due diligence contains all relevant information describing the transaction between the trader or operator and the producer at the start of the supply chain.[23] Similarly, it will cover risk management to assess and mitigate risks involved between deforestation and the trading of commodities to the EU.[24]

There are three potential scenarios for monitoring the compliance of due diligence with EU standards. The first involves environmental traceability: QR codes or barcodes can be assigned to batches of commodities produced in the same region to track the supply chain. The second scenario entails European authorities visiting the commodities' place of origin to verify that the products do not come from deforested areas. Lastly, the third scenario relates to the accreditation of certifications recognized by the EU as a means of verifying the legality of due diligence.[25]

In our examination of the literature, we identified several legal issues that could present challenges for the application of the EUDR's due diligence requirements in Brazil. In the following subsections, we will outline the primary controversial legal issues highlighted through our study of the

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commodities and products associated with deforestation and forest degradation and repealing Regulation No 995/2010, OJ L 150, 9.06.2023, pp. 206–247).

[21] "For the purposes of this Regulation, the following definitions apply: [...] 13. 'deforestation-free' means: (a) that the relevant products contain, have been fed with or have been made using, relevant commodities that were produced on land that has not been subject to deforestation after 31 December, 2020; and (b) in the case of relevant products that contain or have been made using wood, that the wood has been harvested from the forest without inducing forest degradation after 31 December, 2020" (Regulation No 2023/115 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 No 995/2010, OJ L 150, 9.06.2023, pp. 206–247).

[22] N.S. Mattos, *A due diligence em direitos humanos e a responsabilidade social corporativa: duas faces da mesma moeda?*, in: A.C.T. Moreira, C.B.A. Bertazolli, D.A. Pamplona (red.), *Atividade Econômica e Direitos Humanos*, São Paulo 2020, p. 44.

[23] By supply chain, we mean the entire network of entities, individuals, and processes involved in the production and delivery of a product or service to the end customer.

[24] M. Köthke, M. Lippe, P. Elsasser, *Comparing the Former EUTR and Upcoming EUDR: some implications for private sector and authorities*, "Forest Policy and Economic" 2023, vol. 157, p. 2.

[25] S.V. Reijn, *A Qualitative Cross-sectional Study...*, pp. 20–21.

EUDR and the selected literature. These include the concept of forest, the role of cooperatives, the differentiated due diligence regime for small and medium enterprises (SMEs), and the risk criteria for coffee production.

3. EUDR criteria for defining forest and its relationship with the concept of deforestation

Understanding the concept of deforestation requires first defining what constitutes a forest. In this context, Article 2(4) of the EUDR defines it as: "land spanning more than 0.5 hectares with trees higher than 5 metres 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."[26] This definition aligns with the meaning of forest used in the Global Forest Resources Assessment of the Food and Agriculture Organization of the United Nations.[27]

The EUDR is scheduled for review one year after its entry into force to perhaps expand the its scope to "other wooded areas." A second review, planned for two years after its implementation, will consider extending the concept of a forest to encompass other ecosystems beyond "other wooded areas."[28] While future conceptual changes are possible, the current framework raises concerns for countries experiencing deforestation in biomes where medium or large trees are not predominant.

Brazil is a country with the second-largest area of forest in the world, with 497 million hectares of forest cover.[29] In spite of the preponderance of tree vegetation in the Amazon Rainforest and Atlantic Rainforest, Brazil is also characterized by four other biomes: Caatinga, Cerrado, Pampa and Pantanal. Nevertheless, the concept of forest covered by Article 2(4) of the EUDR excludes large portions of these biomes, restricting its applicability in regions where deforestation is increasing.

Brazilian coffee AGS is concentrated in the Atlantic Rainforest and Cerrado biomes. Data from 2017 indicate that 654,023 hectares (ha) of coffee

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[26] Regulation No 2023/115 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 No 995/2010 (OJ L 150, 9.06.2023, pp. 206–247).

[27] FAO, Forest Resources Assessment Working Paper 188, 2018, https://www.fao.org/3/I8661EN/i8661en.pdf [accessed on 23.06.2024], p. 10.

[28] S.E.M. Oliveira et al., *The European Union...*, p. 2.

[29] A.B. de Moura et al., *Impactos extraterritoriais...*, p. 8.

were grown in the Atlantic Rainforest; 344,076 ha in the Cerrado; 8,542 ha in the Caatinga; and 186 ha in the Amazon Rainforest. Of the total coffee planted in Brazil and exported to the EU in 2017, 66.34% originated from Atlantic Rainforest regions; 32.51% from the Cerrado; and 1.15% from the Caatinga. The Cerrado biome accounted for approximately one-third of all coffee exports to the European market.[30]

According to Tasso Azevedo et al., 74% of the Cerrado does not fall under the FAO definition of forest and, by extension, is excluded from the EUDR's definition.[31] Most of the Cerrado areas involved in coffee trade relations between Brazil and the EU may not be classified as prohibited deforestation regions. This exclusion is due to the biome's vegetation, which consists primarily of low, twisted trees, shrubs, and grasses that do not meet the criteria outlined in Article 2(4) of the EUDR. It concerns, as the Cerrado is currently, the biome most heavily impacted by deforestation driven by agricultural and livestock farming in Brazil.[32]

We believe that the definition of forest outlined in the EUDR could have unintended consequences for Brazilian coffee cultivation. While it has the potential to reduce deforestation in biomes such as the Atlantic Rainforest, where much of the flora aligns with the definition in Article 2(4) of the EUDR, it may inadvertently increase deforestation rates in the Cerrado. Likewise, revising the regulation is crucial to prevent leakage and ensure holistic environmental conservation in Brazil's coffee production.[33]

The concepts of forest and deforestation defined in the EUDR have extra legal implications for Brazil's coffee sector, since its provisions are not aligned with Law No. 12.651/2012 (Brazilian Forest Code). Brazilian legislation permits legal deforestation, as long as the *Reserva Legal* (RL) and *Área de Preservação Permanente* (APP) requirements are respected. In contrast, the EUDR prohibits any type of deforestation, disregarding the authorizations granted under Law No. 12.651/2012.[34]

[30] Trase, Brazil Coffee Supply Chain, 2017, https://trase.earth/explore/supply-chain/brazil/coffee?chartType=sankey&year=2017&indicator=land_use&dimension=biome&dimension=economic_bloc&economic_bloc=EUROPEAN+UNION [accessed on 23.06.2024].

[31] T. Azevedo et al., *Potential impacts of due diligence criteria on the protection of threatened South American non-forest natural ecosystems*, 2022, https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2023/08/Nota_Tecnica_UE_07.07.2022.pdf [accessed on 23.06.2024], p. 17.

[32] Ibidem, p. 21.

[33] By leakage, in this context, we mean the transfer of deforestation pressure to areas not covered by the current definition of forest established by the EUDR.

[34] A.B. de Moura et al., *Impactos extraterritoriais...*, p. 20.

Article 3 (II) of Law No. 12.651/2012 defines APP as a protected area, whether or not covered by native vegetation, that serves the environmental functions of preserving water resources, landscapes, geological stability, and biodiversity, facilitating the gene flow of fauna and flora, protecting the soil, and ensuring human well-being. In turn, Article 3 (III) defines RL as a part of a property designated for the sustainable use of natural resources, the rehabilitation of ecological processes, and the shelter and protection of fauna and flora. Every Brazilian rural property must maintain area of native vegetation as both a RL and APP, with deforestation permitted only if the minimum percentages established by the legislation are respected.[35]

In addition to the provisions for legal deforestation, Article 3 (IV) of Law No. 12.651/2012 introduces the concept of a consolidated area, defined as rural property with anthropic occupation prior to 22 June 2008. The primary implication of this definition is outlined in §4, Article 59 of Law No. 12.651/2012,[36] which exempts owners and possessors of consolidated areas from environmental liability for infractions committed before the cutoff date established in Article 3 (IV). In other words, Brazilian landowners are not held accountable for illegal deforestation that occurred prior to 22 June 2008.

The EUDR and the Brazilian Forest Code adopt different approaches to banning deforestation. The EUDR prohibits all deforestation, regardless of its legality, on condition that it occurred after 31 December 2020. Nevertheless, Law No. 12.651/2012 a) recognizes the possibility of legal deforestation, provided the preservation rates for RL and APP on rural properties are respected; and b) does not impose liability for illegal deforestation in consolidated areas, including cases where vegetation suppression may have

[35] Lei No 12.651 de 25 de maio de 2012, dispõe sobre a proteção da vegetação nativa; altera as Leis Nos 6.938, de 31 de agosto de 1981, 9.393, de 19 de dezembro de 1996, e 11.428, de 22 de dezembro de 2006; revoga as Leis Nos 4.771, de 15 de setembro de 1965, e 7.754, de 14 de abril de 1989, e a Medida Provisória No 2.166–67, de 24 de agosto de 2001, e dá outras providências (Diário Oficial da União de 28.05.2012).

[36] "§ 4º During the period between the publication of this Law and the expiration of the deadline for the interested party's enrollment in the PRA, and while the commitment agreement is being fulfilled, the owner or possessor cannot be fined for infractions committed before July 22, 2008, related to the irregular removal of vegetation in Areas of Permanent Preservation, Legal Reserves, and restricted use areas" (Lei No 12.651 de 25 de maio de 2012, dispõe sobre a proteção da vegetação nativa; altera as Leis Nos 6.938, de 31 de agosto de 1981, 9.393, de 19 de dezembro de 1996, e 11.428, de 22 de dezembro de 2006; revoga as Leis Nos 4.771, de 15 de setembro de 1965, e 7.754, de 14 de abril de 1989, e a Medida Provisória No 2.166–67, de 24 de agosto de 2001, e dá outras providências, Diário Oficial da União de 28.5.2012).

exceeded the minimum RL and APP thresholds. From this perspective, the EUDR criteria will prevail over those of Law No. 12.651/2012 for Brazilian parties seeking to export to the EU.

4. Role of cooperatives in relation to the definitions of operators and traders set out in the EUDR

Within Brazilian agriculture, 77% of rural establishments meet the legal definition of family farming, which covers around 80.9 million hectares of land.[37] Their leading role is also confirmed when analyzed from the perspective of the coffee AGS. Based on the data from the Brazilian Institute of Geography and Statistics,[38] of the 136,611 agricultural establishments that produced coffee in 2017, 105,936 were run by family farmers, representing 77.54% of the total.

In the Brazilian legal system, a family farmer is defined as an agricultural producer who operates in rural locations and fulfills the following criteria: (i) the property has an area of less than or equal to four fiscal modules; (ii) predominantly family labor is used in economic activities; (iii) the minimum family income percentages established by the Government are observed; and (iv) the operations are managed by the family. Furthermore, Law No. 11.326/2006 broadens the concept of family farming to include foresters, aquaculture producers, extractivists, fishermen, indigenous peoples, and members of quilombola communities who adhere to those criteria.[39]

Although family farmers represent a heterogeneous segment, with modernized producers coexisting alongside more traditional ones facing financial challenges, they remain in a vulnerable position when compared to major Brazilian agribusinesses.[40] Consequently, family farmers usually organize

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[37] IBGE, *Resultados Definitivos da Agricultura Familiar*, 2017, https://censoagro2017.ibge.gov.br/templates/censo_agro/resultadoAGSro/pdf/agricultura_familiar.pdf [accessed on 7.01.2024].

[38] IBGE, *Censo Agropecuário de 2017*, 2017, https://apisidra.ibge.gov.br/values/t/6769/n1/all/v/183/p/all/c829/46302,46303,46304/c218/46502/c12440/112888 [accessed on 7.01.2024].

[39] Lei No 11.326 de 24 de julho de 2006, estabelece as diretrizes para a formulação da Política Nacional da Agricultura Familiar e Empreendimentos Familiares Rurais (Diário Oficial da União de 25.07.2006).

[40] V.A.C. Alves, F. Trentini, *Contratos de Transação de Crédito e a Democratização do Mercado Voluntário de Carbono para a Agricultura Familiar*, "Revista Iberoamericana de Derecho Agrario" 2024 (in print).

themselves into cooperatives[41] aimed at reducing individual transaction costs associated with agricultural activities.[42] As a result, cooperatives have become key players in the Brazilian coffee sector, accounting for 48% of Brazil's coffee production in 2016[43] and managing 58.51% of coffee-growing areas in the state of São Paulo between 2007 and 2008.[44]

Typically, the Brazilian coffee AGS begins with the producer, often a family farmer, who cultivates the commodity and delivers it to cooperatives after harvest. Cooperatives serve as intermediaries between the producers at the start of the supply chain and the coffee importers, providing family farmers with access to a structured sales platform and sharing a portion of the profits from their operations.

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[41] According to Article 4 of Brazilian Law No. 5.764/1971, cooperatives are defined as associations of individuals with their own legal form and nature, of a civil nature, not subject to bankruptcy, established to provide services to their members. They are distinguished from other types of associations by the following characteristics: I – voluntary membership, an unlimited number of members, except when technical limitations prevent the provision of services; II – variability of share capital represented by participation quotas; III – limitation on the number of capital quotas per member, with the possibility of establishing proportionality criteria if deemed more appropriate to achieve the cooperative's objectives; IV – non-transferability of capital quotas to third parties outside the cooperative; V – singularity of voting rights, with central cooperatives, federations, and confederations of cooperatives, except those engaged in credit activities, having the option to adopt proportionality criteria; VI – quorum for General Assembly meetings and decisions based on the number of members, not the amount of capital; VII – Distribution of net surplus from operations in proportion to the transactions conducted by each member, unless otherwise decided by the General Assembly; VIII – indivisibility of the Reserve and Technical, Educational, and Social Assistance funds; IX – political neutrality and non-discrimination based on religion, race, or social status; X – provision of assistance to members and, when stipulated in the bylaws, to cooperative employees; XI – membership area limited to the possibilities of meeting, controlling, conducting operations, and providing services (Lei No 5.764 de 16 de dezembro de 1971, define a Política Nacional de Cooperativismo, institui o regime jurídico das sociedades cooperativas, e dá outras providências, Diário Oficial da União de 20.12.1971).

[42] V.A.C. Alves, *"Minha terra não tem mais palmeira e nem sabiá a cantar": elementos contratuais voltados à democratização do mercado voluntário de carbono para a agricultura familiar* (senior thesis), University of São Paulo, 2024, p. 39.

[43] SEBRAE (Brazilian Service for Supporting Micro and Small Enterprises), *Conheça as vantagens do cooperativismo para o cafeicultor*, 2019, https://sebrae.com.br/sites/PortalSebrae/artigos/vantagens-do-cooperativismo-para-o-cafeicultor,9ebe438af1c92410VgnVCM100000b272010aRCRD#:~:text=J%C3%A1%20em%202016%2C%20as%20cooperativas,Autonomia [accessed on 7.01.2024].

[44] C.L.R. Vegro et al., *Singularidades do cafeicultor paulista cooperado*, 2010, http://www.iea.sp.gov.br/ftpiea/publicacoes/ie/2010/tec6-0110.pdf [accessed on 23.06.2024], p. 2.

Given the prominence of cooperatives in the Brazilian coffee AGS, we must understand their role within the EUDR in which a distinction is made between operators and traders, both of whom are subject to due diligence obligations aimed at mitigating the risk of forest degradation when trading commodities to the European market. An operator is any natural or legal person who sells these commodities and their products to the EU, whereas a trader is any supply chain participant who does not qualify as an operator but makes these products available in the EU.

Even if Brazilian cooperatives export directly to the EU, they shall not be classified as operators under Article 7 of the EUDR. According to this provision, when relevant commodities are imported from entities outside the EU, the first natural or legal person established within the EU to place these products on the European market shall be considered the operator.

Article 7 of the EUDR does not exempt Brazilian coffee cooperatives from complying with its requirements. Cooperatives wishing to continue their trade with the EU shall demonstrate that their commodities and products do not originate from deforested areas. Notwithstanding the fact that compliance with the EUDR is not directly monitored by European authorities, its requirements will be enforced by the operators/traders within the EU. Following the European standards appears inevitable for Brazilian coffee cooperatives, as contracts with importers will require all necessary documentation to demonstrate adherence to the EUDR.

This dynamic will establish different types of obligations: European operators and traders will be bound by the EUDR through a public law relationship (enforced by authorities in the EU), while Brazilian cooperatives will be bound by a private law relationship (through contractual provisions). After all, European authorities shall not intervene directly with Brazilian cooperatives, as doing so would violate the principle of national sovereignty.

We acknowledge that Brazilian coffee producers at the beginning of the supply chain will also be impacted by the EUDR, albeit to a different extent. This is because coffee, which must be cultivated in deforestation-free areas, is typically grown on their own land, while cooperatives primarily serve to organize their family farmer members without engaging in cultivation. Cooperatives can take on the role of supervising and training their members, as well as imposing market restrictions on those who fail to meet the EUDR requirements or provide false information about their crops. Although cooperatives will be directly affected by the EUDR, family farmers at the start of the supply chain may experience indirect impacts, as cooperatives might hold them accountable for compliance with the European standard.

In summary, European operators and traders will be obligated to comply with the provisions of the EUDR because of its cogent nature (public law). Through contractual agreements, they will require Brazilian cooperatives to export coffee produced in deforestation-free areas (private law). In turn, Brazilian cooperatives will demand compliance from their family farmers suppliers, ensuring they maintain deforestation-free land (private law).

5. Differentiated due diligence regime for micro, small and medium-sized enterprises

Aline Beltrame de Moura et al. argue that the primary businesses impacted by the EUDR will be medium-sized and large enterprises operating outside the EU.[45] In contrast, Greenpeace contend that the most affected will be micro, small, or medium-sized enterprises (SMEs) from developing countries exporting to the European market.[46]

The second position appears to prevail over the first, because SMEs lack the technical and economic resources that large companies possess to comply with the provisions of the EUDR. Recognizing that, it includes specific provisions for SMEs aimed at promoting material equality among economic agents and mitigating disproportionate impacts on smaller enterprises. This is reflected in two key aspects: one pertaining to timing and the other to obligations.

The differentiated treatment for SMEs regarding the timeline of compliance with the EUDR relates to its period of force. While its requirements concerning large companies will take effect on 30 December 2025, SMEs will have time until 30 June 2026 to comply. This extended timeline provides SMEs with additional time to gradually adapt to the new provisions for exporting commodities to the EU and to benefit from benchmarking by observing the practices already implemented by large businesses, which will have been operating under the EUDR for six months.

Another specific provision for SMEs pertains to the obligations they must meet compared to large companies. Article 4(8) of the EUDR exempts SMEs from conducting a new due diligence process for products derived

[45] A.B. Moura et al., *Impactos extraterritoriais...*, p. 12.

[46] Greenpeace, *Civil Society Position Statement on the Proposed EU Regulation on Deforestation-free Products*, 2021, https://www.greenpeace.org/static/planet4-eu-unitstateless/2022/02/bce82039-2022-02-03-civil-society-statement-eu-commissiondeforestation-law.pdf [accessed on 23.06.2024], p. 3.

from commodities that have already undergone this audit and have declarations submitted to European authorities. Instead, SMEs need only to provide the reference number of the previous due diligence, eliminating the requirement to prepare a new declaration. This procedure encourages SMEs to adhere to the EUDR by reducing their compliance burden compared to large enterprises.

Doubts arise regarding the legal concept of SMEs under the EUDR, as the latter does not explicitly define them in its text but instead refers readers to Directive EU 2013/34.[47] Article 3 of this Directive defines SMEs as undertakings that, at the balance sheet date, do not exceed the limits of at least two of the criteria outlined in Table 2.[48]

Table 2. Categories of SMEs according to European legislation

Categories	Balance sheet	Net turnover	Average no. of employees
	in €		
Micro-enterprises	350,000	700,000	10
Small enterprises	4,000,000	8,000,000	50
Medium-sized enterprises	20,000,000	40,000,000	250

Source: own elaboration based on Article 3 of EU Directive 2013/34.

Unlike EU Directive 2013/34, the Brazilian legal system applies its own criteria for classifying SMEs, as established by Complementary Law No. 123/2006. It only considers gross revenue to categorize undertakings as micro or small enterprises, using different parameters from those in EU Directive 2013/34, which include balance sheet totals, net turnover, and average number of employees during the financial year. Notably, Article 3 of Complementary Law No. 123/2006 does not address medium-sized enterprises, focusing solely on micro and small ones. According to it, enterprises

[47] Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC (OJ L 182, 29.06.2013).

[48] Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC, text with EEA relevance (OJ L 182, 29.06.2013, pp. 19–76).

Table 3. Categories of SMEs according to Complementary Law No. 123/2006

Categories	Gross revenue* (≈€)	Gross revenue (R$)
Micro-enterprises	62,000	360,000
Small enterprises	830,000	4,800,000

* Amounts converted using the exchange rate of June 23, 2024.

Source: own elaboration based on Article 3 of Complementary Law No. 123/2006.

earning gross revenue equal to or less than the amounts set out in Table 3 for each calendar year qualify for these categories.[49]

It is evident that Brazilian and European legislations apply different criteria for enterprise classification, making comparisons challenging without the necessary accounting conversions, particularly since gross revenue is not a variable considered under EU Directive 2013/34. In consequence, Brazilian agro-exporters must consider the European parameters when complying with the EUDR, as EU Directive 2013/34 will take precedence over those outlined in Complementary Law No. 123/2006 for exports to the EU.

These provisions will apply only to Brazilian companies that are already kind of established within the EU, allowing them to be classified as operators under the EUDR framework (Article 7). Brazilian coffee cooperatives, acting just as intermediaries between family farmers and the European market as discussed in the previous subsection, will not be directly affected by the differentiated due diligence treatment for SMEs. Rather, their obligations will depend on the size of the operators and traders involved. For instance, if the cooperative is small-sized but sells to a large operator, their obligation to provide more comprehensive due diligence under the EUDR will likely lead to stricter compliance demands on the cooperative, enforced through contractual provisions.

6. Risk criteria for coffee cultivation in Brazil

Article 16(3) of the EUDR establishes that European authorities will adopt a risk-based approach to identify import controls to be conducted.

[49] Lei Complementar No 123 de 14 de dezembro de 2006, institui o Estatuto Nacional da Microempresa e da Empresa de Pequeno Porte; altera dispositivos das Leis Nos 8.212 e 8.213, ambas de 24 de julho de 1991, da Consolidação das Leis do Trabalho – CLT, aprovada pelo Decreto-Lei No 5.452, de 1º de maio de 1943, da Lei No 10.189, de 14 de fevereiro de 2001, da Lei Complementar No 63, de 11 de janeiro de 1990; e revoga as Leis Nos 9.317, de 5 de dezembro de 1996, e 9.841, de 5 de outubro de 1999 (Diário Oficial da União de 15.12.2006).

They will assess risks associated with violations of the zero-deforestation standard, considering factors such as the characteristics of each commodity, the exporting country's history and the conclusions of expert groups from the European Commission. However, the EUDR does not specify the criteria that will be used to develop the risk map, which will serve as the foundation for inspections by customs and related agencies.

For Brazilian coffee AGS, the ideal risk assessment scenario would involve analyzing risk on a dual axis: by commodity and by country, considering the unique characteristics of each commodity and nation when classifying under European criteria. Such a method is justified for Brazilian coffee due to its comparatively low deforestation rate relative to other commodities covered by the EUDR.[50] Therefore, the Brazilian coffee sector would benefit from its sustainable practices, distinguishing it from activities with higher environmental impacts.

The study by Susan E.M. Oliveira et al. aimed to assess the likelihood of commodities produced in Brazil meeting the zero-deforestation criteria established by the EUDR. Their analysis considered: i) the total volume of Brazilian production exported; ii) the share of Brazilian exports to the EU and UK relative to total exports; iii) the presence of voluntary sustainability standards; iv) the prevalence of family farming; v) the absolute deforestation rate; vi) the relative deforestation rate. Based on these factors, each commodity was classified into one of the following probability categories: very low (0–0.2), low (0.2–0.4), moderate (0.4–0.6), high (0.6–0.8), or very high (0.8–1.0).[51]

According to the findings of Oliveira et al., Brazilian coffee cultivation achieved the highest score on the EUDR compliance probability index, registering a value of 0.89 (very high). This outcome is attributed to the coffee sector's low absolute deforestation rates compared to other commodities. While cattle production accounts for 61.20% of deforestation in Brazil, soy for 13%, and timber for 11.30%, coffee contributes with only 0.10% to deforestation practices.[52]

A similar conclusion was reached by Luiz H.E. Cosimo in his analysis of the deforestation risk associated with commodities imported by the EU. He found that, between 2005 and 2018, the countries exporting green coffee with the highest deforestation rates due to coffee cultivation were Honduras (21.40%), Peru (13.30%), Côte d'Ivoire (11.50%), Colombia (11.40%), and

[50] S.E.M. Oliveira et al., *The European Union...*, p. 7.

[51] Ibidem, p. 5.

[52] Ibidem, p. 7.

Uganda (7.20%), collectively accounting for approximately two-thirds of total deforestation linked to coffee production. Despite being the world's largest producer of coffee, Brazil has low deforestation rates in regions dedicated to coffee cultivation.[53]

The Brazilian coffee AGS has a high probability of compliance with the EUDR, with Brazilian coffee cultivation likely to be classified as low risk for deforestation. Nevertheless, European authorities have not yet provided clear guidelines on how they will conduct the risk analysis – specifically whether it will consider commodities and countries individually or collectively. To enhance market transparency and predictability, the EU must offer greater clarity regarding its deforestation risk classification methodology, addressing the current omissions in the EUDR framework.

Conclusion

As discussed above, the EUDR will impose a series of obligations on agro-export agents seeking to trade with the EU. It will mandate due diligence to mitigate deforestation risks, prohibiting cattle, palm oil, soybeans, timber, cocoa, rubber, coffee and their products cultivated in areas of forest degradation from entering the European market.

Among the various commodities exported to the EU, Brazilian coffee cultivation stands out, with 24.99% of all coffee harvested in Brazil in 2023 destined for the European market. Family farming, at the first stage of production, and cooperatives, serving as the primary intermediaries between this segment and the EU, are responsible for more than half of the coffee sold by Brazil. In this context, the EUDR may impact different points of the Brazilian coffee AGS chain, indirectly affecting the initial production phase and directly influencing the intermediate and final export stages.

Whilst the EUDR is currently in its *vacatio legis* period at the time this article was submitted, several questions have already arisen regarding its impact on the Brazilian coffee sector. Aspects such as the definitions of forest create uncertainties for compliance with the EUDR provisions, since its concept of deforestation excludes a significant portion of the Cerrado biome. Moreover, the EUDR direct impact on cooperatives, the classification of SMEs for granting a differentiated due diligence regime, and the unde-

[53] L.H.E. Cosimo, *Voluntary sustainability standards to cope with the new European Union Regulation on deforestation-free products: a gap analysis* (master's thesis), Università degli Studi di Padova, 2023, pp. 104–110.

fined criteria for determining deforestation risks also present controversial points.

The EUDR pose challenges for the Brazilian coffee AGS, particularly due to the ongoing uncertainties surrounding the application of European standards. However, Brazil's advanced environmental framework offers an opportunity not only to comply with the EUDR but also to enhance its competitive position in the global coffee market. Instruments such as the *Cadastro Ambiental Rural* (CAR) and the *Programa de Regularização Ambiental* (PRA) may play a pivotal role in this process.

The CAR is a nationwide electronic public registry, mandatory for all rural properties, designed to integrate environmental information on rural properties and possessions. Its purpose is to form a georeferencing database for control, monitoring and combating deforestation. On the other hand, the PRA consists of a set of actions developed and implemented on rural properties to ensure compliance with legal environmental requirements, such as the minimum thresholds for RL and APP. By centralizing environmental information, both CAR and PRA enable the identification of property locations and land use, facilitating the demonstration that agricultural production occurs in compliant areas without the conversion of native vegetation after the EUDR's cutoff date.

Although the EUDR poses significant challenges to the Brazilian coffee sector, the use of tools such as CAR and PRA to comply with the European standards provide a strategic advantage over competitors whose environmental legislation and technology are less developed. With relatively low deforestation rates compared to other coffee-producing countries, Brazilian coffee exporters should be prepared to meet the EUDR's sustainability requirements.

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