AGRICULTURAL POLICIES IN DEBATE

# Brazilian Stakeholder assessment of the European Deforestation Regulation

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**ABOUT THIS STUDY**

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# Table of contents

# 1. Introduction

On June 29th, 2023, legislative resolution "2021/0366(COD)", more commonly known as the European Union Deforestation Regulation (EUDR) entered into force. At the core of the regulation, which will apply from December 30th, 2024, is the goal of curbing deforestation produced by a range of commodities deemed to be closely associated with global forest loss, such as cattle, cocoa, coffee, palm oil, soya, wood, rubber, charcoal and printed paper products.

The initial announcement of the proposal had been made in 2019 as part of the communication by the commission "Stepping up EU Action to Protect and Restore the World's Forests". The commitment stated within the proposal was subsequently reinforced in the EU Green Deal, the Farm to Fork Strategy, and the Biodiversity Strategy. Compared to previous regulations, such as the EU Timber Regulation (EUTR), the EUDR adopts an unprecedented scope that reaches beyond the legislation in many producer countries through its strict zero-deforestation demands (Duran & Scott, 2021). The law is thereby bound to have significant effects beyond the EU borders, affecting production and supplier networks in countries exporting to the Union. The EUDR is the most recent and far-reaching regulation within a wider movement towards establishing mandatory due diligence requirements to avoid environmental and social harm associated with the production and import of Forest Risk Commodities (FRCs) (Rudloff, 2022). The law has enjoyed strong support within European civil society and scholarly communities (Brandt et al. 2022; Client Earth, 2021; Partiti 2020; Bellfield et al. 2022; CDP 2022; Massaranti et al. 2022). Some pleas have nonetheless been made to expand the scope of the regulation to new biomes and products, to increase its human rights focus, and to include the financial sector within the scope of its due diligence requirements. The regulations within the law are expected to become effective 18 months after it enters into force, by the end of 2024.

In this report, our objective is to assess the effects that the EUDR can be expected to have in relation to the Brazilian soy and beef production chains. As some of the main drivers of land-use change in Brazil, both products are covered by the law and are also two of the main Brazilian export commodities. We thereby seek to assess seven central research questions that the EUDR raises regarding its impact in relation to Brazil:

- RQ1: Have Brazilian actors been consulted in the elaboration of the EUDR?
- RQ2: Which impact will the EUDR have on soy and beef-driven deforestation in Brazil?
- RQ3: Will producers refrain from deforestation because of the EUDR?
- RQ4: How will the implementation of the EUDR affect the logistics of soy and beef sectors?
- RQ5: Which actors will absorb the costs and potential benefits generated by the EUDR?
- RQ6: Will the EUDR lead to the global dissemination of mandatory deforestation due diligence regulation?
- RQ7: Which alternative measures could complement the EUDR to ensure minimization of socio-economic costs and the largest possible sustainability gains?

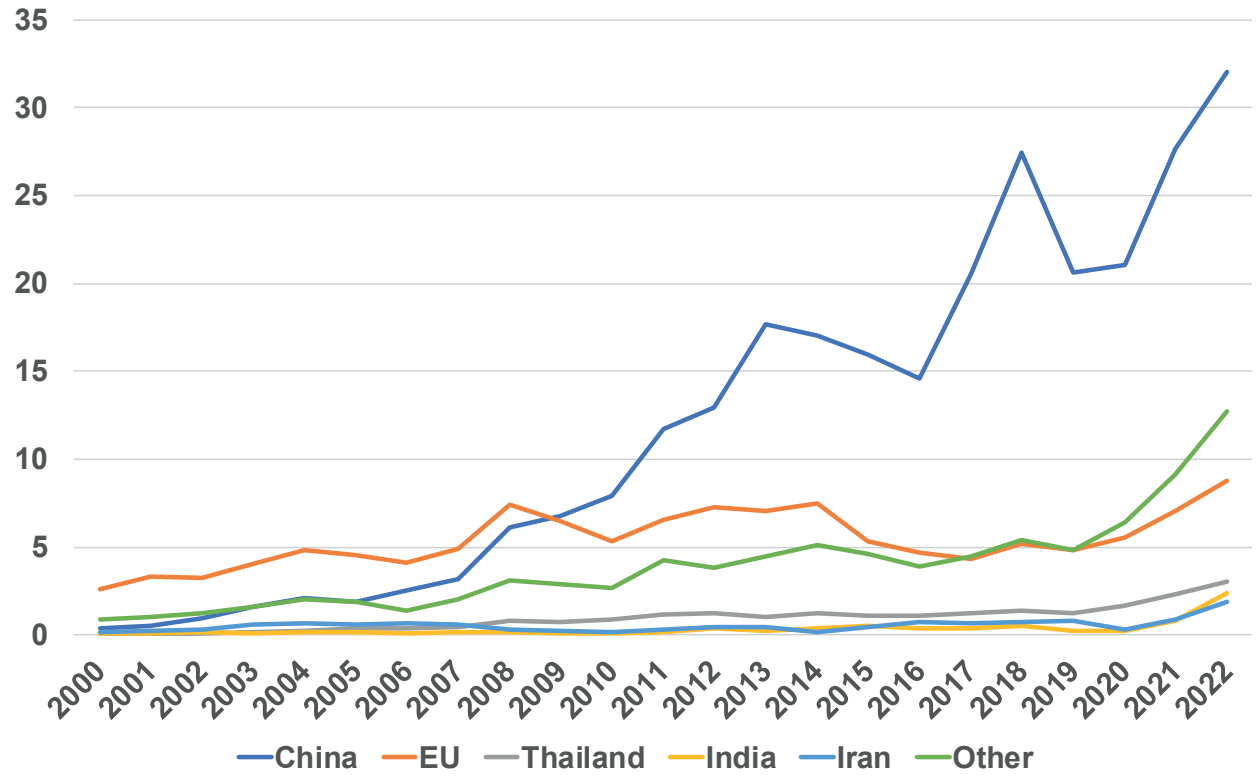
In this report, we adopt a propositive approach, according to which we aim to assess the likely implications and potential for future calibrations of the EUDR, rather than discussing its fundamental reason to be. Our general aim is to understand how the challenges and opportunities presented by the EUDR can be managed to produce the greatest environmental, economic, and social benefits while averting negative consequences.

**Our methodological approach** is based on a collection of assessments from key stakeholders in relation to soy and beef chains in Brazil. We thereby seek to understand the likely consequences of EUDR implementation in relation to Brazil through a systematized review of statements from leading practitioners, who either 1) have been directly engaged in the deliberations surrounding in the elaboration of the law, 2) are placed in a central position to manage the process of adaption to the law in Brazil, or 3) have in-depth knowledge in relation to the key issues that will define the regulation in a Brazilian context. The 16 interviews conducted encompassed 2 interviewees from European NGOs, 4 Brazilian NGO representatives, 1 Brazilian diplomat, 2 consultants, 1 logistics specialist, 1 smallholder producer, and 5 agro-industry representatives. The 16 interviews conducted in the process of this research thereby approximates the number of 15 ± 10 interviews that combined both a reasonable scope of participants and a sufficiently detailed analysis of the answers (Brinkmann & Kvale, 2015). The interviews have been conducted according to a semi-structured format, which has permitted us to collect assessments of the issues related to our research questions. In cases when answers have converged around similar perceptions of the probable outcomes of EUDR, this has permitted us to highlight these outcomes as highly likely/expected. All interviews were conducted under personal and institutional anonymity, and consent was given to record and/or use the information obtained.

# 2. An overview of Brazilian agriculture and deforestation

In recent years, a general growth trend in Brazilian agricultural exports to China can be observed. As can be read from Figure 1, which shows the export destinations of the Brazilian soy complex, exports to China have risen rapidly reaching more than US$ 30 billion by 2022. Conversely, exports to the EU have been oscillating in the last ten years at a level between US$ 5-9 billion. More recently, sales to other international buyers, such as Thailand, India, Iran and others have also grown.

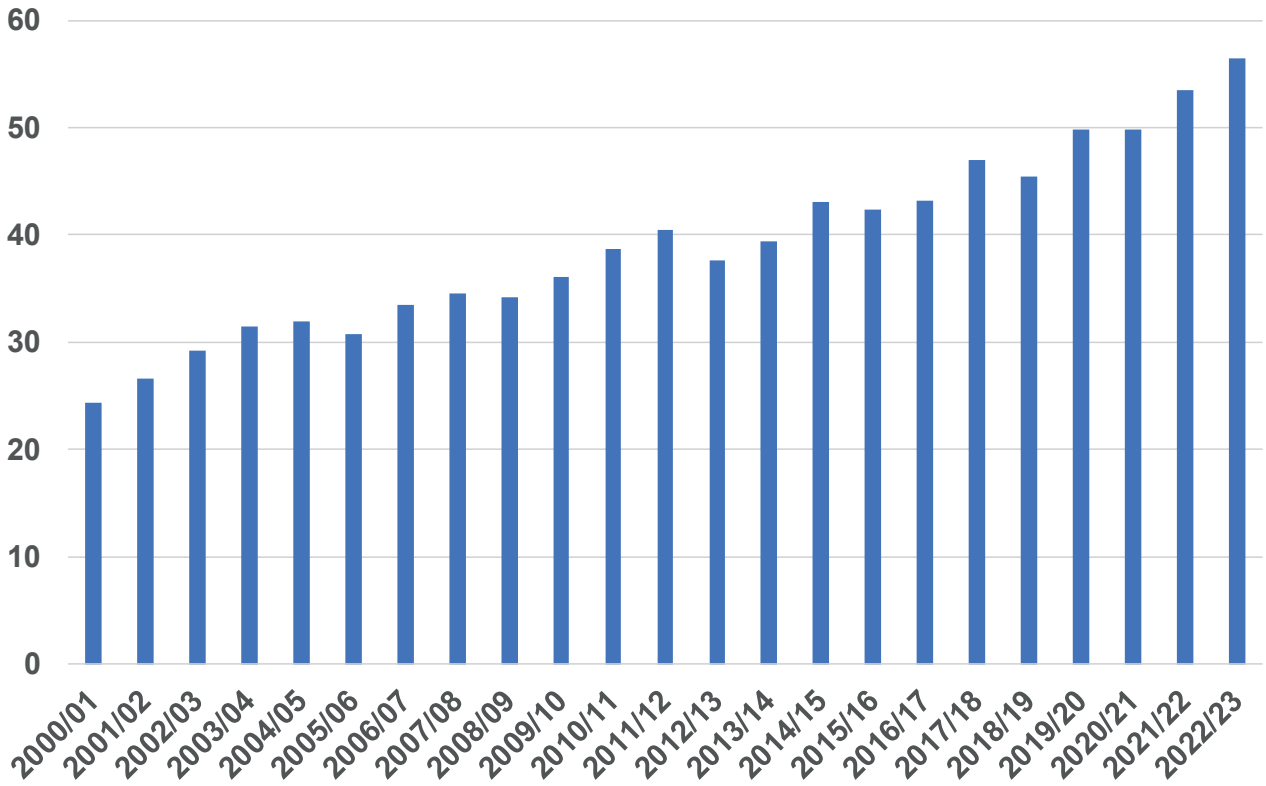
**Figure 1 –** Brazilian soy complex exports by main destinations, in US$ billion, from 2000 to 2022




Source: Agrostat (2023). Note: soy complex includes soybeans, soybean´s meal and oil

Between the crop years from 2000/01 and 2022/23 (Figure 2) Brazilian domestic soybean consumption has grown firmly from 24.3 to 56.4 million tons.

**Figure 2 –** Brazilian soybean domestic consumption in million tons from 2000/2021 to 2022/2023 crop year

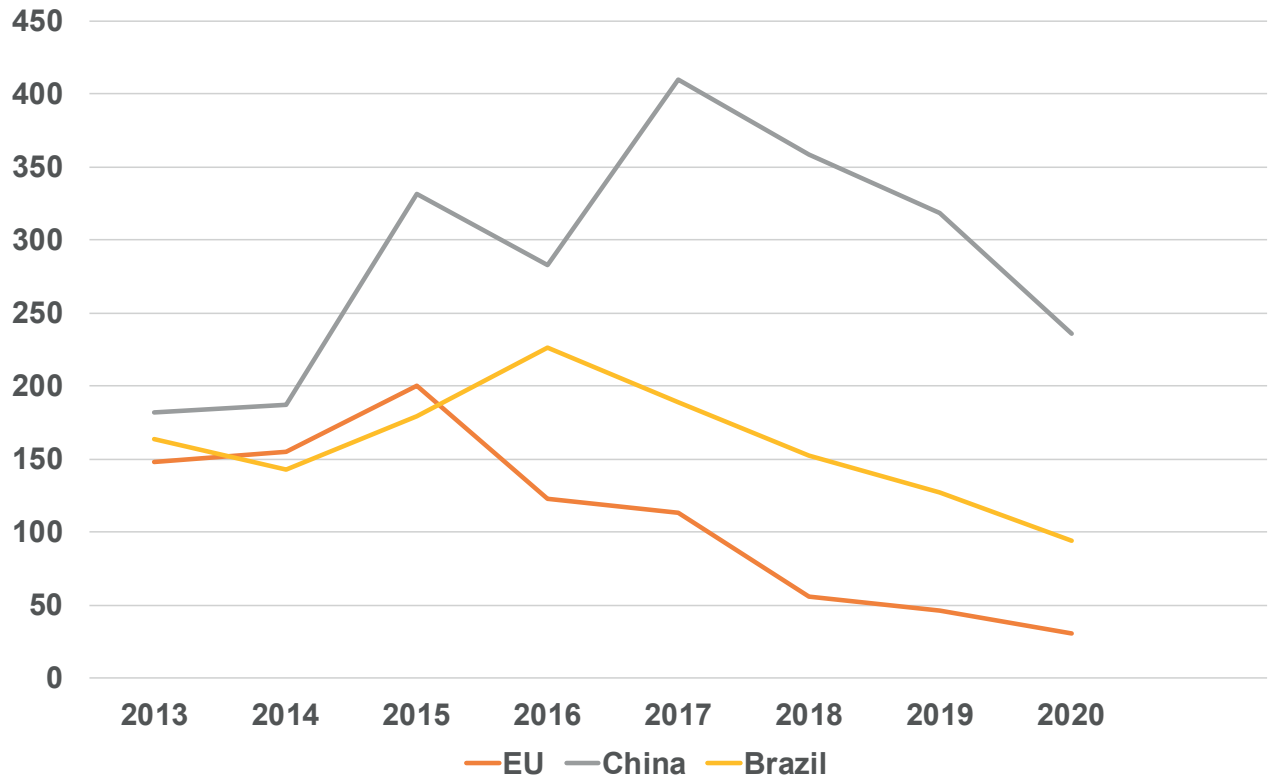



Source: USDA (2023)

Quantitative estimates have also been made of the deforestation risk of flows of soybeans from Brazil to different consumer markets. Figure 3 shows the deforestation exposure[1] of these flows of soybeans, directed, respectively at the Chinese, domestic, and EU markets. The data suggests a significant drop in the deforestation exposure of EU soy imports, from 148.000 ha. in 2013 to 31.000 ha. in 2020. Conversely, the deforestation exposure of soy flows to China has grown from 182.000 ha. in 2013 to a peak of 410.000 ha. by 2017, and thereafter dropped to 236.000 ha. in 2020. The deforestation exposure of domestically consumed soy has fallen from 164.000 in 2013 to 94.000 by 2020.

1 Deforestation exposure can be considered as the "sum of the total soy coverage occupying areas recently deforested that is allocated to the soy supply chain". Recent deforestation refers to the five-year period prior to the year in question.

**Figure 3 –** Deforestation exposure of Brazilian soy area according to its destination, in thousand hectares, from 2013 to 2020



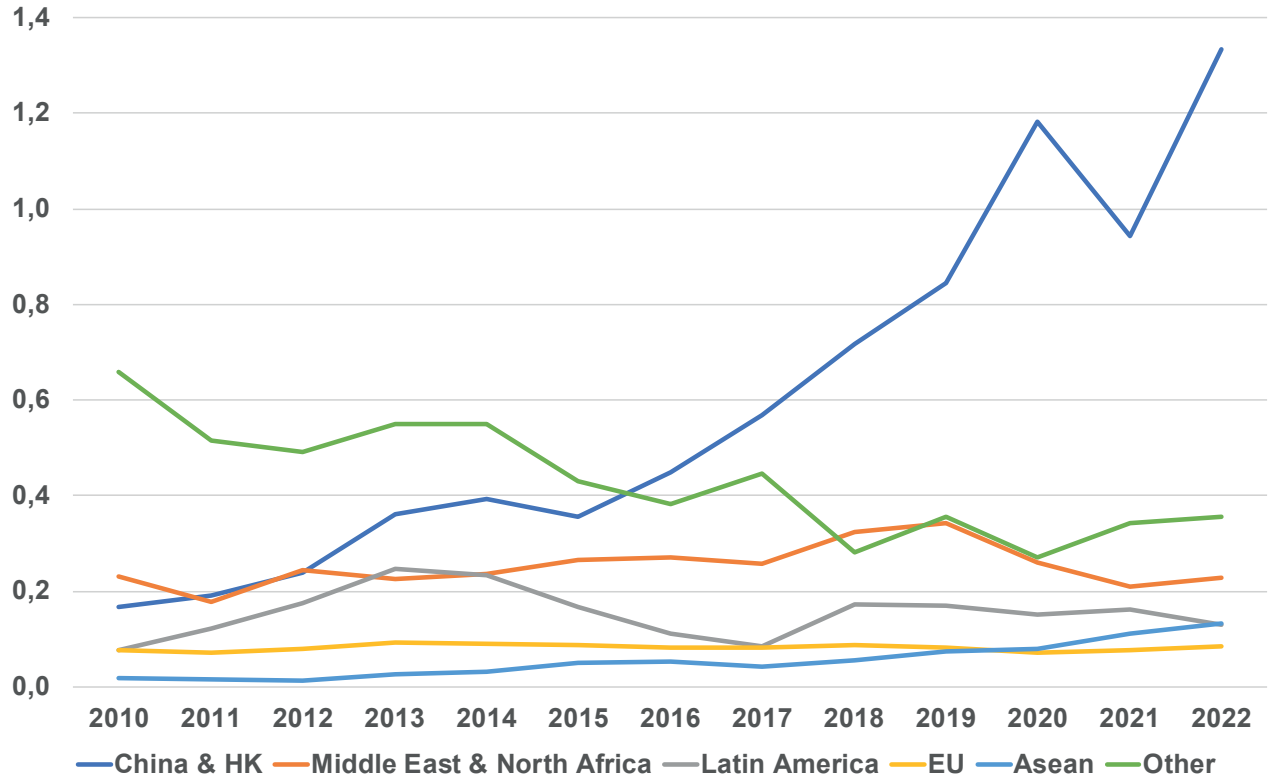

Source: Lathuillière et al. (2022)

Fewer data are available on Brazilian beef production and deforestation exposure year on year. The most recent numbers from the Trase database are from 2017. In terms of deforestation exposure, the EU accounted for 24.423 ha. while China and Hong Kong imports represented 202.744 ha. At that year the EU ranked sixth amongst the international importers of Brazilian beef, accounting for a volume of 80.769 tons. China (including Hong Kong) was the largest international buyer, accounting for imports of 567.543 tons[2]. According to data from the Brazilian Ministry of Agriculture and Livestock, in 2022, these rankings remain largely unchanged (Figure 4). In the Brazilian beef cattle chain, around 70% of production is destined for the domestic market (Figure 5).[3]

2 There is a trade flow of Brazilian meat whose destination is China, but which passes through Hong Kong.

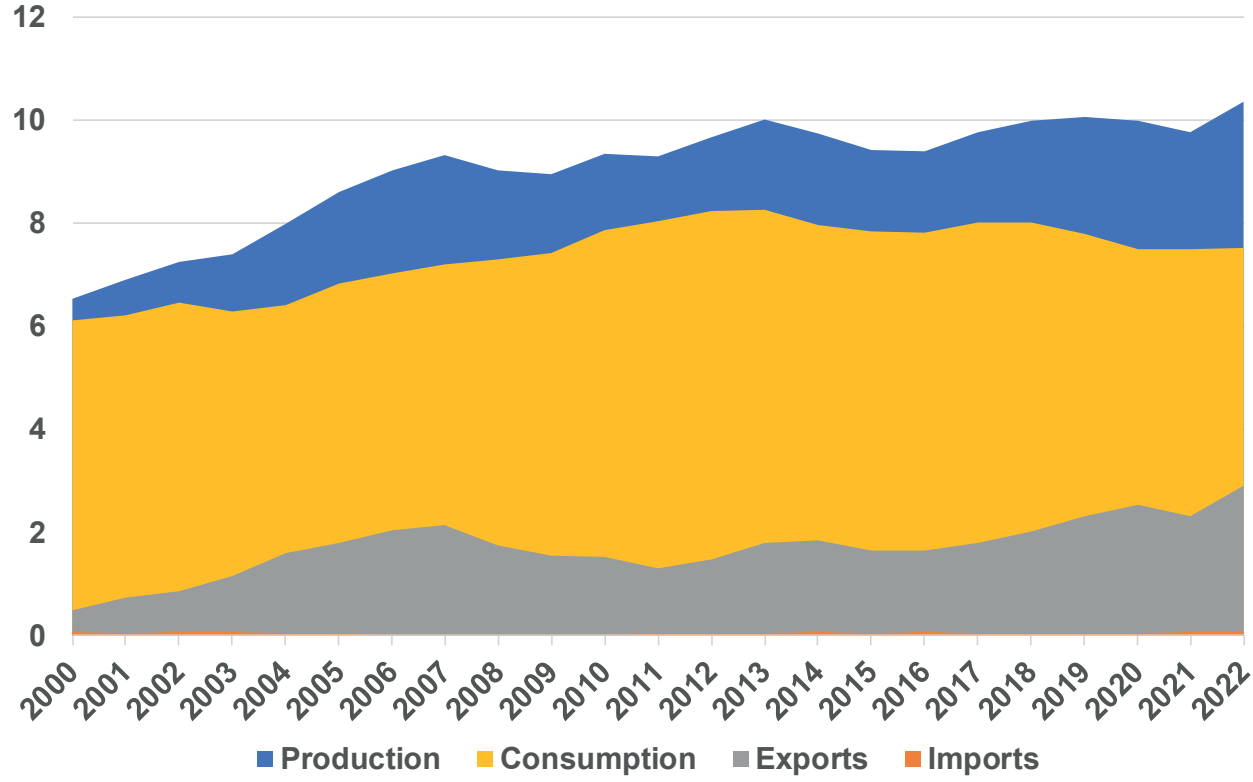
3 A slight modification has been made in the numbers for beef exports compared to the version of this paper that was released on september 20th, 2023.

**Figure 4 –** Brazilian main destination of beef exports, in million tons, from 2010 to 2022




Source: Agrostat (2023)

**Figure 5 –** Brazilian beef historical evolution of production, consumption, exports and imports, in million tons, from 2000 to 2022




Source: USDA (2023)

# 3. Expert Assessments

## RQ1: Consultation of Brazilian actors

A crucial factor in defining how the EUDR will be received in producer countries, such as Brazil, regards the degree to which these countries have been involved in the consultation process during the legislative formation. In very important ways, the EUDR differs from previous legislative actions, notably, regarding its "above-the-law" character. The law thereby presents conservation demands which in the case of Brazil exceed existing legislation. It has also drawn attention because of the highly assertive manner it has been advanced by European institutions, which has nurtured characterizations of it as a 'unilateral' regulatory move (Berning & Sotirov, 2023; De Ville et al. 2023). Assessing the degree of inclusion/exclusion of producer countries in the formulation of the EUDR could help to support an understanding of the potential deficiencies of the regulation, and possibly aid future efforts to remedy such shortcomings (see RQ7). In this section, we therefore treat **research question 1** relating to whether **Brazilian actors have been consulted in the elaboration of the EUDR?**

The EUDR has been defined in a context in which both public and private actors have fallen short of meeting commitments to decouple the production of the so-called Forest Risk Commodities (FRCs) from deforestation. In the New York Declaration on Forests (2014) and the Amsterdam Declaration (2015), European countries have stated their commitment to support private sector goals of eliminating deforestation caused by FRCs, such as a beef and leather, palm oil, paper and pulp, soy, cocoa, and rubber no later than 2020. However, despite the commitment from large private actors in the soft commodity sector, companies have been unable to meet this deadline (Haupt et al. 2020; Lambin et al. 2018; Rogerson 2017; SU 2017).

In the specific case of the Brazilian soy sector, despite the increasing adherence to voluntary zero-deforestation commitments (ZDCs), these measures have not had any substantial effect (Ermgassen et al. 2020). Although a range of voluntary initiatives have been adopted within the Brazilian beef sector, it remains a key driver of deforestation in the country (Ermgassen 2020; França et al. 2021). Combined with the radical anti-environmental rhetoric from the Bolsonaro administration (2019-2023) and increasing deforestation

rates during his tenure, this nurtured a European perception of Brazilian authorities' unwillingness to tackle deforestation. As highlighted by interviewees from both the European civil society and from the Brazilian soy industry, the EUDR thereby appears to have been strongly motivated by the aim to confront exposure to deforestation in EU imports from Brazil. Whether the EUDR is compatible with existing trade rules has been a point of discussion (Capuzzi, 2023). However, if due diligence regulations for placing FRCs on the EU market are tailored in a non-discriminatory way, WTO compatibility will likely not pose a significant obstacle (Henn, 2021; Rudloff, 2022).

Beyond the debate concerning WTO compatibility, an important factor in defining how the EUDR will be received in Brazil relates to the degree of consultation made with Brazilian stakeholders during the law's formation. The inclusion of perspectives from actors in producer countries may be important to "enable regulations that are legitimate, context-sensitive, effective, and follow the "do-no-harm" principle" (Schilling-Vacaflor & Lenchow, 2021). The elaboration of the EUDR has reached an extremely high degree of salience within the European public. The NGO community was very engaged in seeking to create public pressure for the legislation to confront emissions embodied in imports. The Open Public Consultation made by the Commission thus led to the submission of more than 1.2 million responses, making it the second-largest in the history of the EU (EC, 2021). European business actors and multistakeholder initiatives were also strongly engaged. Conversations with NGOs suggest that the EUDR eventually reached a definition of forest degradation biased strongly in favor of the European timber industry, which also had to be covered for the law to be considered non-discriminatory.

Despite the ample consultation process, a general perception amongst Brazilian public, industry, and civil society actors interviewed is that the EUDR in its formulation process and final elaboration has shown little attention to voices from Brazil. A Brazilian submission was made in the public consultation process, within which the issues that it believed the legislative draft did not contemplate were highlighted. However, a Brazilian diplomat stresses how attempts at dialogue with EU counterparts were met with closed doors, and that efforts to arrange meetings with DG Agro and DG Envi were rejected,[4] "At no moment was there any attempt to listen, to seek dialogue with producers, and there still isn´t". An executive from the soy industry also outlines a similar picture,

4 We refer to the Directorate-General for Agriculture (DG Agro) and the Environment (DG ENV) of the European Commission, two of more than 40 Directorates-General and services that make up the European Commission. The DGs are policy departments, which are responsible for develop, implement and manage EU policy, law, and funding programmes.

stressing the lack of access to the EUDR legislators, as well as the "Eurocentric" character of the law. Attempts by the Brazilian soy industry to influence the law were subjected to strong critique from European environmental NGOs, as reflected in a Greenpeace report from 2021 entitled 'Sabotage: How Companies Lobby Against EU Protection of the World's Forests' (Greenpeace, 2021). Apart from complaints from Brazilian public actors and business, the lack of inclusion of perspectives from producer countries, such as Brazil, is also mentioned by different Brazilian NGO representatives. This is reflected in an observation of the law as a European "imposition". Another interviewee from an environmental NGO stated his concern that such unilateralism and lack of a strong dialogue with producer countries eventually could weaken its effect.

More broadly, part of the Brazilian concerns relates to fundamental divergences about predominant European sustainability conceptions within the field of agriculture, and the EU's attempts to internationalize them. This was also expressed in parallel debates within the United Nations Food Systems Summit, in which Brazil made a strong case for alternative sustainability conceptions within the agrifood sector to those defended by the EU. Brazil has also defended FAO as the appropriate site for these debates and stressed the importance of a stronger focus on the agricultural sector as a means for carbon sequestration rather than only as a source of emissions.

A key issue of contention regarding the EUDR concerns its "above-the-law" character, which is grounded in a deforestation cut-off date of December 2020. FRCs produced in forested areas cleared either legally or illegally after this date will not be permitted entry to the EU market. In that regard, the EUDR differs fundamentally from the EU Timber Regulation, as the latter adopts only home country legislation as the benchmark for permitting deforestation. Going beyond the legality criterion has been advocated by voices highlighting how states in producer countries often relax legislation to accommodate agribusiness interests. According to that perspective, a purely legality-based criterion could provide an incentive to loosen regulation to ensure producers' access to the EU market (Partiti, 2021).

The fact that the EUDR rules out both legal and illegal deforestation has nonetheless been met with harsh criticism from both Brazilian public and private actors. This is strongly reflected in a statement from an interviewee in the soy sector, "A question that worries us a lot, and which disappoints us, is the question of legal and illegal. Dude[!] it's a matter of national sovereignty [!]. I'm not going to Germany to tell the Germans

that I don't agree with the law they passed in the Congress there". A similar perspective is presented by a Brazilian diplomat:

> *"There is a total disdain for domestic legislation in producer countries. Totally. Total disinterest in standards other than their [EU's] own. And that's the problem. Because it is an indirect attempt to use community legislation - and therefore, almost national - to create international legislation, fleeing the international debate. And that's the problem."*

Regard for national sovereignty and existing domestic legislation thereby stand as a main point of critique from both Brazilian foreign policymakers and private sector executives. This critique appears to be rooted in economic concerns, but also in a principled belief in Brazilian legislation as the main legitimate tool for conservation and land use regulation. A Brazilian diplomat thus stresses similar deforestation legislation under development in the United Kingdom as much more palatable for Brazil, as it refers to the legality criterion, "there you go; that settled our problem[!]".

An interviewee from a Brazilian NGO nonetheless underscores certain problems related to reliance on the legality criterion. Thus, although this approach may be less politically controversial, defining exactly what should be viewed as compliant with domestic legislation is not always simple[5]. Moreover, the strong differences in terms of relevant domestic legislation across countries further complicate the use of the legality criterion as a common baseline. For example, Argentinean soy farmers face much laxer regulation than Brazilian producers. Such situations could create pressures for the relaxation of legislation in some producer countries with more robust regulation within this field. Another NGO representative underscores the strong existing doubts in producer countries about how to apply the criteria for legal adherence within the EUDR, given each specific domestic regulatory context, and stresses how reliance on non-official data could further accentuate such uncertainties.

**In summary**, the EUDR appears to respond to long-standing commitments made both by public and private actors in the EU to decouple the consumption of FRCs from global

5 Although the Forest Code is a public policy that seeks to align agricultural growth and natural vegetation conservation in Brazil, the process of environmental compliance is initiated by the farmers themselves and wait for the validation of the environmental authority. However, some of the devices outlined in the Forest Code lack sufficient guidance or regulation to be fully implemented (Chiavari et al. 2023). Moreover, the self-declaratory nature of this regulation also means that many territorial claims from rural producers overlap with conservation zones or indigenous lands.

deforestation. In doing so, the law applies an unprecedented ample and deep scope, with substantial reverberations in producer countries. Although the elaboration of the EUDR has been marked by a very high degree of public salience and participation in the EU, Brazilian key stakeholders have expressed the perception of not having been consulted in any meaningful way. This situation is likely to entail frictions within soy chains, and at the bilateral level, which could affect the implementation process. Although the change in administration from Jair Bolsonaro to Lula da Silva in early 2023 presented a much brighter backdrop for EU-Brazil environmental cooperation, Brazilian grievances about the EUDR are grounded in deep-rooted concerns about national sovereignty and export interests that extend beyond the policies of specific governments. A Brazilian loss of faith in the EU as a reliable partner within the agricultural field could thereby accelerate the ongoing strategic reorientation towards East Asia, and particularly China, within different commercial and political domains.

## RQ2: Effect on deforestation

The most crucial question related to the EUDR regards the effect it will have in decreasing deforestation in producer countries, such as Brazil. This aim is stated in the preamble to the legal text in terms of the ambition to "effectively combat deforestation and forest degradation, and to promote deforestation-free supply chains" (EUDR, Pmbl. 41). In this section, we therefore assess **research question 2,** asking **which impact the EUDR can be expected to have on soy and beef-driven deforestation in Brazil?**

Despite the declared goal to diminish deforestation in countries supplying the EU, the EUDR legal text is not very specific about the presumed causal relations that would lead to this result. This is also reflected in the academic and gray literature revised for this report, which often engages more with discussions about the potential expansion of the scope of the law. The Theory of Change (ToC) according to which a change in EU sourcing practices would lead to a decrease in deforestation rates is thereby often implicit and based on the presumption that a drop in existing EU deforestation exposure would lead to the same decrease in total deforestation in sourcing regions.

Our conversations with actors from the soy sector, as well as NGOs engaged with sourcing issues nonetheless reflect a general, - and almost unanimous - perception that the EUDR at best will have a very limited effect on deforestation in the current Brazilian context. Explanations presented to substantiate this claim converge around circumstances

related to the production and logistics structure of contemporary Brazilian soy and beef production, making it unlikely that incentives reach producers and influence their decisions about whether to deforest. With specific regard to soy, parts of the explanation rely on the diminishing share of soybeans that are planted in recently deforested areas. This means that the amount of soy that is non-compliant with the EUDR is estimated to be very small, but that the logistical challenge of separating it from compliant soy is substantial. As highlighted by an employee from an NGO, "It will be very costly to implement, it will create bureaucracy, it will increase friction in the international market, it will probably increase the price of the product in Europe [...] and it will be a lot of work for a small result".

The main reason highlighted by our interviewees that the EUDR appears unlikely to affect deforestation dynamics is that the relatively low European market share of 14% of Brazilian soy export value in 2022 does not constitute sufficient leverage to spur conservation incentives amongst producers. As stated by an NGO employee, "My overall assessment is that [EUDR] is very welcome, but in the way it is being structured, it may not result in the expected effects". Responding to the EUDR at the logistical level through segregation rather than by adoption of more conservationist production practices appears as a much more probable market reaction. As highlighted by another NGO interviewee, this could have the negative effect of "hiding the problem" as producers segregate compliant from non-compliant soy. This would eventually disarticulate supply chains between the soy frontier regions most exposed to deforestation and the European market. This type of ample segregation would thereby have no effect in terms of improving sustainability in these areas, and possibly even worsen conservation incentives there. As stressed by the interviewee:

> *"There are erroneous philosophical notions behind the law that complicate implementation. One of the things that people forget, is that the actor who deforests is not the same actor who markets and distributes the product. And sometimes, even the actor who deforests is not the same actor who produces on that land. So, a large share of deforestation is due to land invasions, which is then resold to producers... so, incentives and losses, etc. they have to reach the actor who deforests. As it stands, the problem has become a logistical problem, not a deforestation problem. So the trader will not solve the problem by avoiding deforestation; it will solve the problem by rearranging the chain. And the actor who deforests will not suffer losses. The only effective way to end deforestation is to inflict costs, - or benefits - on an actor, or a group of actors who are actually having an impact [...] If the trader knows that if it buys any type of product deriving from deforestation, it will incur losses, that is a policy that works.*

> *As it is, it [the trader] doesn't have that incentive to buy according to deforestation; it has the incentive to segregate deforestation, and that's not the same thing. And then, it basically does not pass this disincentive on to the actor who deforests."*

Although nearly all the interviewees across a wide spectrum of organizations and sectors did not believe that the EUDR would have a significant short-term effect on deforestation, an executive from the soy industry did suggest that the regulation could help in the work of convincing producers about the tangible effects of avoiding deforestation, given that the EU would present this as a concrete sourcing demand. Moreover, the interviewee also stressed that the EUDR could accelerate an existing movement of soy expanding into degraded pastures rather than native vegetation. Yet, he was more skeptical about whether this would impact overall deforestation rates,

> *"You have a positive impact from this European decision that will probably make future expansion of soy occur less and less in deforested areas. This will definitely happen; I am convinced of that. I don't know whether it will reduce deforestation. Ok. But soy will definitely expand more in already cleared areas compared to areas deforested after the European cut-off date. I am practically convinced that will happen".*

Perspectives from interviewees with in-depth knowledge of the sourcing structure of the Brazilian soy sector thereby seem to suggest that "cleaning up" soy chains to the EU is not necessarily the same as addressing deforestation problems in Brazil. This is highlighted in the observations of a sustainability consultant, "At the end of the day, I think there is a very big dilemma about what the objective of the law is; whether it is to clean up the products that are sold in Europe, or really to put an end to deforestation in production areas". This highlights that while the EUDR could be an important instrument in addressing legitimate EU consumer concerns and in de-risking importers' sourcing, it may not be a very efficient tool in terms of addressing the key problem of soy-driven deforestation in Brazil. In a more strategic perspective, an NGO employee highlights how the EU with this regulation pursues a somewhat maximalist position by leveraging all of its influence within supply chains. Consequently, the "concentration" of this influence on its own sourcing means that all European indirect leverage in relation to supply chains directed at other global regions is lost.

Another significant point concerns the incentives created by the current formulation of the EUDR. As it stands, the law appears to exclude most of the Cerrado biome from its forest definition (cf. EUDR Art.2(4). NGO employee interviewed thus point to this

omission as a probable cause of the increase in Cerrado deforestation of 21% during the first trimester of 2023, which mainly took place in soy frontier zones (WWF, 2023). The exclusion of large parts of the Cerrado (cf. EUDR Art.2(12) 'other wooded lands') in the current EUDR version, combined with expectations of the future inclusion of Cerrado conversion in the revision of the law (Art.34(1)), could thus have accelerated deforestation in this biome. It is worthwhile mentioning that any future inclusion of the remaining areas of the Cerrado would nonetheless adopt the same cut-off date of December 2020, according to the provisions on its review process. However, given the widespread lack of knowledge about the specific details of the law amongst many producers, it is difficult to discard that the law has created an incentive to augment deforestation in the short term.. If the EUDR has indeed contributed to increasing Cerrado deforestation in the short term, this would nonetheless suggest that the regulation is capable of swaying producers' conservation incentives, albeit not necessarily always in the desired manner. A general point of agreement amongst the interviewees from environmental NGOs was related to the need to include the protection of the Cerrado biome in future revisions of the law.

Within the beef sector, a somewhat different picture becomes evident. With the current export quotas, in 2022 Brazil exported 84,73 thousand ton to the EU, compared to a total Brazilian beef export of 2.26 million ton at a value of US$ 13 billion. Moreover, due to sanitary restrictions, only around 1400 ranches in 8 states (mainly in the Southern half of the country) are licensed to export to the EU, and beef from these operations is already subjected to significant sanitary and traceability requirements. An interviewee from the beef sector thereby highlights that the challenge of adapting to the EUDR mainly would amount to extending existing traceability systems "backwards" to encompass all indirect suppliers. The interviewee nonetheless expresses a perception that the EUDR will have a very limited impact on cattle-driven deforestation. This is mainly because any eventual exclusion of non-compliant suppliers from chains directed at the EU would not necessarily lead to improvements in their conservation practices.

> *"I think that many of the reasons for deforestation are beyond the reach of the production chains. The guy [EU consumer] will continue to see deforestation in the newspaper and on television, and this consumer will ask the German politician, "why am I paying more, while the problem is not being solved" […] The hole is much deeper down and has a lot to do with the protection of public lands, delay in land regularization, and land use planning".*

With regards to traceability, an NGO representative described it as "astronomically more difficult" to implement such systems within the beef sector compared to soy, given the large number of indirect suppliers and the fact that cows move through many different ranches throughout their lifetime.

**In sum**, estimates from different stakeholders in relation to both the Brazilian soy and beef chains thereby suggest that the way the EUDR currently is structured, it will likely not have a substantial impact on current deforestation problems. In some areas of the Cerrado, the law could have some effect in terms of decoupling soy expansion from recently deforested areas, but whether this would have an impact on total deforestation rates is much more uncertain. Under the present market structure, ensuring compliant supply chains to the EU may thereby not necessarily be presumed to provide an effective solution to native vegetation loss. If this holds true after the EUDR implementation, this could force European policymakers to engage more directly with the question of whether the main goal should be compliant sourcing or curbing tropical deforestation.

## RQ3: Producers' incentives

How producers will react to the EUDR is a question which is closely related to the effect of the regulation on FRC-driven deforestation in Brazil. In this section, we therefore engage with **research question 3**, aiming to understand **whether producers will refrain from deforestation because of the EUDR**?

Most of the interviewees consulted suggested that the EUDR would have little effect on rural producers' decisions regarding whether to deforest. In the soy sector, European clients have long sought to convey different sustainability demands to Brazilian suppliers. Traders have occupied an intermediate position, having to present these demands to producers. This process has often been marked by friction and discord, as was reflected in the failed attempts to extend the Amazon Soy Moratorium to the Cerrado. Brazilian soy producers have been particularly resistant to adopting above-the-law regulations without corresponding financial compensation. The perception of the EUDR as an imposition without corresponding compensation could be expected to nurture much reluctance to adapt to the regulation. This position is also fueled by a widespread feeling amongst producers of being subjected to a more rigid environmental legislation than European farmers. Yet, as highlighted by an environmental consultant, despite the decreasing relative importance of the EU as a client for Brazilian soy exports, this market will remain

relevant. Affirmations from more "radical" parts of the soy sector, that the EU has now become irrelevant, should thereby be viewed as symbolic statements, rather than as an expression of any effective strategic orientation. A local cereal trader describes how many producers tend to diminish the significance of the regulation, thereby delaying efforts to adapt to it in the hope that implementation can be postponed.

An executive from the soy industry does nonetheless believe that the EUDR will have some effect on producers' calculations regarding their decision to deforest:

> *"The producer will understand that when the time comes to plant more soybeans, he must plant them in areas cleared before 2020. He will understand that. Because if he plants in an area that was deforested after 2020, he will have a problem with the trading company, because the trading company will have to verify that. And you might not buy from him, or you might say "look, you'll have to deliver it to another warehouse I don't know where... which is further away." The producer will understand that. So, I think it will induce the expansion of soybean planting in areas cleared before 2020."*

In relation to beef, a sectoral representative expressed a lack of faith that the EUDR would change producers' calculus, highlighting how especially small and medium-sized producers often found it difficult to comply with industry standards. As stressed by an NGO representative, many small-scale producers nonetheless have a great interest in gaining access to the technical knowhow and tools that would make it possible for them to be compliant with the regulation. Legal implementation combined with technical assistance and efforts to bring producers back into compliance thereby stands at some of the most viable solutions to address deforestation in the beef sector. According to another NGO representative, compared to many other producer countries, Brazil stands in a favorable position to adapt to the EUDR, given the existing public satellite monitoring for land use in the country. The EUDR also contains certain elements that could foment initiatives to address the underlying causes of deforestation, as highlighted in the text,

"Member States shall engage in a coordinated approach with producer countries and parts thereof that are concerned by this Regulation, in particular those classified as high risk in accordance with Article 29 through existing and future partnerships, and other relevant cooperation mechanisms to jointly address the root causes of deforestation and forest degradation." (EUDR, Chapter 5, Art.30, $1).

As we shall see in the section treating RQ7, exploring these instruments could provide potentially more effective and inclusive solutions to deforestation in the Brazilian cattle sector. Moreover, while an NGO interviewee mentioned that it is improbable that conservation incentives reach producers directly, she nonetheless highlights how the EUDR could influence the governmental level, and thus may help spur changes in the institutional framework regulating land use change.

Producers' reactions to the EUDR are crucial in terms of defining the extent and the modes of adaptation to this regulation. This process also contains a range of risks. As highlighted by a logistics specialist, one of the risks relates to the modification of documents of origin. Although the EUDR stipules adoption of different monitoring instruments to avoid this, there may still be some room for fraud to take place. Public awareness of such cases could produce a strong response from European clients which would be liable for fines of up to 4% of annual turnover for non-compliance. This could thus ultimately accelerate sourcing towards low-risk regions.

Another key question concerning EUDR adaptation regards the interpretations of the law. Nearly all of the interviewees stated that its specific implications in relation to issues such as regional risk classification or the interpretation of relevant domestic legislation still was somewhat nebulous. Given that the law will become applicable in December, 2024, lacking understanding and preparations for this deadline could lead to involuntary non-compliance, due to a failure to properly prepare sourcing and logistics networks. Finally, as highlighted by an NGO employee, if the initial signal emitted by the EUDR through its rigid due diligence procedure fails to punish non-compliance, its symbolic effect could be reversed, and stimulate increased non-compliance.

The EUDR's impact on rural producers' behavior will most likely not only depend on their activity, but also on their scale. Different interviewees thus highlight how large producers are much more favorably positioned to adapt to the law, given their financial and organizational resources, which facilitates compliance with the monitoring and traceability requirements. This is reflected in the observation of an NGO employee, "You have the largest 10% of producers, who have this on their radar, and who sell a lot, and who will adapt very easily to the regulatory requirements [...] large soy producers mainly, so they will continue [selling]". A local cereal trader also highlights how many large-scale producer groups see the regulation as an opportunity to gain a favorable market position, rather than as a liability.

The impact of the EUDR on smallholders is more uncertain, and will depend much upon their capacity to document compliance. As stressed by a smallholder producer from the Southern part of Brazil, most producers in his agrarian reform settlement had no recent deforestation on their lands and complied with Brazilian environmental laws. However, the question about how to comply with the documentation required by the EUDR did nonetheless spur a certain degree of preoccupation by the interviewee regarding any potential negative consequences of the regulation. An interviewee from an NGO also underscores the risk that smallholder cooperatives will be unable to comply with the regulation, as even modest monitoring and traceability costs can be difficult to assume for this group:

> *"Most of these cooperatives will end up being excluded, you know. And if they are excluded, you will encourage deforestation even more, since they then don't have any incentives [not to deforest]. As they get out of the main market, their only option will be to export to China, Russia, and the Middle East, and other countries where the requirements are minimal [...] and then the deforestation problem will continue and even increase, you know. We have seen this in several sectors."*

An interviewee from an environmental NGO nonetheless considers the standards required by the EUDR as an opportunity for the smallholder producers' to strengthen their market position insofar as they organize to become able to document compliance. This could well hinge on gaining access to the necessary traceability and monitoring instruments, as well as information about how compliance is reached.

**In sum**, the way producers perceive the EUDR, and their subsequent response to this regulation is an open-ended process that could become highly important in terms of defining its specific effect. A range of risks of voluntary or involuntary non-compliance appear to be evident, as is the danger of exclusion from supply chains without corresponding incentives for re-inclusion. While in the short term, many producers may be reluctant - or even hostile - to change their modes of operation due to the law, in the intermediate term, it could create some incentives for conservation, depending on how sourcing patterns and logistics structures are designed for adaptation.

## RQ4: Effects within the logistical dimension

How the EUDR will reshuffle existing logistics structures in the Brazilian soy and beef sectors is of high importance in determining the effect of the law. In this part, we therefore, treat **research question 4** of **how the implementation of the EUDR will affect the logistics of soy and beef**.

With regards to Brazilian soy production, the main challenges of the EUDR concern the requirements of ensuring 'negligible risk' in exports to the EU (EUDR, prmb.26), which broadly has been interpreted as a demand for segregated sourcing (Bellfield et al. 2022). This would necessarily entail an ample process of logistical reshuffling. Studies on the EUDR have suggested that this could result in significant sustainability gains if traders transition to completely deforestation-free sourcing on a company basis (Bellfield et al. 2022 p.6; Villoria et al. 2022, p.5). More critical analyses, however, have stressed the risk of segregation of supply chains, which would entail significant logistics costs and limited sustainability gains (Sellare & Borner, 2022). A common observation amongst the interviewees consulted was that implementation of the EUDR would be associated with very significant logistical challenges in the soy sector. Rather than tracing the origins of soy, which is relatively simple, the main difficulty relates to guaranteeing that EUDR-compliant soy leaving the farm is physically segregated from any volume of non-compliant soy on its entire trajectory towards the European market. This is mainly because the links in existing Brazilian soy logistics structures are not built for segregation. From the point of collection at the farmgate, storage facilities adopt a pooling system, with soy from many producers mixed in the same siloes. Railway and barge transport of soybeans also follow this principle, meaning that individual rail carriages would need to be separated according to EUDR-compliant and non-compliant soy. This could even create a need for new types of contracts at that link in the chain. Finally, soy is also mixed in bulk volumes at port terminals, often with products from different traders in the same ships, requiring a large reshuffling to adapt to segregated sourcing. Unitization of soy shipments, for example through containers, was mentioned as another potential option by a logistics specialist. However, this would amount to substantial additional costs, - especially at times with elevated container freight rates – and would surely not provide a viable sector-wide solution.

The difficulties associated with the segregation of EUDR-compliant soy are accentuated by an already deficient storage capacity. This was highlighted by different interviewees as

the link posing the main single challenge. Segregation would also lead to significant costs for the supply chain as a whole. Interviewees from the soy sector thus claim that those costs could reach several billion Brazilian reais, which would significantly impact soy trade with the EU. An executive from the soy industry thus also harshly criticizes the EUDR, stating that the law is based on theoretical presumptions and a lack of practical knowledge about the Brazilian soy chain. In a somewhat different vein, another soy industry executive observes that, while previously, the key driver within logistics was the aim of reducing costs, the future driver will be the ability to do so while still supplying the EU. In this situation, some traders with a small network of direct – and compliant – suppliers could gain a competitive advantage, as could traders that already had made substantial advances towards deforestation-free supply chains. Should the EUDR make traders accelerate existing ZDC commitments, this could produce substantial sustainability gains.

The logistical restructuring spurred by the EUDR could also impact the geography of Brazilian soy flows. As highlighted by a local grain trader, because existing logistical deficiencies would make it impossible to organize parallel storage and transportation channels, supply chains would thereby either have to become entirely compliant, or be considered as non-compliant in the EUDR optic due to the mixing of soy. Given the substantial difficulties of segregating soy flows in the short period of time towards late 2024, several interviewees point to the most likely outcome of EUDR implementation being the regionalization of soy sourcing. This would entail a restructuring of soy exports to the EU exclusively towards regions with low deforestation risks in Southern and Southeastern Brazil, and would likely take the form of specific logistical clusters aimed at supplying Europe. Such an option would result in longer maritime transport routes from Southern Brazil to Europe, and in a reduction of protein content in soy to the EU, which is generally lower in temperate soy cultivars. It could also lead to a growth in soy traded through prior contracts and a decline in spot market trade as buyers would need certainty regarding product origins. An important question concerns what would happen with soy from Mato Grosso, which currently is exposed to some degree of deforestation risk, and which is being shipped through practically all ports in Brazil.

A soy industry executive highlights that although most traders would be inclined to try to avoid regionalization, this could very well become the eventual outcome of the EUDR. The interviewee states that a scenario in which importers seek to de-risk their sourcing by switching to low-risk regions could lead to a process of decommodification of Brazilian soy. This would happen as demand for compliant products inevitably results in a market premium for soy from low-risk regions, while soy from high-risk regions would be marketed

globally at a discount. Most European clients are likely to accept higher prices due to the lack of domestic substitutes for Brazilian soy, and because regulations in competing producers favor domestic crushing industries. A proportionate growth in EU imports of soybean meal would thereby strongly hurt European soy crushers that would have to operate at a sub-utilization of capacity. Increased prices for EUDR-compliant soy, and lower prices for non-compliant products could, ceteris paribus, also lead to a displacement of a marginal share of soy exports to China and a parallel drop in exports to the EU.

A final important question concerning soy exports to the EU is whether the EUDR implementation would lead to temporary bottlenecks. An interviewee from the soy industry highlights that traders probably will have the necessary capacity to meet EU demand, although some initial operational hurdles may become evident;

"The ability to source from the plot of land, to do the due diligence, and to issue the due diligence statement, I think that practically all companies that export to Europe are ready to do that, or will be ready. The problem is making sure that soy you load onto the ship doesn't come from an unverified area. This is the challenge of the physical flow, that there is no mixing, - that it remains segregated. This is a big challenge. And then it will depend on how Europe will monitor this. Now, I don't think there will be cases where traders will say "I don't sell to Europe anymore, because I'm not prepared […] There will be companies with bottlenecks, there will be companies that are prepared, there will be companies willing to take a little more risk, and there will be companies that will not be willing to take on risks.".

Whether adaptation to the EUDR will lead to significant bottlenecks in the flow of soy to the EU will likely also depend on the degree and modes of oversight. High-profile cases of non-compliance could easily have the effect of steering importers towards all available low-risk sourcing options, with significant reverberations in Brazil.

The beef sector faces very different logistical challenges in adapting to the EUDR given that the main compliance difficulties in this sector can be found before the animals reach slaughterhouses. As highlighted by an executive within the beef sector, despite the small volumes of beef that have been permitted entry into the EU, this market will remain relevant for Brazilian exporters due to the high premiums of certain cuts. A key question nonetheless regards which risk classifications will be ascribed to Brazilian sourcing regions. The interviewee thereby points to the danger that risk-aversion will guide European buyers;

> *"I think there is a big risk of these importers wanting to evade the problem, of someone drawing a line in the middle of Brazil and saying, "from here on and upwards [North] I won't buy". […] So, he [the buyer] will want to go beyond what the law requires in terms of control, just to have all the possible guarantees that he won't have a problem".*

Compared to the soy sector, within the logistical dimension, the beef sector thereby does not face the same kind of capacity problem. The main concern is guaranteeing that traceability systems and available data sources can ensure an appropriate monitoring and consequently the compliant origin of all products exported to the EU throughout an often long and complex product chain.

**Summarizing,** the logistical issues associated with EUDR adaptation in Brazil within the soy sector will imply substantial challenges. The soy infrastructure does not currently have the necessary capacity to ensure product segregation, meaning that regionalization of soy sourcing appears to be a very likely outcome. This could easily be associated with a process of decommodification of Brazilian soy, as the market determines premiums and discounts for soy products based on their deforestation exposure. This could lead to some degree of trade diversion away from the EU market and towards China. Challenges within the beef sector mainly regard the backwards implementation of robust monitoring and traceability systems while avoiding the exclusion of a large number of indirect suppliers.

## RQ5: Distribution of costs

A crucial point in the process of implementation and adaption to the EUDR concerns **research question 5**, related to **which actors will absorb the costs generated by the regulation?**

Existing literature has highlighted how powerful actors within value chains often eschew cost absorption (Partiti 2021, p.149; Ponte 2019a & 2019b), which could entail the risk that they would fall upon smallholders (Fern, 2022). Although the soy sector is mainly characterized by large-scale farms, significant differences do nonetheless exist between mega-operations and medium-sized producers strongly dependent on local cooperatives. The beef sector is very heterogeneous, with actors from smallholders to large-scale ranches populating different links of the chain.

With regards to adaption costs within the soy sector, an environmental consultant states that it can be expected that traders will incur initial expenses associated with the reshuffling of supply chains towards regionalized sourcing. Producers would thereby not be immediately affected through the farmgate price. A slightly different picture is painted by an executive within the soy industry, who underscores how farmers in areas with high deforestation risk could be affected by the discount for their products. The interviewee also stresses how producer cooperatives could be negatively impacted if they find it harder to adapt to the new due diligence requirements than larger operations. Yet, the most widespread perception appears to be that costs eventually will be conveyed to European clients who would have to pay a premium associated with the comprehensive reorganization of supply chains. This also reflects a perception that European consumers will be the link in the chain with the largest capacity to internalize implementation costs. In the deliberations during the drafting of the EUDR, European trader branches and food- and agribusiness industry had also been very vocal about the likelihood of rising prices for soy products and the alleged impacts this would have on consumers. An environmental consultant highlights that the costs associated with the logistical restructurings could affect Brazilian competitiveness, also in relation to third markets, such as China. It remains to be seen whether this potential increase in logistics costs would surpass any discount for non-compliant soy products shipped to China. It is also possible that both trends would occur simultaneously, with opposing impacts on the final price.

Financial incentives for conservation efforts and other types of payment for environmental services was defended by different interviewees from the soy sector as a necessary compensation for leaving native vegetation intact, which otherwise could be legally deforested. An NGO representative pragmatically observes how compensation payments thus far have fallen short of what is necessary to make producers refrain from deforestation:

> *"This is the big problem for this deforestation agenda, you know; people want to stop deforestation, but nobody wants to pay for it [...] the price [for environmental services] doesn´t exceed USD 20 per hectare. And if the soybean producer today rents the area, he will get at least US$ 350 per hectare. So, 20 against 350 dollars; the difference is gigantic, right? […] we need to pay the producer what he would receive if he were to rent the area. This is math, and there is no other way to do the math. The producer will not stop making money because of climate change concerns, he just won't[!]. Forget it [!]"*

Financial compensations are not mentioned in the EUDR, and have often been a controversial subject, as was shown with the futile attempts to establish a soy moratorium in the Cerrado. The interviewee nonetheless stresses this kind of incentives as a crucial supplement to the EUDR, defending that multistakeholder deliberations could help provide arrangements for costs to be passed on to buyer companies in consumer countries.

Within the beef sector, there is no consensus on how to make traceability incentives reach indirect suppliers, and ensure that costs are evenly distributed along the supply chain. If traceability implementation due to the EUDR leads to the exclusion of a significant number of indirect suppliers, this could impact smallholders within this group, who would face more difficult conditions for marketing their products within compliant chains. As mentioned previously, guaranteeing the necessary means for re-inclusion of excluded suppliers by bringing them back into compliance becomes an important task to avoid any negative social fallout of EUDR implementation. Supply chain exclusion can often have the effect of increasing deforestation, as the economic losses as well as the disarticulation from chains with sustainability demands can lock in producers into more archaic and land-intensive modes of production.

**Summarizing** the assessments of the distribution of the costs associated with EUDR implementation, most soy sector stakeholders believe that conveyance to consumers in the EU is the most likely outcome. The degree to which this also would impact Brazilian competitiveness in relation to third countries is a relevant point in question, which remains to be seen. Within the beef sector, initial costs of extending monitoring and traceability systems to indirect suppliers of the 1400 ranches certified to export to the EU will likely be absorbed by slaughterhouses and clients further downstream. To avert negative impacts for non-compliant small-scale beef producers, measures to support compliance and re-inclusion in supply chains could become crucial.

## RQ6: Global dissemination of the EUDR

Beyond its significance in relation to European sourcing of FRCs, the global dissemination of the EUDR's underlying principles and instruments could also change the sourcing practices of other large importers. This so-called "Brussels Effect" is the object of enquiry in **research question 6**, related to **whether the EUDR will lead to the global dissemination of mandatory deforestation due diligence legislation**?

In recent years, other countries, such as the United Kingdom or the United States have also seen the elaborations and/or completion of legislative proposals similar to the EUDR. However, the above-the-law requirements for deforestation within the EUDR make this an unprecedented ambitious regulation. European NGO representatives who have followed the drafting of the law highlight its global dissemination as an important goal in addition to ensuring deforestation-free European sourcing. This would also entail a wider recalibration of international production chains to reach compliance with the EUDR.

A crucial point in question regards whether China would seek to adopt similar legislation to the EUDR. As China accounted for 53% of Brazilian soy exports by 2022, this Asian country has much greater leverage to convey sustainability demands to Brazilian producers than the EU, - a point which also was highlighted by many of the interviewees. The large proportion of soy sourced by China also means that demands for zero-deforestation presented by the country could have a substantial impact within the Brazilian agricultural sector. Yet, none of the experts consulted believe that China will present requirements similar in scope and depth to those stipulated in the EUDR. The main reasons stated are the likely price increases of such a measure, - which Chinese consumers would be less able and willing to absorb - as well as the deep-rooted food security concerns in China. As highlighted by an interviewee from a soy producer organization, compared to European clients, Chinese attention is directed more towards positive sustainability features and innovative production models of Brazilian agriculture, "the Chinese are focused on our points of strength, - on our assets". This is also the case in the beef sector, for example, with reports of recent Chinese interest in low-carbon beef production systems relying on integration with forestry components.

A local grain trader expresses a somewhat stronger perception of the Chinese disposition to impose sustainability demands, albeit supply-related concerns make zero-deforestation requirements unlikely in the short term: "Everything points towards that path [compliance], in my opinion. So we have to show our people that this is something irreversible. Not because Europe demands it, but because the market will adapt. Sooner or later, China will demand it. It's not so fast, because as I said, it imports a lot. So, you can't say "2025" […] China takes a little longer, but from my point of view it will be a global trend."

China has in fact assumed a position in relation to illegal deforestation, but due diligence mechanisms to confront this problem have not yet been installed. As highlighted by an interviewee from the soy industry, China has become more vigilant regarding traceability and is likely to increasingly present such requirements in the near future. However,

the country appears unlikely to advance zero deforestation demands that would reach beyond Brazilian legislation. This is also partly grounded in the Chinese interest in maintaining positive bilateral relations within the field of agriculture, as China has strong ambitions of cooperating with Brazil in the field of biotechnology. An interviewee from an environmental NGO thus estimates that China is likely to increase sustainability demands, but that it is much more uncertain whether it will adopt the European model for compliance.

In relation to beef, in 2017 the WWF and the China Meat Association (CMA) representing 64 Chinese companies within the sector signed the China Meat Declaration. This is a non-binding document within which the signatories stated their aim to avoid deforestation and illegality in meat production and trade, amongst other things. An executive within the beef sector also stresses that, thus far, the dominant sustainability approach in the relation between the Chinese and Brazilian meat sectors has been to seek to resolve any outstanding issues directly between private actors. Brazilian initial experiences with traceability and monitoring of cattle are highlighted as an asset in that regard. However, the interviewee nonetheless points to an indirect channel of conveyance of sustainability demands to China through the company-wide commitments made by multinationals operating in the Chinese market. Large food producers and retailer subsidiaries in China thereby tend to adopt the same sourcing criteria as their parent companies in Europe and the United States.

A consultant specialized in the Chinese market nonetheless underscores that the country has been strongly inspired by the EU regulatory practices, also within the field of the environment. Chinese consumers have also displayed a rapidly growing interest in sustainability-related matters, which illustrates the dynamic and emergent nature of this issue within the country. The interviewee thus highlights how new environmental regulations often materialize promptly and unexpectedly, but also stresses how every step still is carefully weighted in relation to Chinese core interests, such as national food security concerns.

**In sum**, although an underlying intent with the establishment of the EUDR appears to be to create a "Brussels Effect" with the dissemination of its principles and instruments to other countries, in China, regulatory measures of this nature will most likely not be adopted in the close future. As the most important Brazilian export market, China does appear to have the leverage to convey substantial sustainability demands to Brazilian producers, and sustainability issues have gained much salience in recent years. Yet, thus

far China has shown few concrete signs to pursue this course of action. The above-the-law elements of the EUDR have not been copied either in the UK or the US, which nonetheless appear to embrace some due diligence standards. However, traceability and monitoring instruments, or maybe even legislation with some type of legality requirement are more likely to materialize within the near future. It can therefore not be ruled out that the normative dissemination spurred by the approval and implementation of the EUDR could accelerate that process.

## RQ7: Complementary pathways

Given the uncertainty about the sustainability gains that may derive from EUDR implementation, it is important to support policy learning and eventual calibration of the law. Existing knowledge within the field and the initial experiences gathered from the implementation process can be important in that regard. The legal draft is already meant to undergo different rounds of revision in the coming years, which should provide a valuable opportunity for making eventual necessary adjustments and additions. In this part, under **research question 7**, we therefore ask **which measures could complement the EUDR to ensure minimization of socio-economic costs and the largest possible sustainability gains**?

While the creation of the EUDR has enjoyed much support from large swaths of civil society and academia, some critical voices have also been raised. Radical perspectives informed by degrowth thinking have focused on developed country consumption as the root problem needing to be addressed, rather than only seeking to decouple imports from socio-environmental degradation (Kumeh & Ramcilovic-Suominen, 2021). However, in relation to Brazil specifically, it is very difficult to identify the presumed causalities that would link a halt in imports to any positive environmental outcomes in the country.

Other branches of the literature have highlighted the importance of engaging local stakeholders in producer regions and home country governments in order to both ensure effective implementation and mitigate negative social consequences (Bager et al. 2021; Bellfield et al. 2022; Sellare et al. 2020; Villoria et al. 2022; WRI 2022). Regarding the downside to the exclusion of suppliers in high-risk regions, the Dutch IDH Sustainable Trade Initiative has presented a proposal for an alternative approach to confronting problems of risk diversion, supply chain exclusion, lacking positive incentives, and negative home country reactions. The proposal foresees the creation of a new risk

classification within the benchmarking system termed "transitional jurisdictions". These would be regions that currently are labeled as high-risk, but which have shown results and commitments in terms of reducing deforestation. A low level of deforestation risk would be acceptable in transitional jurisdictions, given that they commit to a roadmap to curb existing deforestation (IDH, 2022). This approach is also defended by an executive from the beef sector, who highlights the importance of engaging risk-prone regions through multiple governance interventions aiming at environmental and land tenure regularization, and different socio-environmental parameters. The interviewee stresses how building on existing jurisdictional initiatives could be an important first step in this process, in order to seek to bring about sustainable change in high-risk regions rather than only eschewing problems, "I think this also needs to be part of the conversation. It should not only be about fleeing the risk, excluding the region, but rather about how to get there and help make the transformations". Moreover, an NGO interviewee also points to jurisdictional approaches as a potentially important tool in order to create a collective sense of responsibility to refrain from deforestation amongst local producers.

Although the EUDR goes beyond the legality criterion to combating deforestation, many of the stakeholders interviewed suggest that a constructive approach could be to build on existing Brazilian legislation. A Brazilian diplomat thus stresses how the EU could help to facilitate Rural Environmental Registry (Cadastro Ambiental Rural – CAR) implementation. The interviewee also highlights how a point of convergence could be the effort to improve traceability in agricultural commodity chains. The creation of a public traceability register drawing on existing private sector expertise is stressed as a potentially fruitful course of action. In a similar vein, a soy sector representative also stresses how countries of the Amsterdam Declaration could support CAR implementation in states lacking in this process. Comprehensive implementation of the CAR could thereby help form a register with key property land use information. A more skeptical perspective is adopted by an NGO employee, who underscores that adherence to relevant Brazilian legislation does not guarantee EUDR compliance. The interviewee thus stresses how more efficient pathways could be the adoption of new EU legislation imposing similar due diligence requirements for the financial sector, and demands for companies to install completely deforestation-free supply chains throughout their global operations. Although legal compliance and advances in CAR implementation does not by itself qualify producers to export to the EU, these measures might nonetheless help reduce the general level of deforestation risk, especially given that 75%-99% of deforestation in frontier states is currently illegal (Valdiones et al. 2021).

Improving cooperation with public, private, and civil society stakeholders in producer countries appears as a critical route forward as these actors scramble to adapt to the regulation. An interviewee from an environmental NGO thus defends a more gradual implementation in close cooperation with producer countries,

> *"Ideally, the implementation should have taken place step by step, gathering feedback from the other side. This was not done. Even if the EU says, "look, I'm not going to change anything in my law, with your feedback, but I'm going to change how I'm going to implement it, or how long it's going to take to implement the full framework. And that didn't happen, it was kind of BOOM [...] and in this case, cooperation, - and we said this in the European parliament, - EU cooperation with tropical countries, - Brazil included, - this international cooperation gains a great importance, because it can supply some of these issues of more qualified and preparatory implementation".*

Looking forward, an NGO interviewee suggests a three-pronged strategy based on inclusion and assistance to clusters of small-scale producers; development of a bioeconomy activities based on sustainable supply-chains, and; improving traceability systems. In a similar vein, another NGO representative suggests that efforts are aimed to support traceability and monitoring, with special emphasis on poor rural producers, as well as a system of payments for environmental services. Finally, a third NGO interviewee stresses the importance of improving the institutional environment, thus enhancing local capacity to support conservation and sustainable development.

In sum, ensuring that EUDR implementation does not lead to a redirection of supply chains away from risk-prone regions could require approaches with a strong focus on engagement and inclusion rather than punitive measures and exclusion. This also becomes key to averting negative consequences for smallholders in high-risk regions. Existing experiences from jurisdictional approaches could provide important starting points for scaling up these measures at the national level, especially if the EUDR were to incorporate some kind of positive incentives for high-risk regions committed to curbing deforestation, such as an improved sourcing status or payment for environmental services. Likewise, support for CAR implementation and the organization of public registers with detailed information down to the farm level could also support compliant producers' market access to the EU, while showcasing positive sustainability performance.

# 4. Policy recommendations

Based on the research questions analyzed in this report, we present a range of policy recommendations related to future revisions of the EUDR, and EU-Brazil cooperation within the agro-environmental field more generally.

- It is important that European sustainability demands are debated in a meaningful way with key stakeholders in exporting countries. To attenuate existing frictions, joint EU-Brazil committees, encompassing a diverse stakeholder, could be established to oversee the implementation process. These committees could guarantee that any revisions and calibrations to the EUDR are informed by experiences and realities in Brazil and other producer countries.
- With the EUDR, the EU has channeled most of its leverage towards advancing zero-deforestation demands through its combined market power as a buyer. Even so, the diminishing EU market share of Brazilian soy production substantially limits the effectiveness of this strategy. Future efforts should aim to advance conservation through positive incentives and win-win solutions, preferably drawing on successful Brazilian experiences within the field of sustainable forest and agriculture management.
- In line with the goals stated in the EUDR text (Chap. 5, Art. 30, ¶1) the EU should support positive conservation outcomes through engagement with cattle and soy producers in high-risk regions rather than relying only on exclusion. This will require additional financial and organizational resources, but can help support a decrease in total deforestation rates rather than only the exposure of EU imports.
- Specification of formulations within the EUDR is crucial for supply chain actors to be able to adapt in time. This mainly regards the definition of relevant home country legislation (Chap. 1 Art. 2, ¶ 40), as well as the country and regional risk classifications (Chap. 5, Art. 29, ¶ 1-4).
- More attention should be directed to assess how the specific incentives of the EUDR affect the agents and dynamics responsible for deforestation in producer countries. An example of distorted incentives in the current draft is the exclusion of 'other wooded lands', which may have spurred increases of deforestation in the Cerrado.
- Supply chain segregation is unlikely to have a substantial effect on commodity-driven deforestation rates in Brazil. Similar due diligence demands for the financial sector, or aiming at the adoption of company-wide compliant supply chains, could be explored to provide for improved sustainability outcomes.

- More broadly, the recent political changes in Brazil, with the election of Lula da Silva in late 2022 tends to facilitate opportunities for environmental cooperation with the EU. In this context, rather than imposing additional sustainability demands on Brazil, the conservation efforts of federal authorities should be supported by EU institutions to support the positive momentum in the combatting of illegal deforestation, which in the Amazon and the MATOPIBA region represents the vastly predominant share.

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