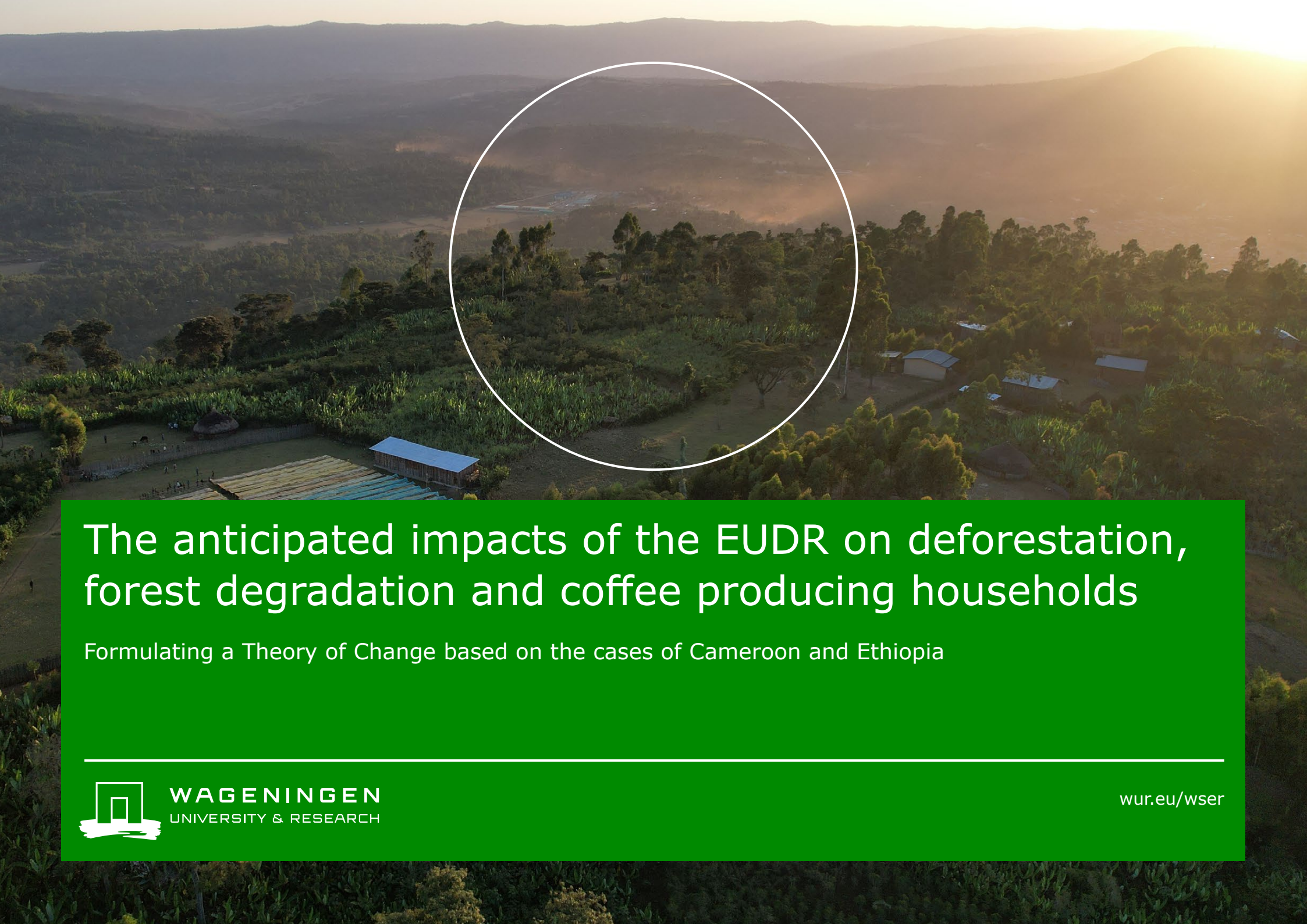

The anticipated impacts of the EUDR on deforestation, forest degradation and coffee producing households

Formulating a Theory of Change based on the cases of Cameroon and Ethiopia

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Summary

Forests play a crucial role in removing greenhouse gases and supporting biodiversity, but deforestation continues at an alarming rate, partly driven by agricultural expansion. The new EU Regulation on Deforestation-free Products (EUDR) aims to curb deforestation by requiring due diligence for certain commodities, including coffee. This study focuses on how the EUDR affects smallholder coffee farmers in Cameroon and Ethiopia. In both these countries, farmers and sector stakeholders were interviewed to assess how they perceive the EUDR, and what the expected consequences of its adoption are. These findings were combined with a document review, and culminated into the development of a Theory of Change, identifying potential causal pathways resulting from the implementation of the EUDR.

Key finding #1: The EUDR relies on critical assumptions that may not hold across contexts

The Theory of Change demonstrates that the EUDR relies on three critical assumptions: adequate due diligence is conducted to identify (risk of) deforestation or forest degradation (or lack thereof), effective deforestation risk mitigation strategies are applied, and farmers (start to) apply EUDR compliant production practices. However, evidence suggests that these assumptions may not hold across contexts, potentially undermining the intended outcomes of the regulation. Furthermore, we found that the EUDR impact pathways do not address the underlying drivers of the agricultural expansion that causes deforestation. We recommended monitoring critical assumptions systematically to ensure the planned pathways are being realized, as well as the adoption of accompanying measures which could increase the likelihood of achieving the desired outcomes. These measures should be considered within a systemic approach that aligns with other relevant EU initiatives to enhance overall effectiveness.

Key finding #2: Smallholder farmers could face negative implications of the EUDR

Smallholder farmers may face greater challenges than currently anticipated by the EU in complying with the EUDR, particularly due to limited awareness and infrastructural gaps that hinder traceability, contrary to expectations that requirements for farmers are straightforward and low-cost. The lack of differentiation between traceable and non-traceable coffee streams in countries like Cameroon and Ethiopia further complicates smallholder access to the European market, with potential negative impacts on their market opportunities and income. Recommendations that emerged are to make it easier for farmers that do not contribute to deforestation to demonstrate this on paper. Furthermore, addressing some of the indirect drivers of deforestation (e.g. poverty, a lack of alternative income sources) may benefit smallholder and forest protection impact synergistically.

1. Introduction

Forests are vital to our planet and serve a long list of crucial functions. Among others, they remove greenhouse gases from the atmosphere, and house over half of the world's land-based species of animals, plants and insects. In the last 100 years, the planet lost the same amount of forest as it had in the preceding 9,000 years, and this trend of net deforestation continues today (Our World in Data, 2021). However, efforts to protect these forests can conflict with another function of forests: they support the livelihoods of 1.6 billion people (UN Environment Programme, n.d.), and given that forests are often in remote areas, these people are generally amongst the poorest and most vulnerable (Sunderlin et al., 2005).

The EUDR is a case in point. In May 2023, the EU adopted the EU Regulation on Deforestation-free Products (EUDR). This new regulation aims to reduce the EU's contribution to deforestation and forest degradation driven by the expansion of agricultural land used to produce specific forest risk commodities (FRCs), namely cattle, cocoa, coffee, palm oil, soy, rubber and wood. Businesses placing these products on the EU market after 30 December 2025[1] will be obligated to carry out due diligence to ensure the products do not come from land deforested after 2020 (EU 2023). While the scope of the EUDR is ambitious, it is uncertain what its impact will be. For example, it is unclear how different sector stakeholders will respond to the EUDR. There are significant costs involved in meeting the due diligence obligations that the EUDR puts on operators. This may lead operators to shorten and/or simplify their supply chains, by relying less on smallholder farmers and more on larger farms (Zhunusova et al. 2022). Another potential response to the raised costs of compliance would be for traders in exporting countries to shift trade from the EU towards other countries with less stringent regulations (Köthke, Lippe, and Elsasser 2023).

This research is aimed at informing policymakers, companies and NGOs about the extent to which the EUDR will be effective in avoiding deforestation and forest degradation, and whether the EUDR has different impacts for different types of households in forested landscapes. This can inform their work to achieve more impact on forest protection and household resilience (if needed), e.g. by adjusting the EUDR at its planned revision in 2028, or by taking additional measures. The research will do so by zooming into a specific commodity affected by the EUDR: coffee. Focusing on Cameroon and Ethiopia, it investigates the anticipated impacts of the European Union Deforestation Regulation (EUDR) on coffee-producing landscapes. The central question guiding this research is: *What are the (anticipated) impacts of the EUDR on smallholder farmers and deforestation and forest degradation in coffee-producing landscapes?* To address this, the study examines the implications of EUDR adoption for smallholder farmers, including the behavioural changes required, the incentives and barriers to compliance, and the roles stakeholders play in promoting adherence to the regulation. A theory of change is developed to map the causal pathways—both intended and unintended—linking the EUDR to forest protection outcomes, contextualizing the regulation within broader drivers of deforestation and forest degradation. Furthermore, the report explores the mechanisms of EUDR implementation and analyses the potential trade-offs and synergies between smallholder farming household interests and forest conservation.

This paper focuses on the anticipated impacts of the EUDR on forest protection, deforestation and forest degradation as well as the livelihoods of coffee producing households. While the conservation of biodiversity and ecosystems is also important in coffee producing countries and can be partly achieved through sustainable forest management activities, we did not include analyses on the implications of the EUDR for biodiversity or ecosystem services.

1 The original date for the provisions of the EUDR to apply (for large operators and traders) was 30 December 2024, but was postponed by a year to allow smooth and effective implementation of the rules, including fully establishing due diligence systems covering all relevant commodities and products (Council of the European Union, 2024).

Over the past few years, many policy options for the EU to combat imported deforestation have been reviewed. Bager et al. (2021) outline no fewer than 86 options, ranging from cooperative policies to stricter regulations. They note that while cooperative approaches are often more feasible, they tend to have less impact compared to stricter regulatory measures. However, Ingram et al. (2020) emphasize that the evidence base on the effectiveness of various deforestation-reduction strategies in value chains remains limited.

Despite the lack of causal evidence for forest protection measures, there is substantial literature on the European Union Deforestation Regulation (EUDR) and its potential impacts. One area of focus is the comparison between the EUDR and its predecessor, the European Union Timber Regulation (EUTR). The EUDR marks a shift toward a more regulatory approach (Berning and Sotirov, 2023), which Bager et al. (2021) argue could enhance its effectiveness. However, Köthke et al. (2023) contend that while the EUDR closes important loopholes present in the EUTR, it does so at the cost of significantly higher compliance expenses.

In addition, substantial criticism of the EUDR has emerged. Some scholars argue that despite its broad reach, the EUDR's scope remains too limited to ensure comprehensive environmental protection. For instance, Powell et al. (2023) suggest that it may overlook certain emerging crops, and Fernandes et al. (2023) warn that the focus on forests might inadvertently lead to increased degradation of non-forest ecosystems. Furthermore, the EUDR's definition of "forest" may conflict with those used in origin countries, creating challenges in determining which products, such as coffee, are compliant (Naranjo et al., 2023). Even where definitions are clear, data accuracy remains a concern; for example, maps of forest cover might misclassify agroforestry plantations as forests (Noordwijk et al., 2024). Finally, some authors raise the concern that the EUDR was imposed unilaterally by the EU on origin countries (Azevedo-Ramos and Lima, 2024).

Most importantly, several studies have raised concerns about the high compliance costs associated with the EUDR (see e.g. Köthke et al., 2023; Miribug, 2022; Naranjo et al., 2023). This may lead importers to simplify their supply chains and shift away from sourcing products from smallholder farmers in favour of fewer, larger suppliers (Zhunusova et al., 2022).

This research is part of the project "Labelling strategies to stimulate sustainable and healthy diets: exploring which strategies are most effective and why."

The world is confronted with a large scale of food-related issues. An alarming increase in obesity and food-related diseases coexist with malnourishment. Additionally, food consumption patterns are associated with a high environmental impact, such as a decrease in biodiversity and climate change. Informing consumers about food products regarding health, the environment and animal welfare, can promote them to change their food choices. However, it remains unclear which labelling strategies are most effective, why labelling strategies can be effective and what the possibilities are when companies are considered. Within this project, we aim to generate new knowledge on labelling strategies to give insight into knowledge rules on consumer labelling to support healthy and sustainable decision-making.

Other work packages within the project focus on the effectiveness of labelling strategies on the side of the consumer. This work package focuses on the effects that labelling strategies have elsewhere in the chain – specifically by connecting the realm of the Dutch consumer to production in low- and middle-income countries (LMICs). Voluntary Sustainability Standards (VSS) such as UTZ, Rainforest Alliance, Organic and Fairtrade have not been effective enough in combating deforestation and land degradation, and company sustainability labels are also unlikely to be as effective as required at scale (Waarts et al., 2019). The ineffectiveness of VSS is among the reasons that the EUDR was developed. While the EUDR in itself is not intended to be a labelling strategy to influence consumer choices, it is an example of how European consumer demand (in this case manifested through legal rather than market pathways) affects a value chain that has its origin in another part of the world. As such, it will be used to get an understanding of the type of impacts that may be faced by one end of the value chain to cater to efforts to influence the choices of the other.

Box 1. *The role of this research within a project on labelling strategies to stimulate sustainable and healthy diets*

This report contributes to this literature by the development of a theory of change, containing both the intended and unintended potential impacts of EUDR, allowing for the structured analysis of the consequences of the implementation of EUDR on smallholder farmers. Furthermore, we focus on two origin countries: one, Ethiopia, where coffee is important to national agricultural strategies, and one, Cameroon, where coffee cultivation is in decline but where relatively much primary and secondary forest is left. In each of these countries, we interviewed farmers and sector stakeholder to assess how the EUDR is perceived, and what the expected consequences of its adoption are.

This report is structured as follows. Section 2 outlines our methodology for creating and validating the theory of change of the EUDR and the case studies. Section 3 provides background about the state of the world's forest and the drivers of deforestation, as well as more detailed information about the EUDR. Section 4 describes the two countries that feature in this research, with a focus on their coffee sectors and forests. In section 5 we apply the theory of change we developed to the case studies to outline what the anticipated and alternative pathways are in the implementation of the EUDR. Finally, Section 6 provides the conclusions and recommendations of this research.

2. Methodology

A combination of a document review, literature review and stakeholder interviews will be used to formulate answers to the research questions, as summarized in **Table 1**. The interviews were clustered in two country case studies, revolving around Cameroon and Ethiopia.

Table 1. *Information sources corresponding to each of the research questions*

#	Research question	Information sources
0	**What are the (anticipated) impacts of the EUDR on smallholder farmers and deforestation and forest degradation in coffee-producing landscapes?**	**Synthesis of the answers to the underlying research questions**
1	**What does the implementation of the EUDR mean for smallholder farmers?**	**Synthesis of the answers to the underlying research questions**
	a. What (behaviour) changes are required for relevant stakeholders, smallholder farmers in particular?	Document review Interviews with stakeholders
	b. What are the enablers (incentives) and barriers to compliance for relevant stakeholders, smallholder farmers in particular?	Document review Interviews with stakeholders
	c. What are the roles of different stakeholders in promoting compliance?	Document review Interviews with stakeholders
2	**What are the (anticipated) causal pathways to forest protection impact and how does the EUDR fit in?**	**Synthesis of the answers to the underlying research questions**
	a. What are the drivers of deforestation and forest degradation (and forest protection)?	Literature review
	b. What are the mechanisms for EUDR implementation?	Document review Expert consultation
	c. What are (potential) trade-offs and synergies between producer interests and forest protection?	Document review Expert consultation Stakeholder interviews
3	**What are recommendations to achieve forest protection impact while protecting the other interests of smallholder coffee farmers?**	**Document review** **Expert consultation** **Stakeholder interviews**

2.1 Document/Literature reviews

Literature reviews have been used across the different steps in the methodology (introduction, formulation of the Theory of Change, analysis of drivers of deforestation). The following principles were maintained throughout:

- Systematic search methods were applied. Search terms were defined and have been documented.
- Sources were first identified using scientific search engines (e.g. Scopus, Wageningen Library, Google Scholar), for which the results were documented.
- Where appropriate, reference lists of identified relevant literature were used to identify relevant research sources (snowball method), as well as the "cited by" feature (citation search).
- Where appropriate, grey literature has been used to supplement the retrieved information (e.g. using Google).
- If sources describe the EUDR, results that precede the final law text were excluded.
- If Google Scholar and Google are used, it has been done in the browser incognito mode.

This report is based on evidence collected until 18/12/2024. Therefore, any changes in for instance the EUDR requirements after that date are not included in this report.

2.2 Creating and validating a Theory of Change

The first step in the research process was to create a draft Theory of Change on what the (anticipated) causal pathways to forest protection impact are. The legal text of the EUDR was studied and used as the basis to map and visualize the anticipated causal pathways. Additional pathways were included based on the various possible deforestation risk scenarios and critical assumptions. The draft Theory of Change was then shared with two WUR colleagues with relevant backgrounds on sustainable value chains and integrated landscape management who provided feedback on the identified causal pathways. Based on this feedback, the Theory of Change was updated, and used to develop the case study interview guides. The outcomes of the country case studies prompted another round of revision, resulting in the version that is included in this report (Chapter 5).

2.3 Country case studies

2.3.1 Case selection

The two country cases were selected based on the following criteria:

- Smallholder producers making up a significant share of domestic coffee production
- At risk of deforestation and/or forest degradation
- Existing collaborations in-country through other (research) projects
- Difference between the sampled countries in economic condition and importance of coffee sector.

Ethiopia met all of these criteria. Its selection allowed alignment with RAISE FS (Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems) – a four-year programme that aims to bring about transformation in the Ethiopian food system. The programme is funded by the Dutch Embassy in Addis Ababa and hosted by Stichting Wageningen Research Ethiopia (SWR). WCDI is a partner in the programme. RAISE FS had received a request to deepen the understanding of the implications of the EUDR for the Ethiopian coffee sector from sector stakeholders, and was willing to fund the Ethiopian country case study. Shayashone (SYS) PLC Consultancy was subcontracted to carry out a study that included the data requirements of the current research project, in a team consisting of Dr. Berihun Tefera, Tigest Zelalem, and Yared Sertse.

Cameroon also met these criteria, and provided an interesting additional perspective compared to Ethiopia. Whereas the coffee sector in Ethiopia is large and economically important, the coffee sector in Cameroon has been in decline. In addition, rainforest still make up a large proportion of the Cameroon territory and is identified as one of 24 deforestation fronts worldwide by WWF (Pacheco et al, 2021). By selecting this case, the project could build on a project in which the Green Commodity Landscape Program implemented in the Grand Mbam landscape in Cameroon was studied. Consultant Victorine Akenji was hired to carry out data collection.

More information about the country cases can be found in Chapter 4.

2.3.2 Country-level stakeholder interviews

Stakeholder interviews were conducted to identify and analyse stakeholders' perspectives to the research questions. The process started with stakeholder identification that outlined the types of stakeholders to include. The Theory of Change provided input. Based on the selected local contexts of Cameroon and Ethiopia, the identified stakeholder categories were further specified.

An interview guide was developed to guide semi-structured interviews with a purposive sample of the stakeholders during the stakeholder mapping process (as described in 4.3). The interviews aimed to supplement and validate the Theory of Change and stakeholder mapping, and collect stakeholder recommendations on how to achieve forest protection impact while protecting the interests of coffee-producing households. Informed consent was sought and documented before the interviews. Interviews were conducted in Ethiopia in April to June 2024, and in Cameroon in September 2024.

In Ethiopia, 5 farmers and 2 cooperative representatives were interviewed from each woreda (11 woredas in total) and 42, 72, 22 and 14 key informants from these regions, respectively. In addition, more than 18 key informants were interviewed. In Cameroon, a total of 30 key informant interviews were carried out with different stakeholders, including smallholder farmers and cooperatives (12), traders, couxeurs and exporters (8), government agencies (9), and non-governmental organizations (1). In addition, 6 focus group discussions were carried out with smallholder farmers. For further details of the data collection process at country level, we refer to the reports of each of the country case studies (Akenji and WCDI, 2024; Tefera et al., 2024), which are available upon request[2].

2.4 Global key informant interviews

The information collected at country level was supplemented with two key informant interviews that captured the perspective of relevant European actors and addressing specific remaining knowledge gaps. The first interview took place on 30 September 2024, with a representative of the European coffee sector. The second interview took place on 22 October 2024, with a representative of the designated Dutch competent authority in charge of assessing EUDR compliance.

2 To request the country case reports, please send an email to hermine.tenhove@wur.nl

3. Forests, deforestation drivers and the EUDR

3.1 Forests, deforestation and its drivers

3.1.1 Forests deliver important ecosystem services but are at risk

Forests represent critical ecosystems that support the majority of the planet's terrestrial biodiversity. They deliver a wide array of ecosystem services, encompassing the provision of timber, food, fuel, fodder, non-timber forest products, and shelter. In addition, forests play an essential role in soil stabilization, water regulation, carbon sequestration, and air purification. Despite these invaluable functions, global deforestation and forest degradation persist, contributing substantially to biodiversity loss and greenhouse gas emissions. These processes exacerbate climate change, generating feedback loops that further threaten forest ecosystems and their capacity to provide these fundamental services (Council of the European Union, 2019).

Globally, forests cover approximately 4.06 billion hectares, constituting about 31% of the Earth's land area (FAO, 2020). These forests encompass over 60,000 tree species and serve as vital habitats for a significant share of global biodiversity, supporting 80% of amphibian species, 75% of bird species, and 68% of mammal species, and they function as the largest terrestrial carbon sink, forest ecosystems store around 400 gigatons of carbon, mitigating climate change by preventing this carbon from entering the atmosphere and altering climate dynamics (FAO, 2020). Additionally, an estimated 1.6 billion people rely on forests for their livelihoods, underscoring the social and economic importance of these ecosystems (United Nations Department of Economic and Social Affairs, 2021).

3.1.2 The rate of deforestation has been decreasing globally but in the tropics it is increasing

The FAO estimates that approximately 420 million hectares of forest – representing about 10% of the world's forests and an area exceeding that of the European Union – were lost to deforestation between 1990 and 2020. In terms of net forest area loss, which accounts for both forest clearance and new forest planting or regeneration, the they estimate a reduction of around 178 million hectares globally over the same period, an area roughly three times the size of France. While this FAO data indicates that the both the global rate of deforestation and net forest loss have declined over recent decades, there has been an increase in forest cover loss in recent years, specifically in tropical countries (FAO, 2020; Weisse and Goldman, 2020).

3.1.3 Agricultural expansion is the primary direct driver of deforestation

Once land is deforested, its most common follow-up land use is agriculture (De Sy et al., 2019). There are regional variation in the patterns of deforestation: in Africa, subsistence agriculture is the dominant driver, in Latin America commercial agriculture and livestock raising are important, while Asia is more mixed (De Sy et al., 2019; Hosonuma et al., 2012). Globally, about a quarter of this deforestation is related to production for international value chains (Curtis et al., 2018; Pendrill et al., 2022), primarily fuelled by demand for commodities like soy, beef, palm oil, and timber expansion[3]. Other direct drivers of deforestation are urban expansion, infrastructure construction and mining, but they represent a far smaller share of global deforestation than agricultural production (Hosonuma et al., 2012). In addition to direct drivers, indirect drivers of deforestation and forest degradation are important to consider, as they explain why land use took place. The most important indirect drivers of deforestation and forest degradation are related to poverty (including indebtedness and a lack of alternative income sources), unclear land tenure, governmental support for commercial agriculture, population growth and weak law enforcement (Weatherley-Singh and Gupta, 2015).

3 Council of the European Union 2019. Conclusions of the Council and of the Governments of the Member States sitting in the Council on the Communication on Stepping Up EU Action to Protect and Restore the World's Forests: Outcome of proceedings. Available at https://www.consilium.europa.eu/media/41860/st15151-en19.pdf

3.1.4 Drivers of forest protection are diverse

Forest protection is crucial for maintaining biodiversity, combating climate change, preserving water cycles, and supporting indigenous and local communities. The drivers of forest protection are multifaceted, involving an interplay of political, economic, social, scientific, and cultural factors. Successful forest protection efforts require a holistic approach that addresses these diverse drivers and fosters collaboration among stakeholders at local, national, and global levels. Efforts to protect forests focus on reducing deforestation and forest degradation, preventing illegal logging, promoting sustainable forest management, restoring degraded areas (e.g. through reforestation) and supporting indigenous rights and knowledge that have been corner stones of managing forests sustainably for generations. In additions, policies and international agreements like the Paris Agreement and the Convention on Biological Diversity, play an essential role in establishing global goals for forest protection. Protecting forests isn't just about conserving trees but also preserving ecosystems, cultural heritage, and climate stability for future generations.

Despite these efforts, challenges like illegal logging, agricultural expansion, mining, and climate change put forests under constant threat. Expanding forest protection, improving transparency in supply chains, and increasing funding for forest conservation are critical to ensuring long-term forest health.

3.2 The EU Regulation on Deforestation-free Products (EUDR)

The EUDR was adopted in May 2023, and, after a postponement of a year, is expected to enter into force on 30 December 2025 (Council of the European Union, 2024). The regulations is aimed at reducing the impact of the EU's consumption of FRCs has on forests world-wide. the EU adopted the EU Regulation on Deforestation-free Products (EUDR). In short, the EUDR will require business placing cattle, cocoa, coffee, palm oil, soy, wood and rubber on the EU market to carry out due diligence to ensure that the products were produced in accordance with local laws and on land that was not deforested after 2020 (European Commission, 2023).

Table 2. *Source: Eurostat*

Country	2021 in Tonnes	2021 % of Total	2022 in Tonnes	2022 % of Total	2023 in Tonnes	2023 % of Total
Brazil	1,033,105	37.1%	1,041,696	35.3%	921,545	34.7%
Vietnam	533,059	19.1%	648,005	22.0%	632,750	23.9%
Uganda	212,289	7.6%	214,649	7.3%	206,254	7.8%
Hunduras	191,085	6.9%	158,430	5.4%	168,719	6.4%
India	122,506	4.4%	151,471	5.1%	118,079	4.5%
Colombia	142,211	5.1%	124,278	4.2%	111,986	4.2%
Peru	84,618	3.0%	130,285	4.4%	83,005	3.1%
Indonesia	85,941	3.1%	102,152	3.5%	68,212	2.6%
Ethiopia	83,113	3.0%	92,474	3.1%	59,027	2.2%
Tanzania	40,182	1.4%	35,496	1.2%	45,049	1.7%
Nicaragua	41,924	1.5%	38,170	1.3%	33,281	1.3%
Guatemala	33,079	1.2%	31,442	1.1%	32,753	1.2%
Papua New Guinea	19,912	0.7%	21,725	0.7%	28,673	1.1%
Kenya	15,951	0.6%	20,056	0.7%	26,025	1.0%
Mexico	27,776	1.0%	25,533	0.9%	17,170	0.6%
Côte D'Ivoire	13,195	0.5%	13,163	0.4%	14,604	0.6%
Costa Rica	13,276	0.5%	9,373	0.3%	12,148	0.5%
Cameroon	15,286	0.5%	9,734	0.3%	9,256	0.3%
El Salvador	6,949	0.2%	8,804	0.3%	8,877	0.3%
Lao People's Rep.	12,196	0.4%	8,434	0.3%	8,309	0.3%
Burundi	10,375	0.4%	4,755	0.1%	8,221	0.3%
Rwanda	8,394	0.3%	7,734	0.2%	8,133	0.3%
Others	41,609	1.5%	54,918	1.9%	30,878	1.1%
EU27 Total (excl. intra-EU)	**2,788,031**	**100.0%**	**2,952,775**	**100.0%**	**2,652,954**	**100.0%**

3.2.1 The EUDR fits in a trend of EU regulation aimed at protecting forest

The EUDR is not the first EU effort aimed at reducing deforestation and forest degradation. In 2003, the EU adopted the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. The main component of this plan was the EU Timber Regulation (EUTR), which put due diligence obligations on operators to ensure the timber they put on the EU market did not originate from illegal logging. Furthermore, the EU engaged in Voluntary Partnership Agreements (VPAs) to support third countries in combating illegal logging and incentivize sustainable timber production (Henn 2021). However, the EUTR did not cover the most of important driver of deforestation: conversion to agricultural land (Hosonuma et al. 2012; Pendrill et al. 2022). The EUDR is aimed at reducing this driver, and hence will have a wider scope than the EUTR, in two crucial ways: Firstly, it expands the scope from timber to in total seven forest risk commodities. Secondly, it covers not just illegally produced products, but any product from newly deforested land (Köthke, Lippe, and Elsasser 2023).

3.2.2 The three pillars of EUDR are information collection, risk assessment and risk mitigation

Under the EUDR, operators (businesses placing relevant FRCs on the EU market) and traders (firms trading in the communities within the EU) are obliged to carry out due diligence to ensure that the commodities were produced legally, and do not come from land that has been deforested (or forest that has been degraded, in the case of wood) after December 2020. This due diligence procedure consists of three pillars: information collection, risk assessment and risk mitigation (Miribug, 2022).

3.2.3 EUDR will require collection of detailed information, down to the plot level

The information required for the due diligence procedure is very detailed. Relevant products placed on the EU market should be accompanied by detailed provenance information in the form of geographic coordinated of the plots of land where they are produced. Names of all intermediaries and producers involved in the supply chain may also be required (Naranjo et al., 2023).

3.2.4 The European Commission will assist risk assessment through country-benchmarks

Once this data has been collected, a risk assessment can be carried out. For example, the geographic information can be cross-checked with forest maps or site visits to determine if the products come from deforested land. The European Commission will support the risks assessment by providing benchmarks for countries or regions, assigning high, standard, low or (possibly) no risk to them. The Commission will base the risk categorization on the rate of deforestation and forest degradations, the rate of expansion of agricultural land and the production trends of relevant products as well as the countries' efforts to fight deforestation and climate and agreements place between the countries and the EU.

3.2.5 Operators and traders are required to take detailed risk mitigation actions

If risks of deforestation have been identified, risk mitigation measures should be taken. Such mitigation actions can collection of additional information through actions such as request for additional documentation, independent surveys, or field audits (Miribug, 2022; Naranjo et al., 2023). All operators and traders should have policies in place for risk mitigation, and these policies are subject to audits by national authorities to ensure compliance.

4. Country profiles

4.1 Ethiopia

4.1.1 Exporting coffee to the EU is important to Ethiopia's economy

Ethiopia is the fifth-largest producer in the world, producing roughly 5% of the global supply of coffee (FAO, 2024). The production of coffee is of great importance to the national economy, representing 30% to 40% of the total exports (Petit, 2007; Worku, 2023). It provides a source of livelihood for over 5 million smallholder farmers who supply 95% of the national coffee production (Amamo, 2014). Ethiopia has exported to 104 countries by 16,850 transactions in the past five years (2019 to 2023). In these years about 122,107 tons of coffee have been exported with an aggregate value of 5,155 million USD. Table 7 shows the top ten Ethiopian coffee export destination countries and the respective cumulative quantity and value from the year 2019 to 2023. The top ten export destinations are Germany, Belgium, Italy, and France from European countries; and Saudi Arabia, USA, Japan, South Korea, Sudan, and China from non-European countries, in order of importance. Top ten destinations received 82% and 80% of the total volume produced and value earned respectively, while European countries (included in the top ten) were supplied with 31% of the total volume and 27% of the total value. The detail of the top ten Ethiopian coffee export destinations for each year is presented in Annex 4 and 5. There is a slight decrease in the number of destination countries, from 84 to 72 countries, in the past five years.

Table 3. *Ethiopian coffee export quantity & value of top ten destinations from 2019 to 2023. Source: Summarized based on data from ECA*

Destination description	Quantity			Value		
	Country	Tons	Share (%)	Country	Million USD	Share (%)
Top 10 destinations (Rank)						
– 1st	Saudi Arabia	22,710	18.6	Saudi Arabia	810.3	15.7
– 2nd	Germany	20,484	16.8	Germany	718.2	13.9
– 3rd	USA	12,183	10.0	USA	707.2	13.7
– 4th	Japan	11,119	9.1	Japan	425.1	8.2
– 5th	Belgium	9,362	7.7	Belgium	418.2	8.1
– 6th	S/Korea	7,819	6.4	S/Korea	388.1	7.5
– 7th	Sudan	5,310	4.3	Sudan	222.4	4.3
– 8th	China	4,267	3.5	China	168.3	3.3
– 9th	Italy	3,927	3.2	Italy	143.5	2.8
– 10th	France	3,411	2.8	France	130.7	2.5
Total						
– Top 10 – EU		37,184	30.5		1,410.7	27.4
– Top 10 – Non-EU		63,408	51.9		2,721.3	52.8
– Top 10 – All		100,592	82.4		4,132.0	80.2
– All destination countries		122,107	100.0		5,155.0	100.0
Number of destinations		104				
Number of transactions		16,850				

4.1.2 Coffee yields in Ethiopia are relatively low

Despite the importance of coffee to the national economy, and the suitability of soils and climate to coffee production, coffee productivity (yield per hectare) is estimated to be below world average (Petit, 2007; Worku, 2023). The productivity is difficult to calculate exactly, because of local coffee consumption and the variety of production systems (Petit, 2007). Coffee production systems in Ethiopia are generally categorized into four types: forest coffee, semi-forest coffee, garden coffee, and plantation coffee (Petit, 2007; Worku, 2023). Based on of the data from Ethiopian Coffee and Tea Authority (ECTA), we can break down the contribution of each production system to total forest production (Tefera et al., 2024): forest coffee accounts for 11% of Ethiopia's coffee production. It is a wild coffee grown under the shade of natural forest trees and it does not have a defined owner. Semi-forest coffee farming, 37% of production, is a system where farmers thin and select forest trees to let sufficient sunlight to the coffee trees and to provide adequate shade. A farmer who prunes and weeds the forest area once a year claims to be the owner of the semi-forest coffee. Garden coffee, 45% of total production, is normally found in the vicinity of a farmer's residence. It is normally fertilized with organic material and usually intercropped with other crops. Finally, plantation coffee accounts for just 7% of production. Supported by the government or private investors results in higher use of chemical inputs such as fertilizers and herbicides than the other types. Production is mostly destined to export markets.

4.1.3 The Ethiopian export sector faces macro-economic and political challenges

The Ethiopian coffee export market faced issues with traders exporting coffee at a loss to earn foreign currency, which they used to import high-demand goods like construction materials and vehicles, distorting agricultural product prices. To address this, the ECTA, in coordination with the National Bank of Ethiopia (NBE), introduced the "Export Coffee Contract Administration" directive on January 28, 2020. This directive set a minimum coffee export price based on a global weighted average for various coffee grades, which all exporters must meet or exceed to avoid legal action. Under this directive, exporters submit contracts to the NBE, which reviews them against international and local prices. A minimum price is recalculated daily, and exporters adjust their contract prices accordingly. Additionally, due to a foreign currency shortage, the NBE imposed a restriction: exporters can retain only 20% of their earnings in USD for imports, while the rest must be converted to the local currency (Birr). This has limited coffee exporters' ability to import goods and it provoked dissatisfaction, with calls to raise the 20% limit. Ongoing security issues have further complicated labour and logistics for exporters (USDA Foreign Agricultural Service, 2022).

4.1.4 Forest development activities in Ethiopia have been improving

An estimated 40% of natural forest landscapes in Ethiopia have disappeared at a rapid rate in the past hundred years (GIZ, 2023). Deforestation and forest degradation are among the main environmental challenges in the country. The major factors in deforestation and degradation are high population pressure, particularly in the north, due to the high demand for agricultural and grazing plots and fuelwood. From 2002 to 2023, Ethiopia lost 96.5 kha of humid primary forest, making up 20% of its total tree cover loss in the same time period. Total area of humid primary forest in Ethiopia decreased by 5.1% in this time period. From 2001 to 2023, Ethiopia lost 1.20 kha of tree cover from fires and 503 kha from all other drivers of loss (Global Forest Watch, 2024a). The government, with the support of diverse non-governmental organizations, implements numerous forest development activities, including area enclosures, participatory forest management, biosphere reserves, pioneering forest carbon projects, etc. As a result, the landscape of the forestry sector is changing. A more recent estimation based on a revised definition of forest to include trees with a height higher than two meters, a canopy cover of 20%, and a plot size equal or above 0.5 Ha, was announced by the prime minister with a special ceremony held on June 23, 2024 (Ethiopian News Agency, 2024b). This revised estimation for the year 2023 is 23.6% and has increased the total forest cover of Ethiopia due to the inclusion of previously excluded lowland forests and trees planted in the past few years by the Green Legacy Initiative (GLI) (Tefera et al., 2024).

4.2 Cameroon

4.2.1 The importance of the coffee sector in Cameroon has been declining

In 2022, Cameroon's coffee exports totalled $22.8 million, positioning the country as the 67th largest coffee exporter globally. During this period, coffee ranked as Cameroon's 15th most exported product. The primary destinations for Cameroonian coffee included France ($6.77 million), Portugal ($4.23 million), Italy ($4.21 million), Germany ($1.7 million), and Ukraine ($919,000). Between 2021 and 2022, Cameroon's most rapidly expanding coffee export markets were Turkey (up by $496,000), Egypt (up by $392,000), and the United Kingdom (up by $383,000) (OEC, 2024).

Coffee has long been central to rural development in Cameroon, standing alongside cocoa and cotton as a key agricultural commodity: nationally, it was a vital source of foreign exchange, funding investments in productive infrastructure, while locally coffee production provided the primary source of cash income for many rural communities, deeply influencing their livelihoods and daily activities (ICO, n.d.). Acknowledging its significance, the State played an active role in supporting the sector through measures such as input distribution and price stabilization. However, over the past three decades, a combination of falling global coffee prices and the State's retreat from coffee development has severely undermined these gains. As a result, the sector has steadily declined, losing much of its former prominence in Cameroon's rural economy (ICO, n.d.).

4.2.2 Cameroon faces continuous high pressure on forests

Between 2002 and 2023, Cameroon lost 976 kha of humid primary forest, making up 49% of its total tree cover loss in the same time period (Global Forest Watch, 2024b). The total area of humid primary forest in Cameroon decreased by 5.1% in this time period (Global Forest Watch, 2024b). Cameroon forests cover approximately 30 million hectares. Deforestation was relatively low until 2013, but annual rates have doubled between the 2006–2012 period and the 2013–2019 period (CAFI, 2024). Replacing large imports of agro-food products by domestic agricultural production is part of the national vision as it negatively impacts the trade balance. The country also wishes to become an emerging and industrialized economy by 2035. The population of the country is expected to double by 2046. All of the above will put even more pressure on the natural resources due to growing demand for food products.

The government strategy to satisfy the growing national and regional market for oil palm and its industrialized derivatives and to double cocoa production could further drive increasing deforestation and forest degradation. Unlike other countries in the region, Cameroon is already experiencing very significant pressure on land, not only due to demographic factors but also related to the development of economic activities.

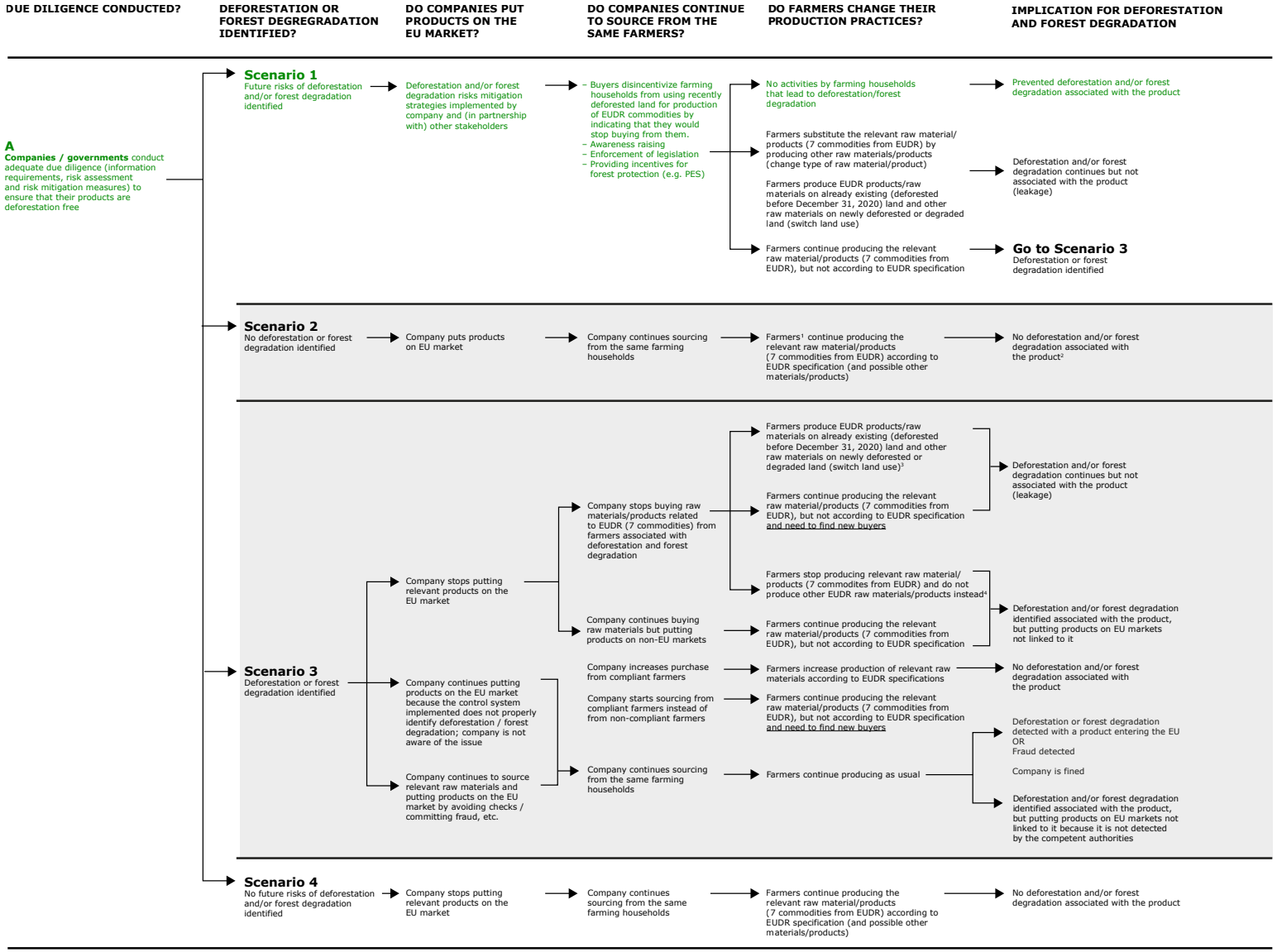
5. Anticipated and alternative causal pathways in EUDR implementation

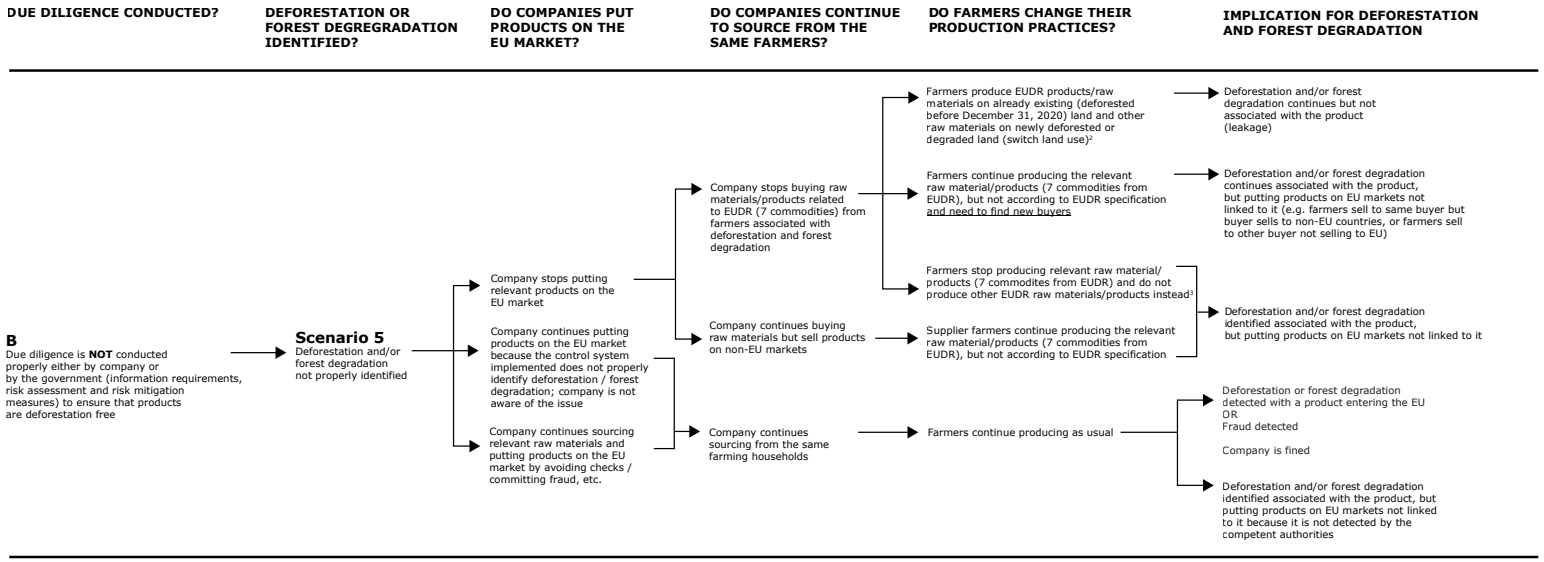
Figure 1 shows a Theory of Change that connects the actions of value chain actors in relation to EUDR compliance to anticipated implications for deforestation and forest degradation (from left to right). In mapping these pathways of behaviour of the different stakeholders that would be necessary to achieve that goal, three key assumptions emerged:

1. Adequate due diligence is conducted to identify (risk of) deforestation or forest degradation (or lack thereof)
2. Effective deforestation risk mitigation strategies are applied
3. Farmers (start to) apply EUDR compliant production practices.

Each of these assumptions needs to hold true in order for the EUDR to have a positive impact on preventing deforestation and/or forest degradation (unplanned impacts notwithstanding). In this chapter, we discuss the likelihood of the assumptions holding true, based on the inputs gathered from the country case studies and literature review. This is marked in the figure as part of Scenario 1. The Theory of Change also incorporates other scenarios that may occur if some but not all of the assumptions hold true.

Figure 1. *Theory of Change connecting the actions of value chain actors in relation to EUDR compliance to anticipated implications for deforestation and forest degradation*





[1] "Farmers" refers to the original suppliers of the company.
[2] The product produced by the farmers we refer to. Not necessarily the product sold by the company.
[3] Considered highly unlikely as 5 out of 7 EUDR products are perennial crops which are difficult to replace.
[4] Considered highly unlikely by experts as 5 out of 7 EUDR products are perennial crops and 1 requires much upfront investment.

5.1 Key assumption 1: Adequate due diligence is conducted to identify (risk of) deforestation or forest degradation (or lack thereof)

This assumption pertains to assumed operator EUDR compliance by carrying out due diligence, and to the assumed ability of due diligence process to accurately identify (risk of) deforestation and forest degradation.

Difficulties in carrying out due diligence may prevent proper identification of (risk of) deforestation or deforestation (or lack thereof)

While theoretically possible, the current research did not yield any indication that operators on the European market will intentionally be negligent in their due diligence – though it would have been unlikely that signals suggesting otherwise would be openly shared. It will be a role of competent authorities to monitor this part of the assumption.

A more likely reason for this assumption to not hold true in all cases is a lack of capacity to carry out due diligence adequately. The country case studies reveal several reasons why due diligence might not adequately identify (risk of) deforestation or forest degradation. For instance, in both Cameroon and Ethiopia, there is a notable lack of clarity among coffee sector stakeholders regarding what compliance with the EUDR requires, and what the specific obligations are for each actor in the coffee value chain. To illustrate this point: in Cameroon, three out of six interviewed traders were unaware of the EUDR's existence. In Ethiopia, over half of the interviewed key informants had no information about the regulation. This unawareness will make it difficult for these stakeholders to play their part of the due diligence.

Further unclarity arises from the definitions of the key concepts that underpin the EUDR: forests, forest degradation, and deforestation. These definitions vary between the EU and coffee producing countries. For example, while Ethiopia and the EU share the same minimum size for a forest (i.e. 0.5 hectare), their criteria differ in terms of tree height and canopy cover percentage. The EU defines a forest as having at least 5 meters in tree height and 10% canopy cover, while Ethiopia uses a 2-meter minimum tree height (which accommodates inclusion of its lowland forests into the definition) and requires at least 20% canopy cover. Regarding the definition of deforestation, the EU states that it pertains to the conversion of forest to agricultural use. However, part of the coffee that is grown in Ethiopia is grown under forest cover. It is unclear whether this type of coffee production falls under the definition. Additionally, the definition of deforestation does not consider the legality of land use changes according to the producing country. These differences are expected to pose problems in accurately identifying deforestation and forest degradation (according to the EU definitions) at country-level.

The country case studies identified various efforts to increase stakeholder awareness of and ability to comply with the EUDR in both countries. For example, the government bodies that are responsible for the coffee sector (PARF-CAFÉ in Cameroon, Ethiopian Coffee and Tea Authority in Ethiopia) have organized stakeholder dialogues, task forces, awareness sessions, establishment of plot coordinates, etc. Non-governmental organizations also provide support, some of which (co-)funded by the EU (e.g. the Sustainable Agriculture for Forest Ecosystems project which is active in Cameroon, among other countries). The one-year postponement of EUDR obligations that was announced on 14 November 2024 provides these initiatives with more time to achieve the required reach. Whether these efforts prove enough to inform the relevant parties in time, and whether due diligence efforts are accurate in identifying deforestation and forest degradation (risk) will need to be monitored.

5.2 Key assumption 2: Effective deforestation risk mitigation strategies are applied

This assumption revolves around the question of what European operators and local buyers will do with the outcome of the risk assessment. While there are different ways of effectively mitigating operator risk of being non-compliant with the EUDR, not all of these ways can be expected to lead to prevention of deforestation and forest degradation. This depends on the type of risk mitigation measures that are taken. The Theory of Change outlines the following possibilities upon its entering into force:

Figure 2. *Categorization of risk mitigation strategies based on whether the same origins are used as pre-EUDR, and the risk categorization of that new origin.*

	(New) origin classified as "zero or low risk"	(New) origin classified as "standard or high risk"
A. Continue to source from same origin	**Easy compliance, but less effective.** No association with deforestation and forest degradation on EU markets, but relatively low likelihood of preventing future deforestation and forest degradation.	**Difficult compliance, but potentially more effective.** Potential to prevent deforestation and forest degradation by discouraging future deforestation and forest degradation.
B. Switch to different origin	**Easier compliance, but less effective.** No association with deforestation and forest degradation on EU markets, but "whack-a-mole" effect: association with deforestation shifts to non-EU markets.	**More difficult compliance, but potentially more effective.** Potential to prevent deforestation and forest degradation by discouraging future deforestation and forest degradation. Not incentivized by EUDR.

It follows that maximum forest protection could be achieved if the need to comply with the EUDR does not cause operators to shift their sourcing practices towards areas that pose a smaller risk of deforestation, but rather, effectively encourages current parties in countries classified as at risk to (continue to) apply forest-friendly production practices.

Differences in risk profiles, government prioritization of the coffee sector, and farm size may make some sources more attractive to European market operators than others
The analysis of the EUDR law text and country case studies found various factors that may make it attractive for operators to mitigate their risk by choosing one source of coffee over another. These factors include:

- **Countries that have a low risk profile.** Countries that are considered to have a relatively low risk profile have more relaxed due diligence requirements than their standard to high risk counterparts (though the geolocation requirement currently applies to all risk categories). For low risk countries, third-party audits, field verification, and high-resolution satellite monitoring do not have to be conducted. Countries are classified with higher risk profiles due to high rates of recent deforestation, high corruption levels and/or weak enforcement of national laws (European Commission, 2024).
- **Countries that are likely to invest in their coffee sector.** As described in Chapter 4, the Ethiopian coffee sector is of high (economic) importance to the country, whereas the Cameroonian coffee sector is smaller and continues to shrink. This difference seems to be reflected in the likelihood of national level government interviewees being aware of the EUDR. The relevant government officials in Ethiopia were aware of the EUDR, and the government, while worried about Ethiopia's ability to be ready in time, has various strategies in place to facilitate compliance. Meanwhile, in Cameroon, government level interviewees state that there is the lack of resources to respond to the requirements of the new regulation.
- **Larger-size producers.** There are also within-country differences. In Ethiopia, the country case study found that large-size producers were more likely to be ready for the EUDR than small-scale producers. They were more likely to have already mapped their geolocation information than smallholders. Meanwhile, export from coffee produced by smallholder farmers (who provide 95% of Ethiopian coffee production, as established in Chapter 4) tends to require higher amounts of aggregation, involving multiple brokers and therefore larger challenges to implement traceability requirements. In Cameroon, a similar issue regarding aggregation was raised: volumes produced by farmers who can or cannot demonstrate the origin of their coffee are not kept separate, and are sold to the same exporters.

Whether such shifts in sourcing will happen in practice should be monitored, as well as any effects on deforestation and forest degradation in high-risk areas.

5.3 Key assumption 3: Farmers (start to) apply EUDR compliant production practices

The core of the EUDR is to discourage deforestation and forest degradation and therefore the use of recently deforested lands to produce crops like coffee. This assumes that it will promote a certain type of forest-friendly practice at farmer level, which may or may not already be applied.

Farmers are largely uninformed about the EUDR and its implications

In both Ethiopia and Cameroon, the assumption that the EUDR will incentivize producers to (start to or continue to) apply forest-friendly production practices did not hold true at the time of our discussions with farmers, as many farmers remain unaware of the regulation and its requirements. In Ethiopia, 78.7% of the local level stakeholders in the Ethiopian sample were unaware. In Cameroon, the exact number varied across the six focus groups, ranging from 0% awareness in two groups, to a small majority being aware (9/15) majority in one of them. Without sufficient knowledge, it is unlikely that farmers will evaluate their production behaviours in anticipation of the EUDR's implementation. For this assumption to hold true, it is essential that farmers receive adequate information about the regulation and understand its implications for their practices, as well as support to meet requirements if needed, allowing the EUDR to serve as a genuine incentive for forest conservation. As described in Chapter 5.1, there are governmental and non-governmental efforts ongoing in both countries to increase this awareness.

Farmers may be incentivized to switch to alternative activities

Attractive alternatives to producing EUDR compliant coffee do exist in both countries. In Cameroon, the coffee sector has already been shrinking (see Chapter 4.2), which caused farmers to move to cocoa production (which also falls within the scope of the EUDR), or non-EUDR crops such as maize and plantain. In Ethiopia, interviewed farmers perceive a high demand for non-EUDR crops such as enset, banana, mango (for intercropping), and khat (a stimulant plant) that could incentivize them to shift away from coffee. Khat, in particular, is considered appealing due to its perceived higher income potential and ability to be harvested multiple times a year, making it a more profitable choice compared to coffee. Shifts away from coffee to khat, prompted by coffee price drops, have also been observed in the past (Belwal and Teshome, 2011).

The EUDR approach may not match farmers' perceptions of what is needed for forest conservation or incentivize their current reforestation efforts

The country case studies found several ways in which the EUDR approach may not align with current stakeholder perceptions of what constitutes forest-friendly practice. For example, Ethiopian "shade coffee" – coffee that is produced under tree cover, is considered a forest-friendly production practice, and is applied to varying extents by roughly half of farmers (Tefera et al., 2024). However, forest used for agriculture is considered "deforestation" according to the FAO definition maintained by the EUDR (European Commission, 2023). Relatedly, the Ethiopian case study raised a concern of a discrepancy between "production system incompliance" (coffee production on deforested plots) and "procedural incompliance" (the inability to meet EU procedural requirements and proof of eligibility by transparent traceability). Depending on plot size, type of production system, and type of connection to the market, Ethiopian smallholders may be compliant regarding their production system, but incompliant according to procedures. In Cameroon, the interviewed farmers provided their own suggestions on what would help them prevent deforestation. These revolved around training on Good Agricultural Practices (GAP), provision of inputs (e.g. high quality seedlings of trees for reforestation) and opportunities for alternative ways of earning an income, including off-farm jobs. When discussing forest conservation, the interviewed farmers also mentioned their efforts to practice agroforestry and to plant trees (for fruit or other Non-Timber Forest Products), which would not be incentivized by the EUDR.

5.4 Intended and unintended effects of the EUDR

5.4.1 Deforestation and forest degradation

Prevention of deforestation and forest degradation is not a given

The intended outcome of the EUDR is that deforestation and forest degradation is prevented. If some of the assumptions do not hold up in a given context, this prevention may not occur. There are several ways in which this could happen. One possibility that was identified is that only low-risk coffee ends up on the European market, and that the coffee that is potentially associated with deforestation is rerouted to other markets without similar regulations. This possibility was voiced by the European coffee sector representative as one of the possibilities to facilitate compliance. While the EUDR would be successful in preventing coffee from deforested areas from entering the EU market, it would not contribute to any net reduction in global deforestation or forest degradation. This possibility would need to be monitored. Another scenario (5) where there would be no benefit to forests, at least in theory, is if companies bring non-compliant coffee into the EU– either by inadequate due diligence, or by wilfully ignoring its outcomes. This possibility will be mitigated by monitoring done by the competent authorities.

Agricultural expansion addressed as driver, but indirect drivers of deforestation and forest degradation should be addressed as well
Aligning the EUDR with the results of our literature study on the drivers of deforestation, the EUDR seems to aim to address deforestation and forest degradation by addressing the driver 'agricultural expansion' (specifically commercial agriculture), by making deforestation less economically attractive. Ultimately, deforestation requires behaviour change at various levels, including the producer level to be effective. Producers are actors in a complex system, where there are countless enablers and barriers towards the promoted behaviour. The EUDR compliance requirements do not address the indirect drivers of deforestation and forest degradation, such as poverty, a lack of alternative income sources, unclear land tenure and population growth, which could decrease its effectiveness. The effectiveness could be enhanced with 'accompanying measures' mentioned in the EUDR, by the EU addressing such indirect drivers.

5.4.2 Smallholder farmers

Negative impacts on smallholder farmers may be underestimated
On its "myth buster" page, the EU describes it considers the statement "EUDR will harm smallholders in developing countries" to be a false one. The explanation covers that the EUDR legal obligations are placed on operators, not on farmers, unless they sell directly to the EU. It also states that providing the required geolocation data only needs to happen once, and the required technology is widespread and free (European Commission, n.d.).The current study found indications that the reality proves more complex, and that smallholder farmers do seem to be less likely to be able to be compliant with the EUDR compared to larger producers, which could negatively impact them. The difficulties do not (only) lie in the one-off technical matter of supplying coordinates, as implied by the EU. This is partially demonstrated by the finding that most of the interviewed smallholder farmers in Cameroon and Ethiopia had never heard of the EUDR or its requirements, and have never been asked to provide their coordinates while their coffee could end up on the EU market. Furthermore, there needs to be a system in place that allows geolocation information to remain traceable as coffee is sold on, which keeps fully traceable flows separate from (partially) non-traceable ones. In both Cameroon and Ethiopia, interviewees report that there is currently no distinction made between traceable and non-traceable volumes from many smallholder producers (unless they are part of an outgrower scheme or producer cooperative). This will mean that in both countries, less smallholder-produced coffee can be sold on the European market, narrowing the possibilities on the global market. Theoretically, in the best case scenario (for small scale producers part of these supply chains), other markets can be found for their product, offering similar prices. However, the question is whether this would occur immediately and without (negative) price effects. This potential vulnerability to should be considered taking into account that people that live close to forests tend to be relatively poor and vulnerable, given that forests are generally in remote locations (Sunderlin et al., 2005).

Improved GAP application and halting deforestation could benefit smallholders
The country case studies also yielded a few reports of anticipated positive effects to smallholder farmers. Some farmers in Cameroon expect that EUDR implementation could also lead to better yields and better prices, although they did not elaborate on how this would happen. Secondly, the Cameroonian farmers expressed appreciation for the potential effects in halting deforestation.

5.4.3 Others in producing countries

Negative effects of the EUDR on Ethiopian coffee exports would have widespread impact
As mentioned in Section 4.1.1, exporting coffee to the EU is important to Ethiopia's economy. It contributes to the livelihoods of more than 15 million smallholder farmers and other actors in the coffee sector (USDA Foreign Agricultural Service, 2022). If the country's revenue from the export coffee is somehow reduced as a result of the EUDR, it is likely to be felt by actors in the coffee sector and beyond. Beyond this direct economic importance, national-level key informants emphasize the role that coffee exports play in obtaining foreign currency. If coffee exports drop, this would lead to a reduction in foreign currency inflows in Ethiopia, which is feared to exacerbate the country's ongoing foreign exchange crisis and further limit the country's ability to import essential goods.

No information yet on Cameroon
The interviews with Cameroonian key informants at government level mainly focused on their operational difficulties in preparing their coffee sector for the EUDR, starting with creating awareness. They did not mention any specific concerns for the wider population of the country.

6. Conclusions and recommendations

Centred on Cameroon and Ethiopia, this research analysed the expected effects of the EUDR on coffee-producing landscapes. The central question guiding this research was: What are the (anticipated) impacts of the EUDR on smallholder farmers and deforestation and forest degradation in coffee-producing landscapes? To address this, the study provided an exploratory analysis of anticipated EUDR effects, building on document review and stakeholder interviews. As such, there are a few factors that need to be considered when interpreting the findings. The results may be affected by the regulation not yet being implemented, potential social desirability bias, evolving EUDR policies (during the research period and after), and the exclusion of broader EU deforestation-related policies. A more in-depth analysis of the internal and external validity of the findings can be found in Annex I. We evaluated these developments and believe that the overall narrative stands regardless.

This chapter provides answers to the two parts of the main research question, first zooming into the EUDR's anticipated causal pathways to forest protection, then describing the effects on smallholder farmers. Recommendations to achieve forest protection impact while protecting the other interests of smallholder coffee farmers (the third research question) are integrated into these sections. The chapter ends with a methodological recommendation to help shape future EU initiatives that aim to achieve impact – on forest protection or elsewhere.

6.1 What are the (anticipated) causal pathways to forest protection impact and how does the EUDR fit in?

Generally, once land is deforested, its most common subsequent use is agriculture. 25% of deforestation worldwide is linked to production for international value chains. Beyond direct causes, it is essential to consider indirect drivers of deforestation and forest degradation, as they explain the underlying reasons for land use changes. Key indirect drivers include poverty (such as indebtedness and limited alternative income sources), unclear land tenure, government promotion of commercial agriculture, population growth, and weak enforcement of laws. Aside from prevention of deforestation, reforestation is also needed for flourishing forested ecosystems.

The Theory of Change developed in this study (**Figure 1**) identified numerous potential causal pathways resulting from the implementation of the EUDR, not all of which are expected to lead to net reductions of deforestation and forest degradation. Reforestation is not an explicit intended outcome of the EUDR. We show that the EUDR relies on three critical assumptions: adequate due diligence is conducted to identify (risk of) deforestation or forest degradation (or lack thereof), effective deforestation risk mitigation strategies are applied, and farmers (start to) apply EUDR compliant production practices. However, evidence suggests that these assumptions may not hold across contexts, potentially undermining the intended outcomes of the regulation. To address this, it is recommended to monitor these critical assumptions systematically to ensure the planned pathways are being realized. This could include collaboration with CSO actors for effective oversight. Periodic monitoring could be a part of EU evaluations, including (but not limited to) the EUDR general review that is planned for 30 June 2028 and explicitly aims to consider the impact of the EUDR on least-developed countries and smallholder farmers. Additionally, the adoption of accompanying measures could increase the likelihood of achieving the desired outcomes. These measures should be considered within a systemic approach that aligns with other relevant EU initiatives to enhance overall effectiveness.

Earlier studies on policy options to address imported deforestation recommend that the EU develops Theories of Change for its future policies and regulations. This study echoes this recommendation. Using a Theory of Change makes the anticipated impact pathways explicit, and helps identify key assumptions that need to be mitigated and monitored to lead to the intended results. Ideally, a Theory of Change is created collaboratively with diverse stakeholder involvement. Following this method may have led to a widely accepted intervention, and may have reduced criticism of imposing a top-down approach.

Box 2. *Recommendations to plan impactful future policies and regulations*

6.2 What does the implementation of the EUDR mean for smallholder farmers?

Smallholder farmers may face greater challenges than currently anticipated by the EU in complying with the EUDR, particularly due to limited awareness and infrastructural gaps that hinder traceability, contrary to expectations that requirements for farmers are straightforward and low-cost. The lack of differentiation between traceable and non-traceable coffee streams in countries like Cameroon and Ethiopia further complicates smallholder access to the European market, with potential negative impacts on their market opportunities and income. Recommendations that emerged are to address disparities between procedural and production system (in)compliance, e.g. by supporting collective traceability, and to incentivize farmers to choose forest-friendly coffee production over the available alternatives. Furthermore, addressing some of the indirect drivers of deforestation (e.g. poverty, a lack of alternative income sources), which, as suggested in the previous section, could be part of accompanying measures, may benefit smallholder and forest protection impact synergistically.

- Using a Theory of Change can help analyse your impact and identify critical assumptions to monitor.
- Look at behaviour in a systems perspective. There are reasons why people make the choices that they do. If the promoted behaviour change is assumed to be economically driven, consider the likelihood of the target group switching to alternative behaviours that will help them achieve their economic goals, and try to think of ways to make the promoted behaviour the most attractive option.
- Consider effectiveness of the labelling scheme relative to its scale. EUDR will immediately achieve enormous scale (much large than voluntary schemes) and may still be too small to avoid a whack-a-mole effect, where addressing one problem causes a related issue to arise elsewhere, often unpredictably. A trade-off analysis of the cost and benefits of a labelling scheme should be made for multiple scale-scenarios, and the benefits should outweigh the costs even if "only" a small scale is achieved.
- Catering to consumer demand for sustainability has implications elsewhere in the chain. This is difficult to predict and oversee, even for experts. Consumers may not understand the cost. In this case, European consumers won't have any choice but to accept any premiums that may be caused by the EUDR – but for normal consumer labels, this is not the case.
- Understand the interests and behaviour of the consumer, but also that of the farmer, and other relevant chain actors.

Box 3. *Implications for consumer sustainability labelling initiatives*

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Annex I

Methodological considerations

Internal validity

This study provides an exploratory analysis of stakeholder perspectives on the anticipated effects of the EUDR. While the findings provide valuable insights, several factors must be considered when assessing the validity of the qualitative results. First, it is important to acknowledge that the study focuses on anticipated effects rather than outcomes of implemented policies. At the time of data collection, the EUDR had not yet been implemented, and stakeholders' understanding of its implications was incomplete. This was compounded by limited awareness of the regulation, both in terms of stakeholders that were not reached yet, and questions to the EU that were not answered yet. These factors contributed to a high level of uncertainty in the responses, amplified by the inherent complexity of the policy and the potential for non-linear impacts. Second, social desirability bias may have influenced the responses. Stakeholders might have been disinclined to express certain views candidly, particularly on sensitive topics such as the likelihood of non-compliance with the EUDR. This could have led to an underrepresentation of critical perspectives or a skewed portrayal of stakeholder readiness and intentions. Third, this research used an exploratory case study approach. While this methodology allows to zoom into specific contexts, it inherently limits the generalizability of findings. Fourth, it should be noted that the EUDR evolved during the research period. Over the course of the study, amendments were proposed to the EUDR (e.g. the introduction of a "no risk" categorization of which the status was unclear at the time of writing, and the one-year postponement of implementation), and more information was shared, (e.g. via the Frequently Asked Questions (FAQ) document). We evaluated these developments and believe that the overall narrative stands regardless. Finally, we note that this study did not comprehensively consider other planned EU policies or regulations aimed at preventing deforestation or improving smallholder livelihoods. While some of these topics emerged organically during data collection, they were not systematically integrated into the analysis. This exclusion may have led to an incomplete representation of the broader policy context in which the EUDR operates.

External validity

Several factors affect the generalizability of its findings beyond the specific contexts we analysed. First, while the study captures various coffee production landscapes, it is based on a sample of two countries. Situations in other countries, with different levels of forest cover, degrees of sector organization, or regulatory capacities may diverge significantly. For example, countries with less organized coffee sectors might face unique challenges in complying with the EUDR compared to those with more established supply chain mechanisms. This contextual variability limits the extent to which the findings can be applied across all coffee-producing regions. Second, the scope of stakeholders included in the study was relatively narrow, which does not allow us to draw conclusions regarding other stakeholders that are part of the system. For example, while we found indications that European consumers may face a lack of access to their favourite coffee and (further) price increases, the scope of stakeholders that we talked to do not allow us to explore this in detail without further study. Similarly, there were indications that small- and medium-sized enterprises (SMEs) in Europe may struggle with the due diligence requirements, even under the simplified rules that apply to them, potentially leading to their inability to operate in the EU market and forcing some out of business – but again, this would require further study. The study also came across indications of broader societal and ethical implications of the EUDR, including concerns about neocolonialism, the historical treatment of forests in Europe, and potential perceptions of protectionism. These highlight the complex interplay between the EUDR's objectives and global equity, and point to the importance of evaluating initiatives like the EUDR as part of a broad geopolitical and ethical context.

Colophon

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