CETEX
Centre for Economic Transition Expertise
Research and Policy at LSE

THE CETEX DISCUSSION PAPER SERIES: LAND AND OCEAN

Macroeconomic and financial risks transmitted by the European Union Deforestation Regulation: a focus on the coffee value chain in Honduras

Jodie Keane, Bernardo Arce, Yohannes Ayele and Sherillyn Raga

Summary

The European Union's Deforestation Regulation (EUDR) poses nature-related transition risks for countries exporting to the EU market. The coffee value chain in Honduras provides an excellent context in which to study this, in view of the country's extreme economic dependence on this highly relevant sector and the overwhelming reliance on smallholder and household producers. The macroeconomic and financial risks transmitted by the EUDR — especially for climate-vulnerable and commodity-dependent economies — remain underexplored.

Findings suggest that the overall risks of exclusion for Honduran producers remain extremely high because of the legality and traceability requirements of the EUDR, putting approximately 20% of the country's exports and 7% of its foreign exchange at risk. The general exposure of banks through loans to the coffee sector, as a share of total lending portfolios, is low. However, at the individual level, some banks are highly exposed to credit risks arising from default, with potential for regional spillovers. Finally, the interaction of nature-related transition and climate risks deserves greater attention, given the potential for both financial and trade-related exclusion.

Policy Briefing **Paper 6**

7 November 2025

The CETEx Discussion Paper Series: Land and Ocean is designed to provide a broader and deeper understanding of environmental risks by introducing economic and financial policymakers to ecosystem degradation issues such as deforestation, pollution and biodiversity loss on land and in the oceans. The series aims to support financial and economic policymakers as they contend with and make considerations for these environmental degradation issues, in addition to climate change. The papers have been written and peer-reviewed by leading experts from academia, think tanks and central banks and are based on cutting-edge research.

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Grantham Research Institute on Climate Change and the Environment

1. Introduction

Case studies can illustrate and explore nature-related transition risks, providing vital real-world evidence. So far, they have not been used extensively within the central banking community to study this topic. Here, a case study concerning the effects of the European Union's Deforestation Regulation (EUDR) on the coffee value chain in Honduras investigates some of these risks, providing valuable evidence and insights.

Recent work on central banking and sustainability emphasises that environmental degradation and transition dynamics can affect both price and financial stability through macro-financial transmission channels (NGFS, 2022, 2023). However, there is limited empirical evidence concerning how these risks originate in real-economy adjustment processes.

One promising entry point lies in the global regulatory environment. Developing countries and their exporters are having to adapt to many types of regulations at the same time, in particular those concerning deforestation, carbon border adjustments and supply chain sustainability — in addition to growing regulatory requirements elsewhere, including for food safety.

These new market demands come at a time when the impacts of climate change and, more broadly, nature degradation, are becoming ever more pressing. The overreach of planetary boundaries — for example, biodiversity loss, disruption of water cycles, soil degradation and pollinator decline — are significant and growing challenges.

Countries are consequently not only exposed to the transition risks from their own efforts to decarbonise and reduce environmental harm, but also to the policy spillovers of other countries' efforts (Mehling, 2025; Leturcq, 2025), while concurrently tackling the physical effects of climate change and nature degradation. Trade-related climate measures (TrCMs) that link environmental objectives to trade and investment flows — and can create cross-border transition risks — are among the factors they must consider.

Insights from the global value chain (GVC) literature are particularly relevant in trying to understand how such policy spillovers can create nature-related transition risks. This body of work examines how the position of countries and firms within GVCs conditions the transmission of external shocks and overall economic resilience (Keane, 2012; Nissanke and Mavrotas, 2010).

New environmental standards imposed by regulation or lead firms often increase compliance costs along the chain, generating what has been termed the 'green squeeze', where smaller or less-capitalised producers bear disproportionate adjustment burdens and risk exclusion (Keane, 2023; Keane et al., 2024; Krishnan and Maxwell, 2020).

Building on this, the GVC literature on supply chain governance describes how any new compliance cost tends to be distributed or absorbed depending on existing power relationships (Ponte, 2022; Humphrey and Schmitz, 2004). These asymmetric dynamics are not only commercial but also financial: firms' ability to absorb costs depends on their borrowing and repayment capabilities and on relationships with different types of financial intermediation. Hence, understanding the structure of the value chain, the nature of contractual relationships and the broader institutional context — including financial linkages and financial intermediation — is critical to understanding how nature-related transition risks propagate through international production networks and into the financial system (Keane, 2012).

"Understanding the structure of the value chain, the nature of contractual relationships and the broader institutional context — including financial linkages and financial intermediation — is critical to understanding how nature-related transition risks propagate through international production networks and into the financial system."

This intersection between GVC dynamics and macro-financial transmission mechanisms provides a conceptual bridge to the emerging literature on nature-related financial risks. The Network for Greening the Financial System (NGFS) framework distinguishes physical from transition risks, with the latter arising from shifts in policy, technology, or market preferences during the environmental transition (NGFS, 2022). From this perspective, measures such as TrCMs can act as transition shocks with the potential to influence both microeconomic and macroeconomic conditions, interacting with central banks' mandates on price and financial stability, particularly in economies that are highly dependent on exports of nature-intensive commodities.

Despite the exploration of nature-related transition risk in the NGFS conceptual framework (NGFS, 2024), empirical evidence remains scarce. Whilst there are anecdotal reports of shifting suppliers following new environmental regulations, there are no event studies assessing how these policy announcements affect trade dynamics, firm adjustment and wider macroeconomic outcomes (Keane, 2023; Keane et al., 2024).[1]

Existing modelling of TrCMs suggests potential negative impacts on exports and, in turn, gross domestic product (GDP) (de la Vega, 2024; Debowicz and Engeda, 2024; Conte Grand et al., 2024; Zhuawu, 2025). These arise primarily from higher compliance costs and the risk of market exclusion for producers unable to meet new standards. However, aggregate scenario analyses do not capture the firm-level restructuring that may occur as some producers or exporters adapt more successfully than others. This heterogeneity implies differentiated exposure to financial stress along the value chain, which is an unexamined channel through which TrCM could influence macro-financial stability.

The literature highlights a clear research gap. While the potential for trade-related climate measures to generate transition risks is recognised conceptually, their concrete macro-financial implications remain largely untested (van Huellen et al. 2024; van Huellen and Newman, 2020; Nissanke and Mavrotas, 2010). In particular, the ways in which value chain structures and financing relationships mediate these shocks has yet to be systematically assessed in commodity-dependent economies.

This gap is addressed here by examining the European Union Deforestation Regulation (EUDR) as a salient trade-related climate measure and exploring its implications using the case of Honduras, where export dependence on nature-intensive commodities makes such risks especially relevant. The report employs value chain analysis to trace relationships among actors and their links to different forms of finance, situating the assessment within the NGFS framework on nature-related financial risks (NGFS, 2022, 2023, 2024) and recent work on macroeconomic exposure to the green transition (Magacho et al., 2023).

2. Case study: macroeconomic and financial risks to the Honduran coffee industry from the European Union Deforestation Regulation

The EUDR (EU, 2023) aims to minimise the European Union's (EU's) contribution to deforestation by prohibiting the sale of selected commodities and by-products — including coffee — that have contributed to deforestation. It imposes additional checks on imports through heightened due diligence for products sourced from countries deemed to

"Trade-related climate measures can act as transition shocks with the potential to influence both microeconomic and macroeconomic conditions, interacting with central banks' mandates on price and financial stability, particularly in economies that are highly dependent on exports of nature-intensive commodities."

[1] TrCMs, such as the European Union Deforestation Regulation (EUDR) are often called an environmental and not a trade measure, hence impact assessments across trading partners have not been considered necessary (EC, 2025).

be a high risk for deforestation. Products placed on the EU market must be accompanied by a due diligence statement that confirms they have not contributed to deforestation and have been produced legally (EU, 2023). The penalties levied on companies for non-compliance are substantial. It is widely acknowledged that proving compliance will be costly, with a need for traceability systems and data governance.

Honduras provides a particularly relevant case for examining these issues. As with many Central American countries, its economy is highly dependent on coffee production. It is the seventh largest coffee exporter globally, and the largest producer in Central America (IHCAFE, 2024). As such, the coffee sector is a significant contributor to Honduras's economic and social development. As of 2024, coffee makes up 30% of agricultural GDP (IHCAFE, 2024) and 22.3% of exports (USDA, 2024). Sales to the EU market account for roughly 50% of total coffee exports (IHCAFE, 2024), around 20% of total exports and approximately 7% of the foreign exchange market.[2]

Over 90% of coffee production in Honduras is undertaken by smallholder producers and family farms (Chalmers et al., 2024), which have limited capacity to meet EUDR requirements and are therefore more vulnerable to exclusion. Recent evidence suggests that only a small proportion of the land used for coffee cultivation is connected to forest loss, though land use data is only available up to 2021, with low spatial granularity (Chalmers et al., 2024), limiting tracking of recent or localised deforestation dynamics. Importantly, the Fairtrade Foundation (Lala et al., 2024) finds that smallholder practices tend to be more environmentally sustainable than those of larger-scale plantations.

Honduras already exhibits high climate vulnerability. For example, during the 2020–2021 season, the overall harvest was 27% smaller than the previous year's because of the impact of hurricanes. By 2050, it is estimated that the areas with productive potential will be reduced by around 50% and this realisation has driven the implementation of climate change policy within the coffee sector (Duron Gallardo et al., 2024). Similarly, the Honduran Central Bank has recognised the effects of climate change on coffee yields and explicitly recommends improving farms' resilience to climate change (BCH, 2025).

In parallel, there is an increasing appreciation within the Honduran Central Bank that climate shocks represent a growing economic risk to the Honduran economy. This includes loss of crops, lower yields and commodity price volatility due to extreme weather events. The broader impacts of climate change on commodity prices have increasingly been acknowledged by central banks in both consumer and producer countries.

Given the anticipated implementation of the EUDR, Honduras has initiated different approaches to boost institutional capacity to support adjustment. However, there has not been a systematic assessment of the value chain structure and the macroeconomic and financial risks that may arise due to non-compliance. For example, exclusion from the value chain could have implications for both the price and financial stability mandates of the Honduran Central Bank.

Motivated by this systemic reality, this study explores and assesses the nature-related transition risks associated with TrCMs by focusing

"Over 90% of coffee production in Honduras is undertaken by smallholder producers and family farms (Chalmers et al., 2024), which have limited capacity to meet EUDR requirements and are therefore more vulnerable to exclusion."

[2] Authors' estimates based on Banco Central de Honduras (BCH) data.

on the EUDR. The case of Honduras illustrates how such risks manifest in commodity-dependent and climate-vulnerable economies, with implications that extend beyond the national context. A key factor shaping these risks is the financial and institutional capacity of actors within the coffee value chain to comply with the regulation. Limited access to credit, weak coordination and high compliance costs determine which producers can adapt and which face exclusion.

Access to finance and institutional preparedness therefore become critical determinants of adjustment. Only some actors in the Honduran coffee chain — intermediaries, exporters and equipment companies — have access to private finance. One such is the Instituto Hondureño del Café (Honduran Coffee Institute — IHCAFE).

Public finance might come from El Banco Hondureño para la Producción y la Vivienda (BANHPROVI) and El Banco Nacional de Desarrollo Agrícola (BANADESA), or from non-governmental organisations (NGOs) (Root Capital) (UNDP, 2018). However, for smallholders financing is deemed to be inadequate or non-existent, worsened by the lack of property titles.

This weak access to credit and formal documentation limits producers' ability to meet the EUDR's legality requirement, one of its three compliance pillars,[3] which demands proof that production conforms with national laws on land use and ownership. Many smallholders cannot demonstrate legal title or traceable legality, creating a structural risk of non-compliance and potential exclusion from EU markets.

Studies have identified multiple barriers to EUDR compliance in Honduras, including technical — knowledge and capacity — and financial constraints, as well as broader institutional weaknesses that particularly affect smallholders (ten Hove et al., 2025; Zhunusova et al., 2022). These challenges are exacerbated by the large number of unprepared actors within the coffee value chain (RECOFTC, 2024).

Key gaps include the absence of an effective traceability system, limited awareness of EUDR requirements (Colindres and Ceballos-Sierra, 2024), weak inter-institutional coordination (Chalmers et al., 2024) and insufficient mechanisms for information sharing across the value chain. High compliance costs further compound these issues (Solidaridad, 2025). Despite these well-documented barriers, the potential exclusion risks for producers — and their broader macroeconomic and financial implications — remain largely unexamined.

3. Conceptual framework and methodology

Figure 1 presents this report's conceptual framework, which integrates both value chain compliance risks and financial risks (Keane et al., 2024; Krishnan and Maxwell, 2020; NGFS, 2022; Raga et al., 2023; NGFS, 2024). Nature-related transition risks are identified by exploring direct compliance costs (traceability, certification), indirect trade impacts (exclusion, shifts in sourcing, price effects) and financial risks (i.e. credit, operational, liquidity, market risks). In doing so, this study analyses how EUDR-related transition risks may translate into financial risks.

To examine financial risks, this study assesses the level of exposure and risks of non-compliance for different actors (Chalmers et al., 2024; IHCAFE, 2024; ILO, 2024; UNDP, 2018) along the GVC. However, this approach has limitations. One is the difficulty of linking microdata on

"Limited access to credit, weak coordination and high compliance costs determine which producers can adapt and which face exclusion."

[3] The others are geolocation (e.g. ensuring farms are located within non-deforested areas) and traceability (e.g. linking each production lot to its farm).

loans to every actor within the value chain. The study also encountered challenges in undertaking field work, including in ensuring effective stakeholder participation across the value chain. For example, although producers and exporters were represented through the IHCAFE — a key informant — we were unable to engage directly with producers.

Within the broader landscape of nature-related transition risks, the EUDR presents potential financial risks of particular relevance to central banks. By reshaping supply and demand for key commodities in both exporting countries and the EU, the regulation may generate significant market uncertainty.

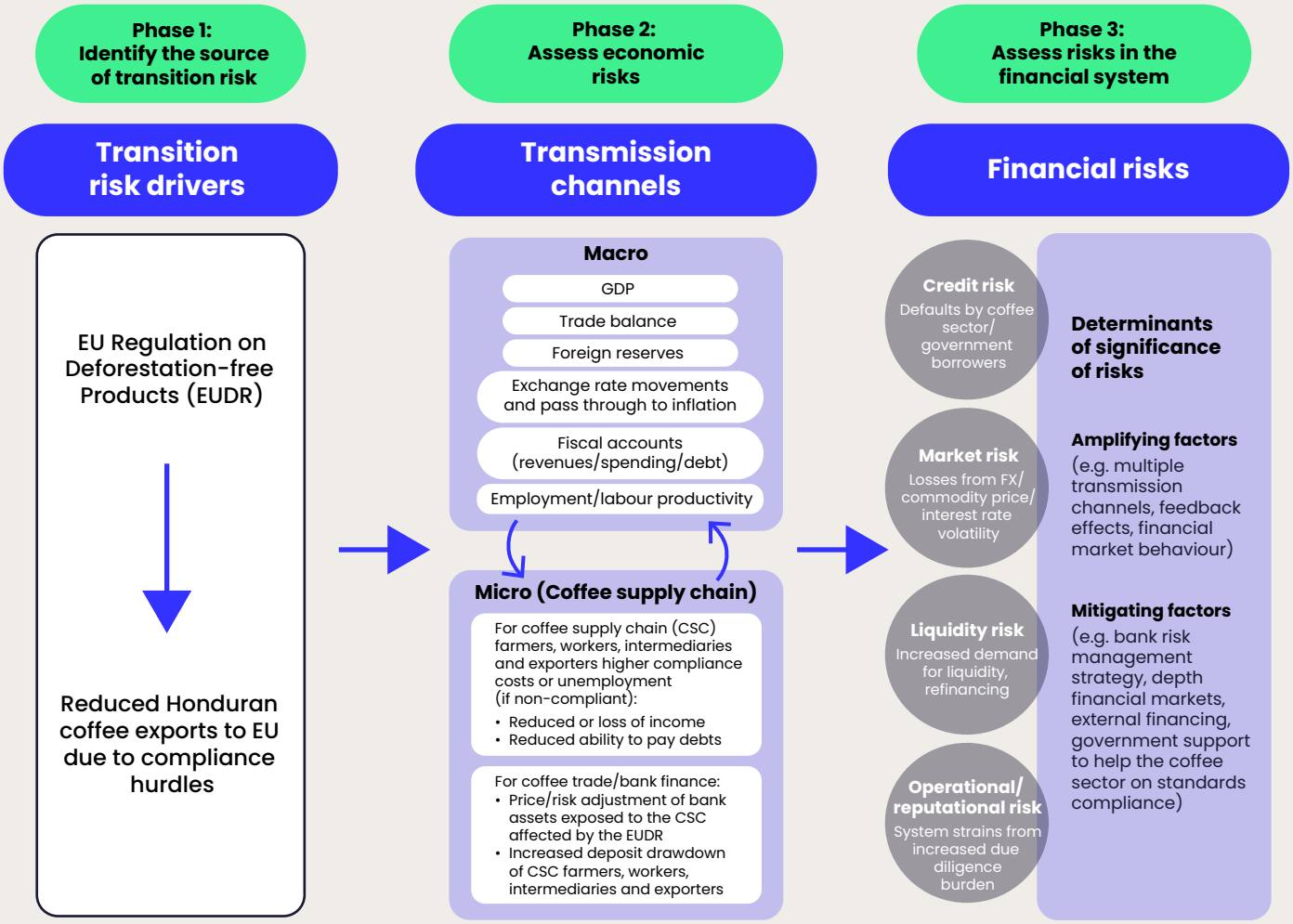
It is important to emphasise that risks can be amplified by feedback loops between macroeconomic and microeconomic channels — such as widespread deposit drawdowns triggering financial instability — or the interaction between transition risks (EUDR) with other nature- or climate-related physical risks — such as soil degradation or hurricanes. For example, nature- and climate-related risks can interact and affect coffee production, which in turn can induce movement out of the value chain and production.

The overarching research question is: what are the cross-border implications of trade climate measures to prevent deforestation, given the structure of the coffee value chain in Honduras? To answer this, a number of sub-questions are asked. How burdensome is compliance with the EUDR? What are the costs of compliance? How do these differ across the value chain? How are they being managed by different actors within the value chain? How are they being managed/addressed by actors who are external to the value chain, for example other institutional factors?

To explore these questions, this study draws on qualitative data from desktop research, semi-structured interviews, roundtable discussions and key informant interviews (KIIs). This process enables an up-to-date mapping and validation of the Honduran coffee value chain, while also providing insights into the nature of relationships among producers and their interactions with financial intermediaries.

"Within the broader landscape of nature-related transition risks, the EUDR presents potential financial risks of particular relevance to central banks."

Figure 1. Transmission channels for the EUDR impact on the coffee sector to financial institutions' risks



Note: This conceptual framework is adjusted from the NGFS conceptual framework on nature-related risks, applied to the case of EUDR as a nature-related transition risk.

Source: Authors, based on the NGFS conceptual framework on nature-related financial risks (NGFS, 2022, 2024)

4. Findings and discussion

4.1. Microeconomic risks

At the micro level, this study validated previous assessments and characterisations of the Honduran value chain (IHCAFE, 2024). Figure 2 presents an overview of the coffee value chain actors in Honduras.

Actors are grouped into:

1. Producers
2. Cooperatives
3. Intermediaries
4. Exporters

Producers are classified as (IHCAFE, 2024):

- Tier 1: producers owning <3.5 hectares (92% of producers)
- Tier 2: producers owning 3.5–10 hectares (7% of total producers)
- Tier 3: producers owning >10 hectares (1% of total producers)

"At the micro level, this study validated previous assessments and characterisations of the Honduran value chain."

Stakeholder consultations confirmed that coffee exporters have better access to different sources/instruments of financing, including credit lines with domestic and foreign banks, forward contracts with international buyers and hedging instruments for price and foreign exchange risks. Tiers 1 and 2 (small and medium-size producers) do not have access to commercial banks and tend to rely on financing through the cooperative or other informal intermediaries.

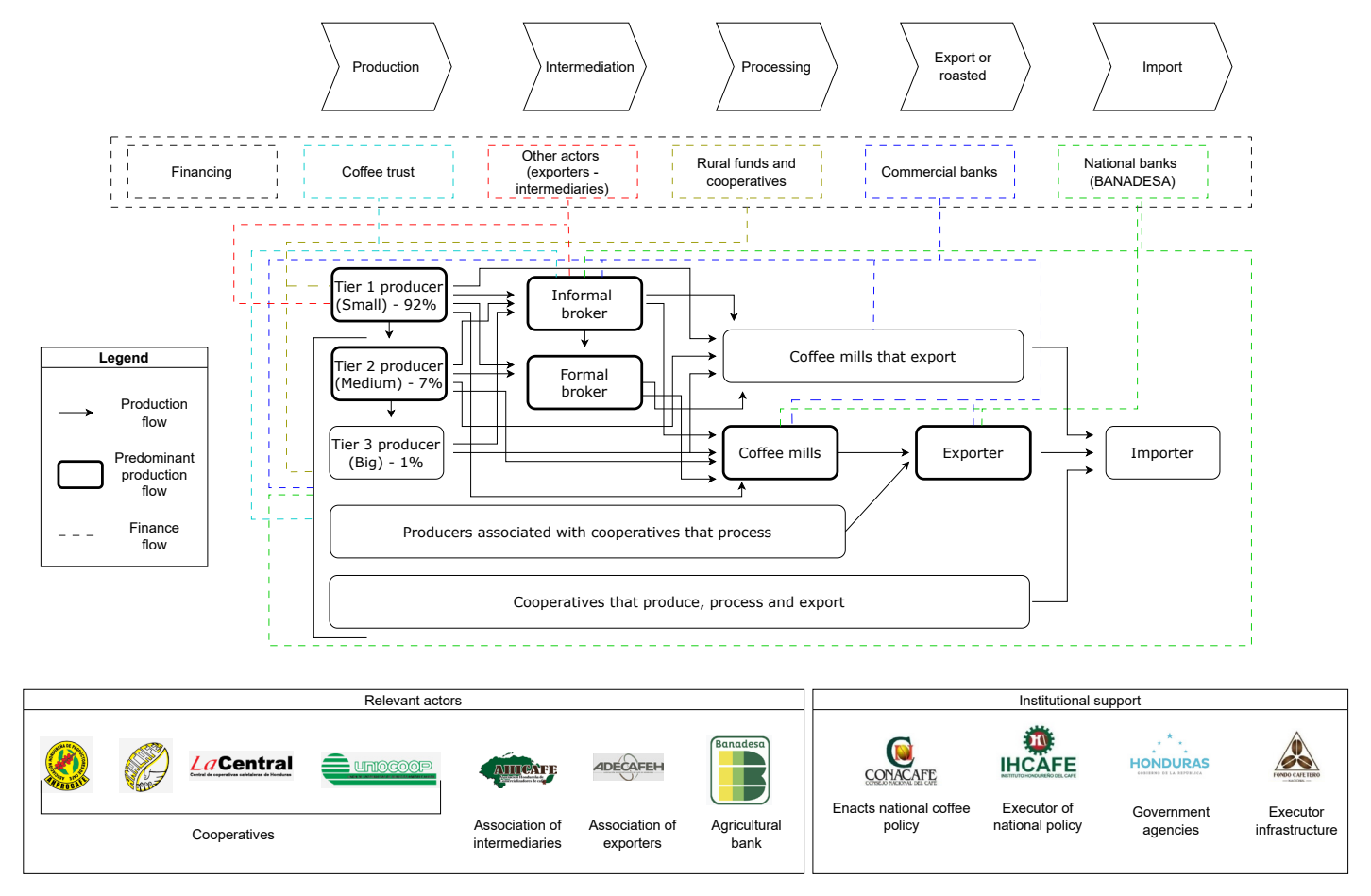
Around 25% of producers are associated with cooperatives, where informality is prevalent. However, informal intermediaries are the least likely to comply with the EUDR because of challenges in ensuring traceability. Hence, the overall risks of exclusion are high — driven by both this and their inability to overcome the legality and traceability requirements. This is especially the case for smallholder producers. It is estimated that the systems introduced by the Honduran government to support compliance only cover around 3% of total production, as of July 2025. These include different types of data information systems to be used on mobile phones, such as the MiIHCAFE geolocation app launched by IHCAFE.

The EUDR introduces new compliance requirements and while large firms and exporters generally have the financial capacity, technical expertise and institutional support to adapt through investments in monitoring systems, certification processes and data reporting, small and medium-size producers face greater adjustment challenges. For larger actors, compliance may increase operational costs but remain manageable; for smaller ones, the combination of high compliance costs and limited access to finance, information and technology increases their exposure to microeconomic risks such as exclusion, income loss and reduced market access.

Microeconomic risks are thus primarily transmitted through production and income losses linked to exclusion from formal markets. Increasing production costs and barriers to accessing services may further incentivise producers to sell to informal intermediaries, who often offer better short-term returns but lack compliance mechanisms (Chalmers et al., 2024). Under the EUDR, these intermediaries are expected to be excluded from the formal value chain due to traceability failures, thereby threatening the livelihoods of producers whose viability depends on them (ILO, 2024).

"It is estimated that the systems introduced by the Honduran government to support compliance only cover around 3% of total production, as of July 2025."

Figure 2. Mapping of the Honduran coffee value chain and financial flows



Source: Adaptation based on integration of value chain mapping and finance flow analysis (Colindres and Ceballos-Sierra, 2024; Chalmers et al., 2024; IHCAFE, 2024; ILO, 2024; UNDP, 2018)

4.2. Macroeconomic risks

A quantitative analysis, including an event study, was conducted at the macro level to assess the potential impact of the EUDR on Honduras's coffee exports to the EU. The objective was to determine whether the regulation's announcement has had any observable effect on trade dynamics — particularly on the prices and volumes of coffee exports, including the possibility of partial or total exclusion from the European market.

This analysis, based on EU-reported monthly export data across a panel of coffee-exporting countries, treats Honduras as the exposed (treatment) group due to its vulnerability to the EUDR, with other exporting countries serving as the control group. To date, the results show no statistically significant effect of the EUDR announcement on the value or volume of Honduran coffee exports to the EU. However, the analysis is constrained by data limitations, as high-frequency export price and quantity data by market segment or producer type are not available for Honduras.

A difference in differences (DiD) model was used to estimate the average treatment effect of the EUDR on Honduras's exports:

$$\log(\text{exports})_{it} = \alpha + \delta_t + \gamma_i + \beta D_{it} + \varepsilon_{it}$$

"To date, the results show no statistically significant effect of the EUDR announcement on the value or volume of Honduran coffee exports to the EU."

where $\log(\text{exports})_{it}$ is the outcome of interest (i.e. the log of the export value for the country) i at time t, δ_t represents the fixed effects of time (month–year), capturing common shocks across countries, γ_i represents the fixed effects of country (partner), controlling for time-invariant country characteristics, $D_{it} = (\text{Honduras}_i \times \text{postEUDR}_t)$ is a binary treatment variable equal to 1 for Honduras in the months after June 2023 (the date the EUDR entered into force) and 0 otherwise, β captures the average treatment effect of the EUDR on Honduras's exports and ε_{it} is the error term.

To explore how the policy's impact evolves over time and to test the validity of the parallel trends assumption, this was complemented by an event study specification. This approach estimates dynamic treatment effects by including a set of time-relative indicators (leads and lags) centred around the EUDR's entry into force. The month immediately preceding the implementation (May 2023) is omitted and serves as the reference category. This allows the capture of both pre-treatment trends and post-treatment adjustments in Honduras's export behaviour.

Overall, the quantitative evidence so far does not indicate a clear or measurable short-term effect — either positive or negative — of the EUDR announcement on Honduras's coffee exports to the EU.

Nevertheless, from a broader macroeconomic perspective, the potential exclusion of Honduran coffee from the EU market remains a key concern given the sector's central role in the country's export base. As of 2024, it is estimated that coffee exports account for around 7% of foreign currency inflows,[4] meaning that a decline in exports would weaken the trade balance and reduce the Banco Central de Honduras's (Central Bank of Honduras's — BCH's) foreign-exchange reserves.

The BCH has a 100% 'surrender requirement' of daily foreign exchange earnings, 80% of which is auctioned the following day and 20% of which is retained by the BCH. The surrender requirement and foreign exchange auction aims to reduce foreign exchange pressures and provide more equitable foreign currency allocation. Since September 2024, the BCH has allowed a crawling exchange rate regime, which provides some room for exchange rate adjustments (appreciation/depreciation).

Under the BCH's exchange rate stabilisation policy and crawling exchange rate regime, a persistent decline in coffee exports could lead to a sustained reduction in foreign currency inflows, eventually outpacing demand, and exerting downward pressure on the nominal exchange rate. Lower foreign reserves from diminished coffee earnings, combined with the new exchange rate regime, might also constrain the BCH's capacity for foreign exchange intervention.

A depreciation of the currency could, in turn, have mixed effects. While it might enhance export competitiveness, a weaker exchange rate would make imports more expensive, including for staples such as rice, whose import share has been rising (Honduras National Statistics Institute, 2025).

Honduras is highly dependent on imported goods and higher import prices are likely to pass through to broader inflation. Although evidence on exchange rate pass-through in Honduras is limited, earlier estimates suggest that a 1% depreciation could raise domestic prices by 0.4–1.08% (based on data for 1990–2000) (Gonzales Anaya, 2000).

"From a broader macroeconomic perspective, the potential exclusion of Honduran coffee from the EU market remains a key concern given the sector's central role in the country's export base."

[4] Authors' estimates based on BCH data.

Beyond exchange rate dynamics, the EUDR could also influence broader macroeconomic performance through growth and employment channels. Modelling exercises for other commodity exporters suggest that increased compliance costs and potential exclusion from EU markets could lower GDP by 0.15–0.7%.

The EUDR is expected to reduce Argentinian GDP by between 0.15% (Calvo et al., 2024) — based on exposure of exports to the European market — and 0.45% (de la Vega, 2024) — based on an incremental cost as an international price reduction of 6%. In the case of Ethiopia, there is a risk of a 0.7% reduction in GDP (Debowicz and Engeda, 2024) based on a 10% cost increase.

A related strand focuses on the exposure of exports that may be affected by the EUDR under a scenario of non-compliance, such as 17% of total exports in Latin America (Conte Grand et al., 2024) or 27.4% of total selected affected commodity exports (cattle, cocoa, coffee, palm oil, rubber, soya, wood) in sub-Saharan Africa (Zhuawu, 2025).

While these estimates only capture the first-round effects of reduced exports, broader macroeconomic adjustments are likely to occur through income and demand channels within the coffee value chain. Higher compliance costs can reduce incomes for farmers, workers, intermediaries and exporters, lowering household spending and weakening aggregate demand.

As coffee is a major source of employment and rural liquidity, reduced revenues could translate into lower wages, layoffs and migration, with spillover effects on retail, finance and input suppliers. These income and demand shocks could amplify the slowdown in domestic activity, leading to weaker output growth and reinforcing macro-financial vulnerabilities.

4.3. Financial risks

Large coffee producers with better capacity tend to have more established access to commercial credit. However, banking sector lending to the agriculture sector — including coffee — has been on a downward trend and continues to represent the lowest share of total credit across sectors. As of 2024, the agricultural sector only captured 4.9% of banking sector credit.

Although the system-wide exposure of banks to the coffee sector is relatively limited, several financial institutions are more vulnerable to shocks affecting coffee exports. For instance, Banhcafé has around 13% of its credit portfolio extended to the coffee sector. Other banks exhibit varying exposures along the coffee value chain: Banrural lends primarily to coffee producers (4.6% of total loans) and only marginally to exporters (0.1%), whereas Bancocci shows the opposite pattern (1.6% and 3.8%, respectively).

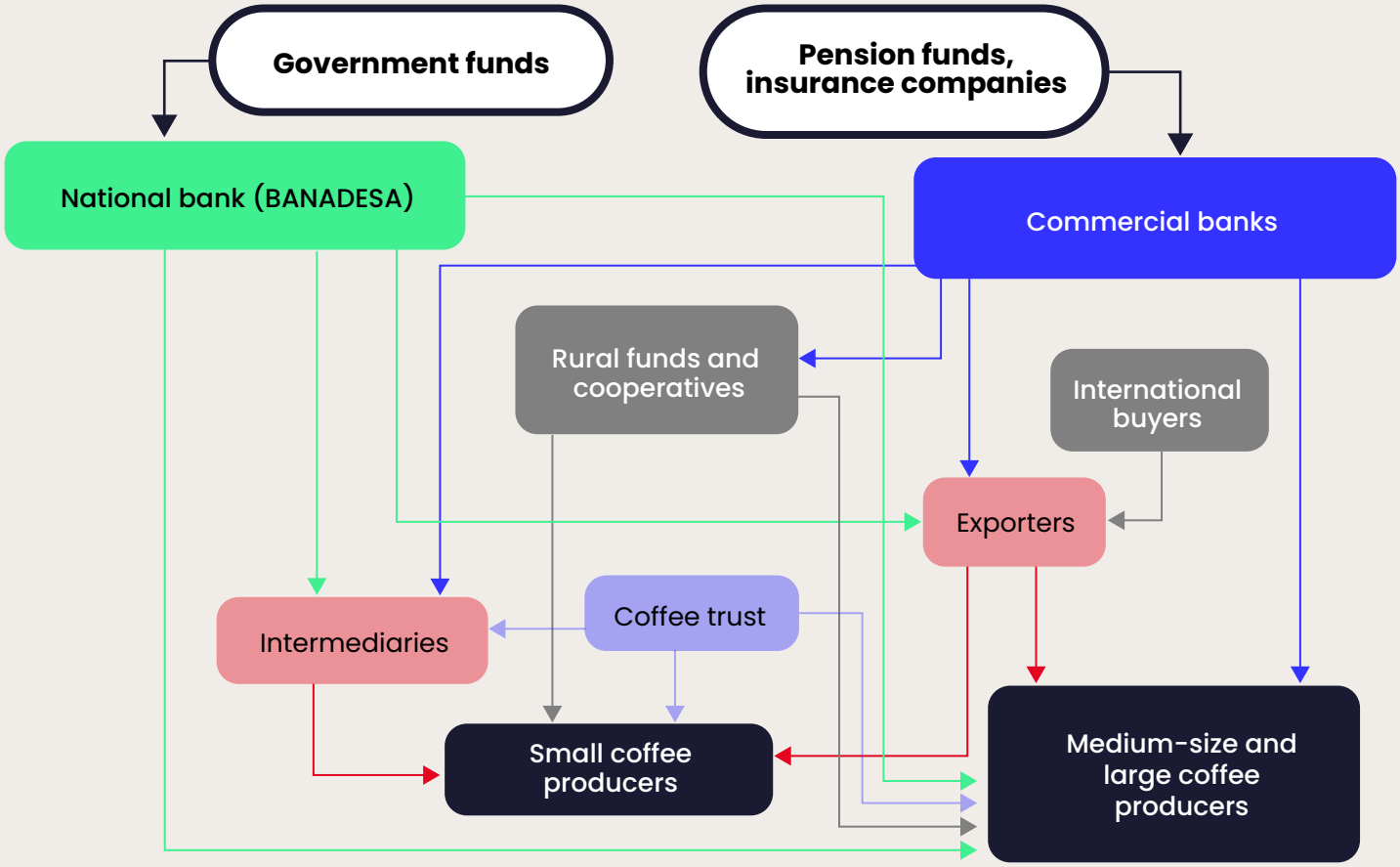
Separately, sustained exchange rate depreciation — potentially triggered by lower export earnings under the EUDR — could heighten financial stress. Banks with a large share of foreign currency-denominated assets and liabilities, including those lending to the coffee sector, would face elevated liquidity and foreign exchange risks. In 2024, foreign currency loans and deposits represented 23% and 21% of total banking sector portfolios, respectively (IMF, 2025), demonstrating that Honduran banks could be vulnerable to exchange rate volatility. Moreover, a depreciation

"Large coffee producers with better capacity tend to have more established access to commercial credit."

of the exchange rate could also weaken public debt sustainability (Fisera et al., 2021), increasing credit risk for banks with substantial exposure to sovereign borrowers.

Figure 3 provides a snapshot of the financing sources for the coffee sector supply chain and the interlinkages among financial institutions/providers. Hence, if there are significant challenges that hinder coffee sales — such as non-compliance with the EUDR — there are financial transmission risks.

Figure 3. Financing flows in the Honduran coffee sector



Source: Authors, as modified/gathered from the literature (Colindres and Ceballos-Sierra, 2024; Wiegel et al., 2020; BCH, 2024) and insights from roundtable discussions

While the direct exposure of the financial system to the coffee sector is modest, wider domestic and external developments could compound financial risks. The BCH's 2024 scenario analysis simulating a shock to Honduran exports to the US — for example from higher US tariffs — identified 13.7% exposure in banking sector loans extended to exporters (BCH, 2024).

The same study found that physical and transition risks could affect 8.1% and 14.7% of agricultural lending portfolios, respectively. Although this scenario was not designed around the EUDR, it provides a useful illustration of how similar trade-related shocks could transmit through the financial sector. Exposure to public debt — around 5% of total loans — also merits close monitoring, given the potential fiscal pressures arising from public support for EUDR compliance in the coffee sector (estimated at US$13 million[5]).

[5] Based on data shared by Interinstitutional Technical Committee during the roundtable discussion in August held for this paper.

Table 1 summarises the potential financial risks and financial stability implications of the direct and indirect impacts of possible coffee export reduction due to non-compliance with the EUDR.

Table 1. Financial risks and macro-financial stability risks from non-compliance with the EUDR.

Risk	Financial system exposure
Credit (default) risk	• Direct: 2.2% of financial institutions' loans are to the coffee sector • Indirect: 4% of financial institutions' loans are to the public sector • Greater provisions required for potentially higher default risks from coffee/public sector borrowers
Market/foreign exchange risk	• 23% of banking sector loans are in foreign currency • 21% of banking sector deposits are in foreign currency (for deposits: foreign exchange risk and liquidity risk) • Inflationary risks — for example non-compliance with the EUDR might induce exchange rate depreciation and pass-through effects to inflation — could reduce the market value of fixed-rate/long-dated bank assets • Potential lower prices assigned for Honduran coffee under a scenario of non-compliance with the EUDR, affecting the earnings and profitability of the coffee sector, which might lead to lower valuation of assets and collateral associated with the sector
Interest rate/ refinancing risk	• Higher funding costs (risk premium) associated with actual/ perceived macro-financial instability due to non-compliance with the EUDR
Operational risks	• Inflationary and foreign exchange pressures might increase operational expenses
Macro-financial stability risks	• Unmonitored loan exposure of formal financial institutions to coffee intermediaries • Contagion risks from panic that might be triggered by a deterioration in the loan quality of a systemically important bank or a few smaller banks that have high loan exposure (5–13% of total) to the coffee sector • Potential reputational risk at the regional level, given the exposure (5% of total) of one foreign bank in Honduras (with a parent company based in Guatemala) to the coffee sector • Spillover risks from interconnections between commercial banks and other financial institutions, such as pension funds, cooperatives and national banks. For example, 12% of deposits in commercial banks are from pension funds, which commercial banks may use for on-lending activities • Feedback effects of macroeconomic instability indicators — such as a larger trade deficit, a shortage of foreign exchange supply, falling reserves, exchange rate depreciation, fiscal/debt pressure, inflationary pressure and higher risk premiums — on financial risks • Compounding effects of physical climate change effects and other external shocks — such as US tariffs and a US tax on remittances — on risks to financial institutions and macro-financial stability

Source: Authors

Regional financial spillovers also warrant attention from financial supervisors and regulators. As of 2023, 4.6% and 2% of Banrural Honduras's loans were extended to the coffee sector and the Honduran public sector, respectively. If EUDR-related disruptions in the coffee sector were to undermine the bank's performance, the parent company in Guatemala might be compelled to provide financial support to its subsidiary. According to Fitch (2024), such support would probably be provided, given

"Regional financial spillovers also warrant attention from financial supervisors and regulators."

the reputational importance of the Banrural brand and the potentially significant impact of a subsidiary default.

Beyond risks at the financial institution level, the EUDR also has implications for financial inclusion. The continued reduction of credit provision to agricultural entities partly reflects regulatory efforts to limit exposure to environmental and climate-related risks. For example, the BCH (2024) estimates that bank portfolios exposed to physical and transition risks represent 8.1% and 14.7% of total agricultural lending, respectively — which is aligned with Honduran National Commission of Banking and Insurance (CNBS) (2020) guidelines on environmental risk management. However, this cautious approach may unintentionally restrict access to finance for smallholder farmers, exacerbating existing credit gaps just as they face new costs for EUDR compliance and climate adaptation.

To address this, a Special Law for Inclusive Financing of the Coffee Sector is being promulgated within Honduras, which aims to strengthen access to credit for organised producers, and includes a focus on gender and youth. However, the analysis presented here shows that there are broader systemic issues that warrant sustained policy attention.

5. Concluding remarks and policy recommendations

In this report we focused on one example of nature-related transition risk and its impacts for Honduras. Our findings provide clear evidence showing why nature-related risks merit greater attention from financial authorities in view of their financial stability mandates.

Our study identified financial institutions that are exposed to credit and liquidity risks arising amongst coffee producers. Based on this and knowing the potential causes of financial distress — especially among small and medium-size firms — financial supervisors could approach the most exposed institutions to discuss risk management and mitigation actions to reduce systemic risks. It may be necessary to provide regulatory guidance or risk management assistance to specific financial institutions with branches spread widely over different regions to balance financial stability, inclusion and environmental sustainability goals.

For the Honduran government to ensure economic and financial stability, the priority must be to reduce the risks of exclusion for Honduran coffee producers. Mitigating actions for geolocation, traceability and legality risks are underway, with each requiring special attention. However, defining how the legality requirement will be fulfilled should be prioritised. This may entail modifying regulations that can be updated — for example those concerning tenancy rules for production.

There is a need for enhanced coordination across the ministries of environment, trade and finance. Common goals should be set at higher political levels so that all of the agencies involved work towards them, regardless of their sectoral scope.

Moreover, given that only a small percentage of the land used for coffee production is implicated in forest loss (Chalmers et al., 2024) — and smallholder practices are more environmentally sustainable than large-scale plantations (Lala et al., 2024) — government policy should aim to tackle the root causes of deforestation. This could involve boosting the

"Common goals should be set at higher political levels so that all of the agencies involved work towards them, regardless of their sectoral scope."

economic value of forestry and improving the value of nature-based ecosystem services.

For the BCH, which has conducted scenario analysis simulating shocks to Honduran exports, a similar approach should be applied to assess the macro-financial implications of policies such as the EUDR. Understanding the interactions among these risk channels should be a priority for future stress-testing exercises by the BCH and CBNS. This work should also involve close coordination with other government institutions to strengthen institutional capacity and ensure a coherent, system-wide policy response.

At the regional level, Central American stakeholders, including Honduras, are advised to explore coordinated responses through institutions such as the Central American Agricultural Council and the Central American Monetary Council. A coordinated approach is required. National central banks could approach the Central American Central Banks group to work on macroeconomic climate change risks and sectoral guidance, including for the agriculture sector. At the global level, as Honduras is a climate-vulnerable country, BCH and CNBS could consider seeking membership of the NGFS to participate in dialogue and learn from best practice.

For EU policymakers, the current EU–Central American Association Agreement — which includes Honduras — could be leveraged to mitigate exclusion risks and strengthen the sustainable development provisions. Regarding implementation, guidelines are required to ensure harmonisation. Examples of unharmonised points include the approach that the European authorities will take to validate the legality requirements and to identify the responsible competent authorities and points of contact across EU markets.

Finally, the interaction between nature-related transition risks — such as those arising from the implementation of the EUDR — and climate-related physical risks — such as extreme weather events that disrupt coffee production — warrants greater attention among policymakers. The combined effects of these pressures could amplify vulnerabilities across both the financial system and the real economy, heightening the risk of trade and financial exclusion for those producers and firms least equipped to adapt. Strengthening analytical capacity to assess these interconnected risks will be essential for ensuring that Honduras's transition towards sustainable trade is both inclusive and financially resilient.

"The interaction between nature-related transition risks — such as those arising from the implementation of the EUDR — and climate-related physical risks — such as extreme weather events that disrupt coffee production — warrants greater attention among policymakers."

References

Banco Central de Honduras [BCH] (2024) *Informe de Estabilidad Financiera.* Report. https://www.bch.hn/estadisticos/EF/LIBINFORMEEF/IEF%20diciembre%202024.pdf

BCH (2025) *Memoria 2024*. Report. https://www.bch.hn/estadisticos/GIE/LIBMemoria/Memoria%20Anual%202024.pdf

Calvo J, Arias V, Villafane MF, de la Vega P, Park L, Sancisi A, Gutman V (2024) Argentina ante el pacto verde de la UE el impacto en las exportaciones. *Integración & Comercio* 49: 58–101. https://www.researchgate.net/publication/380728419_Argentina_ante_el_Pacto_Verde_de_la_Union_Europea_el_impacto_en_las_exportaciones

Chalmers T, Krivonos E, Perego VME, Channa H, Jansen J (2024) *Can smallholder farmers in Honduras and Guatemala export deforestation-free coffee to the European Union?* Country Investment Highlights 24. Rome: FAO and Washington, DC: World Bank. https://doi.org/10.4060/cd0597en.

Colindres M and Ceballos-Sierra F (2024) *Challenges and Opportunities for Honduran Coffee under the European Union's Zero Deforestation Rule Consultations with Key Stakeholders.* Research Brief. https://cgspace.cgiar.org/server/api/core/bitstreams/aab934b3-2474-473e-8d79-c4d4bf47e8c6/content

Commission of Banking and Insurance [CNBS] (2020) *Standard for the Management of Environmental and Social Risk applicable to the Institutions of the Financial System.* Circular 028/2020. https://circulares.cnbs.gob.hn/Archivo/Viewer/109/028-2020.pdf

Conte Grand M, Schulz-Antipa P, Rozenberg J (2024) Potential exposure and vulnerability to broader climate-related trade regulations: an illustration for LAC countries. *Environment, Development and Sustainability* 26(3): 6195–6220. https://link.springer.com/article/10.1007/s10668-023-02958-y

de la Vega P (2024) *The European Union Deforestation Regulation: The Impact on Argentina.* CEDLAS Working Document 333. https://www.cedlas.econo.unlp.edu.ar/wp/wp-content/uploads/doc_cedlas333.pdf

Debowicz D and Engeda E (2024) *Green Squeeze: countrywide modeling for Ethiopia.* https://media.odi.org/documents/Green_Squeeze_in_Ethiopia_Final.pdf

Duron Gallardo MR, Funez NO, Ruiz P, Jimenez Nehring NG, Ucles M, Villate River RH et al. (2024) *Política de cambio climático del subsector café de Honduras.* Policy document. https://hdl.handle.net/10568/139890

European Parliament and Council of the European Union [EU] (2023) Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) 995/2010. *Official Journal of the European Union* L 150: 206–247. https://eur-lex.europa.eu/eli/reg/2023/1115/oj/eng

Fisera B, Tiruneh I, Hojdan S (2021) Currency depreciations in emerging economies: a blessing or a burden? Institute for Economic Studies, Charles University, Working Paper 6/2021. https://ies.fsv.cuni.cz/sites/default/files/uploads/files/wp_2021_06_fisera%2C%20tiruneh%2C%20hojdan.pdf

Fitch Ratings (2024) *Fitch affirms BanRural at 'BB'; Outlook Stable.* Web page. https://www.fitchratings.com/research/banks/fitch-affirms-banrural-at-bb-outlook-stable-22-04-2024

González Anaya, J. A. (2000). *Exchange rate pass-through and partial dollarization*. Center for Research on Economic Development and Policy Reform, Stanford University, Working Paper 81. https://kingcenter.stanford.edu/sites/g/files/sbiybj16611/files/media/file/81wp_0.pdf

Honduras National Statistics Institute (2025) *El comportamineto de las importaciones de arroz en Honduras 2020–2024*. Report. https://temp.ine.gob.hn/wp-content/uploads/2025/06/Comportamiento-de-las-importaciones-de-arroz-2020-2024.pdf

Humphrey J and Schmitz H (2004) Chain governance and upgrading: taking stock. In: Schmitz H (ed.) *Local Enterprises in the Global Economy.* Cheltenham: Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/1843760991.00020.xml

Instituto Hondureño del Café (Honduran Coffee Institute) [IHCAFE] (2024) *Memoria Cosecha 2023–2024*. Report. https://www.ihcafe.hn/

International Labour Organization [ILO] (2024) *Mapeo de la cadena de valor del café en Honduras.* Report. https://researchrepository.ilo.org/esploro/outputs/report/Mapeo-de-la-cadena-de-valor/995619540902676

International Monetary Fund [IMF] (2025) *Honduras: Staff report on the program under the Extended Fund Facility and Extended Credit Facility.* Country Report 2025/131. Washington, DC: IMF. https://www.imf.org/en/Publications/CR/Issues/2025/06/13/Honduras-Third-Reviews-Under-the-Extended-Fund-Facility-and-the-Extended-Credit-Facility-567684

Keane J (2012) The governance of global value chains and the effects of the global financial crisis transmitted to producers in Africa and Asia. *Journal of Development Studies* 48(6): 783–797. DOI: 10.1080/00220388.2011.649260.

Keane J (2023) *The 'Green Squeeze': An Explainer*. Emergin analysis. https://media.odi.org/documents/ODI_The_green_squeeze-an_explainer.pdf

Keane J, Agarwal P, Mendez-Parra M, Debowicz D (2024) *Avoiding a 'Green Squeeze': Supporting Least Developed Countries Navigate New Greening Trade Measures.* Working paper. https://media.odi.org/documents/Avoiding_a_green_squeeze_-_supporting_LDCs_navigate_new_greening_trade_measures_v3.pdf

Krishnan A, and Maxwell S (2020) *Counting Carbon in Global Trade.* Report. https://media.odi.org/documents/200604_counting_carbon_web.pdf

Lala M, Durrant E, Di Paolo I (2024) *Understanding the climate and environmental impacts of smallholder coffee farming in Latin and Central America.* Report. https://www.fairtrade.net/content/dam/fairtrade/fairtrade-uk/news/new-fairtrade-study-demonstrates-that-smallholder-coffee-farming-practices-are-more-climate-friendly-than-large-scale-plantations/Fairtrade%20CLAC%20Understanding%20environmental%20impact%20of%20smallholder%20coffee%20farming%20in%20Latin%20America%20Oct%202024.pdf

Leturcq P, Hiller N, Blot E, Chiocchetti I, Oger A (2025) *Shaping Global Green Leadership — Inclusive Solutions to Address the Negative Spillovers of the European Green Deal.* Institute for European Environmental Policy Policy Report (Shaping global green leadership).

Magacho G, Espagne E, Godin A, Mantes A, Yilmaz D (2023) Macroeconomic exposure of developing economies to low-carbon transition. *World Development*, 167: 106231. https://doi.org/10.1016/J.WORLDDEV.2023.106231

Mehling M (2020) Europe's carbon border adjustment mechanism (CBAM): from design to implementation. In: Roggenkamp MM, Banet C (eds.) *European Energy Law Report.* Antwerp: Intersentia.

Network for Greening the System [NGFS] (2024) *Nature-related Financial Risks: A Conceptual Framework to Guide Action by Central Banks and Supervisors.* Technical document. https://www.ngfs.net/system/files/import/ngfs/medias/documents/ngfs_conceptual-framework-on-nature-related-risks.pdf

NGFS (2023) *Recommendations toward the development of scenarios for assessing nature-related economic and financial risks*. Technical paper. https://www.ngfs.net/system/files/import/ngfs/medias/documents/ngfs_nature_scenarios_recommendations.pdf

NGFS (2022) *Central banking and supervision in the biosphere: an agenda for action on biodiversity loss, financial risk and system stability*. Final Report of the NGFS-INSPIRE Study Group on Biodiversity and Financial Stability NGFS Occasional Paper. https://www.ngfs.net/system/files/import/ngfs/medias/documents/central_banking_and_supervision_in_the_biosphere.pdf

Nissanke M and Mavrotas G (eds.) (2010) *Commodities, Governance and Economic Development under Globalization.* London: Palgrave Macmillan. DOI: 10.1057/9780230274020.

Ponte S (2022) The hidden costs of environmental upgrading in global value chains. *Review of International Political Economy* 29(3): 818–843. https://doi.org/10.1080/09692290.2020.1816199

Raga S, Vaze P, Tan E, Gilmour A (2023) *The treatment of physical climate risks by central banks: insights for the Reserve Bank of India.* ODI/Climate Bonds Initiative. https://odi.org/en/publications/the-treatment-of-physical-climate-risks-by-central-banks/

RECOFTC (2024) *Potential Impacts of the EU Regulation on Deforestation-free Products (EUDR) on Smallholders in Thailand and Indonesia — Case Studies on Rubber, Timber and Coffee.* Report. https://www.recoftc.org/sites/default/files/publications/resources/recoftc-0000469-0002-en.pdf

Solidaridad (2025) *Nivel de preparacion de la regulacion EUDR y los posibles impactos sobre el sector cafe de Mexico, Guatemala, Honduras y Nicaragua.* Report. https://solidaridadlatam.org/wp-content/uploads/2025/03/Sintesis-para-decisores-EUDR-MX-GT-HN-NI.pdf

ten Hove H, Leuveld K, Sopov M, Waarts T (2025) *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*. Report. https://edepot.wur.nl/688694

United Nations Development Programme [UNDP] (2018) *Analisis de la cadena de valor en Honduras.* Report. https://www.undp.org/es/honduras/publicaciones/estudio-sobre-la-cadena-de-valor-del-cafe-en-honduras-2018

United States Department of Agriculture [USDA] (2024) *Coffee Annual Honduras.* Report. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Coffee%20Annual_Tegucigalpa_Honduras_HO2024-0002.pdf

van Huellen S, Abubakar FM, Asante-Poku NA, Fig R (2024) *The political economy of pricing and price risk in Ghana's cocoa marketing system.* GDI Working Paper 2024-074. Manchester: The University of Manchester. https://pure.manchester.ac.uk/ws/files/328873983/GDI_WP_2024-74.pdf

van Huellen S and Newman S (2020) Too much of a good thing? Speculative effects on commodity futures curves. *Journal of Financial Markets* 47: 100480. https://doi.org/10.1016/j.finmar.2020.100480

Wiegel J, del Rio M, Gutierrez JF, Claros L, Sanchez D, Gomez, L et al. (2020) *El sistema de mercado de cafe en Honduras.* Report. https://cgspace.cgiar.org/items/8d56e593-47bb-4cca-b5c5-e233d58b5057

Zhuawu C (2025). *Sustainable Trade at a Crossroads: Sub-Saharan Africa and the EUDR.* The Commonwealth Blog. https://thecommonwealth.org/news/blog-sustainable-trade-crossroads-sub-saharan-africa-and-eudr

Zhunusova E, Ahimbisibwe V, Sen LTH, Sadeghi A, Toledo-Aceves T, Kabwe G et al. (2022). Potential impacts of the proposed EU regulation on deforestation-free supply chains on smallholders, indigenous peoples, and local communities in producer countries outside the EU. In: *Forest Policy and Economics* (vol. 143). Amsterdam: Elsevier. https://doi.org/10.1016/j.forpol.2022.102817

About the authors

Dr Jodie Keane is a Principal Research Fellow at ODI Global.

Bernardo Arce is a Research Officer at ODI Global.

Yohannes Ayele is a Senior Research Officer at ODI Global.

Sherillyn Raga formerly worked at ODI Global as a Research Fellow.

Acknowledgements

The authors thank Maryam Rezaei at ODI Global for internal peer review. They are also grateful for all comments received from the Centre for Economic Transition Expertise (CETEx) and at El Colegio de Mexico (ColMex) 2–3 October 2025, Mexico City. Paul Fishman copy-edited the paper, with editorial oversight from Georgina Kyriacou (Managing Editor at the Grantham Research Institute). We also extend our thanks and appreciation to both Elena Almeida, Senior Policy Fellow CETEx, and Maria Waaifoort, Policy Analyst CETEx, for their constructive comments and continuous support throughout the project lifecycle.

Disclaimer

The authors declare no conflict of interest in the preparation of this paper. The views in this paper are those of the authors and do not necessarily represent those of the host institutions or their funders.

CETEx – the Centre for Economic Transition Expertise

– was established in 2024 at the London School of Economics and Political Science as a specialised research and policy centre to support the ambitious reforms required to deliver sustainable, inclusive and resilient economies and financial systems across Europe. The Centre is hosted by the Grantham Research Institute on Climate Change and the Environment and has founding funding from the Sequoia Climate Foundation, ClimateWorks Foundation, Children's Investment Fund Foundation, Sunrise Project and European Climate Foundation.

www.cetex.org