

TACKLING (ILLEGAL) DEFORESTATION IN COFFEE SUPPLY CHAINS: WHAT IMPACT CAN DEMAND-SIDE REGULATIONS HAVE?

By **Naomi Basik Treanor** and **Jade Saunders**

INTRODUCTION

Rising demand for commodities such as soy, beef, palm oil, cocoa, coffee, and rubber is driving tropical deforestation globally, half of which is estimated to be illegal. While around 500 companies in the food, agriculture, and finance sector have made voluntary commitments to halt deforestation in their operations and supply chains, overall progress towards meeting these commitments has been slow (Supply Change 2020; Reis *et al.* 2019).

Furthermore, an estimated 40 percent of the companies that produce, trade, use, or sell the largest amounts of these commodities have not made public commitments to prevent deforestation in their operations and supply chains (Global Canopy 2020). It is clear that the private sector cannot halt global (illegal) deforestation on its own. Success can only be achieved when effectively complemented by national and/or international regulations and agreements.

Governments in the UK, EU, and the USA are now aiming to develop regulatory approaches to ensure agricultural commodities are not being sourced from deforested lands, or at least lands that were not illegally deforested. In doing so, these pieces of legislation also set out to tackle carbon emissions from forest loss, supporting producer countries to meet their national and international climate commitments, and, in the case of illegal deforestation, to enforce their own laws and regulations. What impact can such import regulations really have?¹

Forest Trends presents ten things to know about the potential for demand side regulations to tackle (illegal) deforestation in coffee supply chains.

¹ For the purposes of this paper, products of illegal deforestation are those which are harvested and/or traded in contravention of a producer country's own laws and regulations.



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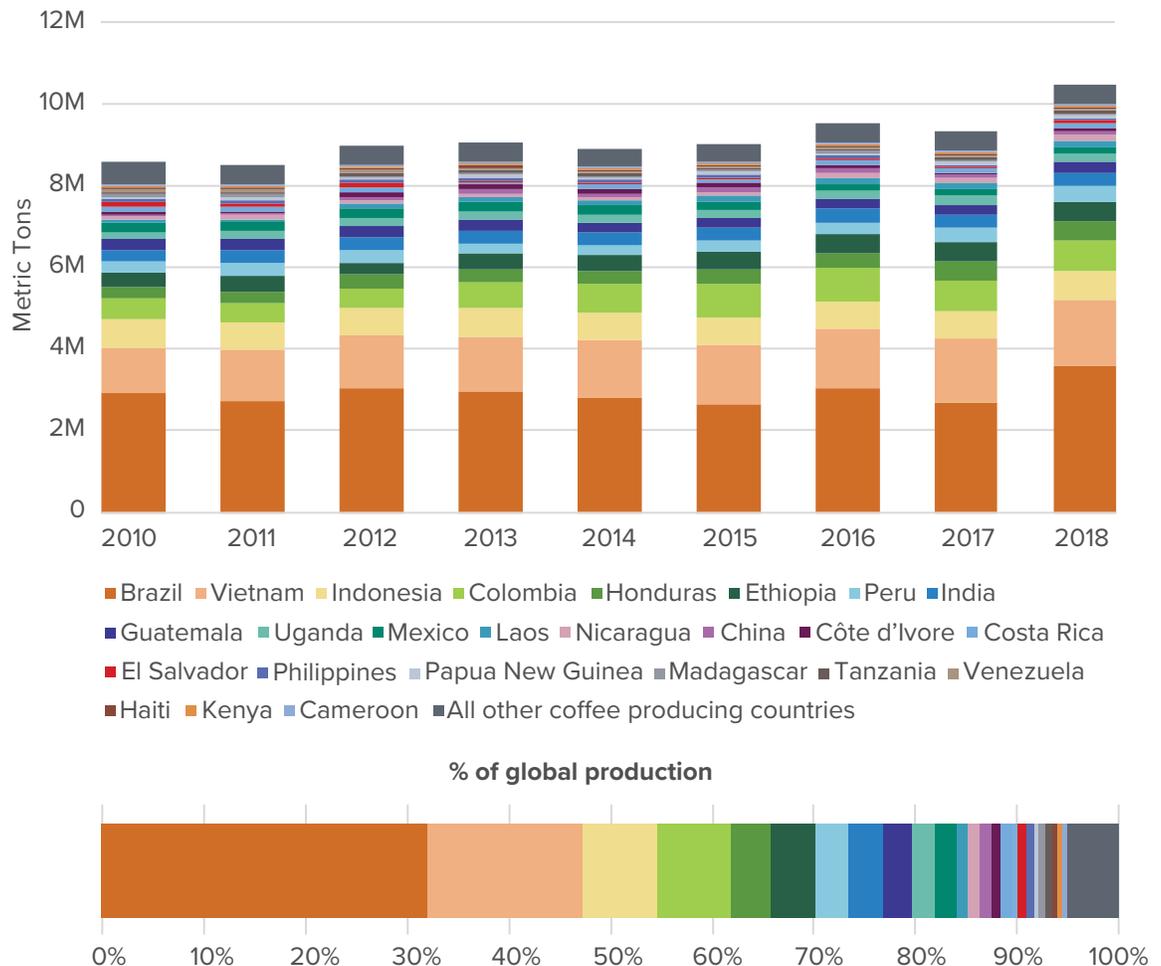
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More than half of the world’s coffee harvest is concentrated in Brazil, Vietnam, and Indonesia. Overall, there are more than 80 countries producing coffee beans.

Coffee beans are produced throughout the world’s tropical forested regions. Brazil produced 35 percent of the global total in 2018, followed by Vietnam, Indonesia, and Colombia with 16 percent, 7 percent, and 7 percent of the global share, respectively.

Latin American countries produce more than 55 percent of the world’s global supply of coffee.² Ethiopia is the top producer of coffee beans in Africa and the fifth largest globally, with 5 percent of all coffee beans produced in 2018. Other major coffee-producing countries include India (3 percent) and Uganda (2 percent).

FIGURE 1 Global producers of coffee beans
(metric tons and % of global production)



Source: FAOSTAT, 2020.

² In addition to Brazil and Colombia, Honduras grows 5 percent of the world’s coffee, Peru 4 percent, and Guatemala 4 percent.



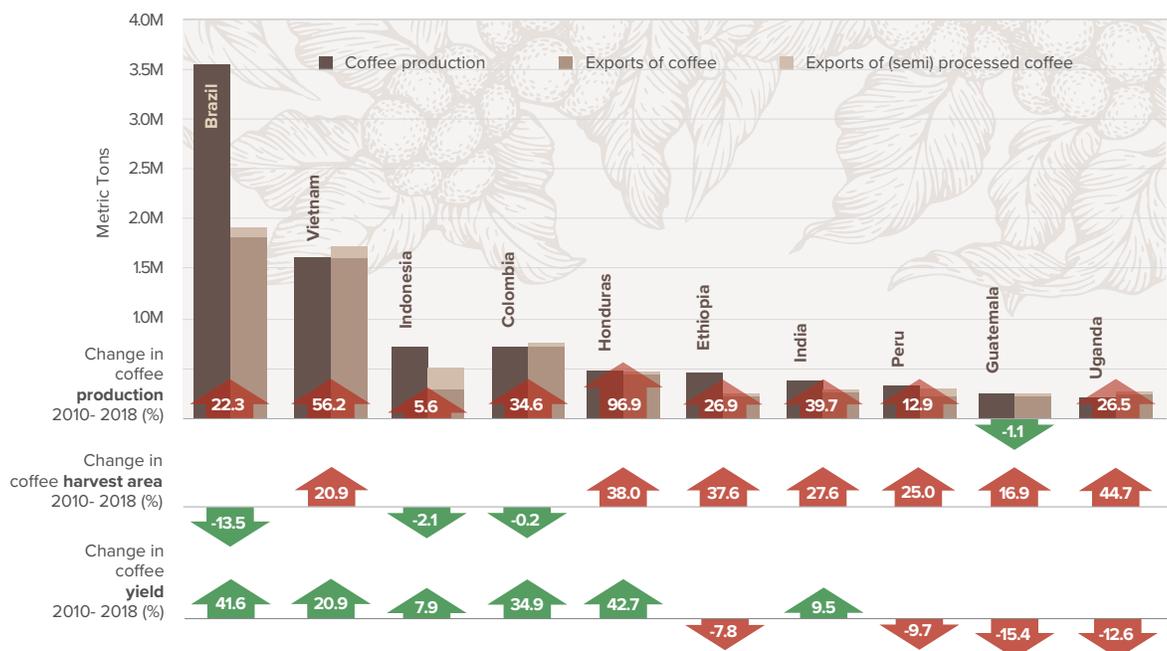
2 As coffee production increased, so has the area of land used for production, often with associated deforestation. Import regulations – whether based on ensuring that all imported commodities are produced and traded in accordance with source country laws, or that commodity supply chains are completely deforestation-free – have the potential to significantly affect how forests are converted to grow coffee.

In 2018, Brazil produced over 3.5 million metric tons of coffee beans, exporting 1.8 million metric tons in the form of unprocessed (green) coffee beans and close to 99,000 metric tons in the form of roasted or otherwise processed coffee. This amounted to just 1 percent of Brazil’s total agricultural exports that year, which were dominated by soy, sugar, and to a lesser extent cassava and other crops. While other top producers such as Vietnam, Colombia, Honduras, and Ethiopia produce and export lower volumes of coffee, they represent a larger share of the countries’ total agricultural exports in metric tons in 2018: Ethiopia (22 percent), Colombia (16 percent), Honduras (16 percent), and Vietnam (12 percent).

Globally, coffee production increased by 2 million metric tons (a factor of 24 percent) between 2010 and 2018. Production increased by more than 50 percent in Vietnam, and land planted with coffee increased by 21 percent during this time period. Honduran coffee production increased by 97 percent, with a 38 percent increase in land area for coffee production. The tenth-largest producer of coffee, Uganda, has seen a 27 percent increase in coffee production between 2010 and 2018 but a 48 percent jump in land used for coffee plants.

In a majority of coffee producing countries, increasing yields may alleviate the pressure to expand the amount of planted land and allow farmers to improve their livelihoods based on existing land use. However, global demand for coffee is projected to grow at least 50 percent and as much as 163 percent by 2050, due in large part to increased consumption in Asia which could significantly outpace gains in yield (Killeen and Harper 2016).

FIGURE 2 Coffee production and exports as well as change in harvest area and yield in the top ten producers (metric tons, %)



Source: FAOSTAT, 2020

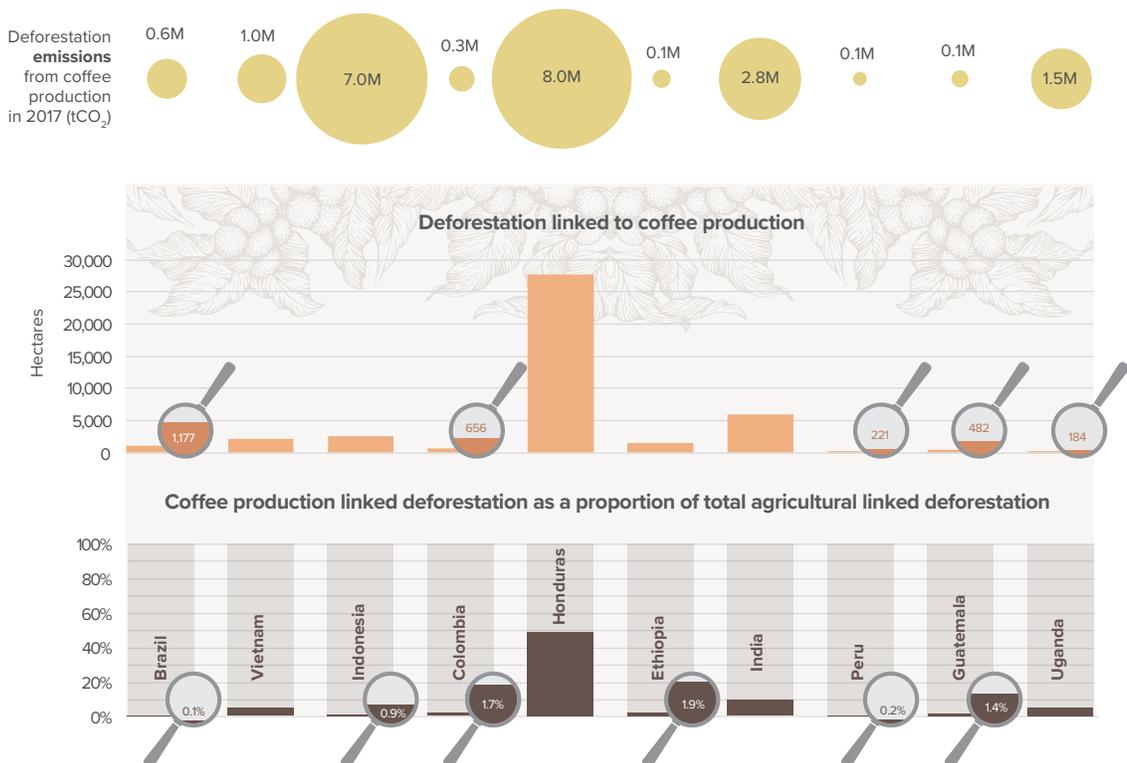


3 Demand-side import regulations for coffee also have the potential to tackle deforestation in order to reduce carbon emissions, supporting many producer countries in meeting their national and international climate commitments.

The top ten global producers of coffee emitted 21 million tCO₂ in 2017 as a result of deforestation linked to coffee production. Eliminating these emissions would be equivalent to removing 4.5 million cars from the road, or the carbon sequestration from growing 350 million new tree seedlings for a decade.³ These countries are also among the most biodiverse in the world, meaning that protecting their forest areas can potentially deliver significant co-benefits for ecosystem services, water protection, nutrient storage, and biological resources such as food and medicinal products.

Shade-grown arabica coffee is recognized as an important agroforestry crop which, intercropped with other species, can contribute to both climate change mitigation and adaptation efforts by sequestering carbon and increasing landscape resiliency (Moreira *et al.* 2018; Gomes *et al.* 2020). Consumers also prefer the taste of shade-grown varieties, as opposed to robusta coffee which can be grown at lower altitudes, making arabica coffee a premium crop. A review of Vietnam's Nationally Determined Contribution (NDC) identified the intercropping of coffee and avocados as incurring the lowest marginal cost of a number of potential scenarios to reduce land-based emissions (Escobar Carbonari *et al.* 2019). In another study, intercropping of coffee and *macauba* (a native palm species) in Brazil provided both increased coffee productivity and a climate mitigation strategy (Moreira *et al.* 2018). And in Ethiopia, Partnership for Forests and the German Development Agency (GIZ) are supporting farmers to create a new premium brand and supply chain for "forest-grown" coffee (Partnerships for Forests 2021).

FIGURE 3 Forest loss and deforestation emissions from coffee production in the top ten producer countries



Source: Pendrill *et al.*, 2020

³ Based on the EPA greenhouse gas equivalencies calculator available at <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.



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Poor governance and corruption in many coffee producing countries increase the risk that coffee is produced on illegally converted land or as a result of illegal deforestation.

Nearly half of the world’s forests are in nations suffering from what Transparency International calls “rampant” corruption casting a shadow over the legitimacy of documents pertaining to the conversion of forest to agricultural uses as well as traceability documentation (Sundström 2016). Nearly half of all tropical deforestation is illegal and for commercial agriculture (Forest Trends 2014). Similarly, most of the forest crimes identified by Interpol and the United Nations Environment Programme (UNEP) as critical to vulnerable habitats result from the inability of national authorities to enforce their own laws that regulate land and forest use and commodity production, harvesting, and trade (Nellemann *et al.* 2016).

In order to understand these systemic risks better, Forest Trends developed a percentile ranking of forest rich countries, combining a range of independent, globally-recognized indices measuring governance, corruption, business, and political risk (Forest Trends 2017). The main coffee producer countries rank consistently low, suggesting elevated risk associated with rule of law in the sector and illegal deforestation, as well as documentary fraud associated with traceability claims.

FIGURE 4 Relative governance ranking for the top ten coffee producing countries and comparison of underlying scores⁴

Country	FT governance score (2020) % rank	WGI (2019) % rank	CPI (2019) % rank	WJP (2019) % rank	IEF (2020) % rank	ND GAIN GR (2018) % rank	EDB (2019) % rank	FSI (2020) % rank	EIU OR (2020) % rank	EIU IT (2018) % rank	TRACE (2019) % rank	PRS PRI (2019) % rank
Brazil	61.3	56.4	58.9	52.3	80.0	59.6	65.3	58.4	53.9	70.2	50.0	69.0
Colombia	47.7	53.1	53.3	60.2	25.0	56.4	35.3	64.0	36.7	51.2	35.5	54.0
Ethiopia	80.6	78.7	53.3	89.1	81.1	80.3	83.7	88.8	82.2		88.0	
Guatemala	65.1	75.4	81.1	78.9	40.6	73.4	50.5	68.0	63.9	79.8	53.0	52.0
Honduras	71.4	76.3	81.1	90.6	51.7	73.9	70.0	64.6	67.2		75.5	63.0
India	51.0	52.1	44.4	53.9	66.7	56.9	33.2	62.4	50.6	58.3	39.0	44.0
Indonesia	49.8	55.0	47.2	46.1	30.0	55.9	38.4	46.6	46.1	81.0	45.0	56.0
Peru	46.7	50.2	56.1	62.5	28.3	51.1	40.0	46.1	35.0	66.7	44.5	33.0
Uganda	72.6	73.0	76.1	91.4	56.7	70.2	61.1	87.1	73.3		65.0	
Vietnam	57.4	59.7	53.3	66.4	58.3	49.5	36.8	38.2	48.3	78.6	80.0	62.0

Source: Forest Trends, 2017, 2019, 2021 (forthcoming)

⁴ Data Compiled from: Forest Trends (FT) Governance Ranking Score 2019, Worldwide Governance Indicators (WGI), Corruption Perceptions Index (CPI), World Justice Project Rule of Law Index (WJP), Heritage Foundation Index of Economic Freedom (IEF), ND Gain Country Governance Ranking (ND GAIN GR), World Bank Ease of Doing Business (EDB), Fragile State Index (FSI), Economist Intelligence Unit Operational Risk Country Rankings (EIU OR), Economist Intelligence Unit Illicit Trade Country Rankings (EIU IT), TRACE Matrix (TRACE), PRS Group Political Risk Index (PRS PRI).



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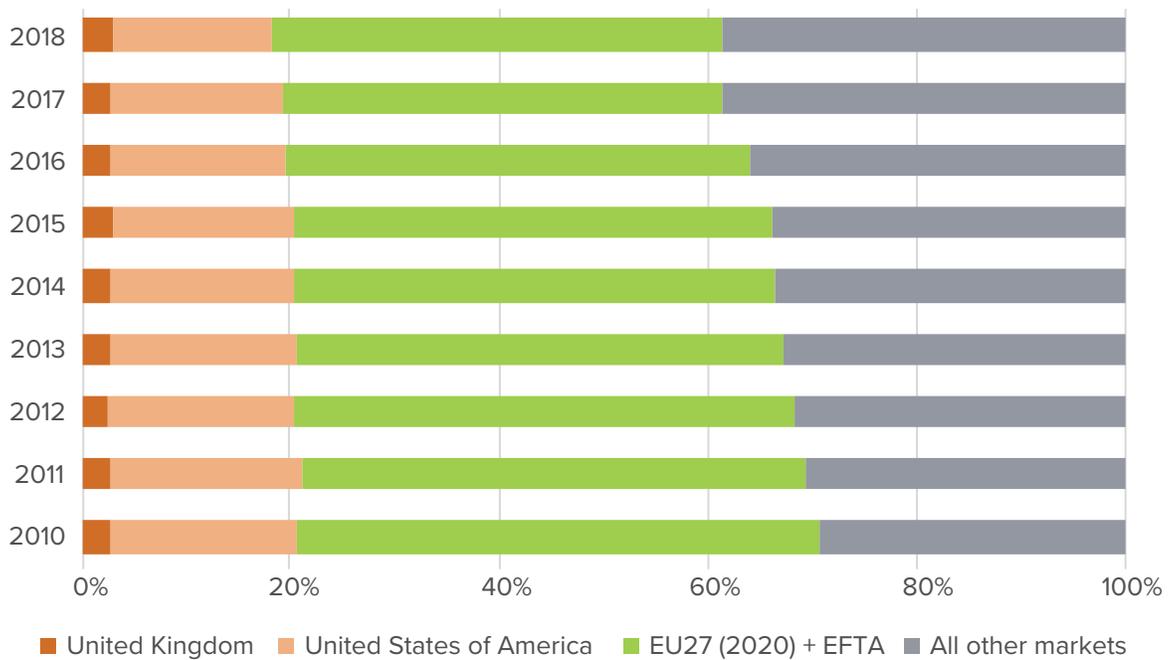
Over two-thirds of all global coffee beans, and close to half of the world’s roasted or otherwise processed coffee products, are imported into the UK, the USA, and the EU.⁵ Each is developing policies to regulate agricultural commodity imports to combat the trade in commodities associated with deforestation.

In global terms, the UK market is small, with imports accounting for just under 3 percent of all coffee products in 2018. However, the USA (representing 16 percent of global imports) and the EU (representing 44 percent) are more significant consumers. Together, the UK, USA and EU represented 62 percent of the coffee market in 2018.

The EU was the majority consumer of coffee beans, roasted and decaffeinated coffee, and coffee substitutes, from eight of the top ten producer countries in 2019 (Brazil, Ethiopia, Honduras, India, Indonesia, Peru, Uganda, and Vietnam). When combined with American demand, market share, and therefore degree of influence, varies between 43 and 81 percent.

The USA has proportionally more influence over the producer markets of Guatemala and Colombia but does not reach critical mass on its own. Japan, which has passed legislation to exclude illegally sourced timber from its market but has not yet signaled similar action on forest risk commodities (FRCs), is an important tertiary market for Brazil, Colombia, Ethiopia, Guatemala, Indonesia, and Vietnam.

FIGURE 5 UK, USA, and EU share of global coffee product imports (%)



Source: FAOSTAT, 2020

⁵ All references to the “EU” refer to the 27 Member States of the European Union (as of 2020) as well as European Free Trade Agreement (EFTA) countries which include Iceland, Liechtenstein, Norway and Switzerland.



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The UK, USA, and EU are developing policies to regulate agricultural commodity imports to combat “exported” deforestation. Only together can the UK, USA, and EU, and their forthcoming legislative efforts, achieve significant leverage over production methods of coffee beans and coffee products.

In 2020, the UK became the first country to take legislative action, announcing a law that will place new responsibilities on larger businesses using FRCs likely to include soy, palm oil, pulp and paper, beef, cocoa, and rubber, aiming to prevent UK imports and consumption of such commodities grown on forest land that was illegally cleared. Coffee is unlikely to be included in the first wave of commodities but is under discussion for additional phases of implementation. In the USA, President Joe Biden has demonstrated a strong commitment to support legislation making it illegal to import commodities sourced from illegal forest conversion or land. The European Commission is also considering regulatory options as part of actions to reduce EU consumption and encourage the use of products from deforestation-free supply chains with additional consideration for human rights.⁶

Both UK and USA legislative drafts have pointed towards a prohibition on the import of crops from illegally cleared forests. This reflects a commitment to honor the sovereignty of producer country governments and avoid compromising on the principles of the World Trade Organization (WTO). However, stakeholder consultations in the EU suggest that policy aspirations are broader, making it more likely that there will be a requirement on companies to remove commodities sourced from all forest conversion lands after specific cut off dates.

It will be critical for those designing and enforcing regulations in all three markets to promote consistent approaches in coffee producing countries if a positive balance of social and environmental outcomes is desired.

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To effectively eradicate deforestation – either planned or illegal – import regulations will need to address direct and indirect imports of green (raw) coffee beans, as well as roasted coffee, coffee substitutes, and other processed coffee products.

The UK, the first country to take regulatory action on FRCs, is likely to ensure that requirements apply not only to FRCs imported directly from producer countries such as Brazil, Vietnam, and Indonesia, but also to products sourced from indirect markets. While over 70 percent of the UK’s coffee imports were in green coffee bean form in 2019, the imports of processed coffee products are not insignificant.

Between 2010 and 2019, the UK imported over 455 million kg of roasted coffee, decaffeinated coffee, coffee husks and skins (the major solid residue from coffee processing), and coffee substitutes containing coffee. Nearly three-quarters of these processed products were imported through traders in five EU Member States: Germany, Italy, the Netherlands, Spain, and France. These indirect sources purchased 12 times more from the top ten global coffee producers in 2019 than did the UK.

As the first country to take regulatory action on FRCs, the UK is likely to ensure that requirements apply not only to unprocessed commodities imported directly from producer countries, such as Vietnam and Brazil, but also to processed products, such as roasted or instant coffee, which are

⁶ These include a pan-European mandatory human rights and environmental due diligence proposal, expected from the Directorate-General for Justice, and a pan-European mandatory due diligence proposal to exclude all commodities grown on deforested land from the European Single Market, expected from the Directorate-General for Environment, both in 2021.

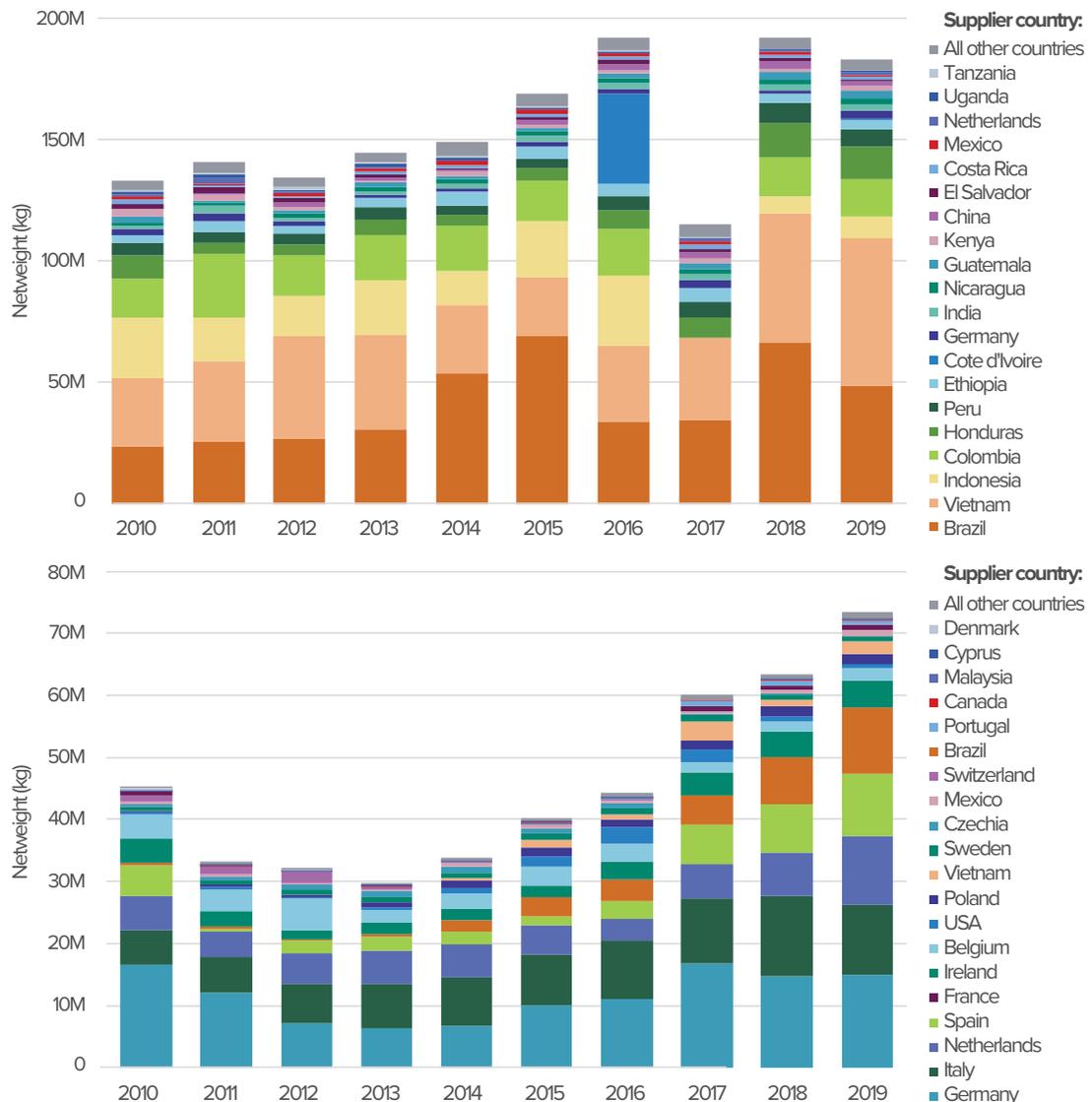


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reexported from other countries. Although the UK imports less than half the amount of coffee in semi-processed form than in unprocessed (green) form, through leverage over indirect trade routes and supply chains, the UK requirements have the potential to create a multiplier effect, shifting the sourcing practices of traders based in other countries that are either yet to take regulatory action or are developing slightly different requirements.

In coffee-producing countries, robusta varieties are more likely to end up in more heavily processed consumer products, such as instant coffee, than shade-grown arabica varieties. Vietnam, for example, saw its share of roasted and ground coffee exports increase from less than 1 percent in 2001 to 2 percent in 2019, and its share of instant coffee increase from 0.5 percent in 2001 to 17 percent in 2019 (Tran 2020). The more processed the product, the more difficult traceability will be. Robust due diligence systems must meet this challenge.

FIGURE 6 UK imports of green coffee (top) and processed coffee products (bottom) 2010-2019
(in weight)



Source: UN Comtrade, 2020



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Any efforts designed to exclude illegal deforestation, and the stakeholders implementing them, will need to ensure that companies can reliably trace and document their supply chain.

Given the size and economic characteristics of the supply chains facing regulation, economically efficient compliance at scale will be necessary. Due to the complexity of these supply chains and the risk of document or permitting fraud, traceability is an immediate challenge. For the coffee sector, countries producing robusta, which makes its way into processed coffee products using mixed sources, will need to ensure adequate traceability. There is some precedent for coffee traceability via the Fairtrade initiative, and in other commodities via public and private sector efforts to achieve zero deforestation.

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Import regulations aimed at eliminating illegal deforestation specifically, will also need to demonstrate legal conversion of forestland for agriculture, likely via audits in production areas and/or multi-stakeholder consultations.

Given the size and economic characteristics of the supply chains facing regulation, economically efficient compliance at scale will be necessary. Once traceability has been established, demonstrating whether a production area has been converted after a given date is relatively easy using historical satellite imagery; however, demonstrating the legality of that conversion will be significantly more challenging, vulnerable to fraudulent documentation, and potentially remain contested. Overlapping and changing laws, opaque political processes and the threat of corruption will cause significant barriers to farmers wishing to demonstrate the legality of their land, as well as companies wishing to demonstrate the legality of their supply base at scale. One of the key lessons learned from enforcing the EU Timber Regulation has been the inherent weakness of a compliance system based on the collection of public documentation in countries grappling with endemic levels of corruption and poor capacity. One way to address this would be through legality audits in production areas, which could collate evidence that relevant laws have been complied with, and, where legality is not accepted by all parties, consider local stakeholder views.





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Coffee production is largely reliant on smallholders. Demand-side legislative options to curb deforestation – whether legal or illegal – must also consider social implications and mitigate potential negative impacts on vulnerable populations.

Coffee is a key cash crop, providing an important stream of export revenue for producer countries and the smallholders who grow coffee. 80 percent of the world's coffee is produced by 25 million smallholders, and 125 million people depend on coffee for their livelihoods (Fairtrade Foundation 2021). These producers are vulnerable to climate change, particularly those growing varieties in tropical highlands, as well as boom and bust cycles in commodity markets (Bunn *et al.* 2014). Producers with higher income streams are able to diversify with other crops (e.g. those that can be grown in agroforestry models alongside coffee) and access capital and information for adaptation measures, yet those with lower income streams are increasingly vulnerable to external shocks.

Consumer markets developing regulations to curb deforestation in FRC imports must be cognizant that these regulations may have negative impacts on the livelihoods of smallholders. A large body of literature on timber legality notes a range of interconnected barriers faced by small farmers and enterprises who must achieve, maintain, and demonstrate legality in their supply chains (Forest Trends 2016). The UK has expressed interest in working together with producer countries in partnership to support the multi-stakeholder development of practical legal frameworks and transition producers to legally and sustainably sourced commodity production. Ideally, demand-side regulations can incentivize producer countries to improve governance of forest and agrarian landscapes.

Research at the intersection of smallholder production, land use, and FRC investment has found that the following factors can lead to inclusive, pro-poor business models, while helping ensure that small farmers meet demand-side legality and sustainability requirements.

- **Secure land tenure:** Smallholders are more likely to invest in production landscapes, and improve climate mitigation and adaptation capacity, if their resource rights are recognized and the process for legal land conversion is easily understood. They can also leverage their land as an asset.
- **Essential livelihood services:** These may include credit in the form of guaranteed bank loans or non-traditional options such as microfinance, training and extension services, or capital which can be leveraged into purchasing resilient crop varieties or value-added production capacity.
- **Subsidies:** Smallholders accrue the smallest share of benefits from commodity production compared to other actors in the value chain, particularly if they are also marginalized in other ways, such as extreme poverty or indigenous identity. Yet governments have overwhelmingly channeled agricultural subsidies to large-scale commercial agriculture.
- **Effective national regulation:** Good governance can help businesses meet social goals and avoid undesirable outcomes such as land conflict, corruption, child labor, or unfair contracting terms. Demand-side regulations can incentivize improved governance by excluding products made from slave labor or adopting sound due diligence frameworks that mitigate against other governance risks.



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