March 2024

Brazil, Colombia, and Vietnam

Potentially noncompliant **coffee** case studies to the EUDR

Photo credit: © 2012, Drost

aid environment

Executive summary

Coffee is one of the seven commodity products under the scope of the European Union Deforestation Regulation (EUDR). Although the cash crop is generally not seen as a major contributor to global deforestation, deforestation hotspots linked to coffee expansion are prevalent. Brazil, Vietnam, and Uganda are the top-3 coffee supplying countries to the world's top coffee importer - the European Union - while Brazil, Colombia, and Vietnam are the largest suppliers to the United States. The largest coffee-producing countries include Brazil, Vietnam, Colombia, Indonesia, and Ethiopia. In this second report in a series of pilots under its Realtime Deforestation Monitoring (RDM) system, AidEnvironment aims to expands its RDM system to identify recent, noncompliant case studies in the coffee sector, specifically linked to major coffee producing countries Brazil, Vietnam, and Colombia. It addresses the challenges of (remote) monitoring EUDR compliance linked to the coffee sector, the availability of public data sources to allow for monitoring, and transparency and traceability issues.

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Coffee production and trade flows

Recent trends in global coffee production and trade

The top-5 coffee-producing countries in the world are Brazil (36%), Vietnam (22%), Indonesia (9%), Colombia (8%), and Ethiopia (6%) (Figure 1). Together, they represented 66% of global coffee production in 2022, producing 7.1 million tonnes of the total 10.8 million million tonnes of green coffee produced by 81 countries worldwide.

The coffee market is vital to many national economies worldwide. Higher output in Brazil, Colombia, and Ethiopia is expected for 2023/2024.

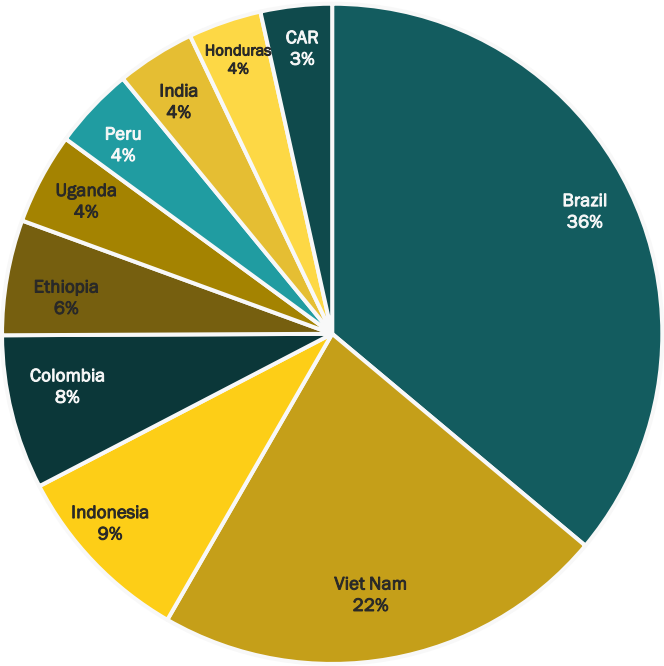


Figure 1. Top 10 coffee-producing countries in 2022. Source: FAOSTAT)

Brazil and Vietnam dominate EU27 imports of coffee beans

The EU is the world's top coffee importer, with slightly over 3 billion kg of imports in 2022 (Figure 2 next page), nearly double the amount of US coffee imports in that same year (1.6 billion kg).

Brazil is the largest supplier of coffee to the EU (34 % of the total volumes imported in 2022), followed by Vietnam (22%). Brazil and Vietnam have consistently ranked as the top-two coffee suppliers to EU27 countries during the last decade, accounting for 54 to 58 percent of EU27 unroasted green coffee beans imports and leaving limited market share for other non-EU suppliers. Uganda, ranked in 2022 as the 3rd supplier to the EU, supplies more coffee to the EU27 than all the other African coffee-producing countries combined. Colombia dropped in coffee supplies to Europe in recent years (e.g. it was the 4th supplier in 2016, but only 6th in 2023), although remaining the second largest supplier to the US.

Coffee production and trade flows

Direct trade links to the EU

Country	Imported volumes 2021 (kg)	% of total	Imported volumes 2022 (kg)	% of total	Imported volumes 2023 (kg)	% of total
Brazil	1,033,362,449	36%	1,042,513,110	34%	920,670,740	34%
Vietnam	549,075,821	19%	661,407,375	22%	651,752,017	24%
Uganda	212,291,456	7%	214,464,204	7%	206,217,403	8%
Honduras	191,110,040	7%	158,433,227	5%	168,638,897	6%
India	122,658,894	4%	151,572,922	5%	118,091,627	4%
Colombia	142,812,960	5%	124,995,237	4%	112,646,198	4%
Peru	84,630,731	3%	130,313,230	4%	82,747,332	3%
Indonesia	85,949,771	3%	104,583,833	3%	67,955,225	2%
Ethiopia	83,457,556	3%	92,676,616	3%	59,304,010	2%
Switzerland	60,986,693	2%	60,797,719	2%	53,224,508	2%
Total top 10	2,566,336,371	89%	2,741,757,473	90%	2,441,247,957	89%
Total world	2,893,873,386	100%	3,049,334,627	100%	2,741,972,552	100%

Figure 2. Top 10 supplying countries of coffee (HS 0901) to the EU27 in 2021, 2022 and 2023 . Countries are ranked according to 2023 volumes.
Source: AidEnvironment based on EU Comext. Accessed in February 2024.

Major EU recipients of coffee from Brazil and Vietnam

Considering the largest EU27 importers, Germany and Italy combined are by far the largest recipients of coffee from Brazil and Vietnam, followed by Spain and Belgium.

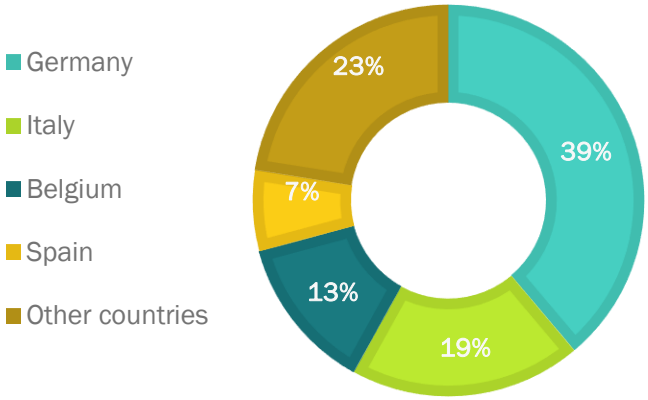


Figure 3. Main EU recipient countries of Brazilian coffee in 2022
Source: AidEnvironment based on Access2Markets. Accessed in February 2024.

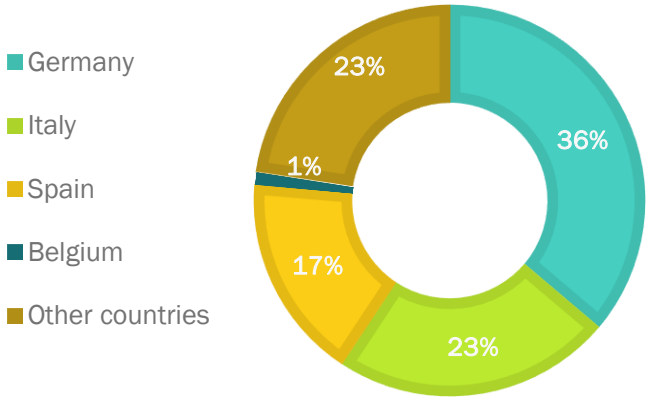


Figure 4. Main EU recipient countries of Vietnamese coffee in 2022
Source: AidEnvironment based on Access2Markets. Accessed in February 2024.

Coffee case studies Brazil

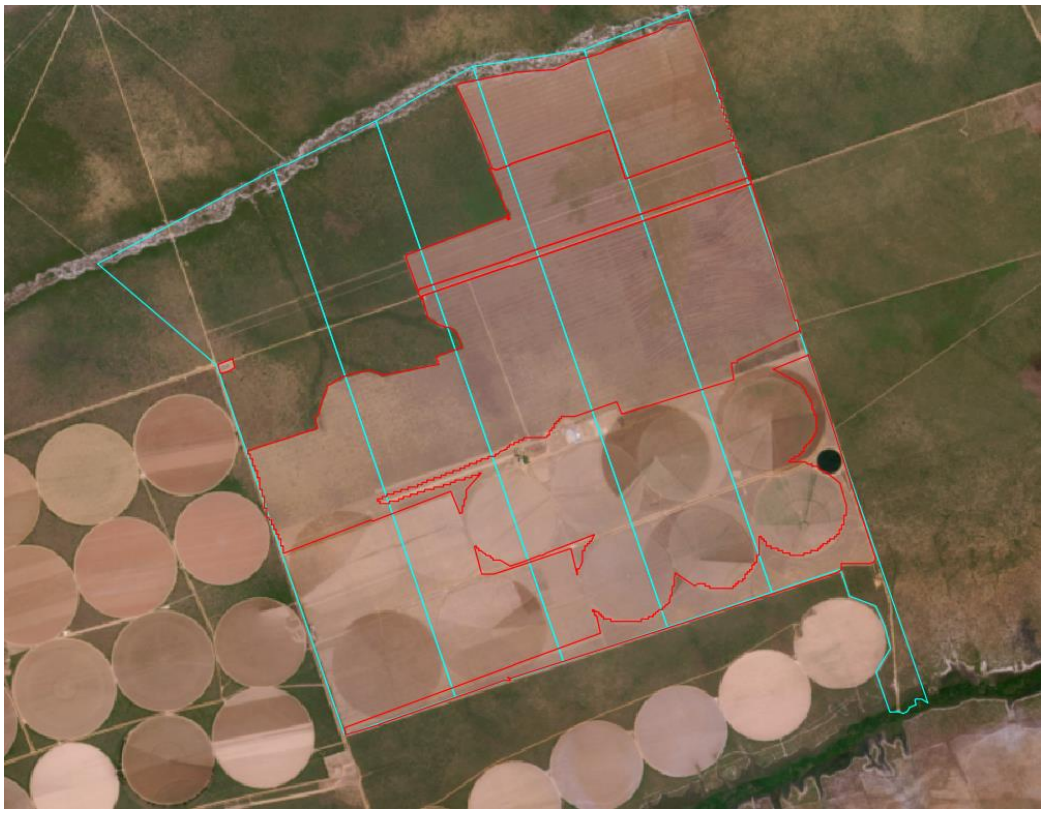


Figure 5. Fazenda Grande Leste I, II, III, IV, V (marked in blue). In red, recent deforestation.
Source: AidEnvironment. Imagery ©2024 Planet Labs Inc.

Availability of public data sources in Brazil to remotely assess compliance with the EUDR

Opportunities: Since 2019, AidEnvironment has built a significant geographic information system (GIS) for Brazil, with millions of data points, mainly to (remotely) monitor soy, palm oil, and beef-related deforestation, and identify responsible actors, under our Realtime Deforestation Monitoring (RDM) program. We have built on this geospatial dataset to include potential coffee-linked deforestation cases in our RDM system. In Brazil, numerous datasets are publicly available that can be combined for adequate coffee monitoring, including rural cadaster data (e.g. SIGEF/SNCI/SNCR and the self-declared CAR); national deforestation data (INPE/Prodes, DETER); legal reserves and permanent preservation areas (Forest Code); conservation areas and indigenous territories (e.g. ICMBio, SNUC); vegetation types (e.g. Mapbiomas, IBGE); environmental embargoes and fines (Ibama); linked companies (e.g. SINTEGRA) and properties; and company infrastructure such as warehouse locations (SICARM). Based on these datasets, and combined with additional research, we were able to develop the three coffee-linked case studies described in the next pages, which are potentially noncompliant with the EUDR (with deforestation after the cut-off date in areas that can be classified as forest).

Challenges: 1) Large farm owners in Brazil may, under the EUDR, provide only coordinates of the plot of land/parcel where coffee is grown, even if the complete farm is bigger and deforestation adjacent to coffee parcels can still be linked to coffee expansion; 2) Identification of EUDR non-compliance at this very moment, followed by timely action, is impeded by delays caused by the life cycle of the coffee plant (between planting and coffee production, 2-3 years pass), and the coffee may only be consumed in Europe three years after the deforestation. Meanwhile, other crops may have been planted in the farms; 3) There is lack of supply chain transparency on direct and indirect buyers of coffee from producing farms in Brazil.

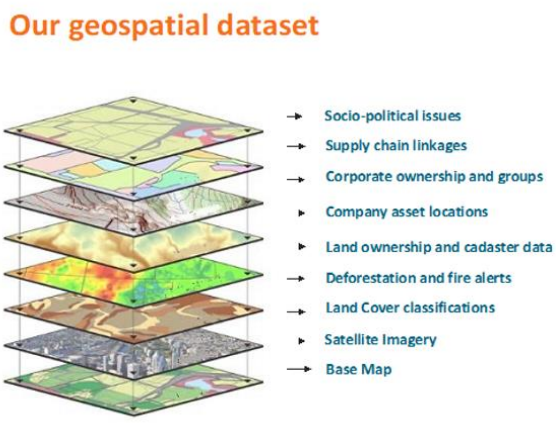


Figure 6. AidEnvironment geospatial dataset

Coffee case studies Brazil

Case study 1: Fazenda Rio de Janeiro (Barreiras, Bahia) (1/2)

Fazenda Rio de Janeiro, located in Barreiras municipality (Bahia) is owned by Q045 Negocios Imobiliarios (headquartered in São Paulo), a company economically active in land investment/leasing as well as whole trade of (unspecified) agricultural raw materials. One of the administrators of the company is Radar Propriedades Agrícolas (Radar), a Brazilian company established in 2008. Radar is part of a complex web of companies through which the Teachers Insurance and Annuity Association of America (TIAA) invests in global farmland assets. Radar is an intermediary company structured to comply with Brazilian land ownership law. Radar properties may be linked to land-grabbing and conflicts with local communities in the Matopiba region. At least 22,834 ha on six Radar's properties in Maranhão and Piauí were bought from companies linked to the known (and now deceased) land grabber Euclides de Carli. AidEnvironment could not identify links between De Carli and Fazenda Rio de Janeiro. Radar and Q045 Negocios Imobiliarios are represented by Henrique Americano Carvalho de Freitas, who owns at least 100 active companies in Brazil. He is active in real estate and land investment companies and heads Nuveen Natural Capital – Latam. He was also Brazil Export Director at Minerva Foods. The previous owner of Fazenda Rio de Janeiro (until early 2021) was Adeco Agropecuária Brasil, subsidiary of publicly listed company Adecoagro, which operates among others in grains, rice, peanuts, sugar/ethanol, and land transformation.

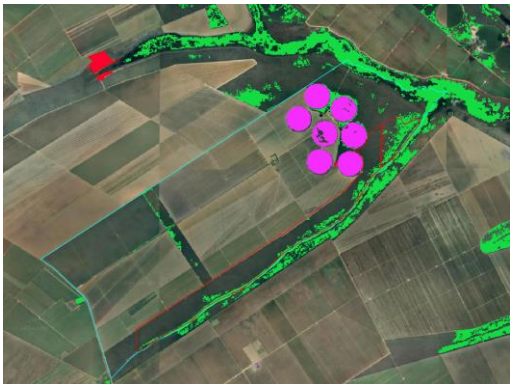


Figure 7. Fazenda Rio de Janeiro (marked with blue line). Source: AidEnvironment. In purple the coffee area (MapBiomas, 2022), in green the EU Forest Observatory classification of forest, and in red the deforested area. Not on this map, but cotton is largely grown in the southwest part of the farm, while soy is grown on all other locations, except from the coffee area.

Coordinates of the farm: -11.88; -45.99

November 2023

January 2022

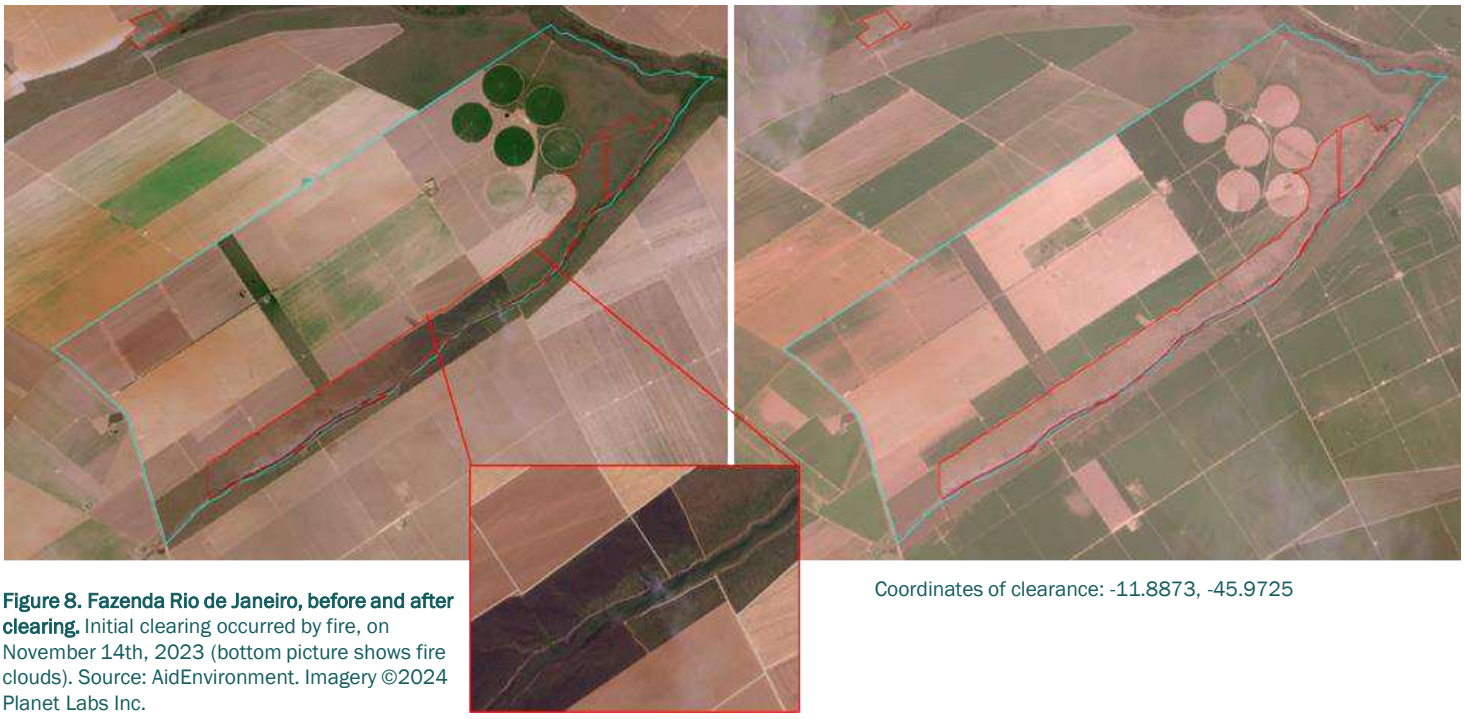


Figure 8. Fazenda Rio de Janeiro, before and after clearing. Initial clearing occurred by fire, on November 14th, 2023 (bottom picture shows fire clouds). Source: AidEnvironment. Imagery ©2024 Planet Labs Inc.

Coordinates of clearance: -11.8873, -45.9725

Since the EUDR cut-off date (31 December 2020), Q045's farm Fazenda Rio de Janeiro has cleared 1,554 hectares of native vegetation, of which about 200 hectares is classified as forest under the EUDR. MapBiomas' assessment of vegetation types on the farm in 2022 reveals that the farm mainly produces soy, cotton, and coffee. While the northeastern part of the farm has a history in coffee production, according to MapBiomas, all seven circles (see Figure above) were covered with coffee since 2011, compounding an area of about 700 hectares. The coffee was planted in areas that previously produced soy. Part of the cleared area is adjacent to the coffee plot of land, therefore, there are substantial concerns that the area where the clearing was detected, and which occurred after the EUDR cut-off date, will be used for coffee production in the near future.

Case study 1: Fazenda Rio de Janeiro (Barreiras, Bahia) (2/2)

Fazenda Rio de Janeiro is also linked to Schmidt Agrícola, a company active in the production of fibers, grains, and fruits, specifically soy, cotton, corn, beans, and bananas. This might be one of the companies that leased (part of) the Fazenda Rio de Janeiro farm from land investment company Q045. Schmidt Agrícola reportedly planted 429 hectares with cocoa recently, fully irrigated, but it remains unclear if this was done in Fazenda Rio de Janeiro and when it was planted. If the location is in Fazenda Rio de Janeiro, the cocoa plants may have replaced part of the planted coffee areas (coffee area in 2022 was about 700 hectares), which can only be validated in the field. Cocoa is also one of the commodities covered under the EUDR. Since the company Schmidt Agrícola is not clearly associated with coffee production, part of the coffee producing area may be/may have been leased by a different company.

Figure 9. Screenshot of entry of farm Fazenda Rio de Janeiro, indicating a link with Schmidt Agrícola. Source: Google maps, coordinates: -11.94510, -46.09966.

Director of Schmidt Agrícola, Paulo Almeida Schmidt and likely relatives (e.g. Moises Almeida Schmidt), also collectively own other farms in Barreiras (Bahia) nearby Fazenda Rio de Janeiro, including Fazenda Água Vermelha e Outras, Fazenda São Vicente, and Fazenda Orquídeas. These farms seem to be mainly involved in grains production.

Case study 2: Fazenda Grande Leste I, II, III, IV, V (São Desidério, Bahia) (1/2)

Between March-July 2022 Fazenda Grande Leste I, II, III, IV, V cleared 2,228 hectares of forested savanna, of which large part is classified as forest under the EUDR. The deforestation occurred in parts of the farm adjacent to the coffee production area.

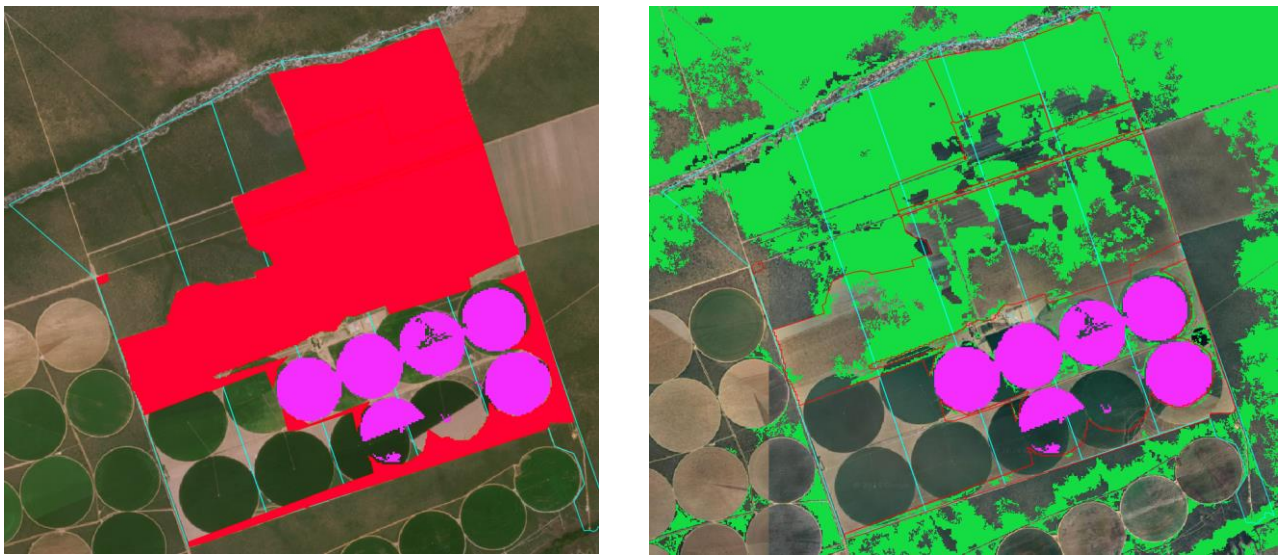


Figure 10. Fazenda Grande Leste I, II, III, IV, V (marked with blue line). Source: AidEnvironment. In purple the coffee area, in green the EU Forest Observatory classification of forest, and in red the deforested area. From 2002, MapBiomas assessed that coffee was grown in the southern part of the farm, covering the purple circles. Prior to that, these areas were covered with 'other temporary crops". Coordinates of the property: -12.7482, -45.2219

Since the existing coffee planted area in the farm is nearing 22 years of existence (coffee has been planted since 2002), there is substantiated concern under the EUDR that the recent deforestation may link to an expansion of coffee area, for instance to replace the old coffee trees.

Case study 2: Fazenda Grande Leste I, II, III, IV, V (São Desidério, Bahia) (2/2)

Owners of the Fazenda Grande Leste farm parcels, the Sibin family, are originally from São João da Boa Vista (SP) and are active in coffee production in Bahia. Companies linked to the coffee producing family in Bahia include Cafeeira dos Gerais LTDA, Agropecuaria Grande Leste LTDA, and Bahia Trading Coffe Consultoria em Agronegocios E Participacoes LTDA. None of these companies can be found in recent shipment data, therefore, it is likely they market coffee through other exporting groups (e.g. Montesanto Tavares Group), cooperatives, or commodity traders (e.g. Olam). While in the official Brazilian land management system (SIGEF, 2019) the farm is registered under ownership of the Sibin Family, official documents from the Bahia environmental state agency, Inema, link the property to Daniel Franciosi. Associated company Franciosi Agro Group is one of the largest agribusiness companies operating in Matopiba, allegedly producing soy and cotton in 70,000 hectares in Bahia and Piauí states. The group of properties Fazenda Grande Leste had an authorization for controlled fire valid from 04th August to 18th September 2022, that might be (partly) linked to the detected deforested area in this case.

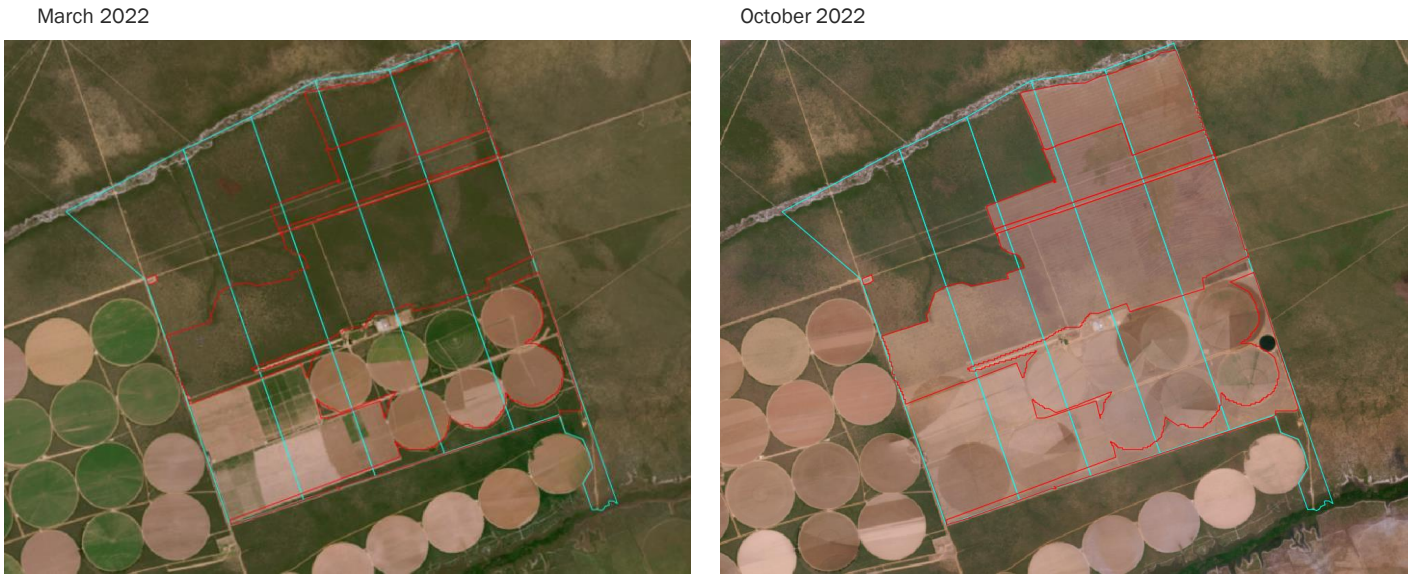


Figure 11. Fazenda Grande Leste I, II, III, IV, V (marked in blue) before and after clearing. The farm parcels are owned by Joan Olivio Sibin, Jose Gilberto Sibin, Luiz Silvestre Sibin, Paulo Roberto Sibin, and Antonio Segio Sibdin. Coordinates of clearance: -12.7205, -45.2163. Source: AidEnvironment. Imagery ©2022 Planet Labs Inc.

Coffee case studies Brazil

Case study 3: Fazenda Planalto (Barreiras, Bahia) (1/2)

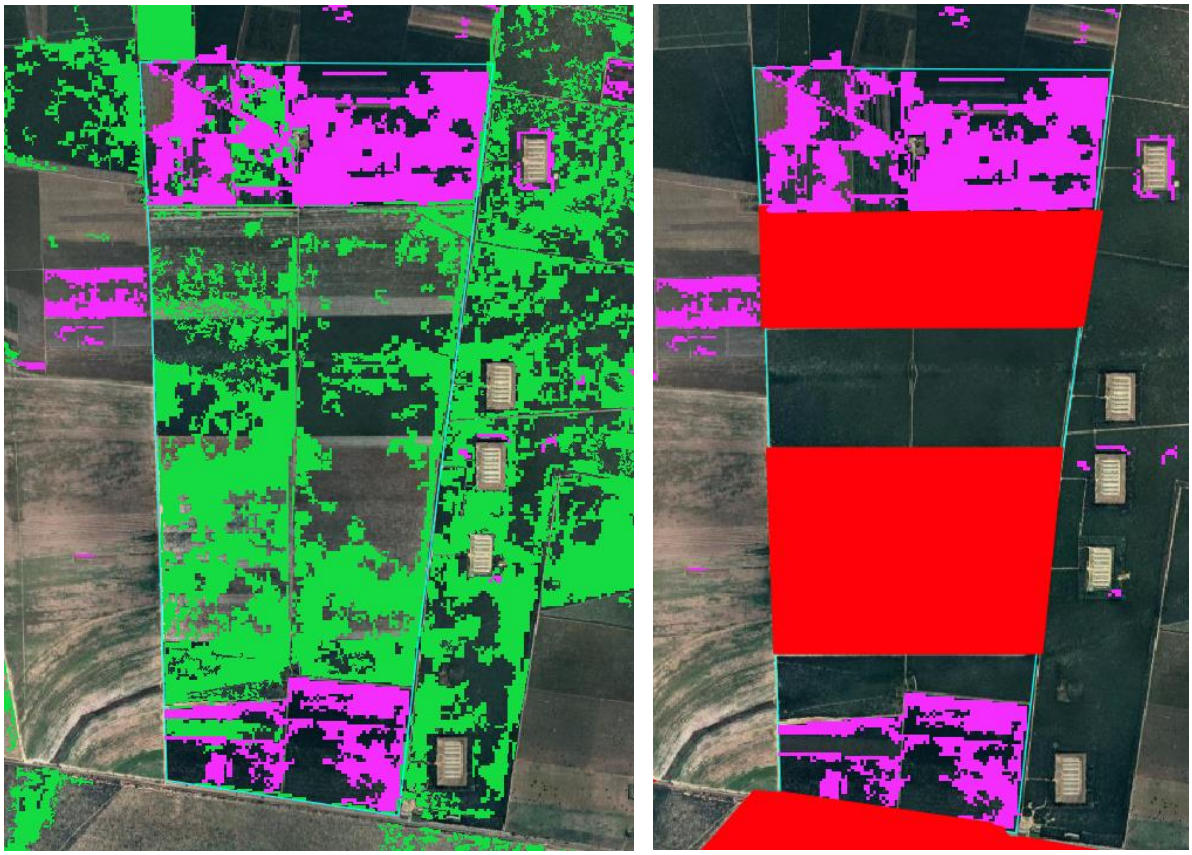


Figure 12. Fazenda Planalto (marked with blue line)**.** Source: AidEnvironment. In purple the coffee area (MapBiomas, 2022), in green the EU Forest Observatory classification of forest, and in red the deforested area. Other than coffee and eucalyptus, the farm was largely covered with native vegetation which has been cleared after the EUDR cut-off date.
Coordinates of the farm: -12.0532, -45.4121

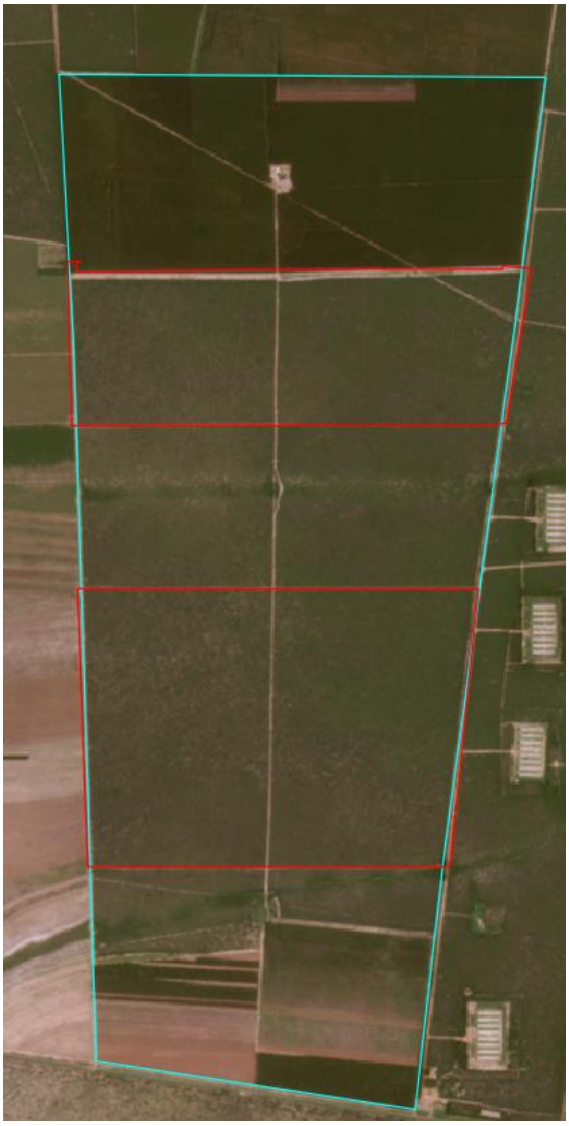
Fazenda Planalto in Barreiras (Bahia) has cleared 854 hectares of native vegetation between February and June 2022, of which large part is classified as forest under the EUDR. In 2011, MapBiomas hardly registered any coffee plantations in the Planalto farm, but from 2013/2014, coffee was planted in northern and southern parts of the farm. Apart from coffee vegetation coverage and other perennial crops (unspecified), Fazenda Planalto also cultivates eucalyptus trees. Other than coffee and eucalyptus, the farm was largely covered with native vegetation which has been cleared after the EUDR cut-off date. With the clearing right next to the coffee plantation areas, there is substantial concern under the EUDR that the area will be used for coffee production in the near future.

Case study 3: Fazenda Planalto (Barreiras, Bahia) (2/2)

Owner of the farm Jacob Lauck is recognised as one of the larger coffee growers in Western Bahia region. Originally from Santo Ângelo (RS), he started soybean planting in the region about 30 years ago and planted 900 hectares of coffee by 2004. In addition to coffee, Lauck also invests in hotels in Luís Eduardo Magalhães municipality. Among his owned companies are JL Empreendimentos Agropecuarios Ltda, Paraiso Hoteis e Turismo Ltda, Lauck e Chiodi & Cia Ltda, Hotel Premium Norte Ltda, Imobiliaria J Lem Ltda, Copal Concretos Paraiso Ltda, and Cerealista Paraiso Ltda.

Other farms of Jacob Lauck, either in São Desidério or in Luís Eduardo Magalhães municipalities in Bahia include: Fazenda Paraíso, Fazenda Paraíso III, Fazenda Bepi, and Chácara JLEM (likely all involved in soy production), whereas particularly Fazenda Johá (Agrícola Joha) in Luís Eduardo Magalhães produces coffee.

February 2022



June 2022

Figure 13. Fazenda Planalto (marked in blue) before and after clearing. Coordinates of clearance: -12.0684, -45.4127. Source: AidEnvironment. Imagery ©2022 Planet Labs Inc.

Coffee case studies Colombia

Availability of public data sources in Colombia to remotely assess compliance with the EUDR

Opportunities: In Colombia, there is publicly available data on where coffee is planted, although it is based on an outdated coffee data layer of 2018. While (partial) rural cadaster data is available, instead of property owner names, the data comes with a code ("número predial", see Figure 14 below). According to a Colombian expert, the identification of ownership names would require visiting Colombian district offices in person and would involve costs. For national deforestation alert data, we can rely on IDEAM, while we visually confirm deforestation through satellite imagery (Planet imagery).

Challenges: All challenges as listed in Brazil are also valid for Colombia but combined with more severe restrictions. A major challenge, the lack of farm names and property owners, causes a disconnect between the detected deforestation and the remote identification of responsible actors and linked coffee buyers/operators. Moreover, in a pilot search, AidEnvironment only identified deforestation cases with limited hectares cleared, likely only linked to smallholder coffee producers. Major coffee-linked deforestation by large-scale, industrial coffee producers occurred already years ago. Generally, little information is available on smallholder producers online.

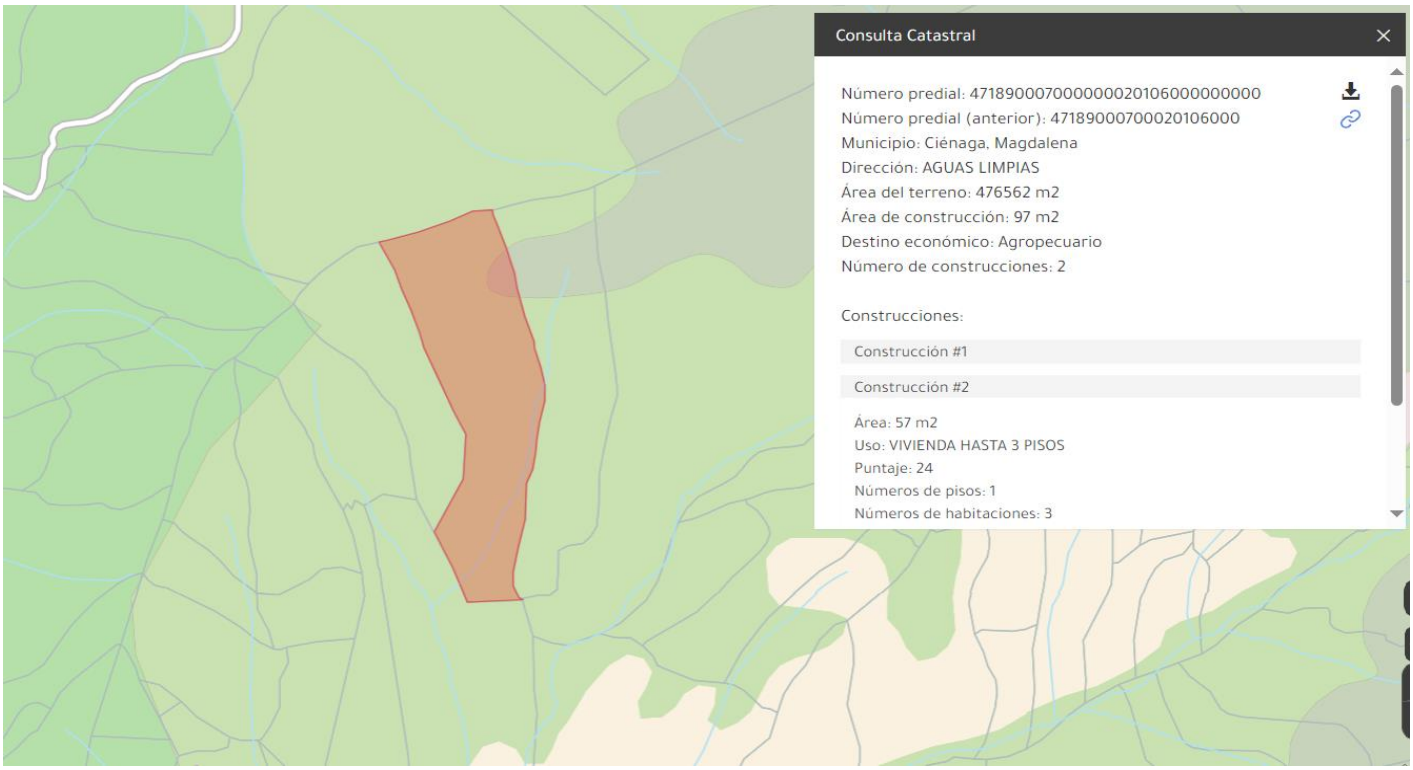


Figure 14. Cadaster data in Colombia comes without farm and ownership names. Farm located in Ciénaga, Magdalena municipality in Colombia (coordinates: 10.7971, -73.9773). Source: Instituto Geográfico Agustín Codazzi – IGAC. Accessed February 2024

Figure 15. Similar property in Magdalena as shown in cadaster data map above (Figure 14). This property, growing coffee according to the 2018 coffee layer, cleared about 1.5 hectare of forest between January and March 2023. AidEnvironment is unable to remotely obtain more information on the property name and linked owners of this property.

Coffee case studies Colombia

AidEnvironment identified **six small-scale deforestation cases** (varying from 1.5 to 9 hectares cleared) in a first coffee pilot remote assessment in the Colombian departments of Santander, Magdalena, and Cesar. In this report, we only listed three cases (cases A, B, C), all of which involved over four hectares cleared.

Case study 1: Property A in Santander, Colombia

Case A - Santander – Colombia
Location coordinates: 6.4629, -73.0979
Cadaster number (número predial): 68855000000040191000

The clearing of approximately **nine hectares** on this property occurred between February and April 2023, therefore after the EUDR cut-off date, and all in an area classified as forest in the EU Forest Observatory global map of forest cover 2020, as well as in the area indicated as coffee in the "coffee layer 2018". In online searches, no further information could be found on this case linked to the name of the polygon property. The identification of ownership linked to the cadaster number would require visiting the local offices of the Colombian Santander department in person and would involve costs. And it remains uncertain whether the information would be disclosed by the officials.

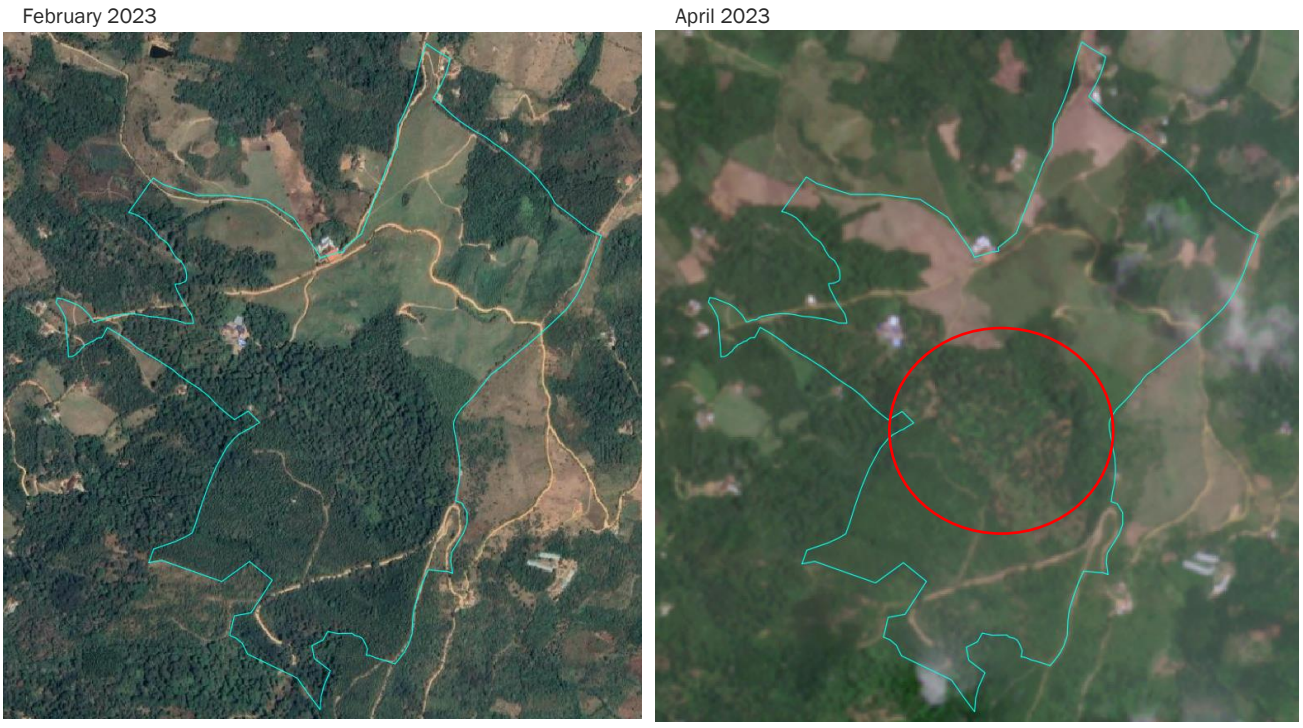


Figure 16. Farm A (coordinates: 6.4629, -73.0979 in Santander (Colombia), before and after clearing. Approximately nine hectares have been cleared on the property between February and April 2023. Source: AidEnvironment. Imagery ©2023 Planet Labs Inc.

Case study 2: Property B in Santander, Colombia

Case B - Santander – Colombia
Location coordinates: 6.8833, -73.3645
Cadaster number (número predial): 68689000100040086000

The clearing of approximately **five hectares** on this property occurred between June and August 2023, therefore after the EUDR cut-off date, and all in an area classified as forest in the EU Forest Observatory global map of forest cover 2020, as well as in the area indicated as coffee in the "coffee layer 2018". In online searches, no further information could be found linked to the name of the polygon property. The identification of ownership linked to the cadaster number would require visiting the local offices of the Colombian Santander department in person and would involve costs. And it remains uncertain whether the information would be disclosed by the officials.

Figure 17. Farm B (coordinates: 6.8833, -73.3645) in Santander (Colombia), before and after clearing. Approximately five hectares have been cleared on the property between June and August 2023. Source: AidEnvironment. Imagery ©2023 Planet Labs Inc.

Case study 3: Property C in Cesar, Colombia

Case C - Cesar – Colombia
Location coordinates: 9.9766, -73.0950
Cadaster number (número predial): 20013000300030138000

The clearing of approximately **four hectares** in this property occurred between December 2022 and April 2023, therefore after the EUDR cut-off date, and all in an area classified as forest in the EU Forest Observatory global map of forest cover 2020, as well as in the area indicated as a coffee production area in the "coffee layer 2018". In online searches, no further information could be found linked to the name of the polygon property. The identification of ownership linked to the cadaster number would require visiting the local offices of the Colombian Cesar department in person and would involve costs. And it remains uncertain whether the information would be disclosed by the officials.

Figure 18. Farm C (coordinates: 9.9766, -73.0950 in Cesar (Colombia), before and after clearing. Approximately four hectares have been cleared on the property between December 2022 and April 2023. Source: AidEnvironment. Imagery ©2023 Planet Labs Inc.

Coffee case studies Vietnam

Availability of public data sources in Vietnam to remotely assess compliance with the EUDR

Opportunities: IDH Vietnam has started to map rural cadastre data in coffee areas, to allow for EUDR monitoring and compliance. While cadastre data in Vietnam is not yet digitalised, IDH Vietnam is currently mapping coffee plot polygons in the Di Linh district (Figure 19 below), a high-deforestation risk area in the South of Vietnam. Forty percent of the coffee area in this district is considered forest under the FAO definition. For each plotted farm, IDH is registering data on what is cultivated in the farm, including coffee. Moreover, Vietnam has an official National Forest Database (FRMS). Using FRMS, satellite images, and field visits, IDH has classified coffee areas with high, medium, and low deforestation risk (Figure 20 below).

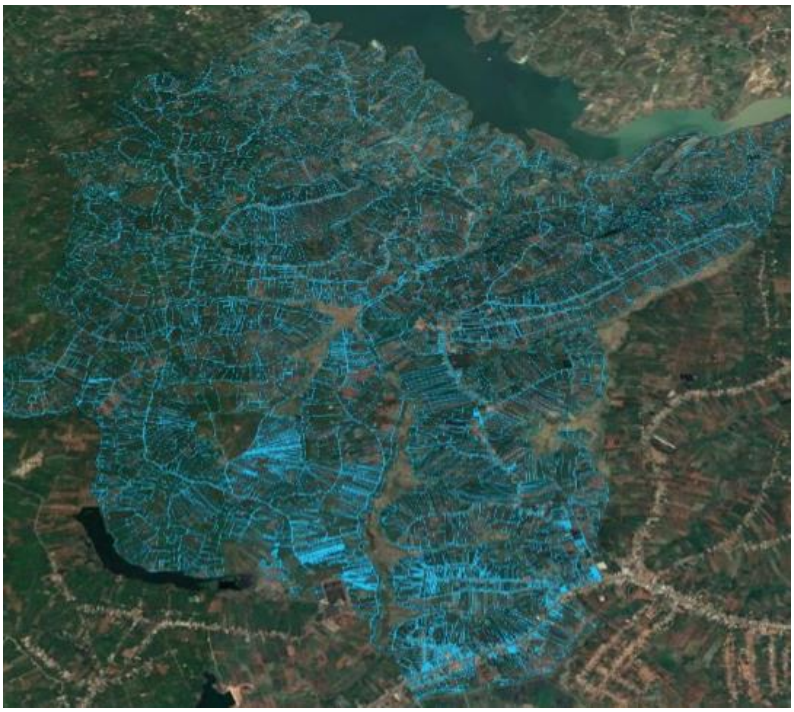


Figure 19. IDH Vietnam Plot map of Tan Nghia commune, Di Linh district.
The map was prepared by digitalising rural cadastre data, combined with field verification visits.

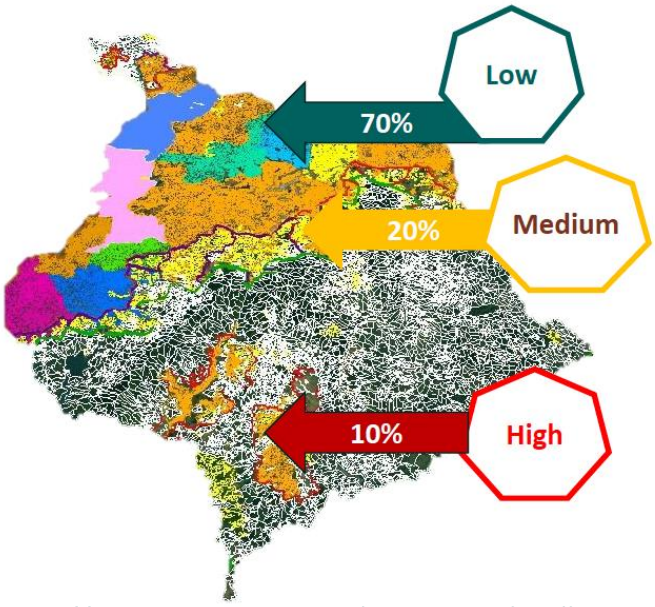


Figure 20 (above). IDH Vietnam map of high-risk areas for coffee-related deforestation. Source: IDH Vietnam, 29 June 2023.

Challenges: All challenges listed for Brazil and Colombia are also valid for Vietnam, although in the latter they are combined with more severe restrictions. Since rural cadastre data is not digitalised in Vietnam, organisations such as AidEnvironment, who are dependent on remote sensing and access to public datasets, can only have access to this data in close collaboration with organisations such as IDH. Also, the definitions of the EU Forest Observatory and that commonly used in Vietnam did not match. Moreover, there is lack of transparency on the identity of middlemen that operate between the Vietnamese smallholder coffee farmers and coffee buyers. Finally, considering that smallholders in Vietnam typically own only 0.3-2 hectares of land, the satellite resolution for detection of coffee areas and deforestation can be low.

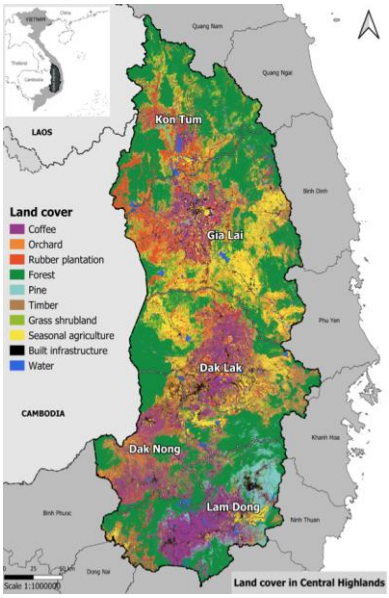


Figure 21 (left). Other initiatives on coffee mapping in the Vietnamese Central Highlands. Source: CGIAR

Coffee case studies Vietnam

Example coffee case study Vietnam

Considering the lack of access to publicly available rural cadastre data, AidEnvironment identified only one **deforestation case** in a first coffee pilot remote assessment in Di Linh district in Vietnam.

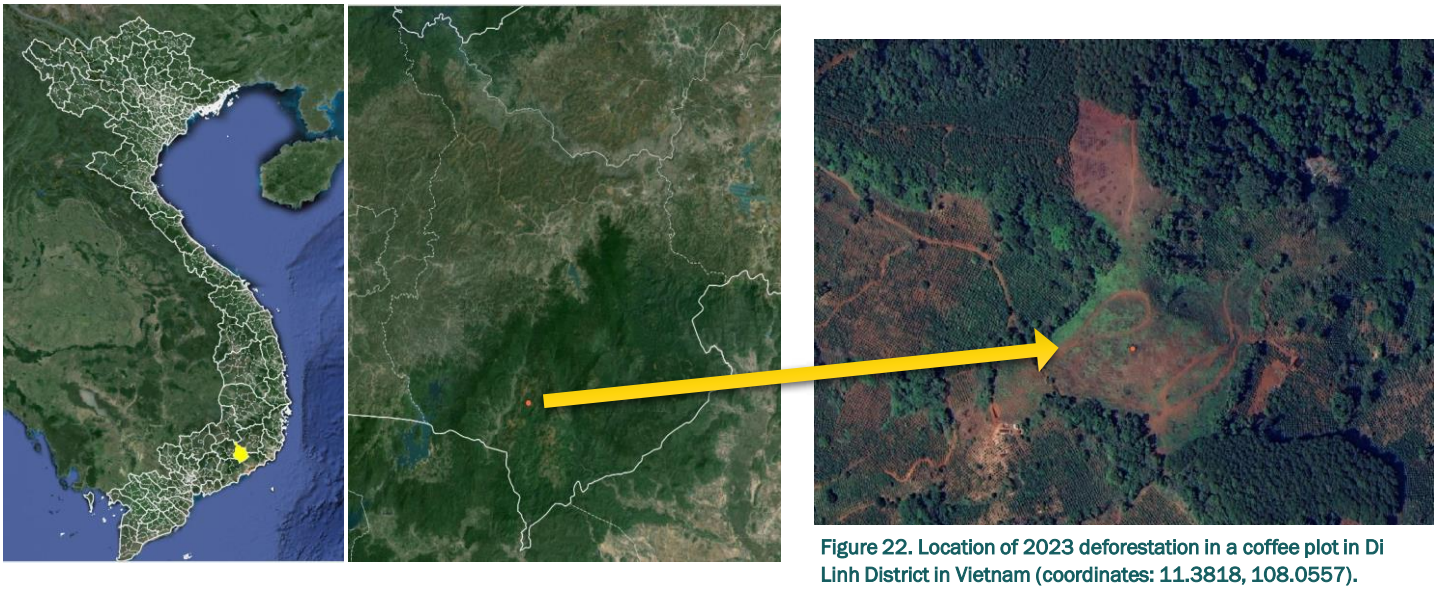


Figure 22. Location of 2023 deforestation in a coffee plot in Di Linh District in Vietnam (coordinates: 11.3818, 108.0557). Source: AidEnvironment. Imagery ©2024 Planet Labs Inc.

Case study : Property A in Di Linh district, Vietnam

Location coordinates: 11.3818, 108.0557

The clearing of approximately **4.3 hectares** in this property occurred between February 2023 and May 2023, therefore after the EUDR cut-off date, and all in an area classified as forest in the EU Forest Observatory global map of forest cover 2020, as well as in the area indicated as a coffee production area in the map of IDH Vietnam. In publicly available data sources, no further information could be found linked to the name of the polygon property, nor to its ownership. Adjacent farms seem to cultivate coffee as well.

December 2021

January 2024

Figure 23. Farm A (coordinates: 11.3818, 108.0557) in Di Linh district (Vietnam), before and after clearing. Approximately four hectares have been cleared on the property between February 2023 and May 2023. Source: AidEnvironment. Imagery ©2024 Planet Labs Inc.

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