



MIGHTY EARTH



RAPID RESPONSE Cocoa Report

October 2023



Prepared with



Introduction

This report forms the first in a series, where Mighty Earth is applying an adapted version of the “Rapid Response” methodology we have used to successfully engage with palm oil companies in Asia to the cocoa industry in Ghana and Cote d’Ivoire.

The objective of this Rapid Response work is provide companies with specific cases of deforestation potentially related to their supply chain, both alerting them to their high risk of purchasing deforestation-related cocoa and demonstrating that further rehabilitative action on the part of companies is required. We use an evidence-based methodology to highlight egregious cases of clearance since 2019 that must be addressed by companies as part of meeting their no-deforestation commitments. However, it should be noted that this does not comprehensively reflect each company’s deforestation risk in the regions we investigate.

Unfortunately, these cases are not unique, but rather emblematic of the cocoa industry’s expansion into forested areas across Ghana, hence we strongly encourage the company implicated in this report, and indeed the sector as a whole, to redouble efforts towards fully traceable and transparent cocoa supply chains. Only by achieving this will industry actors be able to quickly identify emergent deforestation risk “hot spots”, as well as assess where potential restoration efforts could be most beneficial.

Methodology

This publication draws upon publicly-available supply chain data to evaluate the deforestation exposure of several large cocoa traders and manufacturers within their Ghanaian supply chains.

We elected to notify traders about deforestation alerts within a 15km risk radius of their disclosed supply chain purchasing locations. We derived these points from Mighty Earth’s Cocoa Accountability Map for Ghana, which features a compilation of company purchasing locations from each of the major cocoa traders’ website as of December 2022. It should be noted that some companies have not updated their sourcing data for several years; following their CFI commitments, we strongly encourage companies to publicly update their Tier 1 & Tier 2 supplier lists on an annual basis. Some companies release explicit GPS coordinates for their purchasing warehouses while others merely stated the name of the town or region where the aggregation warehouse is located– in these cases, we used the center of the town or region as a proxy for the location of the warehouse. Choosing a relatively small radius of 15km increases the degree of confidence that the nearest warehouse would be the likely destination for cocoa from recently deforested areas, but likely underestimates the true risk zone of each location, given that cocoa has been shown to travel up to 25-60km from farms to the aggregation point.

We used the Open Street Map (OSM) Roads Map for Ghana as the basis of a road network to calculate a ‘deforestation risk zone’ for each warehouse/ cooperative . We then used the QGIS Service Area tool to follow all ‘official’ roads a distance of 15km from each warehouse before plotting and joining each ‘end of the road’ to form the deforestation risk zone. As demonstrated through satellite imagery in each of the three cases presented, there also exist many ‘unofficial roads’– dirt tracks which may not be included in the OSM map – which are locally used to navigate the areas between officially mapped roads.

Within the ‘deforestation risk zone,’ we specifically investigated RADD (RADar for Detecting Deforestation) alerts logged in 2019 & 2020. This timeframe was chosen as trees planted at this time could now (2023) be mature enough to produce cocoa pods - a timeline of about 3-5 years - and hence enter the supply chain; furthermore, it is difficult to distinguishing cocoa saplings from other trees or food crops before they reach this age.

Visually distinguishing cocoa trees with low-resolution satellite imagery is not always accurate, so we specifically selected cases by drawing upon a variety of data sources including high resolution (50cm/pixel) satellite imagery, drone video footage, remotely-sensed cocoa classification, and on-the-ground investigative work.

New Case

Group: ECOM

Location: Nyinahin District

Clearance location: 6.63297 N, 2.13339 W

Deforestation (ha)	Time Period
910.4	May 2019 - December 2020
1,710.9	May 2019 - October 2023
81.5	January 2023 - October 2023

RADD Alerts show that, between 2019 and December 2020, there were 910.4 ha forest* loss within 15km of ECOM's Nyinahin point of purchase*. As demonstrated through satellite imagery, portions of this area have been planted with cocoa.

Between 2019 and October 2023, alerts show 1,710.9 ha of forest loss—81.5 ha of which have been cleared in 2023. These newly cleared areas may enter the cocoa supply chain in coming years.

*Forest is defined by Turubanova et al. (2018) as primary humid tropical forest with annual forest loss and mangrove removed.

*Other companies also have purchasing operations in the sourcing area; Mighty Earth plans to file cases with these companies in future reports.

Supply Chain Information

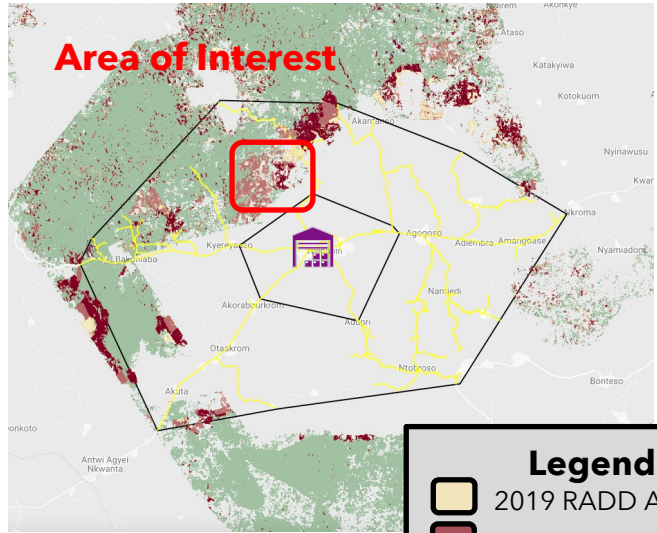
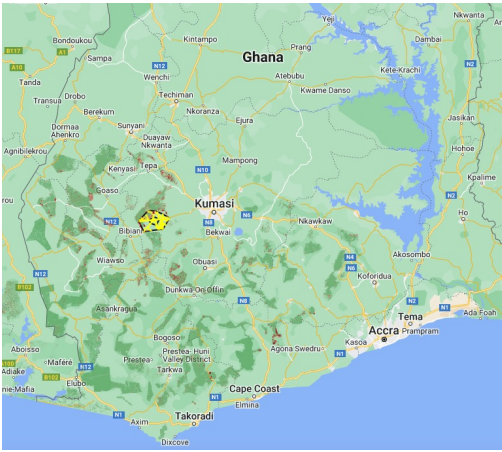
Company/Group	Purchasing Trader / Consumer Brand
ECOM	Mars, Nestle, Mondelez

Company Response

In response to Mighty Earth's concerns, ECOM wrote that the company is "100% satisfied that ECOM's direct supply chain is not located in these highlighted areas and [they] have no reason to believe that [their] indirectly sourced cocoa is coming from these areas." ECOM cites that it carries out due diligence through "a digital questionnaire that all [their] origin- and partner-sourced supply chain suppliers need to complete - mostly completed by [ECOM's] field operatives during their visits to our origin-sourced suppliers." It is unclear what information is gathered through the questionnaire.

ECOM's reply does not detail any specific investigative actions taken in regards this case. It also fails to outline the specific cocoa volumes traded in the region within the indirect supply chain, making it difficult to confirm that deforestation related cocoa is not present in their supply chain. Furthermore, the reply does not address requests 1, 3, 4, & 5 outlined below. Finally, ECOM does write that they "anticipate being able to publish georeferenced maps for our origin-sourced supply chain," but do not specify a timeline for release of these maps.

Mapping analysis



Legend

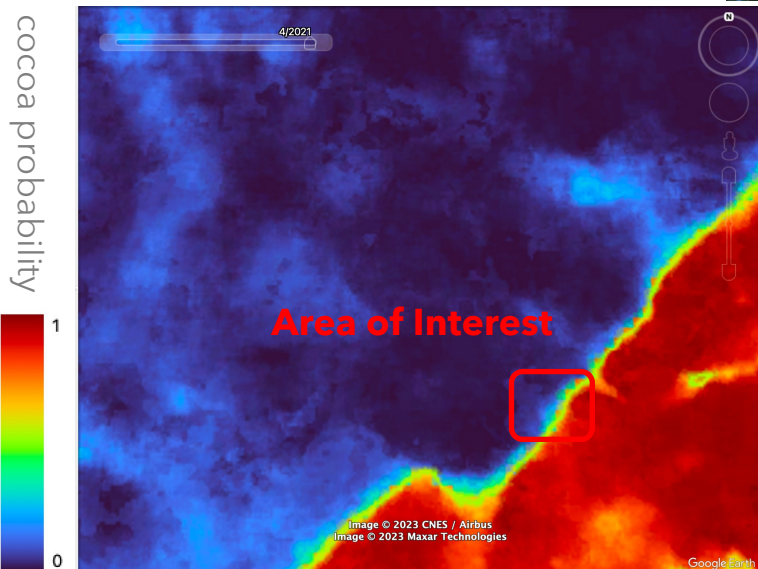
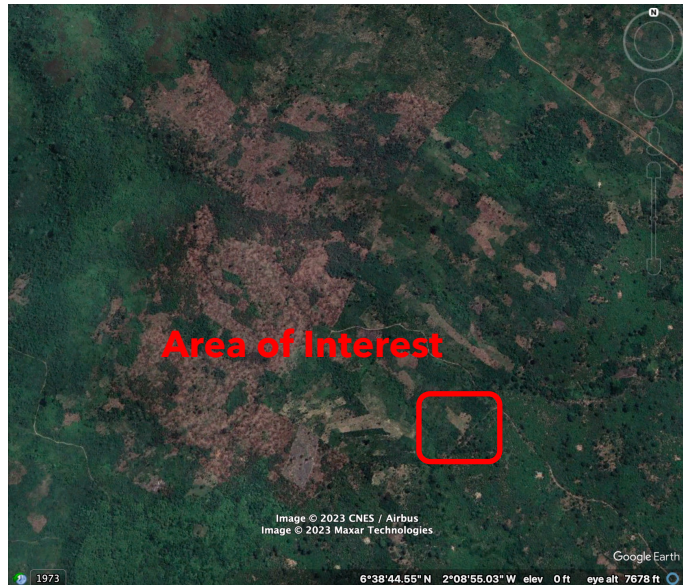
- 2019 RADD Alerts
- 2021 RADD Alerts
- 2023 RADD Alerts
- Risk Radius
- ECOM Warehouse

Alert Imagery (before and after satellite images)

Clearance location: (6.63297 N, 2.13339 W)

February 2017

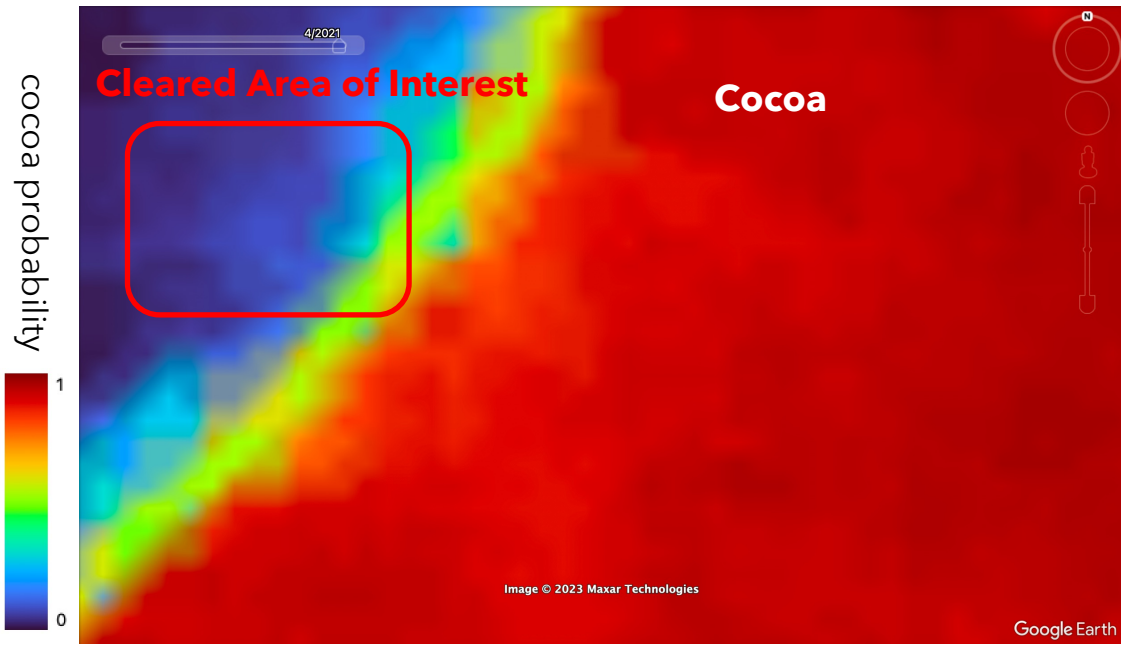
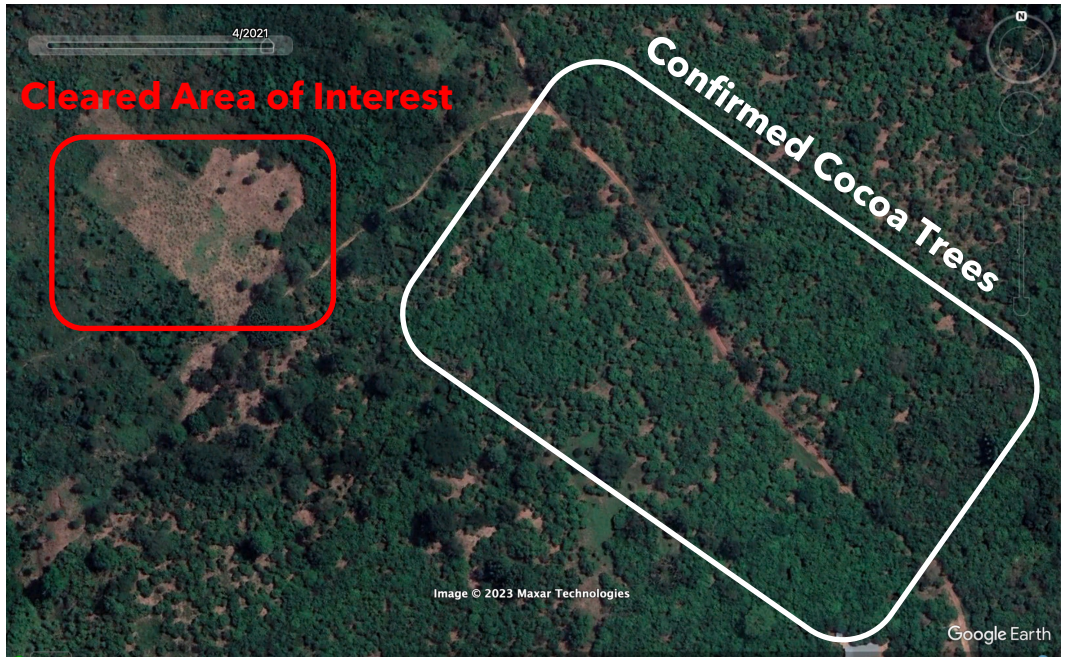
April 2021



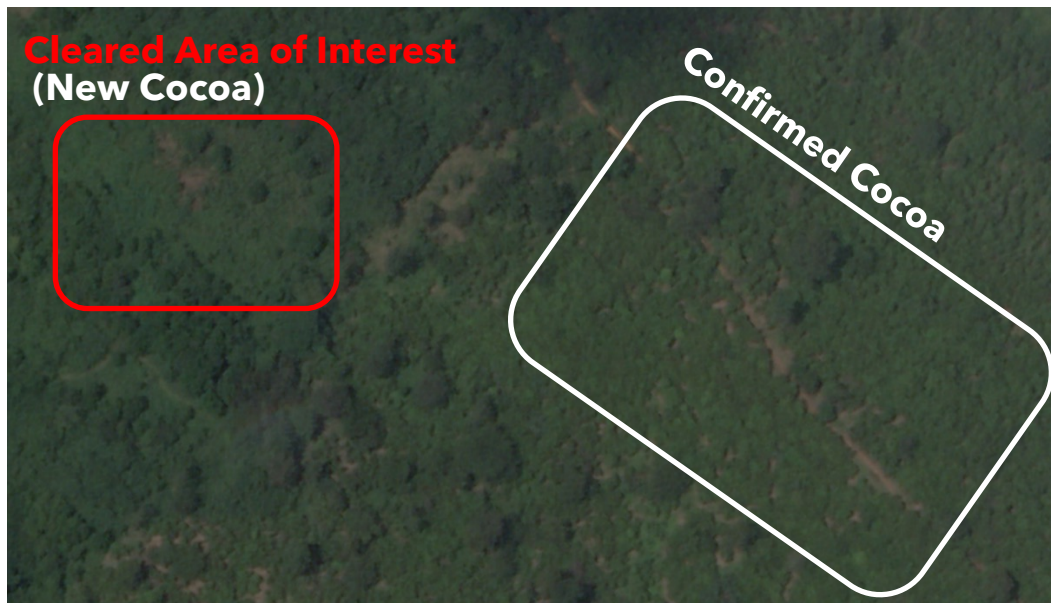
[From Kalischek et al \(2023\):](#)
 "Cocoa farming map for Côte d'Ivoire and Ghana [2019-2021]. The map indicates detection confidence in a range [0, 1]—that is, values near 1 indicate that model predictions across most time steps agree on the presence of cocoa, and values near 0 indicate that they agree on the absence of cocoa."

Mapping analysis

Satellite Imagery (April 2021) Clearance location: 6.63297 N, 2.13339 W



Imagery Date:
October 25th, 2022



ECOM is the third largest cocoa trader in Ghana, and sells cocoa beans and ingredients to leading chocolate manufacturers and food brands such as Nestle, Mars, and Ferrero. According to Nitidae's 2021 report (based on 2017 data from Cocobod), Ecom held a 16% market share of all cocoa traded in the nation.

As of the date of publication of this report, the only publicly-available Ghanaian supply chain information available on ECOM's website is [at the district level](#); the company has neither released the locations of first points of purchase, nor aggregation warehouses, nor farm boundaries themselves. This makes it very difficult for downstream buyers to evaluate the specific origin of their cocoa, which could be of concern in districts where recent deforestation has occurred.

In their [2022 Cocoa Sustainability Report](#), ECOM commits to providing a publicly-available georeferenced map of their "origin-sourced" cocoa supply chain in 2023. This level of detail is essential for the company to demonstrate that its supply chain is not connected to deforestation within its sourcing districts. This should be published as soon as possible, and should be complimented by information specifying how much of ECOM's total cocoa purchasing is "origin-sourced" (direct-supply), versus that bought which is of unknown origin (indirect supply).

In their [2022 Cocoa Sustainability Report](#), ECOM also states that it is using a risk analysis to "determine and predict areas in our value chain that have been deforested in the past and have the highest likelihood of being deforested in the future...[to] inform coordinated engagement between relevant stakeholders in the cocoa sector committed to eliminating deforestation in their supply chains." (p. 31). Unfortunately, the report does not elaborate upon any specific actions taken by the company to date as a result of this deforestation risk analysis, nor does it outline the specific methodology used in the risk analysis. While ECOM states that it reserves the right to terminate trading relationships with partners in violation of their [Supplier Code of Conduct](#) (in which the company also lays out a "no deforestation" commitment), it neither outlines any specific actions taken as a result of this policy, nor commits to the termination and/or support for reintegration of suppliers in violation of their policy.

Finally, ECOM fails to clearly communicate how much of their supply chain is actually covered by their sustainability plan. The company has committed to 100% traceability (again, only reporting at the district-level) for beans purchased in their "direct supply chain" by the end of 2023; they aim for 100% traceability for their *indirect* or "partner-sourced" beans by 2025. While this is encouraging language, it does not communicate what proportion of their Ghanaian supply chain is (in)direct. As such, it is crucial that ECOM publish the specific volumes of cocoa traded at each location across both their direct and indirect supply chains.

Given the above analysis, Mighty Earth therefore recommends that ECOM undertake the following urgent measures:

1. Investigate the cocoa specific deforestation risks in cocoa sourcing districts highlighted in this report and make the findings from these investigations publicly available.
2. Publish a georeferenced polygon map of all "origin-sourced"/direct cocoa at the farm level, as well as provide information about what proportion this cocoa (as well as indirectly sourced cocoa) makes up of ECOM's total cocoa purchases in Ghana (as of 2022).
3. Publish information about deforestation risk assessments undertaken over the past twelve months, including details of the methodologies employed in the assessments.
4. Publish specific actions taken to support farmers in forest remediation upon discovery of deforestation within the direct and indirect supply chains.
5. Produce a public grievance log outlining the actions undertaken as a result of discovery of violations of their Supplier Code of Conduct by both internal and external investigations.

New Case

Group: OFI

Location: Kojina Warehouse

Deforestation Coordinates: 6.362313, -2.736082

Deforestation (ha)	Time Period
429.2	May 2019 - December 2020
1,126.6	May 2019 - October 2023
90.1	January 2023 - October 2023

RADD Alerts show that, between May 2019 and December 2020, there were 429.2 ha forest* disturbance alerts within 15km of OFIs Kojina point of purchase*. Visual review of satellite imagery indicates that portions of this area may have been planted with cocoa. However, OFI sent a team to conduct a field investigation and found that clearance was for timber (see **Company Response** below).

Between 2019 and October 2023, alerts show 1,126.6 ha of forest loss in the risk area—90.1 ha of which have been cleared in 2023. These newly cleared areas may supply cocoa in coming years.

*Forest is defined by Turubanova et al. (2018) as primary humid tropical forest with annual forest loss and mangrove removed.

*Other companies also have purchasing operations in the sourcing area; Mighty Earth plans to file cases with these companies in future reports.

Supply Chain Information

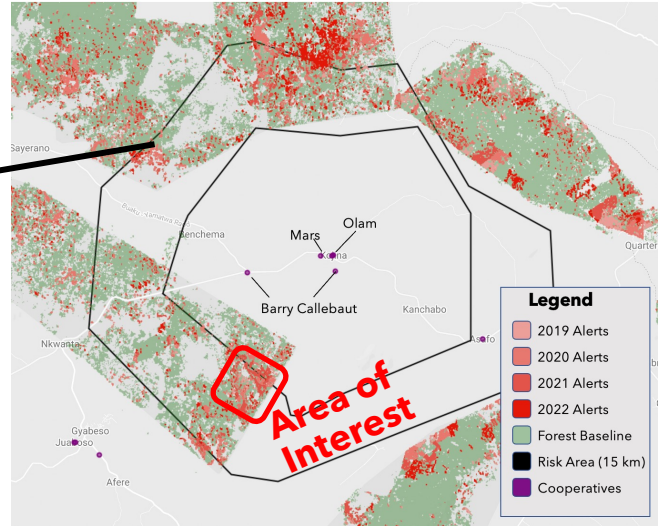
Company	Purchasing Trader / Consumer Brand	*Additional companies with operations in the sourcing area
OFI	Whittaker, Hershey, Mars, Nestle, Mondelez, Starbucks, Alfred Ritter	Barry Callebaut, Mars

Company Response

After Mighty Earth reached out to OFI for comment, the company took direct action to look into the alerts outlined in this case. Mighty Earth commends OFI's efforts and further calls on the company to publish this case and their actions taken in a public grievance log; *this case can be considered successfully closed.*

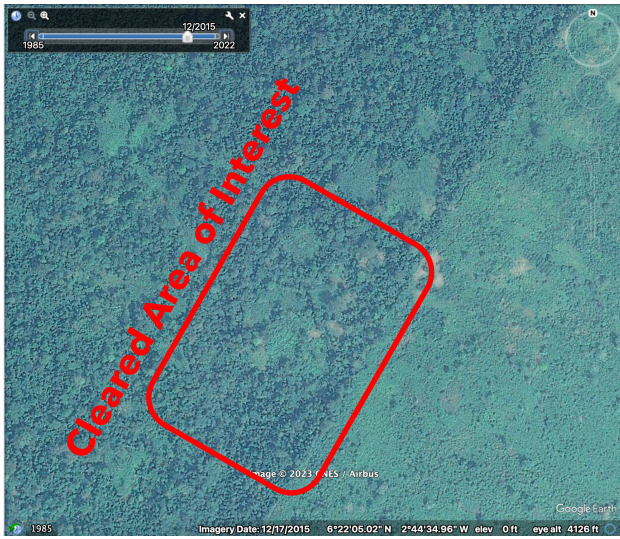
Regarding the areas outlined in the maps below, OFI wrote: "We have thoroughly investigated the area of interest you identified, including a field investigation with the Ghana Forestry Commission, and we are confident that the deforestation in question was not driven by cocoa farmers. Instead, it appears that this area inside the reserve was felled by an authorized local timber operator and then granted to farmers growing a mixture of plantain and timber trees such as *Cedrela odorata* and *Terminalia superba*, not cocoa."

Mapping analysis



Alert Imagery (before and after satellite images)

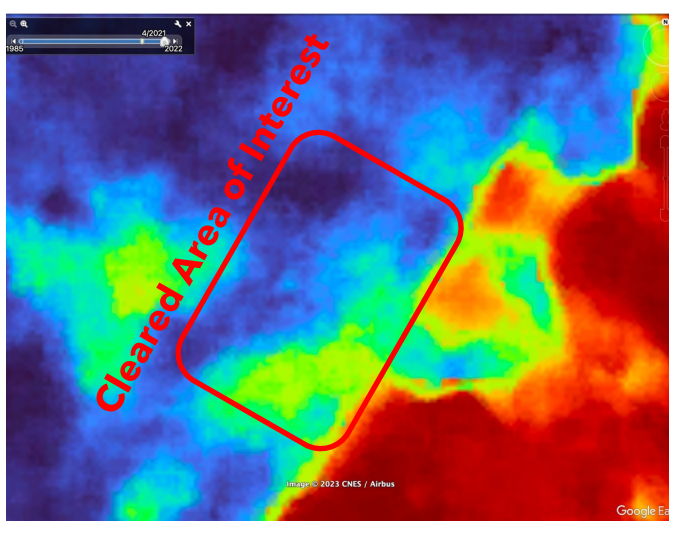
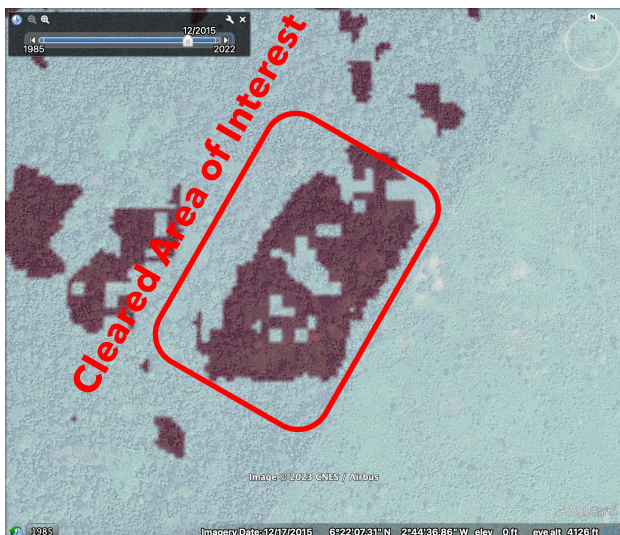
December 2015



January 2022



[Kalischek et al \(2023\)](#) Cocoa Probability [2019-21]



According to their [website](#), Olam Food Ingredients (OFI, formerly Olam) is the "number one cocoa bean supplier globally," and a major player in the West African cocoa industry. Data from Cocobod shows that OFI held a 19% market share of all cocoa produced in Ghana in the 2019/20 crop year, making it the largest cocoa producer operating in the nation that year (pg. 22). The company has established itself as a key Tier 1 supplier, selling cocoa beans to consumer brands like Hershey, Ferrero, Mars, and Mondelez.

In its 2022 Cocoa & Forest Initiative Progress report, OFI [claims to have achieved](#) 100% deforestation monitoring within their "direct supply chain" ([p. 2](#)), having mapped farm boundaries and conducted deforestation risk assessments for each farmer within their direct supply chain. Unfortunately, like many traders, it is unclear from their sustainability reports what percentage of OFI's Ghanaian cocoa supply chain is "direct" vs. "indirect". Nor is it clear what specific measures the company is undertaking to improve traceability within their "indirect" supply chain. Furthermore, OFI has not outlined any specific actions taken to stop purchasing cocoa with high-deforestation risk.

Based on the company's evaluation of deforestation risk in its 2022 [Cocoa Compass Report](#), OFI must also address significant issues within the direct supply chain. For the farmer groups mapped within their direct Ghanaian supply chain, OFI acknowledges a deforestation risk of just under 3%. *The company considers this "low-risk", drawing upon a threshold of 4% to indicate "high risk of deforestation...based on the fact that a deforestation rate of 5%... [leads] to total forest loss in 20 years."* (P 26). We argue that, *given the fact that Ghana has lost at least 65% of its forest coverage in the last three decades*, a 3% deforestation risk within the direct supply chain is high and necessitates action. Furthermore, OFI acknowledges a landscape average deforestation risk of greater than 4.5% for Ghana, placing the country within their "high risk of deforestation" threshold; OFI's indirect supply chain undoubtedly draws from areas included in this landscape average deforestation risk threshold.

Given the above analysis, we therefore recommend OFI undertake the following urgent measures:

1. Produce a public grievance log outlining the actions undertaken as a result of discovery of violations or "bad practices" as defined in OFI's [Supplier Code](#) by both internal and external investigations.
2. Investigate the specific deforestation risks in cocoa sourcing districts highlighted in this report and make the findings from these investigations publicly available.
3. Publish information about deforestation risk assessments undertaken over the past twelve months, including details of the methodologies employed in the assessments and resulting actions taken.
4. Publish specific actions taken to support farmers in forest remediation upon discovery of deforestation within the direct and indirect supply chains.
5. Publish a georeferenced map of all of its "directly sourced" cocoa with farm level boundaries, as well as provide information detailing what proportion "indirectly sourced" cocoa makes up of OFI's total cocoa purchases in Ghana (as of December 2022), detailing specific cocoa volumes traded within each region.

New Case

Group: Cargill

Asempanaye Warehouse

Clearance Location: 6.4411, -2.8612

Deforestation and/or peat development

Deforestation (ha)	Time period
233.7	May 2019 - December 2020
466.2	May 2019 - December 2022
51.6	January 2023 - October 2023

RADD Alerts show that, between May 2019 and December 2020, there were 233.7 ha forest* disturbance alerts within 15km of Cargill's Asempanaye point of purchase*. As demonstrated through satellite imagery (below), portions of this area have been planted with cocoa.

Between 2019 and October 2023, alerts show 751.5 ha of forest loss in the risk area—51.6 ha of which have been cleared in 2023. These newly cleared areas may supply cocoa in the coming years.

*Forest is defined by Turubanova et al. (2018) as primary humid tropical forest with annual forest loss and mangrove removed.

*Other companies also have purchasing operations in the sourcing area; Mighty Earth plans to file cases with these companies in future reports.

Supply Chain Information

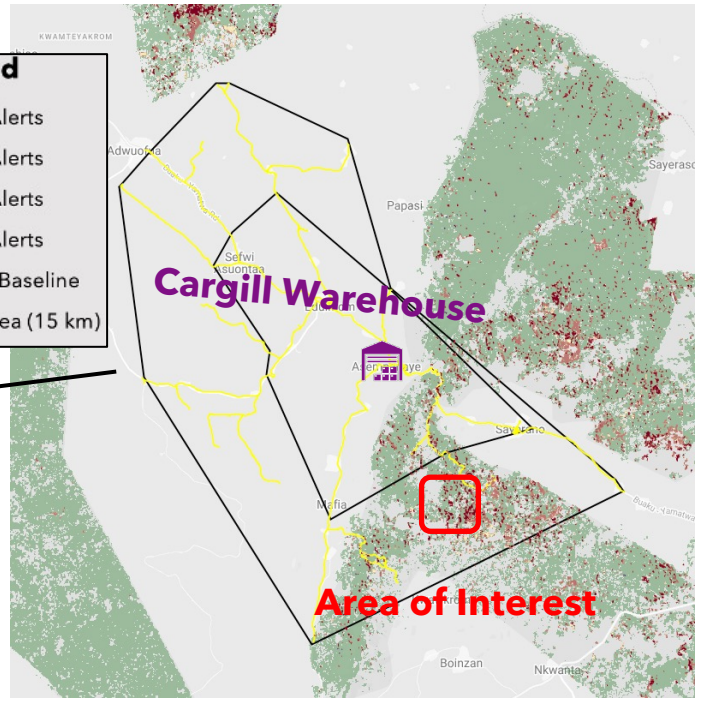
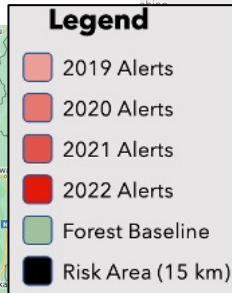
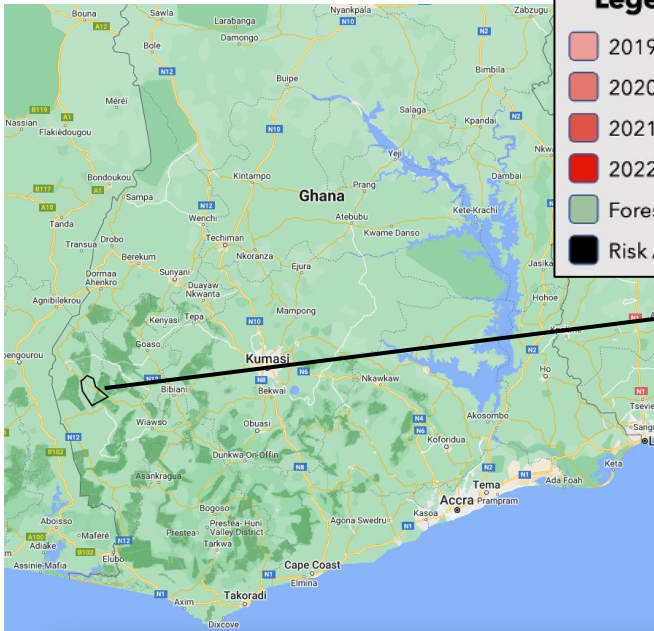
Company/Group	Downstream Trader / Consumer Brand
Cargill	Unilever, Hershey, Mars, Nestle

Company Response

In response to Mighty Earth's concerns, Cargill wrote that the company "pulled specific information about the areas of interest identified in the Rapid Response report and found that **no forest loss incidences as of 2018 were observed on mapped farms that exceed the Rainforest Alliance threshold for minor conversion** (more than 1% of the land of the group or more than 10 hectares), providing confidence that beans sourced by [their] Licensed Buying Company directly from Asempanaye district buying station were not produced on recently deforested lands."

Cargill's reply did not detail any further investigation into the indirect supply chain and did not outline the specific cocoa volumes traded in the region, making it difficult to confirm that deforestation-related cocoa is not present in their indirect supply chain. Furthermore, the reply does not address requests 1, 3, 4, 5, & 6 outlined below.

Mapping analysis

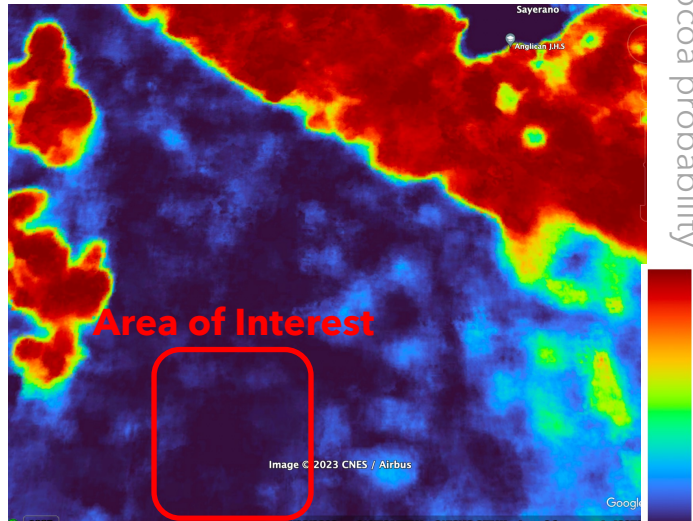


Alert Imagery (before and after satellite images)

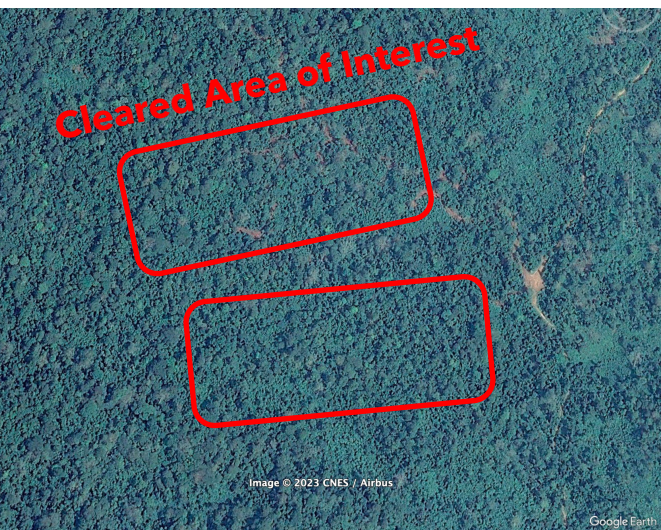
[Kalischek et al \(2023\)](#) Cocoa Probability [2019-21]



Date: December 2015



Date: January 2022



Case Notes: Cargill

Cargill is a major cocoa trader and the largest cocoa processor in Ghana; according to Nitidae's report 2021, Cargill processed 27% of all cocoa beans in the nation in 2017 (p. 20). The company is also emerging as a major cocoa purchaser: historically, Cargill sourced their Ghanaian beans from Global Haulage and Produce Buying Company, but the company recently procured a licence to operate a Licensed Buying Company (LBC), meaning they can now purchase directly from farmers and aggregate beans at district warehouses.

According to the corporation's [2023 ESG Report](#) 72% of farmers in their direct supply chain have their farms polygon-mapped. However, Cargill has released statistics that demonstrate very low traceability for their indirect supply chain: in their indirect supply chain, just 14% of cocoa beans are traceable to the First Point of Purchase (FPP, or where cocoa beans are accumulated from a wide range of farmers), and 78% were traceable to the region of origin in their 2021 Report ([p. 16](#)). According to Nitidae, "a bag of cocoa arriving at the district [or regional] level is a mix of beans from several farms. This impedes the tracking of cocoa coming from specific farms and even illegal sources" ([p. 26](#)).

Cargill has pledged to map its indirect supply chain by 2030. Unfortunately, with the alarming rates of deforestation across Ghana, by the time the company reaches this pledge, there may be little forest left to protect within cocoa growing regions.

Due to the fact that Cargill can neither point to most of the farms in Ghana from which they purchase cocoa in their *indirect* supply chain, the company is at high risk of purchasing cocoa related to deforestation within their sourcing supply shed. Furthermore, it is unclear what interventions Cargill makes or intends to make upon discovering deforestation-linked cocoa within their supply chain.

Given the above analysis, we recommend Cargill undertake the following urgent measures:

1. Produce a public grievance log outlining the actions undertaken as a result of discovery of deforestation within its cocoa supply chain by both internal and external investigations.
2. Investigate the specific deforestation risks in cocoa sourcing districts highlighted in this report and make the findings from these investigations publicly available.
3. Publish information about deforestation risk assessments undertaken over the past twelve months, including details of the methodologies employed in the assessments.
4. Publish specific actions taken to support farmers in forest remediation upon discovery of deforestation within the direct and indirect supply chains.
5. Publish a georeferenced map of all of "directly sourced" cocoa with farm level polygon boundaries.
6. Provide information detailing what proportion "indirectly sourced" cocoa makes up of Cargill's total cocoa purchases in Ghana (as of December 2022), detailing specific cocoa volumes traded within each region.

Final Note

Ferrero also lists ECOM, OFI, and Cargill as Tier 1 Suppliers. However, in communications with Mighty Earth, Ferrero writes that the company "only [has] a direct supply chain" in which they "are able to achieve and maintain a very high level of traceability." Ferrero indicates that they do not source from any areas outlined in this report based on the fact that they have "all farmers polygon mapped...in all [their] cocoa origins."