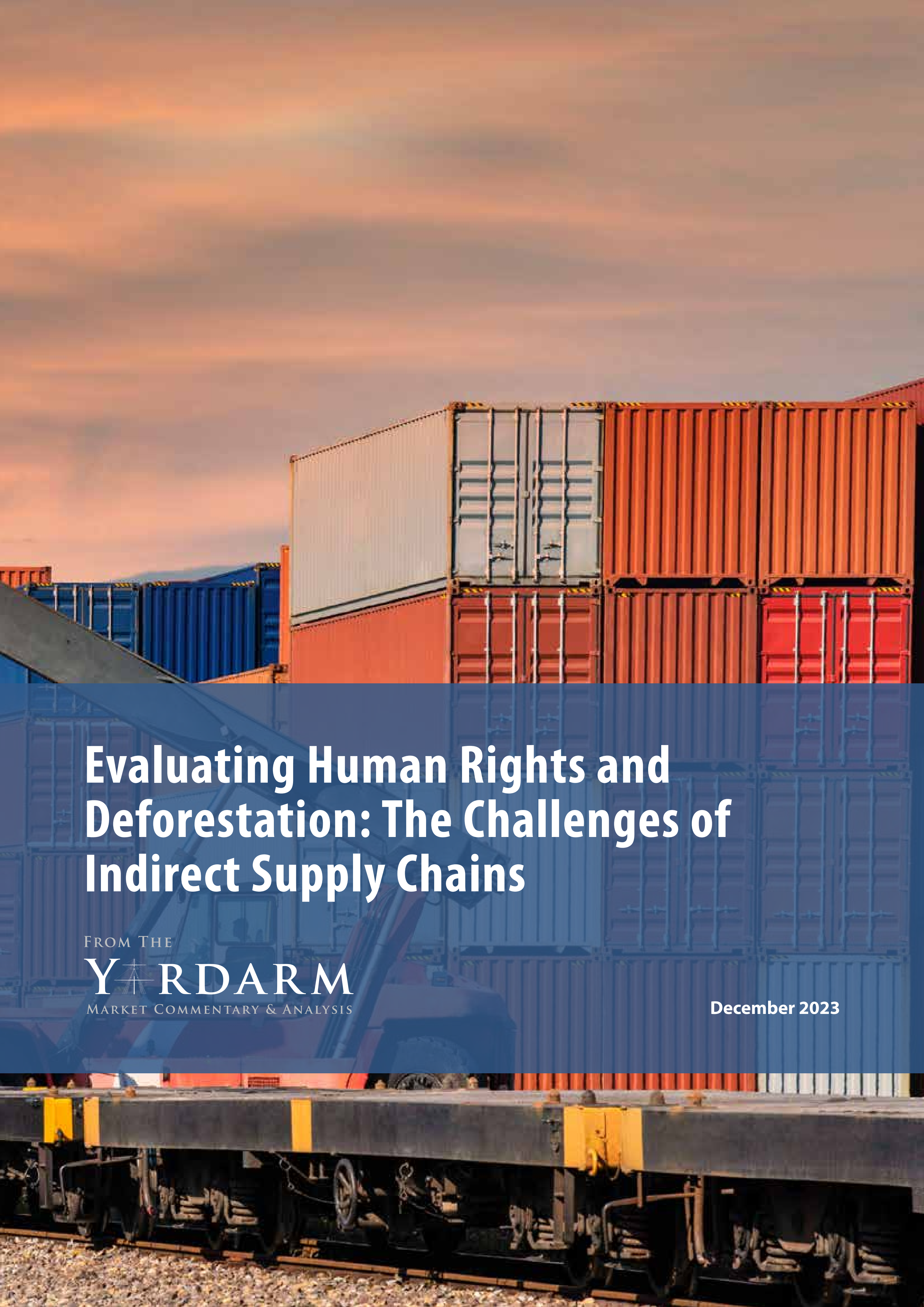

Evaluating Human Rights and Deforestation: The Challenges of Indirect Supply Chains

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Saturna Capital, manager of the Amana, Saturna Sustainable, and Sextant Funds, uses years of investment experience to aid investors in navigating today's volatile markets. Founded in 1989 by professionals with extensive experience, Saturna has helped individuals and institutions build wealth, earn income, and preserve capital.

We are long-term, values-based, and socially responsible investors. We view consideration of sustainable factors as essential in forming portfolios of high-quality companies that are better positioned to reduce risk and identify opportunities. We believe that companies proactively managing business risks related to sustainable issues make better contributions to the global economy and are more resilient.

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About Saturna Sdn. Bhd.

Saturna Sdn. Bhd. is the wholly-owned Malaysian subsidiary of Saturna Capital Corporation, resulting from the 2010 purchase by Saturna Capital of Alpha Asset Management located in Kuala Lumpur. Saturna Sdn Bhd holds an Islamic Fund Management Licence (IFML) with the Malaysian Securities Commission. Saturna is the first conventional asset manager to be converted to an Islamic asset manager.

SDG 8 - Decent Work and Economic Growth

Promote inclusive and sustainable economic growth, employment, and decent work for all.

Investing in a global universe of stocks and bonds can present the investor with a challenging analysis as to the impact these holdings can have on the world's most vulnerable ecosystems and people. Many of these investments are exposed to commodities extracted from places such as the Amazon rainforest or Cote d'Ivoire, which carry risks related to deforestation and human rights. It is critical that global investors have a strong internal process to assess supply chain risks and the potential greater impacts on ecosystems and the people who live within them.

Unfortunately, most of the available data on supply chain risks and impacts doesn't cover indirect supply chains. When using indirect supply chains, companies buy commodities such as cocoa, palm oil, or cattle through intermediaries. These intermediaries amass commodities from many different farms before selling them to traders for export. Often, these crops come from hundreds of farms, and the intermediaries provide little to no information on their origin. Companies may unknowingly purchase commodities from supplier farms using child labor, forced labor, or illegal deforestation.

Therefore, some creativity is required when evaluating investments beyond the scope of an ESG score or quantitative model. At Saturna, much of the data we use is manually collected from sources including but not limited to company reports, news stories, academic research, NGOs, World Bank, International Monetary Fund (IMF), and government agencies. As investors we firmly believe that supply chain resilience and transparency are critical for both the investors and the planet.

Cattle, palm oil, soy, and cocoa production were the four leading drivers of commodity-driven deforestation between 2001 to 2015.[1] In this piece, we will focus on cattle, palm oil, and cocoa and provide an example of each within an investment context. Indirect sourcing accounts for 15% to 90% of all palm oil production and between 94% and 99% for live cattle production. Cocoa production is 100% indirectly sourced. The wide variation in percentages regarding palm oil reflects the differences between refined palm oil and crude palm oil; the former greatly relies on indirect sourcing in comparison to the latter.[2]

Indigenous rights and deforestation within the context of global sustainable investments

We acknowledge that deforestation is linked with the rights and well-being of the indigenous peoples who live in those forests. Over 1.6 billion people, including over 2,000 indigenous cultures, rely on forests for their livelihoods. Forest health is extremely important, not only for the people who depend on them, but also for 80% of the planet's terrestrial species of animals, insects, and plants who live within them.[3] Mitigating illegal deforestation is also a critical component in preventing climate change. At the core of deforestation and indigenous rights issues are visibility and transparency. The risks of deforestation and other impacts are often higher in the parts of the supply chain where companies have the least visibility.[4] In the Brazilian cattle industry, indirect suppliers are 42% more likely to engage in illegal deforestation than direct suppliers.[5]

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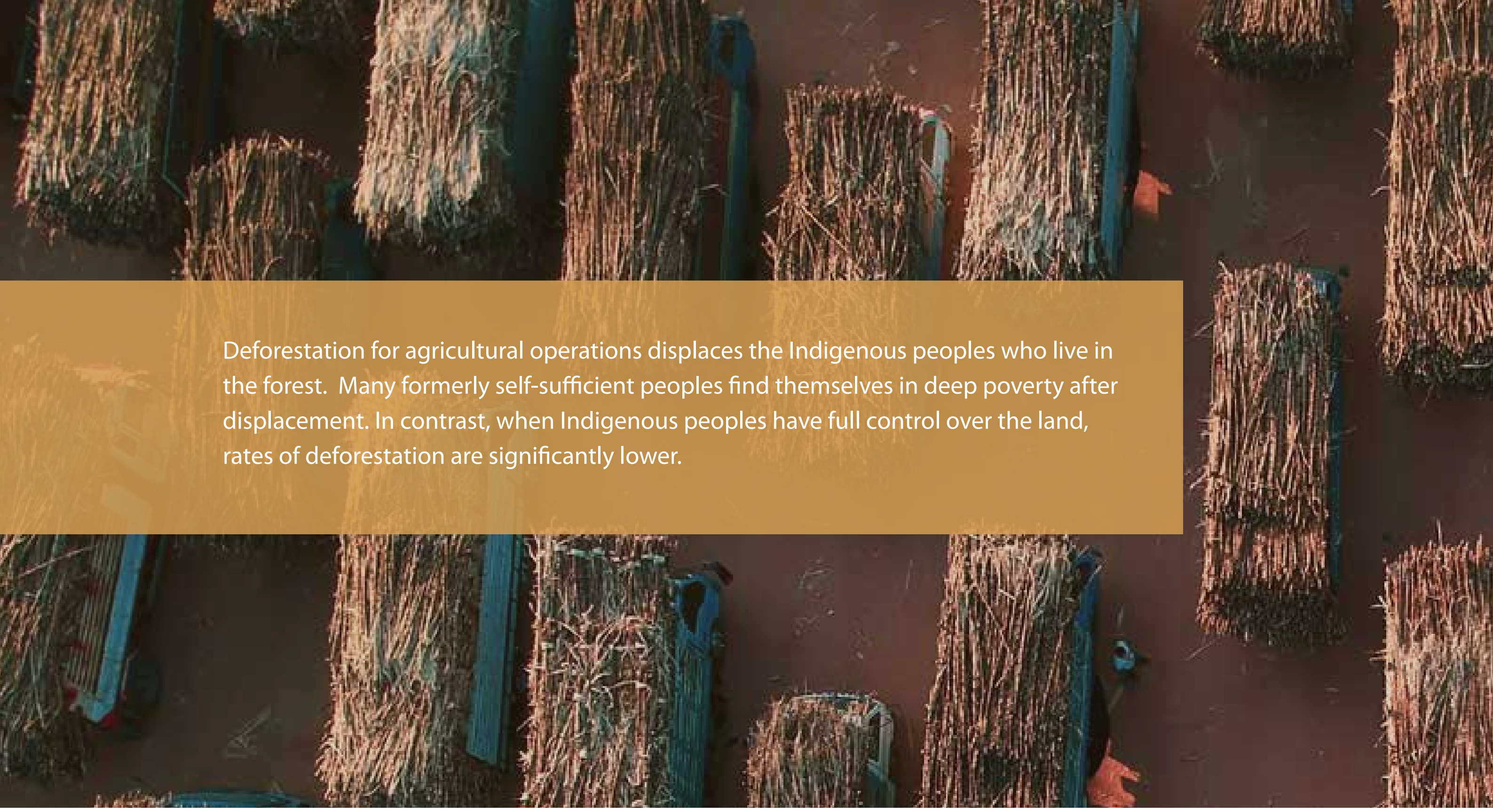

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Deforestation for agricultural operations displaces the Indigenous peoples who live in the forest. Many formerly self-sufficient peoples find themselves in deep poverty after displacement. In contrast, when Indigenous peoples have full control over the land, rates of deforestation are significantly lower. Researchers from Columbia University and UC San Diego found that between 1982 and 2016, land in the Brazilian Amazon rainforest that was designated as Indigenous property saw a two-thirds reduction in deforestation compared to land that was not designated Indigenous property.[6] As sustainable investors in a global marketplace, evaluating risks of businesses operating in places like Brazil is critical to our investment analysis.

Bonds, even green or sustainable bonds, can be linked with the deforestation of the Amazon. One issuer that we evaluated and chose not to own was JBS, a food operating company that specializes in the production of beef, chicken, pork, fish, plant-based proteins, and prepared and frozen food products. JBS issued a $1.0 billion sustainability linked bond with performance targets tied to the reduction of greenhouse gas (GHG) emissions. While we applaud the company's notable ambitions on climate change issues, we could not overlook allegations of potential contribution to deforestation.[7,8] In 2022, a joint investigation between Repórter Brasil, Greenpeace Brazil, and Unearthed discovered that JBS potentially bought nearly 9,000 cattle from a rancher, who had illegally cleared over 2,844 hectares of forest cover.[9] Amnesty International has documented cases alleging that JBS bought cattle that were illegally reared on the Uru-Eu-Wau-Wau indigenous reserve, Rio Jacy-Paraná, and the Rio Ouro Preto extractive reserves in Rondônia state, which happen to be the epicenter of the Amazon forest fires of 2019 and of Brazilian deforestation.[10]

JBS, while admitting to purchasing cattle from the ranch, denied the charges and claimed to be a "victim of cattle laundering fraud." While these examples with JBS may be just allegations of wrongdoing, news items such as these highlight the risks of controversy for businesses that have extensive supply chains in vulnerable areas of the world such as the Amazon.

Early in 2023, advocacy organization Mighty Earth filed a complaint with the SEC against JBS, calling for a full investigation into misleading and fraudulent claims associated with the

company's sustainability linked debt. The complaint noted that JBS had committed to net-zero emissions by 2040, but their emissions had only increased since their bond offering. The complaint also claimed that JBS excluded Scope 3 supply chain emissions (which comprise 97% of their climate footprint) from their net-zero targets. Mighty Earth's complaint alleged that JBS omitted key information from investors about the actual number of animals it slaughters each year, denying investors information they need to make fully informed decisions.[11] Operating in these markets can be financially risky too. Back in 2017, the company was ordered to pay $3.2 billion in fines for its role in Brazilian corruption scandals, painting a picture of a precarious business operating environment that no "sustainability linked" bond can overcome.[12]

While some companies that source higher risk commodities can be fraught with controversy and bad actors, there are others demonstrating a positive impact. We do not believe that we should forgo these commodities completely, but rather do our best to choose companies that seek to impart positive changes for their stakeholders in difficult industries. Cocoa and palm oil are linked with a tremendous amount of deforestation and human rights abuses. However, even large cocoa companies have the potential to significantly change how business is run and help improve transparency.

Leveraging technology to gain transparency into the indirect supply chain

In April 2023, a landmark law was approved in the European Union, banning deforestation-linked imports such as coffee, beef, and soy. The new law will take effect by the end of 2024 and requires that importers provide a "certified verification declaration" that their products are not linked with deforestation. Failure to do so will result in fines.[13] As climate change issues become more severe, we can expect further legal changes and regulations surrounding deforestation, which could have serious financial impacts on companies that import higher risk commodities. Evaluating corporate governance and progress toward transparent supply chains may become more material going forward.

Unilever – A first mover

Unilever is a leader and first mover in supply chain transparency and information, but is still a large company with a complex supply chain. They were the first consumer goods company to publish a full list of the palm oil suppliers and third-party mills in their supply chain. They were also the only consumer goods company to publish a public grievance report so that issues associated with their direct and indirect palm oil suppliers could be identified and addressed.

However, the best due diligence on the supply chain still won't impact indirect sourcing if the company itself has little visibility. To combat this, Unilever uses digital tools to assess risks in their supply chain such as land rights, deforestation, and forced labor. Unilever launched a pilot program in collaboration with Orbital Insight, using geolocation data to help identify the individual farms and plantations most likely to supply the palm oil mills in its extended supply chain. This gives the company a clearer picture of where harvested crops came from, even down to individual fields. The technology also helps predict the possibility of issues such as deforestation, and to act where required.[14]

Unilever aims to eliminate deforestation-linked commodities from its supply chain. They piloted a new blockchain technology called GreenToken, developed by German software corporation SAP, to help strengthen the traceability of palm oil in the "first mile" of the supply chain. In the "first mile," palm oil is transferred from plantation to mill, and the raw materials are at risk of being mixed with non-verified sources.[15] Unilever executed a proof of concept of GreenToken in Indonesia, using the new technology to source 188,000 tons of oil palm fruit. GreenToken enables Unilever's suppliers to create tokens that "mirror the material flow of the palm oil" across the supply chain. Using GreenToken is an excellent step toward full transparency and helps prepare Unilever for future deforestation regulations on supply chains.

Barry Callebaut – An Improvement Story

Barry Callebaut is a company with a controversial history. However, by improving its governance and business practices, the company has made tremendous progress in improving their business model and supply chain transparency. Barry Callebaut did sign the Cocoa and Forests Initiative, but our due diligence requires more than a commitment on paper to show alignment with sustainability. The company sources cocoa from markets such as Côte d'Ivoire, which has hundreds of thousands of smallholder farmers and produces 45% of the world's cocoa harvest. Cocoa makes up 20% of the country's export revenues. The controversy stems from the fact that the cocoa industry in Côte d'Ivoire has engaged in child labor and deforestation.[16] Between 1986 and 2015, Côte d'Ivoire's forest cover shrank from 15% to 9%. Cocoa has been flagged as a major commodity driving deforestation.[17]

Barry Callebaut sources about a third of its cocoa from cooperatives, and indirectly sources the rest.[18] Since 2019, they have publicly disclosed the geolocation of their direct suppliers in Côte d'Ivoire, Ghana, and Cameroon. In 2020 and 2021, over 200,000 farms located within 25 kilometers of a protected forest area were mapped and monitored, leading to full traceability for cocoa beans originating from those farms. Overall, the company has reached 80% traceability of cocoa at the cooperative level and 60% at the farm level.[19] The company aims to have full traceability across the direct supply chain by 2025.

Transparency of the sources of commodities like cocoa and palm oil must also be implemented within indirect sourcing to fully end deforestation and poor labor practices. Barry Callebaut is focusing on developing projects that aim to transfer traceability know-how from direct to indirect supply chains. In 2021, the company conducted a pilot program with three key indirect suppliers in Côte d'Ivoire. This initiative involved training their suppliers to enable precise and timely data collection. Nearly 35,000 farmers were engaged in the program, with data collected

20,000 cocoa plots covering 45,000 hectares in total. Barry Callebaut gained a great deal of insight through the project into the current level of traceability among local indirect suppliers and how they could best assist them to further improve and scale up their traceability efforts. Next, Barry Callebaut plans to onboard an additional nine suppliers and the cooperatives they source from.[20] While we recognize that there are still supply chain issues for companies that source higher risk commodities, we believe that supporting issuers who are making progress toward larger goals is important within our roles as sustainable investors in a global marketplace.

Progress is good, but we still have a long way to go

While Barry Callebeaut and Unilever are making steps in the right direction, each is still a work in progress toward full transparency and accountability in their indirect supply chains. Full traceability in indirect supply chains will require collaborative efforts between corporations and governments.

To investors, evaluation comes down to governance, risk, and impact. Companies like JBS have shown relatively poor governance and highlight the risk of corporate controversy and greenwashing. Barry Callebaut and Unilever are leveraging technology, but continued progress in these challenging commodities will be essential. If we want to achieve the eighth Sustainable Development Goal – decent work for all and economic growth – sustainable investing must not ignore the indirect supply chain.

Footnotes

[1] Zu Ermgassen, Erasmus, et al. "Addressing indirect sourcing in zero deforestation commodity supply chains." Sciences Advances. April 29, 2022. Volume 8, Issue 17. https://www.science.org/doi/10.1126/sciadv.abn3132

[2] Zu Ermgassen, Erasmus. "Action needed to address indirect sourcing 'blindspot.'" Trase. May 8, 2022. https://insights.trase.earth/insights/action-to-reduce-deforestation-must-address-blindspot-of-indirect-sourcing/

[3] Merchant, Natalie. "8 reasons we need to protect forests." World Economic Forum. March 19, 2021. https://www.weforum.org/agenda/2021/03/deforestation-biodiversity-protect-international-day/

[4] "Action on deforestation must address indirect sourcing 'blindspot.'" SEI – Stockholm Environment Institute. May 9, 2022. https://www.sei.org/featured/action-on-deforestation-must-address-indirect-sourcing/

[5] Skidmore, Marin. "Agriculture, environmental policy, and climate: Essays on cattle ranching in the Brazilian Amazon." The University of Wisconsin - Madison ProQuest Dissertations Publishing. 2020. https://www.proquest.com/docview/2402915308/abstract/F44B82A0B57243C7PQ/1

[6] Chemnick, Jean, and E&E News. "Amazon deforestation falls where land is under Indigenous control." Scientific American. August 11, 2020. https://www.scientificamerican.com/article/amazon-deforestation-falls-where-land-is-under-indigenous-control/

[7] Phillips, Dom. "Brazilian beef farms 'used workers kept in conditions similar to slavery.'" The Guardian. January 6, 2021. https://www.theguardian.com/environment/2021/jan/06/brazilian-beef-farms-used-workers-kept-in-conditions-similar-to-slavery

[8] Fishman, Andrew. "How Your 401(k) is Helping Destroy the Amazon Rainforest." The Intercept. November 21, 2021. https://theintercept.com/2021/11/23/brazil-amazon-deforestation-greenwashing-bonds-investment/

[9] Hofmeister, Naira, et al. "JBS admits to buying almost 9,000 cattle from 'one of Brazil's biggest deforesters.'" Greenpeace – Unearthed. November 11, 2022. https://unearthed.greenpeace.org/2022/11/11/jbs-cattle-brazils-biggest-deforester-amazon/

[10] Cowie, Sam. "World's biggest meatpacker JBS bought illegally grazed Amazon cattle: Report." Mongabay. July 20, 2020. https://news.mongabay.com/2020/07/worlds-biggest-meatpacker-jbs-bought-illegally-grazed-amazon-cattle-report/

[11] "Mighty Earth files complaint with US Securities and Exchange Commission against JBS 'green bonds.'" Mighty Earth. January 17, 2023. https://www.mightyearth.org/whistleblower-complaint-to-the-securities-and-exchange-commission-against-jbs/

[12] Magalhaes, Luciana and Kiernan, Paul. "JBS Parent to Pay $3.2 Billion to Settle Corruption Investigations in Brazil." Wall Street Journal, May 31, 2017. https://www.wsj.com/articles/jbs-parent-to-pay-3-16-billion-to-settle-corruption-charges-in-brazil-1496232139

[13] "Côte d'Ivoire implements national traceability system for coffee, cocoa." Food Business Africa. September 15, 2023. https://www.foodbusinessafrica.com/cote-divoire-implements-national-traceability-system-for-coffee-cocoa/

[14] "Côte d'Ivoire implements national traceability system for coffee, cocoa." Food Business Africa. September 15, 2023. https://www.foodbusinessafrica.com/cote-divoire-implements-national-traceability-system-for-coffee-cocoa/

[15] Askew, Katy. "Côte d'Ivoire implements national traceability system for coffee, cocoa." Food Navigator. March 24, 2022. https://www.foodnavigator.com/Article/2022/03/24/Unilever-pilots-SAP-blockchain-tech-for-deforestation-free-palm-oil-This-will-be-transformational-for-smallholder-inclusion#

[16] Zu Ermgassen, Erasmus, et al. "Addressing indirect sourcing in zero deforestation commodity supply chains." Sciences Advances. April 29, 2022. Volume 8, Issue 17. https://www.science.org/doi/10.1126/sciadv.abn3132

[17] Renier, Cécile, et al. "Transparency, traceability and deforestation in the Ivorian cocoa supply chain." Environmental Research Letters. January 31, 2023. https://iopscience.iop.org/article/10.1088/1748-9326/acad8e/pdf

[18] Zu Ermgassen, Erasmus. "Action needed to address indirect sourcing 'blindspot.'" Trase. May 8, 2022. https://insights.trase.earth/insights/action-to-reduce-deforestation-must-address-blindspot-of-indirect-sourcing/

[19] Amman, Christine. "A big picture approach to cocoa traceability." Barry Callebaut. September 12, 2022. https://www.barry-callebaut.com/en-US/group/media/news-stories/big-picture-approach-cocoa-traceability

[20] Unrein, John. "Barry Callebaut invests in progress." Bake Magazine. October 19, 2022. https://www.bakemag.com/articles/16715-barry-callebaut-invests-in-progress

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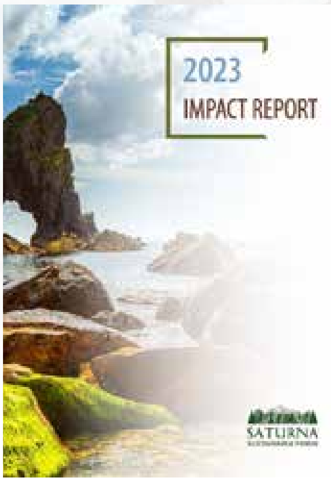
Elizabeth Alm, Senior Investment Analyst, joined Saturna Capital in April of 2018. Originally from Connecticut, she graduated from New York University with degrees in Economics and Anthropology including field work completed in Luxor, Egypt. Prior to joining Saturna, Ms. Alm spent 11 years at Wells Fargo Asset Management as a senior research analyst focusing on high-yield municipal bonds. As part of her previous role, she also worked on the management of several municipal SMA strategies. Ms. Alm is a Chartered Financial Analyst® (CFA®) charterholder.

More by Elizabeth Alm

Saturna Sustainable Funds 2023 Impact Report



Saturna's portfolio managers are thoughtful about how we construct our portfolios and how we incorporate the United Nation's Sustainable Development Goals. Through our analysis of SDG reporting, a clear picture emerged of which goals are popular, which are more difficult, and which tend to be unsupported.

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