



Ethos Engagement Paper

Deforestation



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1 Introduction

1.1 Background

Rampant deforestation has been causing serious socio-environmental damages and requires to be addressed with urgency. Conversion of forests has become a critical issue for many economic actors, in particular businesses operating in agricultural value chains. Ethos believes these companies must act now and adopt responsible practices to end deforestation.

In view of the impact of deforestation on the society in general and the environment in particular, Ethos considers that this issue is a major topic of responsible investment and environmental, social and governance (ESG) analysis. Companies directly or indirectly involved in deforestation must urgently adopt sound management of deforestation risks.

The objective is to increase these companies' ability to create long-term value for their shareholders as well as their other stakeholders without deteriorating worldwide natural capital.

1.2 Overview of Ethos' expectations

The Ethos Foundation aims to promote socially responsible investment and to foster a stable and prosperous socio-economic environment. As such, it attaches particular importance to corporate responsibility and sustainability issues.

The present engagement paper summarizes the issue of deforestation and Ethos' expectations ("the principles") for companies across the agricultural value chain. The principles embodied in this document aim to cover the entire value chain, including producers, traders and retailers, across several commodities. The engagement paper focuses on the environmental aspects of deforestation, but Ethos is fully aware of the numerous social issues related to this topic.

Ethos' principles on deforestation

1. Establish a "No Deforestation" policy
2. Commit to full traceability in the supply chain
3. Adopt a monitoring and verification system including a grievance mechanism
4. Engage with stakeholders and advocate to stop degrading forests
5. Support voluntary sustainability certification
6. Report on the implementation of the policy and the traceability commitment

2 Challenges of deforestation

2.1 Role of forests

Forests cover nearly a third of the world's land surface, approximately four billion hectares¹, of which just over one billion hectares are primary forests, or native forests, largely undisturbed by human activities².

Forests are home to an estimated 80% of the world's terrestrial biodiversity³ and are critical for plant and animal species conservation. Primary forests are of particular importance since they have higher biodiversity and a high proportion of species only occur there. Consequently, these species are more vulnerable to extinction from forest loss or degradation. Forests also provide people with habitats, food, medicine and fuel. More than 1.6 billion people depend on them for their livelihoods, many of them living in extreme poverty⁴.

The world's forests provide a wide range of ecosystem services essential for all forms of life. They protect watersheds that supply fresh water to rivers, produce oxygen, prevent soil erosion and act as a barrier to floodwater. Since they act as carbon sinks, forests also play a critical role in climate change mitigation. Forests absorb twice the amount of carbon they emit and sequester 7.6 billion metric tonnes of carbon every year⁵, just below the combined emissions of the US and India. Moreover, tropical rainforests absorb and create rainfall, thus regulating the local and global weather.

2.2 Deforestation

Deforestation refers to the conversion of forest to another land use including agricultural croplands, pasture and mining. During the period 2015-2020, the rate of deforestation reached an estimated 10 million hectares per year, roughly the size of Iceland. Furthermore, the loss of primary forest has been estimated to 81 million hectares between 1990 and 2020².

However, deforestation does not occur similarly across all regions. Most of the forest loss currently takes place in Latin America, sub-Saharan Africa, Southeast Asia and Oceania. The Amazon, Sumatra, Borneo and the Congo Basin have been particularly affected by the loss of primary tropical forest, accounting for approximately two thirds of global loss⁶.



Figure 1: Deforestation fronts 2020⁷

¹ Food and Agriculture Organization of the United Nations, 2020. "The State of the World's Forests 2020"

² Food and Agriculture Organization of the United Nations, 2020. "Global Forest Resources Assessment 2020"

³ <https://www.un-redd.org/forest-facts>

⁴ <https://www.worldwildlife.org/habitats/forest-habitat>

⁵ Harris, N.L., Gibbs, D.A., Baccini, A. et al., 2021. "Global maps of twenty-first century forest carbon fluxes"

⁶ World Resources Institute, 2021. "Global Forest Review"

⁷ Pacheco, P., Mo, K., Dudley, N., Shapiro, A., Aguilar-Amuchastegui, N., Ling, P.Y., Anderson, C. and Marx, A., 2021. "Supplement to Deforestation fronts: Drivers and responses in a changing world"

3 Major drivers of deforestation

3.1 Agriculture

Agricultural expansion is the main driver of deforestation and is estimated to account for about 80% of deforestation worldwide⁸. The global population growth, which has structurally increased the demand for food, and dietary shifts – notably the rising consumption of meat and dairy in developing countries – have led to more forest conversion to agricultural land.

In Latin America, deforestation is mostly caused by commercial agriculture while in sub-Saharan Africa and Southeast Asia subsistence farming and commercial agriculture cause deforestation of similar importance. Commercial agriculture refers to the production of cash crops for trading purpose. Subsistence agriculture refers to the production of food primarily for the consumption by the farmer and his family.

Three agricultural commodities – namely cattle, palm oil and soy – were responsible for replacing 63.8 million hectares of forest from 2001 to 2015, thus 23% of global tree cover loss⁹ over the period⁶. Cattle ranching, palm oil and soy production cause the conversion of forests for pasture, plantations and cropland. These commodities are further detailed in the last chapters of this paper.

Wood fibre, cocoa, coffee, and plantation rubber were also among the commodities causing forest replacement. They were together responsible for 8.1 million hectares of deforestation over the 15-year period¹⁰.

3.2 Mining, infrastructure and urbanisation

To a far lesser extent, mining operations, infrastructure projects and urban expansion are also drivers of deforestation.

Valuable mineral and metal resources are found in forests. To allow mining activities, trees and vegetation are cleared. Large-scale mining operations, especially open-pit mining, can be particularly destructive. Mining and other industrial activities located in forests require the construction of roads and other infrastructures (e.g., power stations, railway lines). Urban expansion driven by population growth puts further pressure on forests both through the consumption of land and building materials.

3.3 Indirect drivers of deforestation

In addition to direct causes of deforestation, indirect, or underlying, drivers also contribute to forest loss. Economic, demographic, institutional and geopolitical factors influence human activities and indirectly cause deforestation, in particular rising commodity prices, rapid population growth and population density but also corruption, policy failures, land tenure uncertainties or inappropriate land use planning are some of the underlying drivers of deforestation.

⁸ Kissinger, G., M. Herold, V. De Sy., 2012. "Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers"

⁹ Tree cover loss: in the Global Forest Review, the World Resources Institute uses the tree cover loss as a best available proxy for forest loss. Tree cover loss includes forest loss as well as loss of industrial tree plantations

and agricultural tree crops, which are not typically considered forests.

¹⁰ Morand, S., and Lajaunie, C., 2021. "Outbreaks of vector-borne and zoonotic diseases are associated with changes in forest cover and oil palm expansion at global scale"

4 Consequences

All the benefits provided by forests are put at significant risk by the damages caused by deforestation, which has various impacts on the planet as well as society at large.

4.1 Climate change

When trees are cleared, they release substantial amounts of carbon dioxide and other greenhouse gases absorbed over their lifespan into the atmosphere, thus contributing to the acceleration of global warming. This also reduces the planet's overall ability to capture and store carbon dioxide. Loss and degradation of forest are responsible for an estimated 15% of the yearly global greenhouse gas emissions¹¹.

4.2 Global weather

Deforestation also causes increases in temperatures by absorbing less heat. In turn, warmer temperatures alter wind and ocean patterns as well as rainfall distribution and contribute to more extreme weather events such as droughts.

4.3 Soil erosion

Healthy forests provide ecosystem services that are degraded by the loss of trees. Notably, fewer trees mean a lesser capacity of topsoil retention and cause widespread erosion. Eroded soil then reduces crop yields and causes farmers to spend money on fertilizer or perpetuate more forest clearing. Ultimately, soil erosion can lead to food insecurity.

When it rains, the run-off carries eroded soil into the rivers, where it increases the sediments. Not only does this phenomenon affect river wildlife, but it also increases the risk of flooding by elevating the level of rivers. Run-off of sediments that flow out to the ocean is considered a primary cause of coral decline.

4.4 Biodiversity loss

The interconnection between forests and biodiversity is complex and fragile. Loss of forested area causes the loss of food and habitat vital for certain animal and plant species and may result in their extinction. Animals are forced to exit the forest and move closer to human populated areas in search of shelter and food, which sometimes results in human-animal conflicts.

4.5 Loss of natural disease regulation

Deforestation increases human presence in areas so far undisturbed. People moving deeper into forest leads to the encounter with pathogens that normally would have been filtered and blocked by a range of predators and habitats. Researchers have evidenced the link between outbreaks of zoonotic and vector-borne infectious diseases and the loss of forest cover¹⁰.

4.6 Threat to forest-dependent populations

Indigenous people and local communities relying on forests for their livelihood and subsistence are amongst the most affected by the clear-cutting. Besides, exploiters often violate the human and land rights of these populations.

¹¹ <https://www.cdp.net/en/forests>

5 Ethos' expectations

In view of the impact of deforestation on the environment, society and economy, Ethos considers that this issue is a major topic of responsible investment and environmental, social and governance (ESG) analysis. Companies active throughout the value chains of forest-risk agricultural commodities – especially cattle, palm oil and soy – are particularly exposed to deforestation risks and must therefore implement policies to prevent the clearing of forests.

Ethos thus advocates for the implementation of a comprehensive deforestation strategy that addresses the issues previously listed. Ethos expects producers, traders and retailers of forest-risk agricultural commodities to adopt the following principles:

Ethos' principles on deforestation

1. Establish a "No Deforestation" policy
2. Commit to full traceability in the supply chain
3. Adopt a monitoring and verification system including a grievance mechanism
4. Engage with stakeholders and advocate to stop degrading forests
5. Support voluntary sustainability certification
6. Report on the implementation of the policy and the traceability commitment

Principle 1: Establish a "No Deforestation"¹² policy

Companies should commit to halt deforestation and establish a policy prohibiting the deforestation and conversion of forest and non-forest ecosystems (e.g., grasslands and savannas), including but not limited to High Conservation Value (HCVs), High Carbon Stock (HCS) and other conservation areas.

Furthermore, the policy should include the following aspects:

- Ban new developments on peatland and prevent the use of fire for clearing land.
- Avoid legal deforestation in jurisdictions where legislation allows for it.
- Include time-bound commitments applying to all the company's operations, subsidiaries, joint ventures, brands and products.
- Cover all direct and indirect suppliers at their group level.
- Have a time-bound commitment for implementing the policy.

Principle 2: Commit to full traceability in the supply chain

Forest-risk agricultural commodities' supply chains may be complex and involve a high number of actors and intermediaries. Hence, traceability represents one of the greatest challenges in these supply chains. Having a clear visibility as to where commodities come from is essential to ensure their production respects sustainability requirements. Thus, companies should fully map their supply chains, including their direct and indirect suppliers, in order to track and trace the commodities back to the origin farm or plantation. Companies should publish a complete list of their suppliers and update it regularly to provide an accurate picture of their situation. Companies should disclose the total volume of commodity used or produced and should provide a breakdown by sourcing region and/or supplier.

Similarly to the "No Deforestation" policy, the traceability target should include a time-bound commitment for achieving 100% traceability back to the origin.

deforestation. Zero net deforestation allows for the clearance or conversion of forests as long as an equal area is replanted elsewhere.

¹² Ethos advocates for "no deforestation" as it means no forest are cleared or converted and therefore goes further than "zero deforestation". Indeed, "Zero deforestation" may indicate zero net or gross

Principle 3: Adopt a monitoring and verification system including a grievance mechanism

Companies should monitor and verify that their suppliers and own operations are compliant with their “no deforestation” policy. Monitoring should be based on real-time satellite imagery and georeferenced maps. Internal or third-party audit should be conducted to inspect sites and verify compliance with the policy. Companies should report the volumes monitored and disclose non-compliant suppliers and/or operations. Companies should implement a grievance mechanism, internal or external, accessible to all stakeholders to allow for the identification and remediation of non-compliance with the “no deforestation” policy. The mechanism should preserve the confidentiality and anonymity of stakeholders. Companies should disclose a public list of complaints and grievances including actions taken to address and remedy the issues and progress made.

Principle 4: Engage with stakeholders and advocate to stop degrading forests

Companies should adopt a “suspend then engage” approach with non-compliant suppliers. Immediate suspension must occur on verified cases of non-compliance detected through the monitoring and verification system or reported through the grievance mechanism. Companies should then engage with suppliers to address and remedy non-compliance. Unsuccessful engagement should lead to the termination of the business relationship between the parties. Companies should develop and participate in programmes supporting independent smallholders in becoming compliant with the “no deforestation” policy and industry sustainability standards. Companies should embrace multi-stakeholder initiatives to address and eliminate deforestation across forest-risk agricultural commodities’ supply chains.

Principle 5: Support voluntary sustainability certification

Credible certification schemes (e.g. Roundtable on Sustainable Palm Oil, Palm Oil Innovation Group, Roundtable on Responsible Soy or equivalent) are an assurance that the commodities’ production complies with certain sustainability standards. Although their implementation and enforcement

have faced challenges, Ethos believes they are currently the most effective instrument to push for sustainable supply chains and incentivise producers to adopt sustainable practices. Companies should support credible certification schemes by becoming members of the organisations developing these certifications and having their production and operations certified or purchasing only certified products. When certification schemes offer more than one option, the more rigorous one should be chosen. The volume of certified commodity produced, sourced or sold should be publicly disclosed.

Principle 6: Report on the implementation of the policy and the traceability commitment

Companies should report annually on the implementation of the “No Deforestation” policy and the achievement of the supply chain traceability commitment. The reporting must allow for public and regular progress measurement over time. Companies should publish indicators on field audits and incidents of non-compliance. It should also include the volume of certified commodity produced, sourced, or sold. The report should be based on credible certification standards and independently verified by a third-party.

6 Focus on palm oil

6.1 Context

Palm oil is an edible vegetable oil extracted from fresh fruit bunches. Oil can be produced from squeezing the fleshy fruit (crude palm oil) and from crushing the kernel (palm kernel oil). Palm oil has versatile properties that make it ubiquitous in our daily lives. It is found in food, beauty and household products and biofuels. Palm oil is a cheap high-yield crop than can be harvested 12 months a year. About 4.5 million people depend on the palm oil industry, including three million smallholder farmers¹³. The latter account for roughly 40% of total global palm oil production while large-scale industrial plantations produce the remaining 60%¹⁴.

85% of all palm oil is produced in Indonesia and Malaysia, two countries with large areas of tropical rainforest that are unique homes to critically endangered, threatened and vulnerable species. Between 2001 and 2015, expanding plantations caused 10.5 million hectares of deforestation, including 3.5 million hectares of primary forest loss⁶. However, while global deforestation rates tend to increase, figures in Indonesia and Malaysia offer a glimmer of hope. Both countries saw their rates of primary forest loss decrease over the past five years and since 2020, Indonesia is no longer included in the top three countries by total primary forest loss¹⁵. While part of this decline can be attributed to government initiatives and corporates efforts, more rain and falling palm oil prices may also have played a part. It is therefore essential to maintain efforts to eradicate deforestation.

6.2 Challenges

Smallholder farmers

While deforestation from large scale plantations has declined, conversion of forests done by smallholder farmers with no commitment against deforestation has increased¹⁶. These small-scale farmers face various constraints such as prohibitive costs that prevent them for adopting more sustainable practices.

Leakage markets

Rising demand is driven by Asian emerging economies (e.g., India and China) where population growth combined with changes in consumption patterns have boosted palm oil consumption. Imports in these countries are price-sensitive and not driven by sustainability concerns. Therefore, they create leakage markets for unsustainable palm oil.

Alternative vegetable oil

From either coconut, rapeseed, soybean or sunflower, it would take 4 to 9 times as much land to produce the same amount of oil¹⁷. At global level, palm oil accounts for less than 6% of land use for vegetable oils but represents 36% of global vegetable oils produced¹⁸.

¹³ <https://palmoelnetzwerk.ch/en/palm-oil/>

¹⁴ <https://rspo.org/smallholders>

¹⁵ World Resources Institute, 2021. "Forest Pulse: The Latest on the World's Forests"

¹⁶ WWF, 2021. "Deforestation Fronts: Drivers and responses in a changing world"

¹⁷ Manoli, G. et al., 2018. "Substitutes may make matters worse"

¹⁸ Food and Agriculture Organization of the United Nations, 2017. "Crops"

7 Focus on soy

7.1 Context

Soybeans are one of the most efficient sources of protein and are among the few plant-based food able to provide all nine amino acids essential to human health. Although this could help meeting the increasing global need for food protein, 80% of the global production of soybean is used to feed livestock, poultry and farmed fish before being consumed as meat, eggs and dairy¹⁹. The remaining soy is used for cooking oil, processed food, soap and biodiesel or sold as whole beans. Over the past 25 years, global soybean production has grown 2.5-fold while the area planted with soybean has almost doubled²⁰.

Brazil, the world's leading producer of soybeans, Argentina, Paraguay and Bolivia account for more than half of the global soybean production²¹. As a result of a growing demand largely driven by China's consumption, deforestation has increased in these countries, which together account for 96%²² of forests replaced by soy plantations worldwide between 2001 and 2015. Some of the most biodiverse biomes, namely the Amazon, Cerrado and Gran Chaco, have been affected by this deforestation.

7.2 Challenges

Direct deforestation

Direct deforestation occurs when farmers clear forests and plant soy within a short period of time. The Argentine Chaco, the transition area between the Amazon and the Cerrado and the Matopiba region of the Cerrado have experienced high levels of direct forest conversion due to rapid expansion of soy production.

Indirect deforestation

Indirect deforestation occurs when soy is planted on land already deforested, often for being used as cattle pasture, which causes cattle ranchers moving deeper into the forest. Indirect

deforestation caused by soy expansion onto cattle pasture is extremely difficult to quantify. Research suggests that soy expansion in Argentina may have driven indirect deforestation in the Bolivian and Paraguayan Chaco. Thus, while the Soy Moratorium – a commitment not to purchase soy planted on land in the Amazon deforested after 2008 – drastically reduced direct soy deforestation in the region, the commodity's production is still an indirect driver of forest conversion.

As soy is a high-value cash crop that can significantly inflate the price of land, it might also fuel land speculation and incentivise further forest clearance.

Legal deforestation

In Brazil, laws allow some deforestation. According to the country's Forest Code, up to 80% of privately held land in the Cerrado and 20% in the Amazon can be legally deforested provided that the remaining land is protected as legal reserves.

¹⁹

https://www.panda.org/discover/our_focus/food_practice/sustainable_production/soy/

²⁰ Food and Agriculture Organization of the United Nations, 2021. "Crops"

²¹ United States Department of Agriculture, 2021. "Oilseeds: World Markets and Trade"

²² Goldman, E., M.J. Weisse, N. Harris, and M. Schneider, 2020, "Estimating the Role of Seven Commodities in Agriculture-Linked Deforestation: Oil Palm, Soy, Cattle, Wood Fiber, Cocoa, Coffee, and Rubbers"

8 Focus on cattle

8.1 Context

Beef cattle is raised to produce meat and its by-product leather. As a result of growth in population, global beef production has more than doubled over the past six decades²³. In addition, a rise in disposable income combined with middle-class expansion have led to a growing appetite for beef in some fast-growing economies. For instance, China's beef consumption per capita per year has increased from 0.36 kg in 1980²⁴ to 5.48 kg in 2018²⁵ and is expected to keep growing.

However, beef is one of the least efficient sources of protein. About 164 m² of land²⁶ are used per 100 grams of protein. In comparison, pork, poultry and tofu use respectively 11 m², 7 m² and 2 m² of land. Not only is land used for grazing but also to produce feed crops (e.g., grain, soy) for cattle. Cattle ranching is by far the main contributor to commodity-related deforestation. It is estimated that the area of forests converted to cattle pasture between 2001 and 2015 represents 45.1 million hectares, almost twice the area of forest replaced by oil palm, soy, cocoa, plantation rubber, coffee and plantation wood fibre combined²⁷. Farmers "slash-and-burn" forests to make the area available for cattle ranching, which sometimes results in uncontrolled fires. Slash-and-burn is a traditional shifting agriculture practice, but it is now used as a quick and cheap way to convert forests to pastures. Global warming has led to drier seasonal conditions in the tropics and has increased the risk of uncontrolled fires.

In the Amazon, cattle pastures occupy 80% of deforested areas²⁸. In the Paraguayan and Bolivian Chaco, cattle ranching is the primary cause of deforestation. As previously mentioned, in South America, cattle may be the single largest direct driver of deforestation in many regions, but it is closely linked to the expansion of soy production. Cattle ranching is also by far the main driver of

deforestation in Eastern Australia. It is responsible for 73% of deforestation happening in Queensland, and this figure rises to 93% in Great Barrier Reef catchments²⁹.

8.2 Challenges

Traceability

Cattle supply chains are complex since animals often change farm throughout their life, which makes traceability a challenge for meat purchasers. Breeding, rearing and fattening can occur in more than one farm before the meat processing stage. Meatpackers generally trace their direct suppliers, namely the fattening farm, and monitor their implication in deforestation but they do not cover their indirect suppliers.

Cattle laundering

Cattle laundering occurs when ranchers raise cattle on "dirty" farms responsible for deforestation and then shift them to "clean" farms where no forest conversion occurs in order to sell them to meat processors and avoid legally enforced zero deforestation agreements.

²³ Ritchie, H., and Roser, M., 2017. "Meat and Dairy Production"

²⁴ Food and Agriculture Organization of the United Nations, 2017. "Food Balances (old methodology and population)"

²⁵ Food and Agriculture Organization of the United Nations, 2021. "New Food Balances"

²⁶ Poore, J., and Nemecek, T., 2018. "Reducing food's environmental impacts through producers and consumers"

²⁷ World Resources Institute, 2020. "Global Forest Review"

²⁸ Nepstad, D. et al., 2008. "Interactions among Amazon land use, forests and climate: prospects for a near-term forest tipping point"

²⁹ Wilderness Society, 2019. "Drivers of deforestation and land clearing in Queensland"



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