Wildlife Conservation Society

THE FOREST FIRST APPROACH

A new framing that addresses supply chain risk and reduces deforestation at the forest and farm frontier

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FOREWORD

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I congratulate the Wildlife Conservation Society for the completion of this important study, which provides critical insights into how the forest and commodity community might evolve strategies to focus more on a risk-based 'Forest First' approach. The analysis demonstrates that deforestation risk is increasingly concentrated in smaller farms in a small number of districts and municipalities at the forest frontier. Just three percent of these districts in tropical forest countries account for over 50 percent of tropical tree cover loss. They also find that the deforestation in frontier areas is associated with far higher greenhouse gas emissions and presents an outsized threat to primary and intact forests, making these regions priority areas for action to mitigate climate change and address biodiversity loss.

Perhaps most importantly, the authors find that deforestation along these forest frontiers is increasingly not the result of the large-scale conversion of forests (though of course, this remains a risk in some areas), but is instead driven by the incremental expansion of agricultural land by smaller farmers often seeking to sustain their livelihoods. Tackling deforestation in these areas will require an additional set of actions and strategies to those we have relied upon in the last decade, and to some degree a shift in mindset, towards a heightened recognition of deforestation as a development challenge in addition to an environmental one. Curbing commodity driven deforestation will need more joined up efforts from producer as well as consumer countries to address these challenges together.

Working together – drawing on the strengths and understanding of farmers, supply chain companies, local and national governments, importing nations and NGOs - is the only way we can drive down deforestation while also supporting broader development goals. I hope this study will provide a valuable framework for a new generation of Collective Action and more public private partnerships that can deliver transformative change at the forest and farm frontier.

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EXECUTIVE SUMMARY

Despite a growing number of commitments and increasing efforts to address commodity-driven deforestation, forest loss across the tropics continues to rise. From 2010 to 2019, total tropical tree cover loss increased by three percent annually, reaching 13.1 million hectares in 2019. With increasing urgency around halting deforestation and responding to the climate emergency, there is a need to examine where and how we can re-focus our interventions to more effectively reduce commodity-driven deforestation and protect vital standing forests. In this report, we examine the interplay between deforestation trends and current implementation challenges, and propose a new risk-based framing for action on deforestation that prioritises efforts towards the forests and farm frontier – **The 'Forest First Approach.'**

We find that an increasing proportion of tropical deforestation, and associated deforestation risk in commodity supply chains, is concentrated within relatively low production volumes originating in a small number of districts or municipalities at the forest frontier. Just **three percent of all municipalities and districts in tropical forest countries account for over 50 percent of tropical tree cover loss.** Deforestation at the forest frontier is also associated with far higher greenhouse gas emissions and presents an outsized threat to primary and intact forests – just **34 subnational jurisdictions (states or provinces) account for only 31 percent of total deforestation, but 64 percent of remaining primary forests and 76 percent of the remaining intact forest landscapes** in tropical regions, making these regions priority areas for action to mitigate climate change and address biodiversity loss. There is also evidence that deforestation is increasing outside industrial and large-scale concessions and farms on land managed by smallholder farmers.

Many brands, commodity producers, and traders have made considerable progress towards securing traceable and verified deforestation-free supply chains, supported by the actions of producer and consumer country governments. However, while essential and effective in places, the majority of the strategies relied upon to identify and tackle commodity-driven deforestation are designed primarily to mitigate corporate exposure to supply chain risk, rather than to actively protect standing forests – in fact, they work most effectively in areas where deforestation has taken place historically. The lag time between initial forest clearance and subsequent crop or commodity maturity is such that by the time substantive deforestation risk materialises in supply chains, forests have already been converted or degraded at scale. Global deforestation rates and lessons from the last decade of implementation have also taught us that actions taken to avoid or mitigate further deforestation and associated supply chain risks at this point are complex, expensive, and can be prone to failure.

The Forest First Approach is centred on the principle that prioritising efforts towards forest frontiers has the potential to aggressively address current deforestation whilst also providing pre-emptive protection against the future conversion of adjacent intact or primary forests. For this approach to be effective, we must consider where and how interventions are enacted to tackle deforestation, now and in the future, by first re-defining how deforestation risk within supply chains is understood, recognising the links between emerging production areas at the forest frontier and future supply chain risk; and second by re-thinking the framing of corporate responsibility to encompass support for measures beyond the immediate supply chain that pre-emptively protect intact and primary forests from future production.

This framing enables the public and private sector to proactively triage and target emerging deforestation risks before they are heavily embedded within supply chains and provides a lens through which emerging deforestation frontiers can be identified. This is critical to counter the impacts of two-tier markets, where there is progress among a subset of companies and a primary focus on lower-risk areas in one tier, and business-as-usual production and supply chains linked to unchanged (and often increasing) deforestation in higher risk areas in the other. This is particularly relevant in the context of emerging legislation in the UK, US, and EU designed to minimise the risk that products linked to deforestation are placed on the market.

The Forest First Approach is intended to be a set of guiding principles that are essential components of strategies to tackle The deforestation challenges we face. These are:

1. ***Prioritise actions to the forest frontier, where 'embedded risk' of deforestation in commodity production is highest and intersects with at-risk primary and intact forests***

This has key implications for the strategies of importing countries and companies seeking to address their deforestation risks. It provides an opportunity to ensure measures support the protection of standing forests and in doing so reduce future risk while maximising contributions to climate and biodiversity goals.

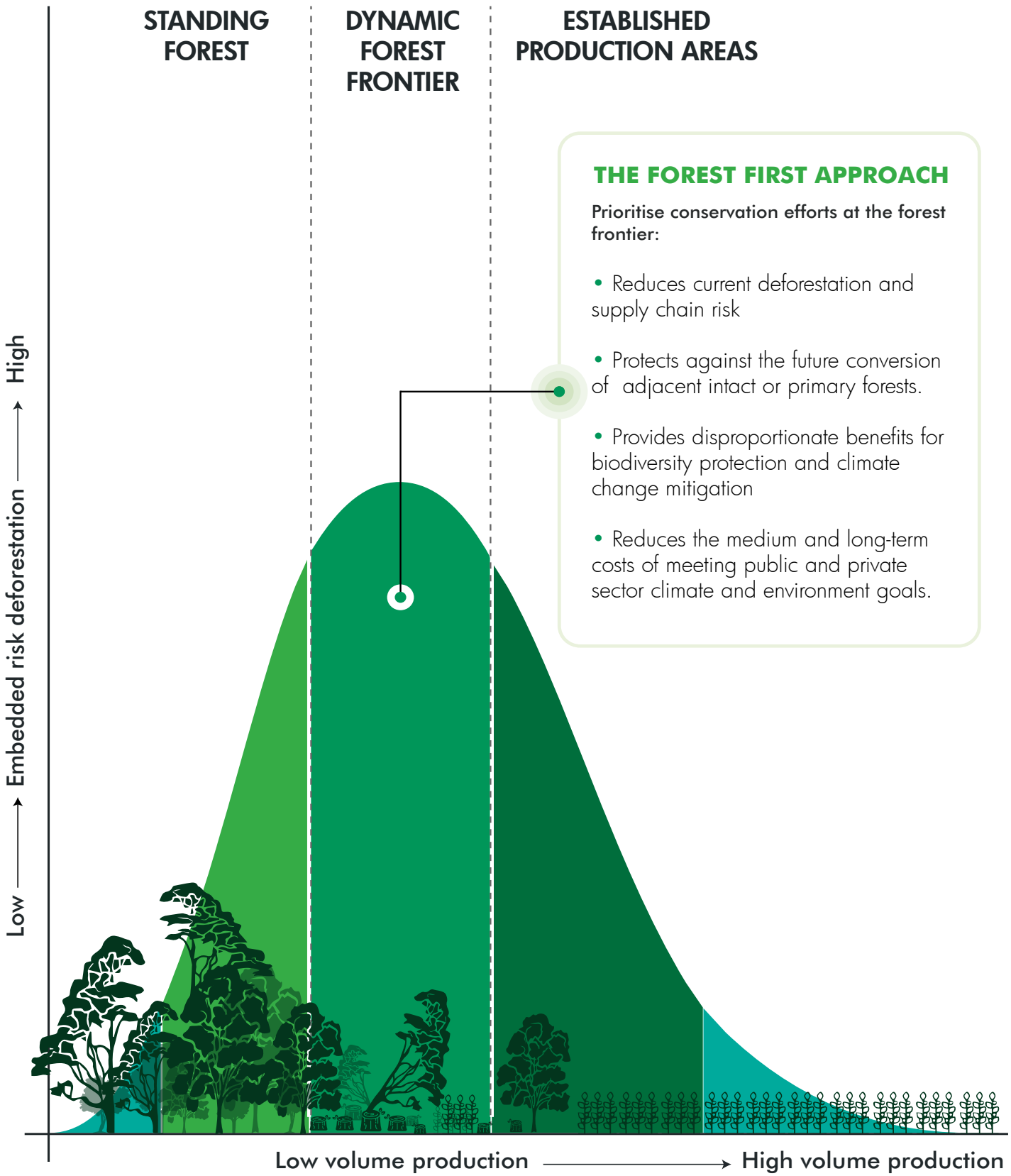
2. ***Support smallholder farmers and local communities at the forest frontier***

Securing a living wage for farmers at the forest frontier is a key building block to prevent future forest conversion, support farmers that underpin commodity sectors, and secure long-term sustainable supply. The horizon of corporate responsibility must shift to identify and foster stronger relationships with smallholder producers at the forest frontier, even in areas outside of current supply sheds.

3. ***Catalyse collective action, and collective responsibility, at the forest frontier***

Collaborative and pre-competitive action can improve the effectiveness and efficiency of action at the forest frontier. This can result in cost savings by companies seeking to improve the sustainability of their supply chains. Cooperation with communities, local government, and NGOs, supported by donor governments and philanthropy at the forest frontier, can impact livelihoods, development, climate, and biodiversity conservation. Development assistance and philanthropy, particularly the use of sustainable and blended finance, has a critical role to play in de-risking private sector engagement and financial investment in these areas.

This framing, that supports an intensification of efforts at the forest frontier, has the potential to increase support for smallholder farmers; reduce supply chain deforestation risk whilst providing pre-emptive protection against the future conversion of adjacent intact or primary forests; and in doing so, achieves disproportionate benefits for mitigating climate change and protecting biodiversity. These inherent benefits are likely to represent significant medium- and long-term cost savings to the public and private sector and should be explored as a matter of priority.



THE FOREST FIRST APPROACH

Prioritise conservation efforts at the forest frontier:

- Reduces current deforestation and supply chain risk
- Protects against the future conversion of adjacent intact or primary forests.
- Provides disproportionate benefits for biodiversity protection and climate change mitigation
- Reduces the medium and long-term costs of meeting public and private sector climate and environment goals.

INTRODUCTION

Agricultural expansion is the primary driver of forest conversion across the tropics,[1] with the production of several internationally traded commodities, including palm oil, soy, beef and leather, timber, pulp and paper, rubber, coffee, and cocoa responsible for a high proportion of tropical deforestation.[2] In the last decade, a range of public and private sector committments have been made to slow forest loss and to decouple deforestation from agricultural production. Key joint commitments include the New York Declaration on Forests,[3] which aim to eliminate deforestation from the production of palm oil, soy, paper, and beef by 2020, and end natural forest loss by 2030; and the Amsterdam Declaration, which seeks to achieve deforestation-free agro-commodity supply chains in Europe by 2020.[4] New legislation designed to minimise the risk that products linked to deforestation are placed on the market is also currently being explored in the United Kingdom (UK), the United States (US), and the European Union (EU).[5,6] There has been reciprocal action in producer countires, with at least 115 active jurisdicational programmes aiming to support sustainable production approaches and combat deforestation at the subnational level.[7]

Within the private sector, 484 of the world's leading companies have made forest-related sustainability commitments,[8] with major industry coalitions such as the Consumer Goods Forum also committing to address deforestation.[9] There has been progress within specific sectors; 34 of the world's largest cocoa and chocolate companies have committed to collaborating to end deforestation in the cocoa supply chain and restore forest areas,[10] and notable efforts to combat deforestation are being made within industry roundtables for sustainable soy, beef, and palm oil, amongst others. In the financial sector, investors are also increasingly recognising the operational and climate risks associated with land-use change and are calling on companies to disclose and address their deforestation risks.[11] There are also emerging initiatives, such as the Taskforce for Nature-related Financial Disclosures (TNFD), which aims to redirect finance towards outcomes that are nature-positive, in alignment with the UNFCCC Paris Agreement, the CBD Post-2020 Global Biodiversity Targets, and the UN Sustainable Development Goals. [12]

Despite all of these efforts, tree cover loss[13] in the tropics continues to rise (Exhibit 1). From 2010 to 2019, total tropical tree cover loss increased by three percent annually, from 10.4 million hectares in 2010 to 13.1 million hectares in

1 Gibbs, H. K., Ruesch, A. S., Achard, F., Clayton, M. K., Holmgren, P., Ramankutty, and Foley, J. A. (2010). Tropical forests were the primary sources of new agricultural land in the 1980s and 1990s. Proc. Natl Acad. Sci. USA 107, 16732-16737; and Kissinger, G., Herold, M. and De Sy, V. (2012). Drivers of deforestation and forest degradation. A synthesis report for REDD+ policy makers. Lexeme Consulting, Vancouver.

2 Pendrill, F., Martin Person, U., Godar, J., and Kastner, T. (2019). Deforestation displaced: trade in forest-risk commodities and the prospects for a global transition. Environmental Research Letters 14 055003.

3New York Declaration on Forests (2014). Available at: https://nydfglobalplatform.org/wp-content/uploads/2017/10/NYDF_Declaration.pdf

4 Amsterdam Declaration (2015). Towards eliminating deforestation from agricultural commodity chains with European countries. Amsterdam, The Netherlands.

5 UK Department for Environment, Food and Rural Affairs (2020). "World-leading new law to protect rainforests and clean up supply chains" Available at: https://www.gov.uk/government/news/world-leading-new-law-to-protect-rainforests-and-clean-up-supply-chains

6 European Commission (2020). "Deforestation and forest degradation – reducing the impact of products placed on the EU market" Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12137-Minimising-the-risk-of-deforestation-and-forest-degradation-associated-with-products-placed-on-the-EU-market

7 AlphaBeta analysis extended from research with the Tropical Forest Alliance (TFA); this estimate is not exhaustive and includes the specific regions that have been analysed by AlphaBeta. See Tropical Forest Alliance and AlphaBeta (2019). Commodity-First Landscapes. Available at: https://www.tropicalforestalliance.org/assets/Uploads/TFA-Commodity-First-Landscapes-April-2019.pdf:.

8 Supply Change (2019). Targeting Zero Deforestation. Available at: https://www.forest-trends.org/wp-content/uploads/2019/06/2019.06.05-Supply-Change-Targeting-Zero-Deforestation-Report-Final.pdf

9 Consumer Goods Forum (2019). "Commitments and achievements" Available at: https://www.theconsumergoodsforum.com/environmental-sustainability/forest-positive-deforestation/about/commitments-achievements/

10 World Cocoa Foundation (2019). "The Cocoa Forests Initiative" Available at: https://www.worldcocoafoundation.org/initiative/cocoa-forests-initiative/

11 CDP (2019). "Request Environmental Information" Available at: https://www.cdp.net/en/investor/request-environmental-information; and Ceres (2019). "Investors with $6.3 trillion in assets call on companies to cut climate, deforestation-related risks in global soybean supply chains" Available at: https://www.ceres.org/news-center/press-releases/investors-63-trillion-assets-call-companies-cut-climate-deforestation

12 Taskforce for Nature-related Financial Disclosures (2020). Available at: https://tnfd.info/

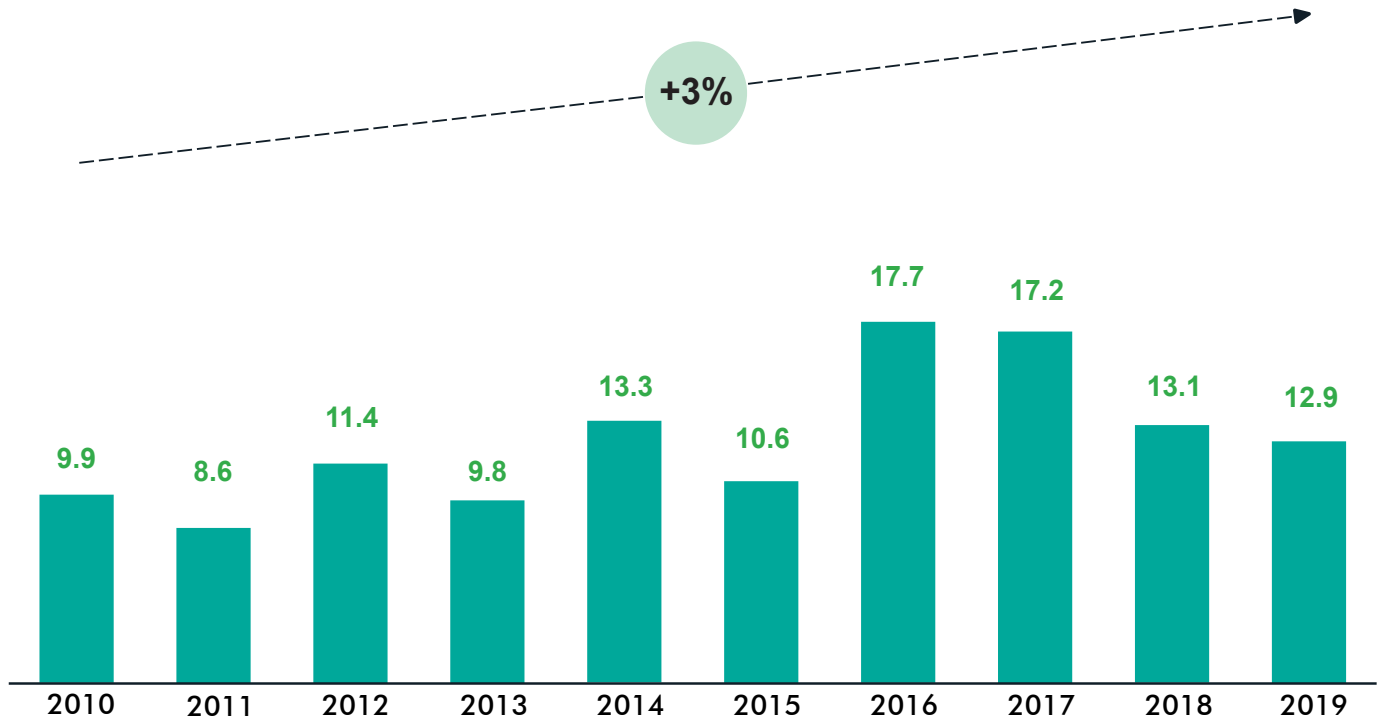
13 Tree cover loss may be the result of human activities, including forestry practices such as timber harvesting or deforestation (the conversion of natural forest to other land uses), as well as natural causes such as disease or storm damage. It is not necessarily the same as deforestation, which indicates a permanent change, though in the main tropical forest regions of Southeast Asia and Latin America, the majority of tree cover loss is estimated to be permanent change – see Curtis et al. (2018). Classifying drivers of global forest loss. Science, Vol. 361, Issue 6407, pp. 1108-1111. Available at: https://science.sciencemag.org/content/361/6407/1108/tab-pdf

2019. This is particularly concerning given the role of tree cover loss in carbon emissions. Indeed, tropical deforestation produces more emissions than many countries. At 4.9 gigatonnes of carbon dioxide-equivalent emissions per year ($GtCO_2e$) in total, it ranks third in carbon dioxide-equivalent emissions, behind only the United States and China.[14] At the same time, forests are an essential climate solution, potentially providing 23 percent of the cost-effective climate mitigation needed before 2030 to keep global temperature rise below 2°C.[15]

These facts compel practitioners to examine how and where interventions can be more effectively targeted. In this report we examine the interplay between deforestation trends and current implementation challenges, drawing on lessons from the field and propose a new 'risk-based' framing for action on deforestation that prioritises efforts towards the farm and forests frontier – **The Forest First Approach.**

EXHIBIT 1: TREE COVER LOSS (2010-2019) FOR TROPICAL FOREST COUNTRIES

Tree cover loss (2010-19)[1] for tropical forest countries[2]
Millions of hectares



1. For canopy cover greater than 10%.
2. The dataset includes countries which are (a) between the Tropic of cancer and tropic of Capricorn, and (b) those from this set of countries that are classified as low, lower-middle or upper-middle income countries. See https://worldpopulationreview.com/country-rankings/tropical-countries for tropical status; income status of countries was considered based on the World Bank definition of low-, lower-middle-, upper-middle- or high-income: low-income are those economies with GNI per capita <$1,035 or less in 2019; lower-middle-income economies are those with a GNI per capita between $1,036 and $4,045; upper-middle-income economies are those with a GNI per capita between $4,046 and $12,535; high-income economies are those with a GNI per capita of $12,536 or more; This filter lens removes countries such as Bahamas, Puerto Rico, Brunei, Panama, Mauritius, Singapore etc.

SOURCE: Global Forest Watch (GFW) Database; AlphaBeta analysis

14 On average between 2015 and 2017. See David Gibbs et. al. (2018). "By the numbers: The value of tropical forests in the climate change equation" Available at: https://www.wri.org/blog/2018/10/numbers-value-tropical-forests-climate-change-equation

15 Harris and Wolosin (2018). "Ending Tropical Deforestation: Tropical Forests and Climate Change: The Latest Science by Nancy Harris and Michael Wolosin". World Resources Institute. Available at: https://www.wri.org/publication/ending-tropical-deforestation-tropical-forests-and-climate-change-latest-science

In this report, we:

- Explore recent trends in tropical tree cover loss and commodity-driven deforestation, drawing on data from Global Forest Watch (GFW), previous analyses from Trase and Proforest, and findings from other literature sources.

- Draw on literature and analyses to assess some of the challenges that limit the scalability and impact of existing approaches which are designed to achieve sustainable and/or deforestation-free production and supply chains in high-risk areas.

- Demonstrate the uneven distribution of deforestation risk across jurisdictions, defined as recent commodity-driven deforestation relative to commodity production, and explore how associated prioritisation can more effectively pre-empti deforestation and mitigate risks.

- Based on these findings, outline the guiding principles of **The Forest First Approach** that we believe are essential to effectively tackle the deforestation challenges we face.

1. DEFORESTATION AND SUPPLY CHAIN RISK

Tropical tree cover loss is highly concentrated. Only three percent of all tropical forest jurisdictions account for 31 percent of total deforestation, 64 percent of remaining primary forests, and 76 percent of the remaining intact forest landscapes in tropical regions. Deforestation risk is also concentrated in commodity supply chains originating from the forest frontier. Deforestation is increasing outside industrial and large-scale concessions and farms. Finally, deforestation at the forest frontier is associated with far higher greenhouse gas emissions and presents an outsized threat to primary and intact forests.

Tree cover loss is highly concentrated in specific regions within tropical forest countries.

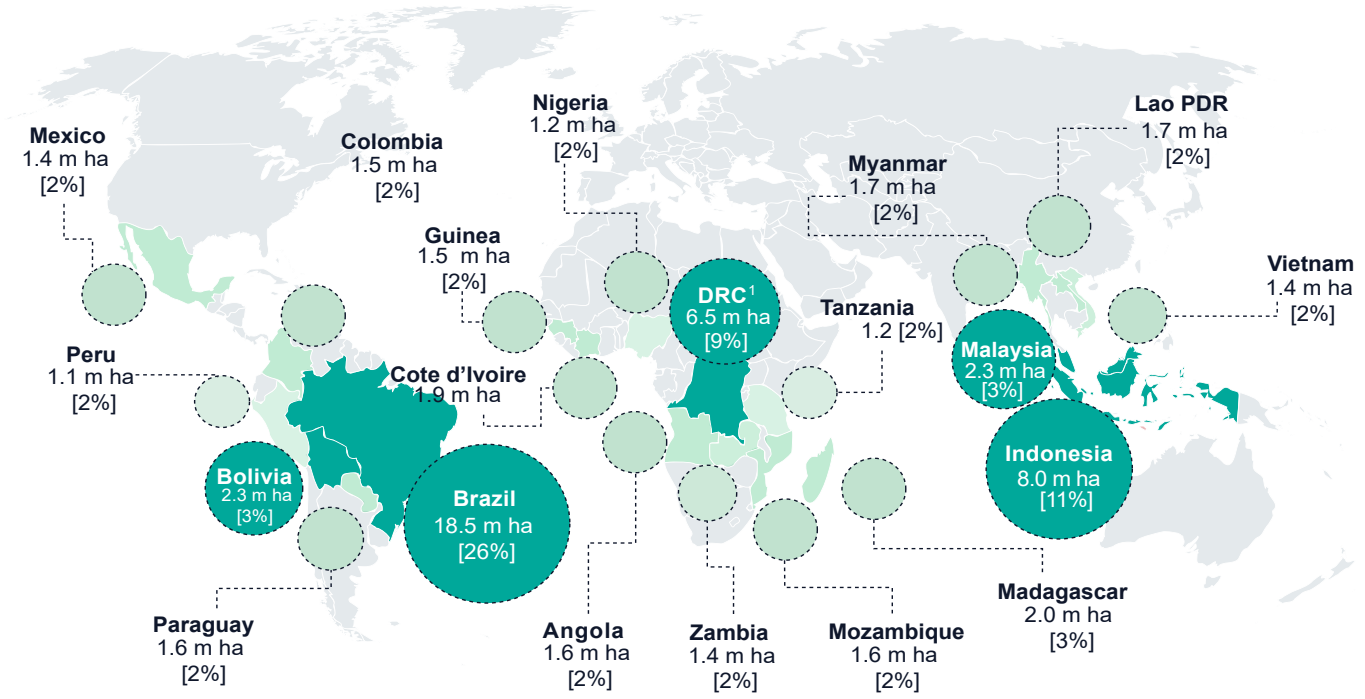
Just 20 of 74 tropical forest countries account for 84 percent of total tropical tree cover loss (see Box 1). The top five countries, including Brazil, Indonesia, The Democratic Republic of Congo, Malaysia, and Bolivia, account for 50 percent of this total (see Exhibit 2). Tree cover loss is also concentrated at the subnational level (see Exhibit 3). Just four percent (56) of the 1,290 states and provinces and three percent (520) of the 19,761 municipalities and districts within the focal tropical forest countries accounted for 53 percent of tree cover loss (2014-19) (see Exhibit 3).

EXHIBIT 2: TROPICAL TREE COVER LOSS (2010-2019) IS CONCENTRATED AT THE NATIONAL LEVEL

Tree cover loss, 2014-19 – tropical forest countries
Millions of hectares

Top 5 countries; the size of the bubble indicates the amount of deforestation

(#) *The percentage within brackets is the country's share of total tropical forest deforestation*



1. Democratic Republic of the Congo.
SOURCE: Global Forest Watch (GFW) Database; AlphaBeta analysis

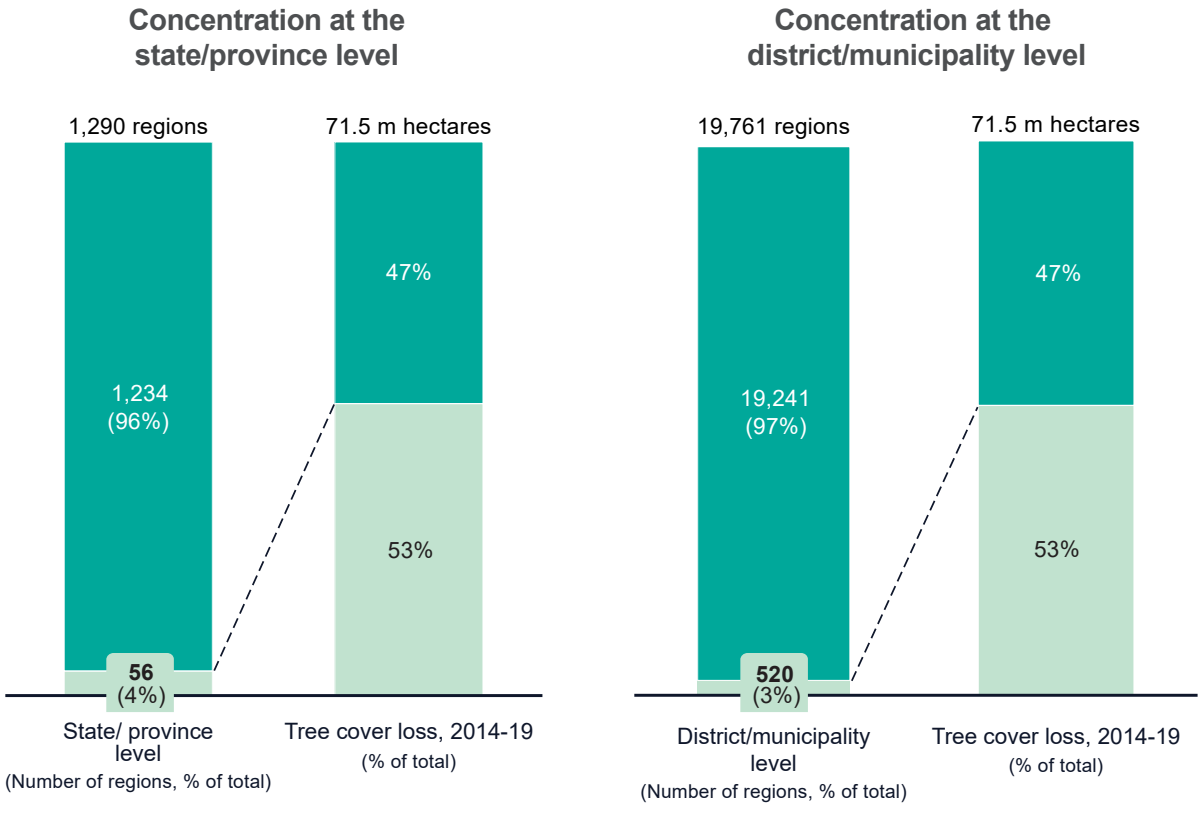
Box 1: Scope of analysis

Focus countries were determined based on two key factors:

1. The country contains tropical forests: In order to identify tropical forest countries, those countries that were between the Tropic of Cancer and Tropic of Capricorn were chosen.
2. The country is either a low, lower-middle or upper-middle income country: The income status of countries was considered based on the World Bank definition of low-, lower-middle, upper-middle- or high-income: low-income are those economies with GNI per capita $1,035 or less in 2019; lower-middle-income economies are those with a GNI per capita between $1,036 and $4,045; upper-middle-income economies are those with a GNI per capita between $4,046 and $12,535; high-income economies are those with a GNI per capita of $12,536 or more; This filter lens removes countries such as Bahamas, Puerto Rico, Brunei, Panama, Mauritius, and Singapore, among others.

As a result, a total of 74 countries were selected for the sample set. These countries account for 52 percent of global tree cover loss from 2014-19 and 97 percent of primary forest loss over the same period.

EXHIBIT 3: TROPICAL TREE COVER LOSS (2010-2019) IS CONCENTRATED AT THE SUBNATIONAL LEVEL



SOURCE: Global Forest Watch (GFW) Database; AlphaBeta analysis

Deforestation risk is highly concentrated within a handful of jurisdictions, and within relatively low volumes, at the forest frontier.

Deforestation risk is therefore also highly concentrated in supply chains that originate from jurisdictions at the forest frontier. For example, recent analyses from Trase show that only one percent of 2,318 soy-producing municipalities, and two percent of 2,803 beef-producing municipalities at the forest frontier in Brazil were responsible for more than 50% of deforestation risk linked to exports.[16] In Argentina, just two percent of 205 soy-producing departments in the Chaco region were linked with the majority of deforestation in the soy supply chain. In Indonesia, just six percent of 249 Indonesian palm oil producing districts were responsible for more than 50 percent of deforestation risk linked to exports in 2015.[17] This has key implications for importing countries seeking to address their exposure to deforestation risk from imported goods and ensure these efforts support reductions in forest loss at the frontier.

Deforestation risk can be higher outside industrial concessions on land dominated by smaller producers

Most efforts to tackle deforestation risk to date have focused on curtailing or mitigating the impacts of industrial agriculture. However, research increasingly highlights the importance of also addressing deforestation occurring outside of large farms and plantation concessions in some contexts. In Brazil, deforestation between 2004-11 attributable to the largest properties (>2,500 hectares) declined by 63 percent, while that attributable to smallholders increased by 69 percent.[18] Similar trends are also seen in Southeast Asia. Recent findings from research in Indonesia and Malaysia demonstrate that deforestation related to palm oil production outside of known industrial-scale concessions is of considerable concern. Forthcoming data from Proforest[19] shows that 48 percent of all deforestation (2017-19) in Indonesia and Malaysia potentially linked to palm oil[20] occurred outside of known concessions (337,593 hectares), in areas likely to be managed by smallholder and mid-scale farmers. In Sumatra, Indonesia, 92 percent of deforestation potentially linked with palm oil between 2017-19 occurred outside of known concessions. In fact, in all Indonesian provinces except Papua, deforestation outside concessions far exceeded deforestation inside concessions.

These findings also demonstrate a high concentration of deforestation subnationally, even at the village level, aligning with previous findings that concentrated areas with lower production volumes can represent higher deforestation risk. Across Indonesia, 75 percent of the total deforestation outside concessions (180,926 hectares) was found to occur in the vicinity of just one percent or 581 Indonesian village territories.[21]Similarly, in Malaysia, 75 percent of total deforestation outside concessions (156,653 hectares) occurred within just 14 percent or 20 of Malaysia's districts.

Deforestation at the forest frontier is associated with far higher greenhouse gas emissions and presents an outsized threat to primary and intact forests

Focusing on the forest frontier is vital to meet climate change mitigation and biodiversity conservation objectives. Greenhouse gas emissions associated with commodities produced in the 10 percent of regions at the agricultural frontier experiencing most deforestation were found to be considerably higher than average – in the case of Brazilian beef (775 percent higher), Brazilian soy (940 percent higher), and Indonesian palm oil (630 percent higher).[22,23] At the same time, an analysis of subnational jurisdictions demonstrates the importance of several forest frontier jurisdictions as priorities for stemming future forest loss. We identified thirty-four subnational regions as immediate priorities based on their high levels of recent deforestation and high extents of remaining primary forest (see Box 2 and Exhibit 4). These priority forest frontier areas account for just three percent of all subnational tropical forest jurisdiction, but 31 percent of tropical defoestation, 64 percent of remaining

16 2018 and 2017 data respectively. Trase (2020). Trase Yearbook, 2020. Available at: https://insights.trase.earth/yearbook/highlights/hotspots/
17 Trase (2020). Trase Yearbook, 2020. Available at: https://insights.trase.earth/yearbook/highlights/hotspots/
18 Javier Godar et. al. (2014). Actor-specific contributions to the deforestation slowdown in the Brazilian Amazon. Proceedings of the National Academy of Sciences of the United States of America vol. 111,43 (2014): 15591-6. doi:10.1073/pnas.1322825111
19 Proforest, forthcoming.
20 In forest blocks with over 100 hectares of core forest areas and "potentially linked to palm" means deforestation in large forest blocks that are less than 50km from mills, lower than 500m elevation and less than 30 degrees slope.
21 With deforestation of greater than 64 hectares. Proforest, forthcoming.
22 Gil, J. Carbon footprint of Brazilian soy. Nat Food 1, 323 (2020). https://doi.org/10.1038/s43016-020-0106-x
23 Trase (2020). Bulk Supply Chain Data. Available at: https://trase.earth/data?lang=en

primary forests[24] and 76 percent of the remaining forest landscapes in the tropical regions (see Box 3)[25], and also accouunt for 42 percent of stores forest carbon globally.[26]

Box 2: Defining priority forest frontier regions

Subnational regions experiencing high rates of deforestation and with high remaining forest represent priorities for stemming future forest loss. To identify these subnational regions, we first considered all 1,290 subnational regions (at the first administrative level) with the 74 tropical forest-rich countries. Two criteria were used to identify high deforestation-high forest jurisdictions within these 1,290 regions:

1. High tree cover loss. These are subnational regions where the annual tree cover loss (from 2014-19) was greater than the average (~60,000 hectares per year). The tree cover loss was calculated using GFW's database of tree cover loss.

2. High remaining primary forest. These are subnational regions where the annual tree cover loss (from 2014-19) was greater than the average (~60,000 hectares per year). The tree cover loss was calculated using GFW's database of tree cover loss.

As a result of the above analysis, 34 priority jurisdictions were identified. The list of priority regions is not exhaustive, but aims to demonstrate the importance of increasing the focus on some areas to have high impact across both deforestation and biodiversity.

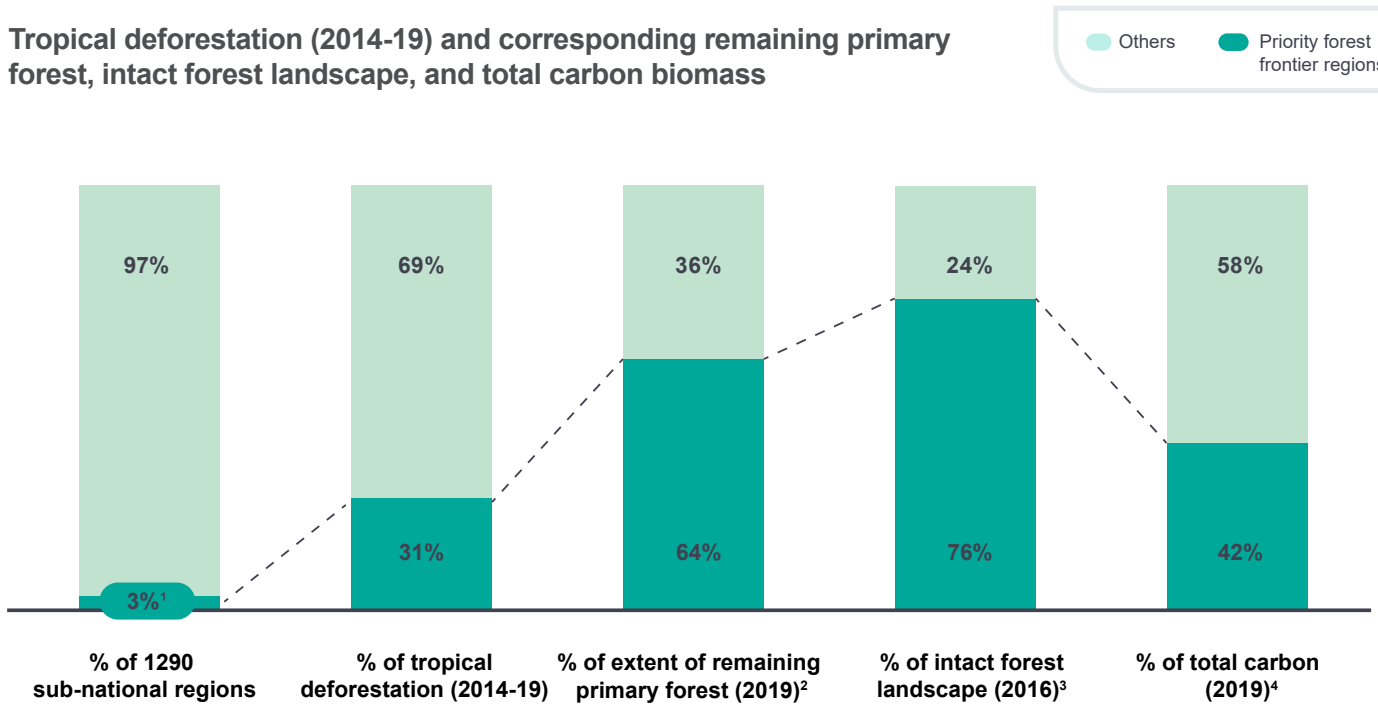
24 GFW definition; Primary forests are among the most biodiverse forests, providing a multitude of ecosystem services, making them crucial to monitor for national land use planning and carbon accounting. This data set defines primary forests as "mature natural humid tropical forest cover that has not been completely cleared and regrown in recent history." In order to calculate this, the primary forest loss from 2002-19 is subtracted from the 2001 extent.
25 Intact forests are only 24 percent of global forest cover. These are unbroken expanses of natural ecosystems within the zone of forest extent that show no signs of significant human activity and are large enough that all native biodiversity, including viable populations of wide-ranging species, could be maintained. Potapov, P. et al. (2017) The last frontiers of wilderness: Tracking loss of intact forest landscapes from 2000 to 2013. Science Advances 2017;3: e1600821
26 Spawn et al. (2020). Harmonized global maps of above and belowground biomass carbon density in the year 2010. Scientific Data 7, Article number : 112 (2020). Available at: www.nature.com/articles/s41597-020-0444-4

Box 3: The importance of protecting intact forests

Intact forest landscapes— very large, unbroken swaths of healthy forests—represent less than a quarter of Earth's remaining forest. They are disproportionately valuable in terms of their provision of global, life-sustaining ecosystem services, yet are disappearing at twice the rate of forests overall. From 2000 to 2016, 9 percent of the total intact forest landscapes were degraded or cleared, or 0.6 percent per year. Forests play a crucial role in protecting biodiversity - as biodiversity strongholds for two-thirds of all land-based plants and in climate regulation, with intact forests absorbing a quarter of total global carbon emissions annually, and storing significantly more carbon than degraded forests. Intact forests are also critical for sustaining human communities globally and locally. For example, at least 36 percent of intact forest landscapes are within Indigenous Peoples' land, making these areas crucial for future protection and support.

EXHIBIT 4: A CONCENTRATION OF FOREST FRONTIER REGIONS REPRESENT PRIORITIES FOR STEMMING FOREST LOSS

Tropical deforestation (2014-19) and corresponding remaining primary forest, intact forest landscape, and total carbon biomass



1. The 34 regions include: El Beni, La Paz , Santa Cruz, Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Est, Caquetá, Guaviare, Bas-Uélé, Kasaï, Maniema, Maï-Ndombe, Sankuru, Tshopo , Tshuapa, Équateur, Kalimantan Barat, Kalimantan Tengah, Kalimantan Timur, Papua, Papua Barat, Sarawak, Kachin , Loreto, Madre de Dios, Ucayali, Sangha, Amazonas, Bolívar.
2. Primary forests are among the most biodiverse forests, providing a multitude of ecosystem services, making them crucial to monitor for national land use planning and carbon accounting. This data set defines primary forests as "mature natural humid tropical forest cover that has not been completely cleared and regrown in recent history." In order to calculate this, the primary forest loss from 2002-19 is subtracted from the 2001 extent.
3. Intact forest landscape identifies unbroken expanses of natural ecosystems within the zone of forest extent that show no signs of significant human activity and are large enough that all native biodiversity, including viable populations of wide-ranging species, can be maintained.
4. Total carbon consists of both above ground carbon stored in tree biomass as well as below ground carbon stored in soils. Subnational data for the Democratic Republic of the Congo is estimated.

SOURCE: Global Forest Watch (GFW) Database; AlphaBeta analysis

2. REFRAMING APPROACHES TO TACKLE DEFORESTATION AT THE FOREST FRONTIER

In light of emerging deforestation trends, it is clear that there are opportunities to mitigate current and future supply chain risk while maximising climate and biodiversity impacts by targeting efforts to address deforestation towards the forest and farm frontier. There are several challenges linked to existing approaches that limit their ability to scale to high risk and priority regions and contribute to addressing deforestation. To tackle tropical forest loss, protect remaining forests, and mitigate current and future deforestation risks, we need to understand and overcome these challenges while working to increase our efforts at the forest frontier.

Challenge 1: Voluntary certification cannot address deforestation at scale in priority areas

Voluntary certification systems were developed initially to harmonise sourcing requirements and production standards, allowing companies to verify and communicate the sustainability of their supply chains. Although several certification standards incorporate criteria to ensure deforestation-free production[27], poor incentives production incentives and a lack of demand for certified commodities have limited uptake (see Exhibit 5). This has meant that certification has been unable to scale and contribute to addressing deforestation in priority areas. A further challenge is that standardised rules and criteria become difficult to apply and verify at the producer level in complex supply chains (e.g. in those with high proportions of independent smallholder farmers), and that sustainability verification is, by nature, easier to achieve in lower-risk landscapes. This has meant that the uptake of certification has typically been in areas where production and supply chains are already well-established and where deforestation is likely to already have occurred historically. The high cost of certification and the lack of market demand have also limited both the uptake and the capacity of certification schemes to incentivise sustainable and deforestation-free production in the regions where it is needed most.[28] Even production regions with high levels of certification, such as Sarawak in Malaysia (palm oil) and Mato Grosso in Brazil (soy), remain among the top 10 subnational jurisdictions for deforestation, with certified supply chains in these regions representing "islands of sustainable supply in a sea of deforestation".[29]

27 RSPO (2018). "RSPO members agree on new palm oil standard to halt deforestation and improve human rights protection" Available at: https://rspo.org/news-and-events/news/rspo-members-agree-on-new-palm-oil-standard-to-halt-deforestation-and-improve-human-rights-protection; and de Koning, P. C. and D. A. Wiegant. (2017). *Certification standards and deforestation*. Mekon Ecology.
28 Carlson, K.M., et al. (2018). Effect of oil palm sustainability certification on deforestation and fire in Indonesia. Proc. Natl. Acad. Sci. USA. 115, 121-126. doi: 10.1073/pnas.1704728114
29 Reuters (2018). "Deadline 2020: 'We won't end deforestation through certification schemes,' brands admit" Available at: https://www.reutersevents.com/sustainability/deadline-2020-we-wont-end-deforestation-through-certification-schemes-brands-admit

EXHIBIT 5: COMMODITY CERTIFICATION HAS BEEN UNABLE TO SCALE AND THEREFORE CANNOT CONTRIBUTE TO ADDRESSING DEFORESTATION IN PRIORITY AREAS

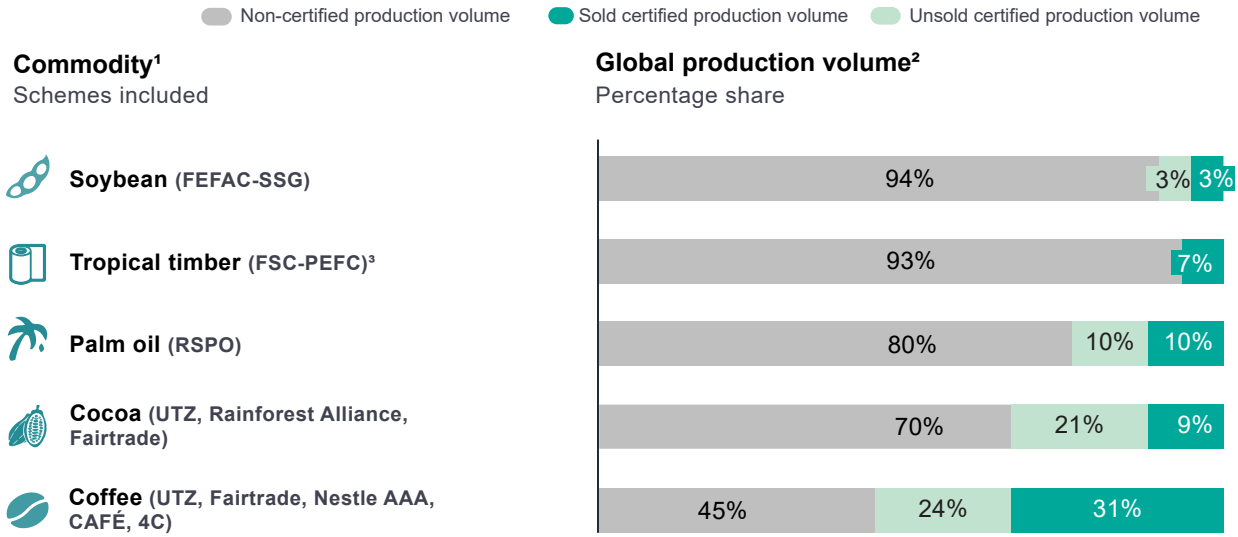


EXHIBIT 5.1: GLOBAL CERTIFIED PRODUCTION VOLUMES ARE LOW, AND SALES LAG PRODUCED VOLUMES

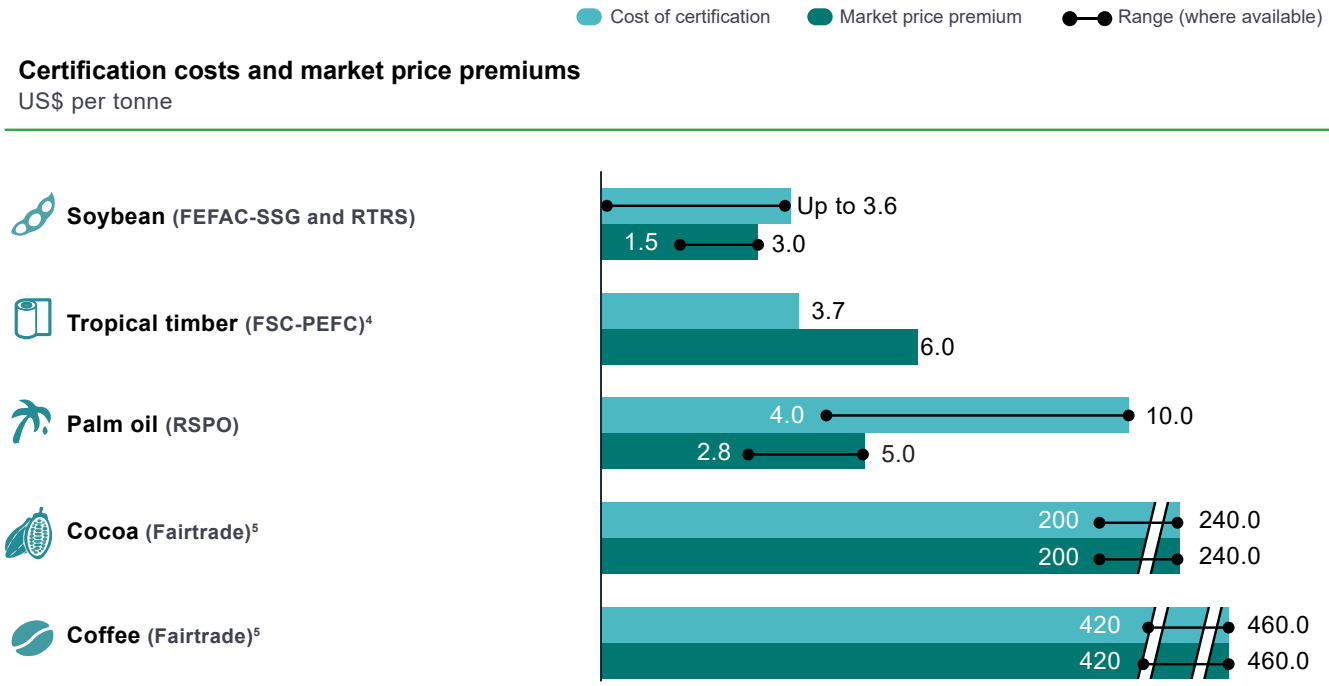


EXHIBIT 5.2: MARKET PRICE PREMIUMS DON'T ALWAYS JUTIFY CERTIFICATION COSTS

1. There are no widely used global beef certification schemes. The cattle supply chain is unique wherever beef is produced, and the inflexibility of many certification standards makes it difficult to accommodate complexities in political, social, and economic contexts in producer regions. Beef is also the least "commodity"-like agrifood product of this sample set, given its lower "tradability" and need for relatively immediate consumption. Beef certification has also struggled between setting high standards for significant impact and lower bars to include more producers, and the demand for certified beef is very specific for certain markets (that are largely produced locally) – the result being low or no premiums for certified products.
2. For the latest year of available data. Certified volumes are not necessarily deforestation-free and this is contingent on the certification scheme being assessed.
3. Volumes on FSC-certified tropical timber sales are unavailable; however, it is likely that unsold volumes have been extremely low in recent years given that global timber demand has generally outpaced supply, driven by rapidly increasing demand from middle-income countries, and legally FSC-certified products are sought after and generally fetch higher auction prices.
4. US$ per m³ of tropical timber volume. Does not account for lost potential income ("opportunity costs") from HCV set-asides that averages $0.53 per m3 of certified production.
5. Minimum support price premium offered to producers by Fairtrade – covers cost of sustainable production as well as providing support for costs of living for producing communities.

Challenge 2: Smallholder farmers underpin supply chains, but receive insufficient support

Tangible, lasting, and sector-wide reductions in deforestation are impossible without increasing smallholder engagement and support. Smallholder farmers are integral to commodity supply chains – responsible for 90 percent of global cocoa production, 70 percent of global coffee production, and 40 percent of global palm oil production[30] – and are also often the main producers operating at the forest frontier. Smallholder-driven deforestation typically results from a nexus of challenges – including poverty, geographical remoteness, and poor infrastructure, uncertain land tenure, low yields, and limited access to inputs, finance, and markets – but the technical and financial support needed to address these or to achieve deforestation-free production is often inaccessible to smallholder farmers.[31] In any case, interventions designed to address deforestation have typically been developed for application where producers have higher capacity and control over production at scale, i.e. within mid- to large-scale farms or plantations.[32] This challenge has been well reported, but despite increasing efforts to engage and support smallholders to improve the sustainability and commercial viability of their production, progress remains modest. For instance, in the palm oil sector, smallholder support under the Roundtable on Sustainable Palm Oil (RSPO) has expanded significantly in recent years, covering over 160,000 farmers and 445,000 hectares of certified area.[33] However, this represents under a tenth of global certified palm oil volume and just a fraction of the estimated three million smallholders making their livelihoods from palm oil globally. There is a risk that corporate deforestation-free supply chain commitments that fail to account for these challenges may be pushing "deforestation leakage" upstream into smallholder areas, beyond the responsibility horizon of downstream supply chain actors.[34,35,36]

Challenge 3: Jurisdictional approaches can address deforestation at scale, but are not yet operational in many forest frontier areas

Jurisdictional approaches seek to align governments, businesses, communities, NGOs, and other stakeholders around shared conservation, economic and supply chain objectives, and have the potential to address deforestation beyond the scale of individual production areas.[37] Companies are increasingly engaging in jurisdictional initiatives to support efforts beyond their own supply chains.[38,39] This is a major step towards achieving sustainable production and addressing deforestation at scale, however, the need of companies to secure sustainable supply and avoid reputational risk likely favours an intensification of support towards major production centres, away from the forest frontier. For example, of the 34 priority forest frontier regions identified in Chapter 1, 16 either have no jurisdictional plans or they remain in development.[40] Focusing jurisdictional efforts away from the forest frontier misses opportunities to mitigate ongoing and near-future deforestation risk. There is a need to consolidate progress within existing jurisdictional programmes, including those supported by private sector jurisdictional or landscape sourcing commitments, whilst ensuring efforts are also expanded to target frontier areas.

Challenge 4: Varying demand for sustainable or 'deforestation-free' commodities leads to two-tier supply chains, while supply chain diversification is making industry engagement more challenging

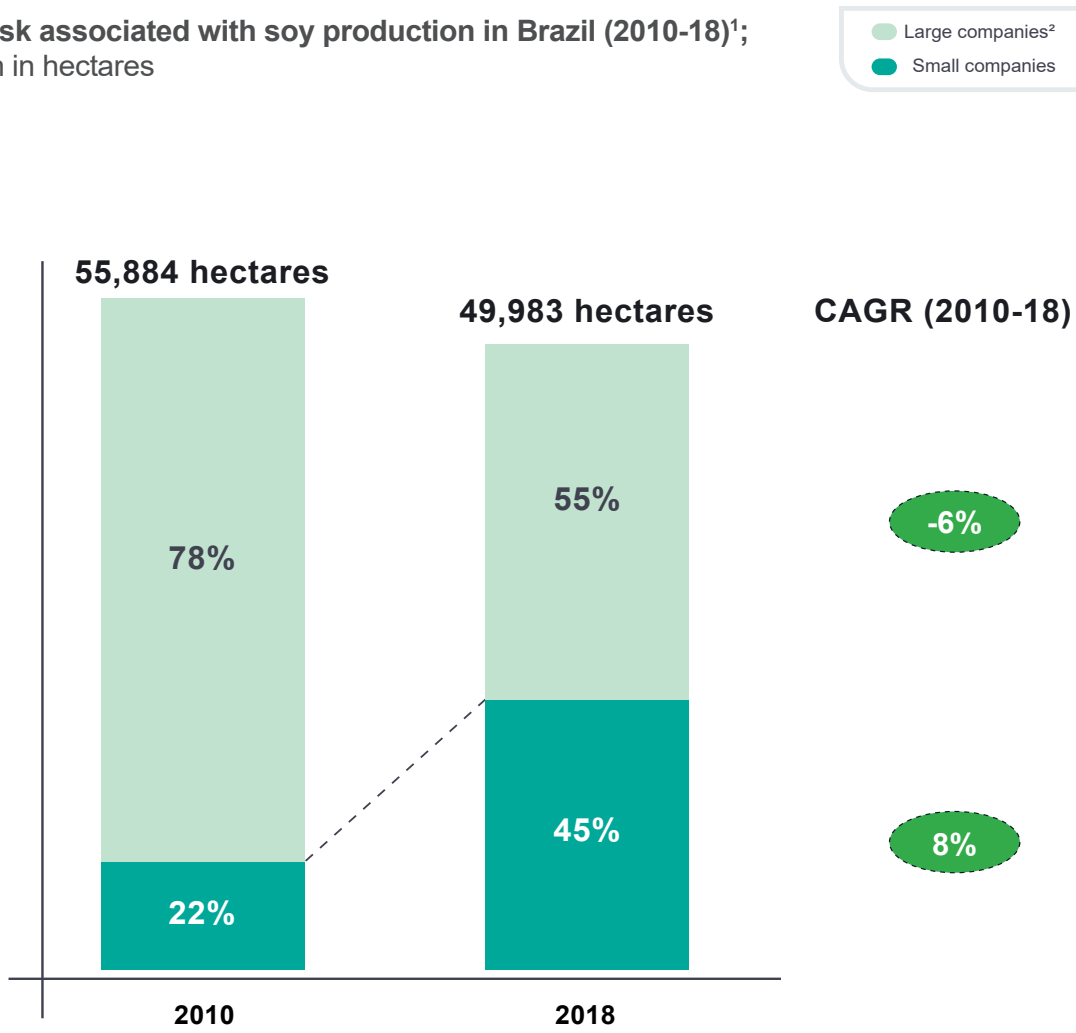
Variations in demand for sustainable and/or 'deforestation-free' commodities, driven by the presence or absence of legislation or the voluntary commitments of sourcing companies, risks the emergence of "two-tier" supply chains. In such supply chains, companies that supply markets (or downstream buyers) with no requirement for commodities to be 'deforestation-free' continue to drive production and forest conversion at the forest frontier, whilst companies that supply markets or customers with stringent sustainability commitments source from lower-risk areas.

30 Rikolto Website. Available at: https://www.rikolto.org/en/project/cocoa-flores-indonesia; RSPO Website. Available at: https://rspo.org/smallholders; and LCA for Agriculture (2019). *Integrating diversity of smallholder coffee cropping systems in environmental analysis*. Available at: https://link.springer.com/article/10.1007/s11367-019-01689-5
31 Proforest (2017). *The High Carbon Stock Approach: An update.* Proforest Responsible Sourcing and Production Briefing 07.
32 R Piraird et. al (2015). *Deforestation-free commitments – The challenge of implementation: An application to Indonesia.*
33 RSPO (2020). "RSPO Smallholders" Available at: https://rspo.org/smallholders
34 Jezeer R. and N. Pasiecznik (2019). *Exploring Inclusive Palm Oil Production.* ETFRN News 59. Tropenbos International, Wageningen, the Netherlands
35 Xiahoue Weng (2019). "Can forests and smallholders live in harmony in Africa?" Available at: https://forestsnews.cifor.org/60901/can-forests-and-smallholders-live-in-harmony-in-africa?fnl=en
36 Jane Nelson (2019), *Leave No One Behind: Time for Specifics on the Sustainable Development Goals; Chapter 4: No Smallholder Farmer Left Behind.* Brookings (Sep. 2019). Available at: https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter4.pdf
37 Conservation International (2019), *Exploring the reality of the jurisdictional approach as a tool to achieve sustainability commitments in palm oil and soy supply chains.* Available at: https://www.conservation.org/docs/default-source/publication-pdfs/jurisdictional_approach_full_report_march2019_published.pdf?Status=Master&sfvrsn=23c977ae_3
38 TFA (Tropical Forest Alliance) (2019). A "commodity-first" approach to identifying landscapes for private sector engagement. World Economic Forum, Geneva, Switzerland.
39 RSPO (Roundtable on Sustainable Palm Oil) (2019). Public consultation: Jurisdictional approach for RSPO certification. Available from: https://rspo.org/news-and-events/announcements/public-consultationjurisdictional-approach-for-rspo-certification
40 Jurisdictional approach can be civil society, government or private sector led and the focus is on helping tropical forest-rich regions adopt sustainable production approaches rather than simply ensuring sustainable sourcing approaches in the supply chains of large companies; TFA (2019), *A "commodity-first" approach to identifying landscapes for private sector engagement.* Available at: https://www.tropicalforestalliance.org/assets/Uploads/TFA-Commodity-First-Landscapes-April-2019.pdf

Changes in sourcing and the associated risks of large and small companies can be seen in the Brazilian soy sector between 2010 and 2018. During this time, the deforestation risk[41] associated with smaller companies (those accounting for less than five percent of global trade) increased by eight percent (Exhibit 6), with the majority of this risk originating from new production regions at the forest frontier (Exhibit 7). For example, the sourcing risk associated with soy production in the MATOPIBA region (Maranhao, Tocantins, Piaui, and Bahia states) linked to smaller companies increased noticeably from 59 percent in 2010 to 84 percent in 2018, while the total traded volume of soy in the same region increased only marginally from six percent in 2010 to 12 percent in 2018. In comparison, the sourcing risk associated with the MATOPIBA regions for larger companies in the soy sector remained constant at 64 percent between 2010 and 2018.[42] In the context of growing global demand for forest risk commodities, exploiting this unequal playing field may even constitute a strategy to secure market share in some competitive sectors, which may accelerate negative impacts on forests. At the same time, an increased diversification of suppliers in key sectors and areas makes engagement and pre-competitive collaboration challenging.

EXHIBIT 6: DEFORESTATION IN THE BRAZILIAN SOY SECTOR IN 2010 AND 2018

Deforestation risk associated with soy production in Brazil (2010-18)[1];
Percentage; sum in hectares



1. This measure of deforestation risk is calculated based on total deforestation in the previous five years that is associated with soy expansion per jurisdiction (ha), averaged across the 5-year period to give an annual rate.
2. Includes companies which account for more than 5% of total trade in Brazil for soy (a total of 7 companies) in 2018; additionally, there are 181 small companies
SOURCE: Trase; AlphaBeta analysis

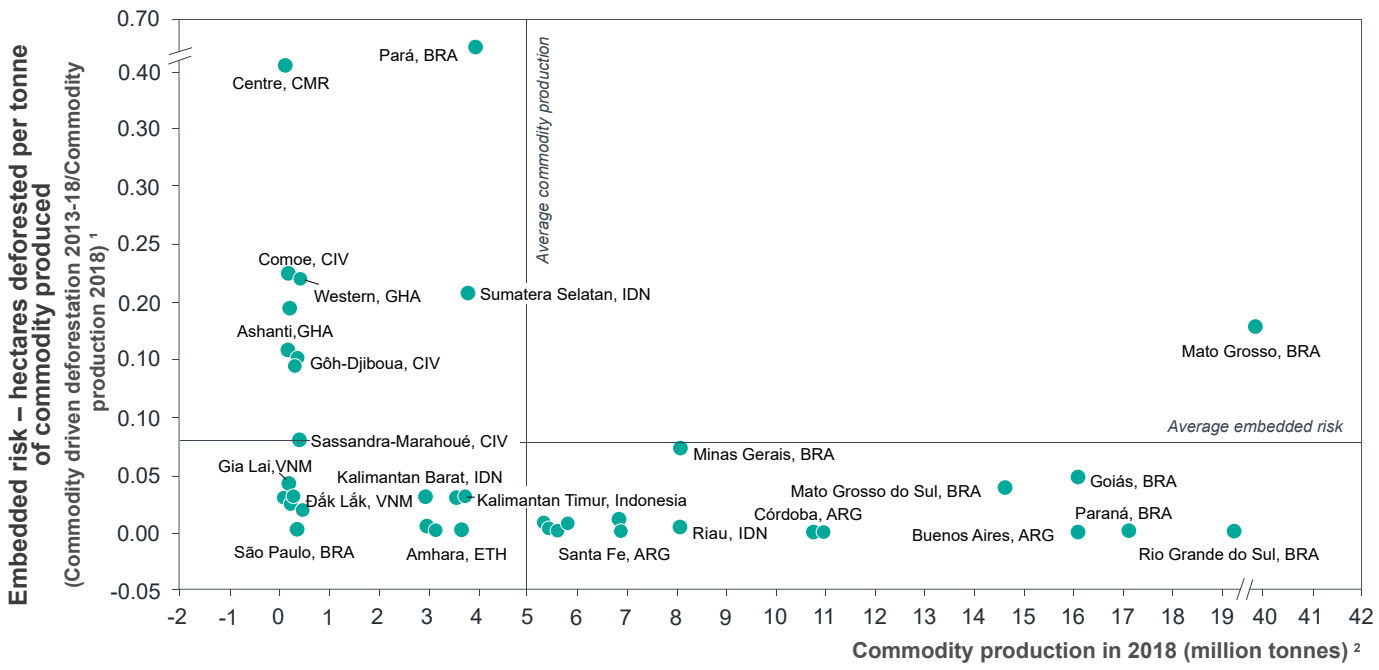
41 Deforestation risk is the Trase definition of risk associated with deforestation, calculated based on total deforestation in the previous five years that is associated with commodity expansion per jurisdiction averaged across the 5-year period to give an annual rate.
42 Calculated using Trase data. Trase (2020). *Bulk Supply Chain Data*. Available at: https://trase.earth/data?lang=en

'Embedded deforestation risk' is higher in emerging production areas at the forest frontier

These challenges demonstrate how existing approaches have resulted in an increased focus on high commodity-producing regions that represent lower deforestation risk. An assessment of 'embedded risk'[43] (defined as recent deforestation per tonne of commodity) across subnational production regions[44] shows a higher risk per tonne in emerging production areas with lower commodity volumes compared to more established production areas with higher production volumes where forests may have already been converted or degraded (See Exhibit 7). For example, although Brazil's Mato Grosso is a key producer of both soy and cattle, the 'embedded risk' associated with production is almost four times lower than in Para, which is an important, but a smaller producer of cattle in comparison (with around half of Mato Grosso's cattle production). We also find that deforestation is increasing at a higher rate annually in areas with lower production volumes at the forest frontier; indicative of the increasing threat commodity production is posing to forests in these areas. For example, the average annual rate of increase in deforestation from 2013 to 2019 in Para, at the frontier of deforestation, was significantly higher (39 percent) than in Mato Grosso (26 percent).[45] Similarly, the rate of increase in Indonesia's Sumatra Selatan is also higher than that of Riau (15 percent in comparison to 8 percent).[46,47] Prioritising interventions in areas that are responsible for lower (but increasing) commodity volumes and increasing deforestation provides an alternative pathway for targeting efforts towards regions in most need of support.

EXHIBIT 7: EMBEDDED DEFORESTATION RISK IN EMERGING PRODUCTION AREAS AT THE FOREST FRONTIER

Embedded risk and commodity production for key commodities



1. The embedded risk is calculated as a weighted average of risk associated with each commodity for each sub national region; i.e. Weighted average of (a) deforestation associated with soy/volumes of soy produced; (b) deforestation associated with cattle/volumes of cattle produced; c) deforestation associated with palm oil /volumes of palm oil produced; (4) deforestation associated with cocoa/volumes of cocoa produced; (5) deforestation associated with coffee/volumes of coffee produced, weighting by deforestation associated with the commodity

2. Sum of production (in tonnes) of the 5 deforestation linked commodities;

SOURCE: Goldman et al. 2020; GFW database; AlphaBeta analysis; FAO Stat; Literature review

43 Embedded risk differs from deforestation risk in the calculation methodology and data source. Embedded risk has been calculated using National statistics for production data and GFW for deforestation data. It is calculated as a weighted average of risk associated with each commodity for top production subnational regions (commodity driven deforestation 2013-18/commodity production 2018), weighting it by deforestation associated with the commodity.

44 This analysis focuses on a selection of high commodity-producing regions for which subnational production data were available and is intended to illustrate the distribution of risk between jurisdictions relative to commodity volumes rather than represent a prioritisation exercise.

45 Calculated as an average of yearly change between 2013-19 to avoid biases due to extreme values.

46 It is important to recognise that this analysis is directional and not absolute, and does not incorporate the trajectory of land use change or the length of time between the deforestation event and the establishment of the commodity. We have tried to account for this by taking aggregated deforestation 2013-18. Further, there are also limitations in the data available, in that, in some areas, deforestation may be overestimated as not all forms of tree cover loss are deforestation.

47 WRI (2020). "Estimating The Role Of Seven Commodities In Agriculture-Linked Deforestation: Oil Palm, Soy, Cattle, Wood Fiber, Cocoa, Coffee, And Rubber" Available at: https://files.wri.org/s3fs-public/estimating-role-seven-commodities-agriculture-linked-deforestation.pdf?c5LkqUrzu26_c17r7DE9AZB6mGWN5g7o

3. THE FOREST FIRST APPROACH: PRIORITISING THE FOREST AND FARM FRONTIER TO ADDRESS DEFORESTATION AND SUPPORT FARMERS

Hitting a moving target – Re-defining "risk" to enable protection of standing forests

Many brands, commodity producers, and traders have made considerable progress towards securing traceable and verified deforestation-free supply chains, supported by the actions of producer and consumer country governments. However, while essential and effective in places, the majority of the strategies relied upon to identify and tackle commodity-driven deforestation are designed primarily to mitigate corporate exposure to supply chain risk, rather than to actively protect standing forests, they work most effectively in areas where deforestation has taken place historically. The lag time between any initial forest clearance and subsequent crop or commodity maturity is such that by the time substantive deforestation risk materialises in supply chains, forests have already been converted or degraded at scale. Global deforestation rates and lessons from the last decade of implementation have also taught us that actions taken to avoid or mitigate further deforestation and associated supply chain risks at this point are complex and expensive, and can be prone to failure. We are, in effect, trying to hit a moving target – but by the time we take aim, forest has been lost and the deforestation frontier has moved on.

The Forest First Approach is centred on the principle that prioritising efforts towards forest frontiers has the potential to reduce current deforestation whilst providing pre-emptive protection against the future conversion of adjacent intact or primary forests. For this approach to be effective, we must consider where and how interventions are enacted to tackle deforestation, now and in the future, by first re-defining how deforestation risk within supply chains is understood, recognising the links between emerging production areas at the forest frontier and future supply chain risk, and then by re-thinking the framing of corporate responsibility to encompass support for measures beyond the immediate supply chain that pre-emptively protect intact and primary forests from future production. This framing enables the public and private sector to proactively triage and target emerging deforestation risks before they are heavily embedded within supply chains and provides a lens through which emerging deforestation frontiers can be identified. This is critical to counter the emergence of a two-tier market, with progress among a subset of companies and a primary focus on lower-risk areas in one tier, and business as usual production and supply chains linked to unchanged, and often increasing, deforestation in higher risk areas in the other.

The Forest First Approach is intended to be a set of guiding principles that are essential components of strategies to tackle the deforestation challenges we face. It is not intended as a manual or toolkit that determines where and how to engage, which will depend on the stakeholder applying the approach, and should always be driven by local contexts and the needs of local stakeholders. It is also not intended to replace, but to reinforce, other efforts in support of sustainable production and supply chains as well as other vital forest conservation measures. For example, increasing recognition and support for Indigenous Peoples' rights to ensure their active role in decision-making over forest areas,[48] and supporting the development and well-resourced management of a network of protected areas. The guiding principles of **The Forest First Approach** are:

48 Fa et al. (2019). *Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscapes*. Available at https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1002/fee.2148

Guiding Principles of The Forest First Approach

Principle 1: Prioritise actions to the forest frontier, where 'embedded risk' of deforestation in commodity production is highest and intersects with at-risk primary and intact forests

Key considerations:

i. Importing countries (including the US, UK, and the EU) are already pursuing ambitious measures that eliminate products linked to deforestation from their imports and markets to help close the gap between voluntary and regulatory action on deforestation. Consideration should be given to ensure that these measures actively support interventions at the forest frontier, to maximise contributions to meeting development, climate and biodiversity conservation objectives, but also to account for the challenges outlined in this study, in particular the risk of continued deforestation and deforestation leakage under two-tier supply chains.

ii. Targeted development assistance to the forest frontier, including, for example, support for locally-led sustainable land-use planning, could create an enabling environment for the successful implementation of due diligence legislation designed to tackle deforestation. Development assistance and philanthropy, particularly the use of sustainable and blended finance, can also play a critical role in de-risking private sector engagement and financial investment in these areas.

iii. Applying the forest first lens across a country's imports can help direct efforts and support to smaller production areas that represent disproportionate deforestation risk in import volumes. For example, China obtains 75 percent of its soy imports from Brazil. While Mato Grosso has the highest share of soy exports to China (16 percent of total Brazil soybean exports to China), the highest deforestation risk (78 percent of total) is associated with the MATOPIBA region (Maranhao, Bahia, Piaui and, Tocantins), compared with Mato Grosso (13 percent of the total). Similarly, India obtains 75 percent of its palm oil from Indonesia. Although the province of Kalimantan Barat has a low share of exports (just 3 percent of total Indonesian palm oil exports to India), it carries the highest associated deforestation risk (24 percent of total deforestation risk associated with palm oil production for exports to India).[49]

iv. From a private sector perspective, companies can apply the forest first lens across their sourcing regions to identify and target support to priority at-risk landscapes, representing potentially low production volumes but high deforestation risk. Identifying priority areas from the ground up and targeting actions to those areas has the potential to pre-emptively address future deforestation risk and avoid the need for full traceability as a risk mitigation strategy, which is costly and likely ineffective in supply chains with complex and inconsistent market links. This prioritisation can increase private sector impacts in reducing deforestation and contributing to climate and biodiversity goals, whilst mitigating deforestation risk. However, this needs to be undertaken alongside other actions to improve the sustainability of supply across a company's sourcing, including to ensure that human rights are0 upheld.

Principle 2: Support smallholder farmers and local communities at the forest frontier

Key considerations:

i. Securing a living wage for farmers at the forest frontier is a key building block to preventing future forest conversion and supporting smallholder farmers that underpin commodity sectors. There is therefore an urgent need for supply chain actors across sectors, supported by private investors and philanthropic donors, to actively identify, engage and invest in smallholder farmers. There is a strong business case for these actions - investments in replanting, good agricultural practice training, and other agricultural extension services at the forest frontier in the near-term can avoid future deforestation risk, and associated reputational and operational costs, secure long-term sustainable supply, and generate returns on investment. A proactive approach in the near term is likely to be orders of magnitude cheaper than reactive measures designed to mitigate or compensate for 'embedded risk' implemented at a future date.

49 TRASE (2020). "Methods and data" Available at: https://trase.earth/about/methods-and-data?lang=en

ii. The horizon of corporate responsibility needs to shift to identify and foster stronger relationships with smallholder producers at the forest frontier, even in areas beyond current supply sheds. This approach offers an opportunity to target more strategic engagement to pre-emptively tackle future deforestation and contribute to the protection of standing forests, climate change mitigation and biodiversity conservation efforts. Failing to do so is likely to create a material risk for the future sourcing of commodities from that region. Engaging smallholder farmers in efforts to reduce deforestation is doubly important as they not only underpin agricultural commodity sectors but are powerful allies in forest conservation as their lives and livelihoods often depend on the ecosystem services provided by forests.[50] New private sector strategies, policies, and standards related to deforestation should include robust criteria that enable monitoring and reporting on the levels of investment made to support smallholder inclusion in supply chain transitions to sustainability.

Principle 3: Catalyse collective action, and collective responsibility, at the forest frontier.

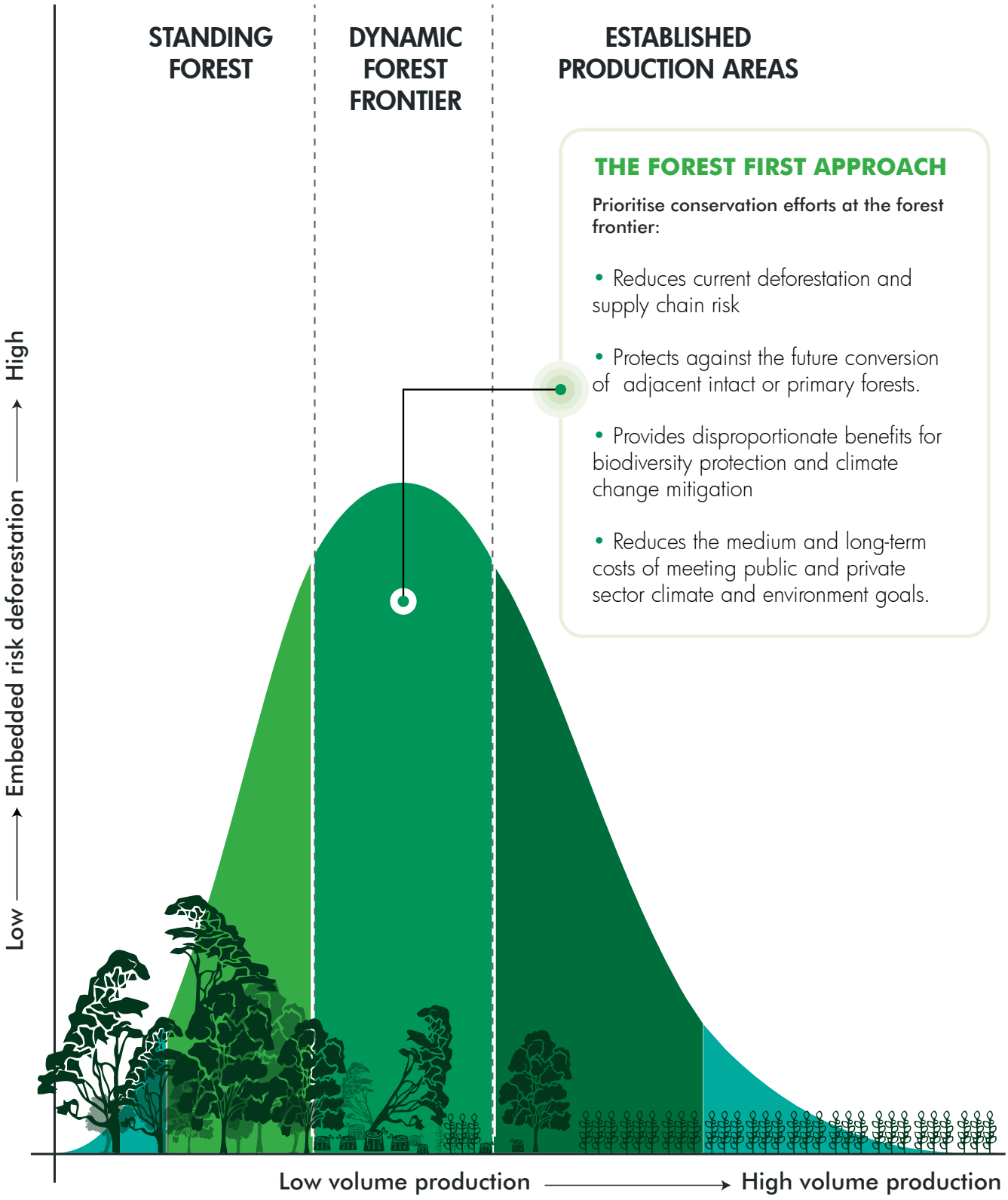
Key considerations:

i. There is a need for the private sector to proactively identify opportunities to form pre-competitive collaborations around forest frontier areas at risk of current and near-future conversion. Pre-competitive collaboration between companies can achieve sector-wide shifts in production and sourcing behaviour, and can drastically reduce the costs of engaging and supporting smallholders and undertaking shared monitoring and verification. In some cases, this can support effective risk mitigation without the need for full traceability and can mitigate the impacts of emerging two-tier supply chains. Industry roundtables and coalitions should also explore new approaches and promote sectoral collaboration to support pre-emptive action against deforestation and interventions that enable engagement in high-risk landscapes.

ii. Donor governments must play a role in supporting these collaborations, and in de-risking continued private sector engagement at the forest frontier, either through scaling up existing jurisdictional approaches, or by targeting aligned development assistance to high-risk landscapes within these jurisdictions. Without this explicit support, there is a risk that many "good actors" will seek to consolidate sourcing from "safer" jurisdictions, away from the forest frontier, and the demand signals for deforestation will remain unchanged. This may also lead to negative social and economic consequences for smallholder farmers at the frontier. Emerging tools, such as Landscale,[51] can create a standardised framework to measure progress over time to address deforestation, and drive incentives and finance towards forest frontiers, in line with and in support of broader domestic and international policy goals.

50 IFAD and UNEP (2013). Smallholders, food security and the environment. International Fund for Agricultural Development, Rome, Italy.
51 Verra (2020). "Landscale – Driving improvements in sustainability across landscapes" Available at: https://verra.org/project/landscale/

EXHIBIT 8: THE FOREST FIRST APPROACH - ADDRESSING THE HIGH CONCENTRATION OF TROPICAL DEFORESTATION, AND SUPPLY CHAIN DEFORESTATION RISK, AT THE FOREST AND FARM FRONTIER



Conclusions

An increasing proportion of tropical deforestation, and supply chain deforestation risk, is concentrated in relatively few regions at the forest and farm frontier. These areas are often characterised by relatively low (but rising) production volumes, increasing rates of deforestation, and often a high proportion of independent smallholder farmers. These locations – which are less likely to benefit from the presence of voluntary certification schemes, and where jurisdictional approaches are either nascent or absent – have, to date, remained relatively invisible within leading public and private sector efforts to tackle deforestation. The future risk of sourcing commodities from these areas is likely to be higher than in many major commodity -producing regions, which are likely to have already been significantly degraded or deforested.

Prioritising efforts towards areas at the forest frontier, guided by the principles of **The Forest First Approach** has the potential to reduce current deforestation and supply chain risk whilst providing pre-emptive protection against the future conversion of adjacent intact or primary forests, and has disproportionate benefits for mitigating climate change and protecting biodiversity through the protection of intact and primary forests. These inherent benefits to targeting efforts at the forest frontier are also likely to represent significant medium and long-term cost savings to the public and private sector and should be explored as a matter of priority.

Citation:
Leggett, M. and Lawrence, L. 2021. The Forest First Approach. A new framing that addresses supply chain risk and reduces deforestation at the forest and farm frontier. Wildlife Conservation Society, New York, US.

Our Mission
WCS saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature.

Our Vision
WCS envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on earth.

WCS is a proud partner of Trillion Trees, a joint venture between Birdlife International, WCS and WWF, founded on a vision for a world where tree cover is expanding not shrinking. For more information, please visit www.trilliontrees.org

The Tropical Forest Alliance is a multistakeholder partnership, hosted by the World Economic Forum. Its 170+ alliance partners include companies, government entities, civil society, indigenous peoples, local communities and international organizations, working together through Forest-Positive Collective Action to advance the world's transition to deforestation-free commodity supply chains.

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