

GOAL 2: Support and help meet the private-sector goal of eliminating deforestation from the production of agricultural commodities such as palm oil, soy, paper, and beef products by no later than 2020, recognizing that many companies have even more ambitious targets

Key messages

- The number of corporate commitments to reduce or halt deforestation driven by agricultural commodity supply chains reached 797 in 2018. After several years of rapid growth, the pace of new commitments has slowed markedly from a 77 percent increase in 2014 to less than 2 percent in 2018.
- Commitments have reached significant shares of certain commodity markets, yet major gaps remain. Commitments cover large shares of production in international palm oil markets (65 percent) as well as the largest paper and pulp players operating in tropical regions (70 percent), while the shares are low in the global soy and beef markets.
- Across the different sectors, a sample of companies shows that the majority of those with existing commitments have started translating their commitments into action. Despite signs of progress in implementation, comprehensive data to assess the effectiveness of these actions in reducing deforestation is still lacking.
- Support from financial institutions, governments, and civil society for the advancement of corporate commitments is increasing, but progress is incidental. Efforts remain limited in scope and scale.

OVERVIEW OF GOAL AND INDICATORS

Goal 2 aims to help the private sector eliminate deforestation from agricultural commodities such as palm oil, soy, cattle and wood products (including timber, pulp, and paper).

Commercial agriculture as a driver of deforestation

Commercial agriculture is the largest driver of forest loss. The production of the “big four” commodities alone (palm oil, soy, cattle and wood products) has an enormous impact on forests and was responsible for the deforestation of about 113 million hectares – almost the size of South Africa – in tropical regions between 2000 and 2012.¹¹ While cattle and soy production have the greatest impact in South America, palm oil and logging are major drivers of forest loss in Southeast Asia, and increasingly in West Africa. A substantial share of this deforestation (e.g., 44

percent for soy) is embedded in global exports, with the largest importers in the European Union, China, and the rest of Asia.^[2]

Efforts to address deforestation in agricultural supply chains

Recognizing their responsibility to protect forests, an increasing number of consumer goods and producer, processor, and trader companies in the agriculture sector have pledged to reduce or eliminate deforestation in their supply chains. Across supply chains, companies adopt different strategies to implement their commitments. These strategies may include attaining external certification or establishing traceability systems to monitor internal and external compliance to company standards. Governments, nongovernmental organizations (NGOs), and the financial sector support supply-chain companies in their efforts. Governments can adopt and enforce laws, formulate policies, and directly invest in farmers and farming support. Civil society can provide producer training and finance, act as watchdogs to support accountability efforts, or directly assist supply-chain companies in developing and implementing their commitments through collaborative partnerships. Financial institutions can encourage company compliance by adopting safeguard policies, establishing clear compliance deadlines and consequences, and providing incentives for high performance and support for sustainability transitions.^[3]

Assessing progress

Comprehensively assessing progress toward Goal 2^[4] is limited by major constraints and uncertainties such as limited sample size, the lack of appropriate proxy data, and a lack of verification of self-reported data. We often do not know to what extent companies with commitments are exposed to deforestation risks because available data do not distinguish between supply from risk and non-risk geographies. Despite some progress, many companies remain reluctant to share data and the information they provide is often vaguely defined, incomplete, or buried in sustainability reports.

Aside from case studies like the Soy Moratorium and cattle sector agreements in Brazil which show evidence of regional benefits for forests, none of the efforts measured in the first three criteria in Table 1 have been directly linked to on-the-ground impacts on forests. Without a reliable way to measure aggregate impacts of agricultural commodities, it remains to be seen whether the implementation of commitments will translate into reduced deforestation at scale. There is, however, evidence that corporate efforts to address deforestation have had impacts on the activities of actors along their supply chains, primarily among the large trading groups in the middle of the chains, which, in some cases, have led to better management of agricultural areas.^[5] Supply-chain actors are improving their transparency and accountability, and commitments have contributed to increased awareness about the links between agricultural commodities and deforestation. The supply-chain movement has also driven an adoption of new practices and policies and has encouraged cross-sectoral engagement, such as reinforcing national priorities and commitments in company commitments.

For the [2016 NYDF Progress Assessment](#), we developed an assessment framework that provides a comprehensive tool for measuring progress toward Goal 2 based on four criteria. This update largely builds on a [Progress Assessment of Corporate Commitments and their Implementation](#),

commissioned by Tropical Forest Alliance 2020 and conducted by several NYDF Assessment Partners.

Table 1. Criteria and indicators to track Goal 2

CRITERIA	INDICATORS
1. Forest-related commitments by companies	1.1 Commitments by companies
2. Implementation of private-sector forest commitments	2.1 Adoption of policies 2.2 Traceability and monitoring of commodity sourcing 2.3 Reporting of progress
3. Support by financial institutions, the public sector, and civil society	3.1 Forest policies by financial institutions 3.2 Improvements in forest governance and public policies 3.3 Support by civil society
4. Impact on deforestation	4.1 Reduction of deforestation associated with a particular commodity

FINDINGS

Criterion 1: Forest-related commitments by companies

Indicator 1.1: Commitments by companies

Forest Trends' [Supply Change Initiative](#) tracks the commodity-driven deforestation commitments of companies with risk exposure in palm oil, soy, timber and pulp, and cattle products. As of July 2018, 473 companies have made 797 commitments to end deforestation driven by agricultural commodity supply chains, compared with 785 commitments from 471 companies as of August 2017. Cattle and soy continue to be the sectors with the smallest number of commitments, though there are important regional sectoral agreements in which they participate.

After several years of rapid growth, the pace of new commitments has slowed in the past few years. Annual growth shrank from 77 percent in 2014 to less than two percent in 2018.^[6] This slower growth rate may indicate a market saturation, as the companies interested in supporting these efforts or most exposed to reputational risks have already made commitments. Some companies might also be reluctant to endorse efforts such as the NYDF and the Consumer Goods Forum's Deforestation Resolution because their 2020 target year for achieving the goal of deforestation-free supply chains leaves little time for implementation.

Figure 1. Forest-related commitments in different commodity supply chains



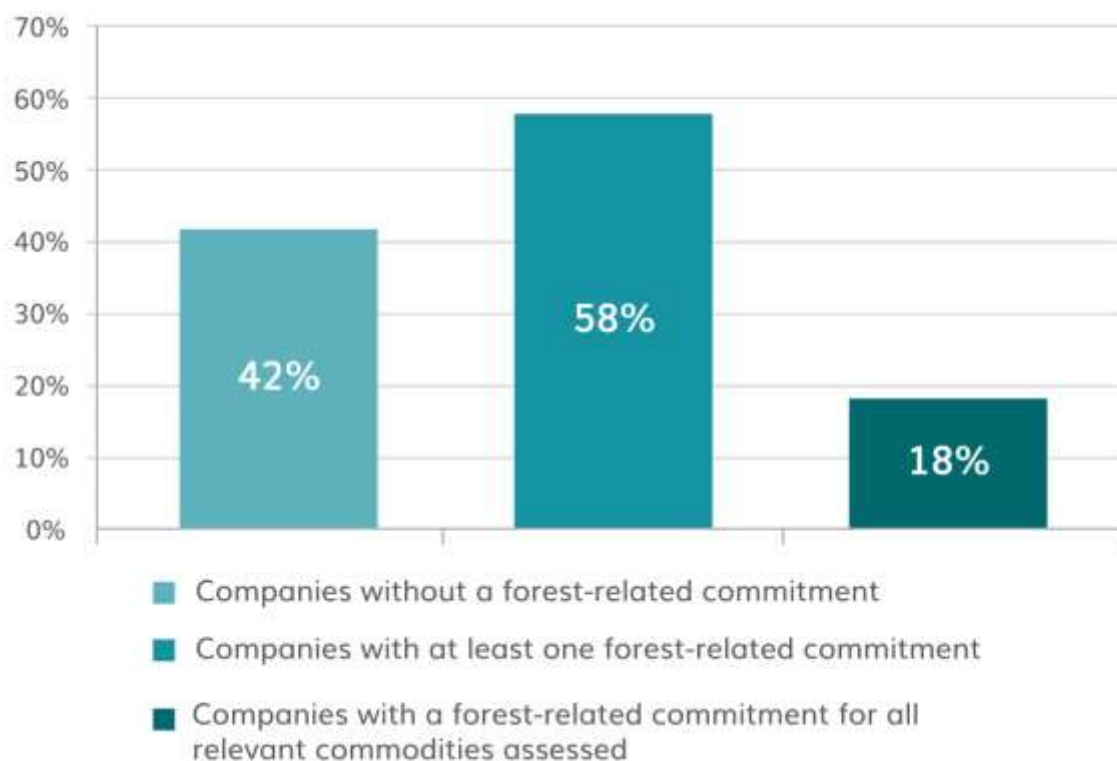
Source: Compiled by Climate Focus based on data presented on Supply-Change.org in July 2018.

Other developments

Market share of commitments

Of the 250 companies with the greatest exposure to forest-risk commodities, 58 percent (144 companies) have at least one forest-related commitment (Figure 2), according to [Forest 500](#), a project of the nonprofit Global Canopy that identifies and ranks the most influential companies, financial institutions, and governments in forest-risk commodity supply chains. That means that 42 percent of these large and influential companies still do not have a commitment, while only 18 percent have commitments covering all forest-risk commodities in their operations.^[2] This figure also fails to capture production and consumption by smallholders and medium-size companies, which often account for a large share of production (e.g., 40 percent in the palm oil sector).^[8]

Figure 2. Share of Forest 500 companies with and without commitments, in percent



Source: Compiled by Climate Focus based on 2017 from Global Canopy.

Of the four commodity sectors, palm oil, mainly produced in forest-risk areas, has the highest global uptake of forest commitments from major companies (Figure 3), reaching two thirds of its market.^[9] However, regional analysis of major producer companies in Indonesia and Malaysia – which together supply 85 percent of the world’s palm oil^[10] – shows that less than one third of these countries’ palm oil production area is under commitment by producers. At least 11 million hectares in these two countries are not yet covered, partly because smallholders who manage large areas are not typically covered by commitments. This lack in geographic coverage may be compensated by the commitment of major palm oil refineries to sourcing their oil from companies with commitments to no deforestation, no planting on peatlands, and no exploitation of workers or local communities; 74 percent of Indonesia and Malaysia’s palm oil refining capacity is covered by such policies.^[11]

Figure 3. Share of global production of palm oil, soy, cattle products, and paper and pulp under a commitment in 2017, in percent



Source: For soy, cattle and palm oil commitments, CDP. For global production data, USDA and FAOSTAT. For paper and pulp data, Climate Focus analysis based on publicly available information on companies' webpages and data published by RISI, and FAOSTAT for global production data.

Note: Paper and pulp data show the share of volume under commitment for the 20 largest producers with operations in Latin America and Asia.

The share of the global production of soy, cattle, and paper and pulp covered by deforestation-related company commitments remains much lower (11 to 12 percent, see Figure 3).^[12] If only international exports of soy and cattle from forest-risk regions are considered, these sectors reach coverage levels similar to palm oil. In the paper and pulp sector, a sample of 20 of the largest producers operating in Asia and Latin America shows that more than 70 percent of production volume is under a forest-related commitment.^[13] Brazil, a global deforestation hotspot and major producer of soy and beef, has made significant progress in its international market, which has experienced a large growth in exports, especially to emerging economies. Eighty-five percent of soy exports from the Amazon (mainly Brazil) in 2015 were covered by the Amazon Soy Moratorium,^[14] while in 2016, 42 percent of soy exports were covered by zero-deforestation commitments by soy traders.^[15] Also in 2016, three companies with zero-deforestation commitments (JBS, Minerva, and Marfrig) accounted for 60 percent of all Brazilian beef exports.^[16] Nevertheless, it remains unclear if efforts extend to domestic markets, which account for the most consumption (e.g., about 40 percent of soy and 80 percent of beef)^[17] and where consumer demand for sustainable practices is still low.

Quality of commitments

In general, palm oil sector companies tend to have high quality commitments^[18] that provide clear definitions for sustainable forest and land use. Roughly two thirds of commitments by Forest 500 palm oil companies are high quality. The Sustainability Policy Transparency Toolkit (SPOTT)^[19] found that almost half of the 50 palm oil producers and traders assessed have specific commitments to no deforestation, no peat, and no exploitation.^[20] In other commodities, the share of high-quality commitments by Forest 500 companies is low (5 to 11 percent).

In some sectors and regions, rather than relying on public announcements of commitments, companies have focused on sectoral agreements and compliance with legal requirements as a means to address deforestation risks in their supply chains. The majority of Brazilian companies active in the soy and beef supply chains use sectoral strategies that clearly define requirements, timelines, and geographic scopes. All major soy companies support the Soy Moratorium, and 70 percent of beef slaughtering capacity is covered by companies that have signed collective agreements, such as the G4 Agreement between the three largest meatpackers and Greenpeace, or the legally binding Terms of Adjustment of Conduct agreements between meatpackers and Brazil's federal public prosecutor.^[21] While these sectoral agreements set clearly defined terms and compliance measures, they can also be subject to leakage, such as driving bad practices to other areas. For example, the Soy Moratorium covers only the Amazon region, which has led to increased deforestation in other regions.^[22] Individual company commitments that go beyond these agreements are often vague, lacking clear targets.^[23]

Criterion 2: Implementation of private-sector forest commitments

Indicator 2.1: Adoption of policies

There is progress in the implementation of commitments through policy adoption, with action in all supply chains.^[24] Close to three quarters of companies that responded to CDP's^[25] disclosure request^[26] have adopted environmental standards for production or procurement. Over 90 percent of manufacturers and retailers across commodities reported direct engagement with suppliers to improve implementation of forest commitments, though very few offer financial (up to nine percent, depending on commodity) or technical (up to 16 percent) support to suppliers. Only one third to one half of downstream companies – manufacturers and retailers – in all commodities conduct supplier audits to ensure compliance. About three quarters of producers, processors, and traders report working with smallholder farmers to reduce forest impacts.

Figure 4. Share of companies with commitments that have adopted policies or strategies, in percent



Working with direct suppliers



SUPPLY CHAIN POSITION:



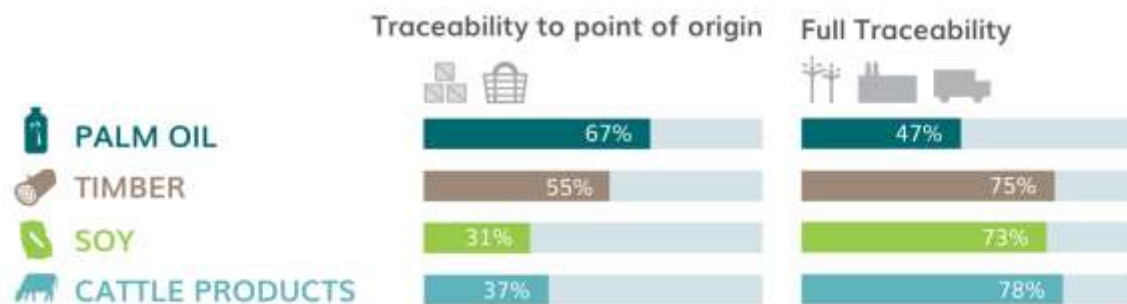
Source: Compiled by Climate Focus based on 2017 data provided by CDP's Forests Program.

Note: Data covers 201 companies that responded through CDP's Forests Program up until August 2, 2017.

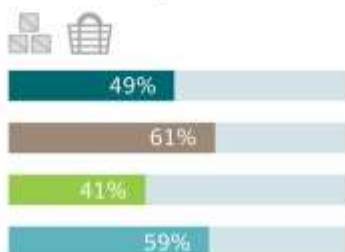
Indicator 2.2: Traceability and monitoring of commodity sourcing

Traceability systems are an important tool for companies to monitor compliance with their own standards, and many companies are making progress on implementing these systems. According to CDP data, on average, three fourths of producers, processors, and traders with commitments in cattle, soy, and timber can fully trace their production or consumption to the point of origin. Fewer than half of palm oil companies report the same capability. Among downstream companies, only about a third of manufacturers and retailers can trace soy and cattle products back to the point of origin, compared to more than half of palm and timber and pulp companies.^[27] An analysis by Supply Change in late 2017 found that less than half of companies with forest commitments have indicated a specific intent to implement a traceability system, though some companies are mapping their supply chains even without a commitment to do so.^[28] Other companies may find internal traceability systems to be redundant; for example, a soy retailer may choose to implement its deforestation-free commitment by sourcing only from traders who are signed on to the Amazon Soy Moratorium, which would theoretically negate the retailer's need to trace the product to its point of origin.

Figure 5. Share of companies with commitments that have traceability systems in place, in percent



Traceability > 90%



SUPPLY CHAIN POSITION:



Source: Compiled by Climate Focus based on 2017 data provided by CDP's Forests Program.

Note: Data covers 201 companies that responded through CDP's Forests Program up until August 2, 2017.

Indicator 2.3: Reporting of progress

Supply Change found in 2017 that, among companies with a specific commitment to implement traceability systems, over half are regularly disclosing their progress on systems implementation.^[29] However, self-reported company data are rarely independently verified and often lack specificity on suppliers, sourcing areas, and other information necessary to conduct third-party verification. No recent, reliable, and aggregate data are available to measure progress on this indicator.

Other developments

Progress on adoption of certification schemes

Based on CDP analysis, 84 percent of palm oil companies with a forest commitment use certification, with more than half of companies reporting that over 60 percent of at least one of their products is certified. Palm oil producers and processors in Malaysia and Indonesia in particular show advanced progress on implementation of their commitments, since most companies have adopted certifications, according to SPOTT.^[30] However, certification still covers only 18 percent of the total palm oil cultivation area in these two countries.^[31] Emerging markets

like China and India have very low demand for certified palm oil, leaving companies that target these regions with few incentives to adopt certification.^[32]

An analysis of paper and pulp companies active in Latin America and Asia shows that almost all commitments in this sector are implemented through certifications.^[33] Eight of the 20 largest paper and pulp companies in these regions report that all of their timber, all of their production, or all materials procured are certified. However, SPOTT data on the timber and pulp sector – a broader category – found that only six percent of companies report that any of their supply is verified as legal by a third party, and only eight percent of companies have achieved 100 percent Forest Stewardship Council Forest Management certification.^[34] In contrast, 80 percent of Forest 500 companies in the timber and/or paper and pulp sector utilize certifications.^[35] Most of these companies are based in Europe or North America, whereas, of the 50 companies assessed by SPOTT, only six were based in Europe, with the rest in Asia, Africa, and Latin America.^[36]

Attaining third-party certification requires companies to meet clear production and chain-of-custody requirements, including requirements for sustainable forest management. Therefore, certification schemes can serve as an indication of the quality of commitments. However they are limited as a proxy for progress in the implementation of commitments. Evidence of certifications' contribution to forest protection is mixed; while some studies have found that palm oil certification adoption somewhat reduces forest clearing,^[37] and specifically fire-related deforestation,^[38] another examination of the soy, palm oil, and cocoa sectors revealed little evidence that certifications have been effective at halting or slowing deforestation in commodity-producing regions.^[39] These shortcomings can be partly explained by a lack of sufficient market coverage. In addition, some certification schemes simply do not mandate strict enough protections for forests; for example, the existing RSPO Principles and Criteria do not prohibit the clearance of natural forests. Other certification weaknesses may include vague language of standards, low quality auditors, and loopholes, such as not accounting for companies using subcontractors to clear forests rather than clearing them directly. A 2016 analysis showed that palm oil producers have sometimes strategically opted for less stringent certification schemes.^[40]

Progress of sectoral agreements in Brazil

In Brazil's Amazon, soy and beef producers have largely used sectoral agreements to address deforestation. These agreements, which target the supply chain of a single commodity, have demonstrated positive impacts on forests while leaving much room for improvement.^[41] The Amazon Soy Moratorium remains one of the most successful strategies to curb deforestation. Although some of its impact was undermined by leakage – to other regions and to other commodities – the moratorium has effectively excluded sourcing from farms with illegal deforestation.^[42] The Cerrado Manifesto, adopted in 2017, shows important momentum to stop leakage from the Amazon, though big soy producers and most commodity traders have yet to sign on.^[43] Nonetheless, such initiatives can drive change: 20 Forest 500 companies with no previous forest commitment have signed the Cerrado Manifesto.^[44] Similarly, in the Brazilian beef sector, research indicates that companies' collaborations to achieve legal compliance have had a positive impact,^[45] though coverage must be improved. For example, the Terms of Adjusted Conduct agreements, which two thirds of federally inspected slaughterhouses have signed, theoretically prohibit purchasing cattle from farms with illegal deforestation. Yet, because these

agreements extend only to direct suppliers rather than to the point of origin, only 17 percent of cattle farms are reached.^[46]

Criterion 3: Support by financial institutions, civil society, and the public sector

In the absence of aggregate data or even a common understanding of how to measure stakeholder support, we summarize general trends and examples of successful support.

Indicator 3.1: Forest policies by financial institutions

Financial institutions are adopting policies around forest-risk commodities, but the overall proportion of those with commitments remains low.^[47] In June 2018, the Tropical Forest Alliance 2020 released a roadmap to financing deforestation-free commodities, which looks at why financial institutions worldwide are taking insufficient action or facing challenges and proposes a way forward. According to the report, progress has been slow in part because financial institutions require better guidance and tools to make a clear business case for action and to support them in recognizing good commodity policies and how to develop and implement them internally.^[48] For a more detailed analysis, see [Goal 8](#), Indicator 2.1: Policies for investment in forest-risk commodities.

Indicator 3.2: Improvements in forest governance and public policies

Within the public sector, governments and jurisdictions are making pledges and developing policies to halt deforestation and adopt sustainable land use. However, implementation and enforcement have been slow. Demonstrable actions include the adoption of high-level policies, the initiation of legal reforms, the formation of investment plans and monitoring capabilities, and the development of new public-private partnerships to halt deforestation and adopt sustainable land use.^[49] Examples include Colombia's multilateral commitment with Germany, Norway, and the United Kingdom to end natural forest loss by 2030; Indonesia's commitment to save natural forests and significantly reduce the rate of deforestation as part of the Reducing Emissions from Deforestation and Degradation (REDD+) strategy; and Liberia's zero-deforestation commitment, based on a 2014 agreement with Norway.^[50] More countries are preparing REDD+ programs, but approval and funding have been slow. In one of the largest multilateral REDD+ funding vehicles, the Forest Carbon Partnership Facility's Carbon Fund, more than 50 countries are developing programs, but only 11 have had their final emissions reduction program documents accepted into the portfolio and only six have made it (provisionally) to the final application stage.^[51]

Indicator 3.3: Support by civil society

NGOs and think tanks are providing tools to advance implementation of commitments and help address gaps in geographic and supply-chain coverage. These include the [Trase platform](#), [CDP forests](#), [Global Forest Watch](#) and the [Accountability Framework](#), civil society-led initiatives that work in different ways to track and assist in harmonizing supply-chain efforts across sectors and levels (see Criterion 4 for more information). However, such tools are not yet applicable on a broad scale. NGOs may also provide localized support as the Working Group of Indirect Cattle

Suppliers does in Brazil by working to improve accountability and transparency along the beef supply chain.

Criterion 4: Impact on deforestation

Indicator 4.1: Reduction of deforestation associated with a particular commodity

Despite the progress reported in criteria 1 and 2 on adoption and implementation of private-sector commitments, we still have a limited understanding of the effectiveness of these efforts and their impacts on forests. Therefore, assessing progress on reducing deforestation caused by particular commodities remains very difficult. However, new tools are being developed and refined that may provide answers within the next couple of years:

- [Global Forest Watch \(GFW\) – Commodities](#) is a dynamic online forest monitoring and alert system that breaks down satellite data into mosaics and overlays it with open-sourced commodity data. Over the next couple years, GFW–Commodities will add more commodity data to enable global measurement of deforestation by commodity type.
- [Global Forest Watch – Pro](#) is a scalable and easy-to-use management system for companies, banks, or other institutions managing land-related assets. Using GFW—Pro, they will be able to plot the location of thousands of farms, production facilities, or municipalities; save location data securely; access a dashboard of alerts to track environmental risks occurring in these areas, such as tree cover loss, fires, and more; spot trends in risky areas; and monitor progress over time. Though the information will likely remain proprietary, it should inform decision making and mitigate or eliminate reputational and operational risks for organizations working to eliminate deforestation from commodity supply chains. GFW—Pro is expected to launch in late 2018 or early 2019.
- [Trase](#) is an innovative platform that maps the supply chains of globally traded agricultural commodities, linking regions of production to countries of import via the individual companies that export and import these commodities. Trase connects downstream supply-chain actors to the impacts and opportunities associated with commodity production to enable greater accountability, improved monitoring, and ultimately progress toward ambitious sustainability goals. Having launched in November 2016 with a focus on the Brazilian soy trade, Trase aims to cover over 70 percent of the total traded volume of forest-risk commodities by 2020. As of August 2018, Trase had expanded to include data from the beef supply chains in Brazil, Paraguay, and Argentina and soy in Paraguay and Argentina, in addition to Brazil and the palm oil supply chain in Indonesia. Also in 2018, Trase launched [the first issue](#) of its *Trase Yearbook* series offering up-to-date analysis. The yearbook shows that Brazilian soy traders with zero-deforestation commitments had similar levels of deforestation risk as companies without commitments, indicating the limited effect so far of commitments in this sector.^[52]
- [The Accountability Framework](#) is being developed by a coalition of leading environmental and social NGOs in close consultation with companies, governments, and other stakeholders in response to the need for clear and consistent guidance on definitions,

implementation, monitoring, verification, and reporting on supply-chain commitments. The Framework is designed for companies, financial institutions, government agencies, reporting and tracking initiatives, implementation service providers, advocacy organizations, producers, and communities affected by commodity production. In late July 2018, the coalition released a partial draft of the Framework, including updated Core Principles and Definitions and sections of Operational Guidance that provide details on key topics for fulfillment of supply chain commitments.

- ¹¹¹ Henders, S., Persson, M., & Kastner, T. (2015). [Trading forests: Land-use change and carbon emissions embodied in production and exports of forest-risk commodities](#). *Environmental Research Letters*, 10(12), 1–13.
- ¹¹² Henders, S., Persson, M., & Kastner, T. (2015). [Trading forests: Land-use change and carbon emissions embodied in production and exports of forest-risk commodities](#). *Environmental Research Letters*, 10(12), 1–13.
- ¹¹³ Tropical Forest Alliance 2020. (2018). [The roadmap to financing deforestation-free commodities](#). Geneva, Switzerland: World Economic Forum.
- ¹¹⁴ Haupt, F., Bakhtary, H., Schulte, I., Galt, H., & Streck, C. (2018). [Progress on corporate commitments and their implementation](#). Tropical Forest Alliance 2020.
- ¹¹⁵ Chagas, T., Streck, C., Galt, H., Zwick, S., Schulte, I., Kroeger, A., & Thompson, A. (2018). [Impacts of supply chain commitments of the forest frontier](#). Tropical Forest Alliance 2020.
- ¹¹⁶ Climate Focus analysis based on Supply Change data in July 2018.
- ¹¹⁷ Rogerson, S. (2017). *Achieving 2020: How can the private sector meet global goals of eliminating commodity-driven deforestation?* Forest 500 Annual Report 2017. Global Canopy: Oxford, UK.
- ¹¹⁸ Roundtable for Sustainable Palm Oil. (2016). [Smallholders](#).
- ¹¹⁹ CDP analysis of company responses to their forest questionnaire.
- ¹²⁰ U.S. Department of Agriculture, Foreign Agricultural Service Office of Global Analysis. (2018). [Oilseeds: World markets and trade: April 2018](#). Washington, DC: USDA FAS Office of Global Analysis.
- ¹²¹ Steinweg, T., Drennen, Z., & Rijk, G. (2017). [Unsustainable palm oil faces increasing market access risks: NDPE sourcing policies cover 74 percent of Southeast Asia's refining capacity \(updated version\)](#). Washington, DC: Chain Reaction Research.
- ¹²² For soy and cattle, CDP. For pulp and paper, Climate Focus analysis based on publicly available information on companies' webpages and data published by RISI.
- ¹²³ Climate Focus analysis based on publicly available information on companies' webpages and data published by RISI.
- ¹²⁴ Soy: [Trase data](#) for 2015 based on the SEI-PCS model version 2.2. for Brazilian Soy.
- ¹²⁵ Trase. (2018). [Zero-deforestation commitments and Brazilian soy](#). Trase Yearbook 2018.
- ¹²⁶ Bauch, S., & Ayre, B. (2018, February 22). [Who exports Brazilian beef?](#) Trase.
- ¹²⁷ U.S. Department of Agriculture, Foreign Agricultural Service Office of Global Analysis. (2018). [Livestock and poultry: World markets and trade: April 2018](#). Washington, DC: USDA FAS Office of Global Analysis; U.S. Department of Agriculture, Foreign Agricultural Service Office of Global Analysis. (2018). [Oilseeds: World markets and trade: May 2018](#). Washington, DC: USDA FAS Office of Global Analysis.

¹¹⁸¹ According to Global Canopy, high-quality commitments by powerbroker companies are those that score 5/5. Commitments with this score require the implementation of traceability systems; are timebound; and exclude the production and use of products originating from intact forest landscapes, high-conservation-value areas, and primary and/or natural forests. Note that a high-quality commitment does not necessarily indicate efficacy of implementation or quality of impact.

¹¹⁸¹ The Sustainability Policy Transparency Toolkit (SPOTT) is an online platform supporting sustainable commodity production and trade. It is a project of the Zoological Society of London.

¹²⁰¹ SPOTT. (2017). [Palm oil assessment summary – November 2017](#). Website.

¹²¹¹ Barreto, P., Pereira, R., Brandão, A., & Baima, S. (2017). [Will meat-packing plants help halt deforestation in the Amazon?](#) Belém: Imazon.

¹²²¹ Gross, A.S. (2018, March 28). [Cerrado Manifesto could curb deforestation, but needs support: experts](#). *Mongabay*.

¹²³¹ Global Canopy and Climate Focus analysis.

¹²⁴¹ CDP, 2018 data.

¹²⁵¹ Formerly the Carbon Disclosure Project, CDP runs the global disclosure system that enables companies, cities, states and regions to measure and manage their environmental impacts.

¹²⁶¹ Each year, CDP Worldwide (CDP) asks the world's largest companies to disclose information on their actions related to forest risk and deforestation. In 2017, CDP contacted 1,103 companies, and 272 responded; of these, 201 companies reported information related to the four key forest-risk agricultural commodities.

¹²⁷¹ CDP, 2018 data.

¹²⁸¹ Donofrio, S., Rothrock, P., & Leonard, J. (2018). [Zooming in: Companies, commodities, & traceability commitments that count, 2018: Executive summary for institutional investors](#). Washington, DC: Forest Trends.

¹²⁹¹ Donofrio, S., Rothrock, P., & Leonard, J. (2018). [Zooming in: Companies, commodities, & traceability commitments that count, 2018: Executive summary for institutional investors](#). Washington, DC: Forest Trends.

¹³⁰¹ SPOTT. (2017). [Palm oil assessment summary – November 2017](#).

¹³¹¹ Climate Focus analysis based on 2018 SPOTT data.

¹³²¹ Steinweg, T., Drennen, Z., & Rijk, G. (2017). [Unsustainable palm oil faces increasing market access risks: NDPE sourcing policies cover 74 percent of Southeast Asia's refining capacity \(updated version\)](#). Washington, DC: Chain Reaction Research.

¹³³¹ Climate Focus analysis based on publicly available information on companies' webpages and data published by RISI.

¹³⁴¹ SPOTT. (2018). [Timber and pulp assessment summary – July 2018](#).

¹³⁵¹ Guindon, M. (2017). [Achieving sustainable timber supply chains: What is the role of certification in sourcing from tropical countries?](#) Global Canopy.

¹³⁶¹ SPOTT. (2018). [Timber and pulp: ESG policy transparency assessments](#).

¹³⁷¹ Carlson, K. M., Heilmayr, R., Gibbs, H. K., Noojipady, P., Burns, D. N., Morton, D. C., et al.. (2017). [Effect of oil palm sustainability certification on deforestation and fire in Indonesia](#). *Proceedings of the National Academy of Sciences*, 201704728.

- ¹³⁸¹ Noojipady, P., Morton, D. C., Schroeder, W., Carlson, K. M., Huang, C., Gibbs, H. K., et al. (2017). [Managing fire risk during drought: the influence of certification and El Niño on fire-driven forest conversion for oil palm in Southeast Asia](#). *Earth System Dynamics*, 8(3), 749–771.
- ¹³⁹¹ van der Ven, H., Rothacker, C., & Cashore, B. (2018). [Do eco-labels prevent deforestation? Lessons from non-state market driven governance in the soy, palm oil, and cocoa sectors](#). *Global Environmental Change*, 52, 141–151.
- ¹⁴⁰¹ Anderson, Z.R., Kusters, K., McCarthy, J., & Obidzinski, K. (2016). [Green growth rhetoric versus reality: Insights from Indonesia](#). *Global Environmental Change*, 38, 30–40; van der Ven, H., Rothacker, C., & Cashore, B. (2018). [Do eco-labels prevent deforestation? Lessons from non-state market driven governance in the soy, palm oil, and cocoa sectors](#). *Global Environmental Change*, 52, 141–151.
- ¹⁴¹¹ Gibbs, H. K., Rausch, L., Munger, J., Schelly, I., Morton, D. C., Noojipady, P., et al. (2015). [Brazil's soy moratorium](#). *Science*, 347(6220), 377–378; Gibbs, H., Munger, J., L'Roe, J., Barreto, R., Pereira, R., Christie, M. et al. (2016). [Did ranchers and slaughterhouses respond to zero-deforestation agreements in the Brazilian Amazon?](#) *Conservation Letters*, 9(1), 32–42.
- ¹⁴²¹ Barrett, K. (2016, May 11). [Soy sector extends moratorium on Amazon soy. Now, can they expand it?](#) *Forest Trends' Ecosystem Marketplace*.
- ¹⁴³¹ Gross, A.S. (2018, March 28). [Cerrado Manifesto could curb deforestation, but needs support: experts](#). *Mongabay*.
- ¹⁴⁴¹ As of March 2018. Global Canopy. (2018). [Extending the reach of company policies and action on soy](#). Oxford, UK: Global Canopy.
- ¹⁴⁵¹ Gibbs, H., Munger, J., L'Roe, J., Barreto, R., Pereira, R., Christie, M. et al. (2016). [Did ranchers and slaughterhouses respond to zero-deforestation agreements in the Brazilian Amazon?](#) *Conservation Letters*, 9(1), 32–42.
- ¹⁴⁶¹ Barreto, P., Pereira, R., Brandão, A., & Baima, S. (2017). [Will meat-packing plants help halt deforestation in the Amazon?](#) Belém: Imazon.
- ¹⁴⁷¹ Rogerson, S. (2017). Achieving 2020: How can the private sector meet global goals of eliminating commodity-driven deforestation? *Forest 500 Annual Report 2017*. Global Canopy: Oxford, UK.
- ¹⁴⁸¹ Tropical Forest Alliance. (2018). [The roadmap to financing deforestation-free commodities](#). Geneva: World Economic Forum.
- ¹⁴⁹¹ Lee, D. & Pistorius, T. (2015). [The impacts of international REDD+ finance](#). Climate and Land Use Alliance; Climate Focus analysis.
- ¹⁵⁰¹ Forest 500. (2018). [Rankings: Jurisdictions](#). Global Canopy.
- ¹⁵¹¹ Forest Carbon Partnership Facility (2018). [FCPF Dashboard as of June 30, 2018](#).
- ¹⁵²¹ Trase. (2018). [Zero-deforestation commitments and Brazilian soy](#). *Trase Yearbook 2018*.