Progress on the New York Declaration on Forests

Eliminating Deforestation from the Production of Agricultural Commodities

Goal 2 Assessment Report

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Foreword

Last year we as a global community were presented with a stark choice. Do we accept the inevitable outcomes of our "business-as-usual" trajectory, or do we take the road less traveled by coming together to create a new normal - A new normal where governments, civil society, the private sector and small farmers, link arms to tackle the challenges before us and aspire to achieve the global goals that reflect our values?

We could not have answered this question more emphatically. Last year saw the adoption of both the Sustainable Development Goals and the Paris Agreement, which together draw a roadmap towards a sustainable and climate friendly future. The NYDF coalition should feel even more galvanized as a result. These new global frameworks create additional momentum for forest conservation and sustainable development and provide an ever greater impetus for the type of collaborative relationship among governments, companies, civil society and indigenous peoples that the NYDF exemplifies.

We have long known that forest landscapes play a crucial role in combatting climate change and supporting livelihoods. It is estimated that over a quarter of the world's population rely on forests for their livelihoods, and a majority of them use trees directly on their farms. A focus of this year's report is on the forested and mosaic landscapes that the private sector operates within and sources from, and which are pivotal for forging partnerships and implementing integrated approaches that can advance a large portion of the global community's goals for 2030.

These landscapes are ripe with exciting initiatives that can halt deforestation and restore landscapes (SDG 13, 15), increase smallholder productivity (SDG 1, 2, 8), enfranchise workers (SDG 5, 10), and supply the global market with sustainable products (SDG 12). Most people are not aware how impactful these interconnected forest landscapes can be in changing lives, reducing emissions, and safeguarding forests. And while companies clearly have a significant role to play, the NYDF, SDG, and Paris Agreement goals require multi-stakeholder cooperation if we are to see progress continue.

We have already seen net deforestation declining from a high in 2005 to 6.65 million hectares in 2015, and since the Paris Agreement was agreed, the number of restoration commitments under the Bonn Challenge has doubled to more than 124 million hectares. This progress is encouraging, but we have to and will do better. The adoption of the SDGs followed by the Paris Agreement signals a pivot from negotiation to action on land-use, providing an unequivocal signal to the private sector and other stakeholders that healthy forests are central to the future of our planet.

UNDP applauds the multi-stakeholder effort that supports the progress assessment on the NYDF, and which focused this year on evaluating progress made towards eliminating deforestation from supply chains in agricultural production. The focus report, "Progress on the New York Declaration on Forests: Eliminating Deforestation from the Production of Agricultural Commodities – Goal 2 Assessment Report" is a unique and comprehensive effort to bring all data sources together in an honest assessment of private sector pledges and commitments, and to assess whether we are heading in the right direction. The second report, "Progress on the New York Declaration on Forests – Achieving Collective Forest Goals" Updates on Goals 1-10" complements the in-depth report on Goal 2, with an annual update on all NYDF Goals.

We continue to look ahead now that the impetus for action is so clear. And we acknowledge that the NYDF is a collection of promises, and that this year we as a global community made great strides towards keeping them.

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Executive Summary

Progress on the New York Declaration on Forests: Second Edition 2016

Focus Goal 2: Eliminating Deforestation from the Production of Agricultural Commodities

In September 2014, the New York Declaration on Forests (NYDF) outlined ten goals that provide endorsers – including countries, sub-national governments, indigenous groups, and NGOs – with ambitious global targets to protect forests and end natural forest loss by 2030. In 2015, when the first edition of the NYDF Progress Report was published, it proposed a framework and respective indicators for measuring progress towards all ten goals and offered an initial assessment on the status of progress toward achieving these goals. The NYDF progress assessment is supported by a broad coalition of civil society and research organizations which annually publishes progress updates. In addition to summarizing new data and findings around the established indicators, we also provide an in-depth analysis of a selected goal.

This year's focus report is dedicated to Goal 2 on eliminating deforestation from agricultural commodity supply chains. The NYDF assessment coalition has developed a new framework that allows a comprehensive evaluation of supply-chain efforts taken by private and public actors, drawing on existing work and data from all partner organizations, and filling in data gaps through company interviews.

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> **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.

For the first time, this report aggregates, cross-references, and interprets data from a variety of disparate sources to provide a coherent picture of the 'state of play' of efforts to ensure agro-commodity supply chains are free of deforestation. The full picture of engagement from pledge to impact is slowly emerging, showing that the global supply-chain movement continues to gain momentum with a continued increase in pledges, and progress on implementation. The overall impact on forests is however currently impossible to assess as there are no comprehensive global data sets that link efforts to clean up agricultural commodity supply chains to an actual reduction in deforestation. Any analytical effort is also burdened by scattered data and multiple and overlapping definitions.

Cross-sectoral cooperation enables risks, responsibilities, resources, competencies, and benefits to be shared. The NYDF can provide a platform for exchange of information and best practices leading to a cooperative implementation of strategies for sustainable land use that address deforestation at the national level.

Key Messages: 2016 Assessment of Goal 2

Agriculture is the biggest driver of global forest loss, and significant deforestation can be linked to specific commodities and geographic regions. This report focuses the assessment of progress related to the four key commodities driving agricultural deforestation: beef, soy, palm oil, and wood (timber and pulp). Large shares of production and trade of these commodities can be traced to a handful of countries– Indonesia, Brazil, Malaysia, and Paraguay in particular – where the majority of deforestation is concentrated. Targeted action in these countries is particularly important to reduce agro-commodity-driven deforestation.

CRITERION 1: Commitment to deforestation-free commodities

- **The number of corporate commitments to reduce the deforestation of agricultural commodity supply chains continues to grow.** Since last year's report, 108 companies have announced 212 new commitments, an increase of 43% over the previous year. In total, more than 400 companies have made more than 700 pledges to reduce their impacts on forests and the rights of forest communities.

- **The variety of deforestation-related commitments makes direct comparisons difficult.** Commitments range from signing on to high-level pledges such as those formulated in the NYDF to individual targets on the production or sourcing of specific commodities. Very few companies commit to zero (gross) deforestation across their operations; most choose a step-wise approach that sets priorities and deadlines for

individual commodities.

- **The majority of the 629 companies assessed by Supply-Change.org that source and/ or produce palm oil (59%) and wood products (53%) have made commodity-specific commitments.** For soy and cattle, the proportion of companies with commitments is considerably lower (21% and 12%, respectively). This is concerning considering that cattle have a deforestation footprint that is approximately 9 times larger than the one associated with palm oil. The numbers correlate with the availability and use of certification as a tool to implement supply-chain pledges. Overall, more than 20% of global palm oil and 11% of timber is certified.

- **Most of the companies that have announced commitments are manufacturers and retailers, 90% of them are headquartered in Europe or North America.** Companies operating upstream in the supply chain (producers, processors, and traders) and those headquartered in Latin America, Africa, and Asia have been slower to act. This may be starting to change, however. More producer companies, particularly those involved in palm oil in South East Asia, are announcing their own pledges. These commitments are particularly important since large producers control a vast portion of the market share and have outsized impacts on land use and conversion. Meat processing companies headquartered in Brazil have also achieved significant progress in eliminating deforestation from their operations.

- **Over 90% of the assessed companies source or produce in deforestation hotspots (Brazil, Indonesia, Malaysia and Paraguay).** This means that most commitments come from environmentally sensitive markets with a proactive consumer base, and risk mitigation seems to be a major driver for companies to address deforestation in their supply chains

- **Pledges and commitments matter**. The increasing engagement of companies on forest issues and their pledges to reduce deforestation are the first promising steps in the right direction. However, a lot remains to be done to operationalize these commitments.

CRITERION 2: Implementation of private-sector forest commitments

- **The growing number of commitments to reduce impacts on people and forests represents important progress, but more focus is needed on action and impact.** Implementation requires translating announcements into practice, and an important first step is adopting commodity-specific, concrete policies and systems, like production standards, procurement rules, operational plans, and key performance metrics. Significant advancement has been reported on deforestation-related risk assessments, a dialogue with suppliers, and the revision of procurement rules. Once these policies are in place, monitoring progress and compliance is the next step for ensuring deforestation impacts are avoided. More work is needed on this last step. Strategies on

how a company can eliminate deforestation from its supply chains are difficult to compare as they depend on the targeted commodities, geographies, work with suppliers and the position of the company in the supply chain.

- **There has been a significant effort to implement supply-chain commitments, yet less than half of the assessed companies have time-bound actionable plans, robust monitoring systems are still rare and only 45% of companies are reporting on compliance to deforestation policies**. Tracing commodities to the producer level remains challenging for many companies, and very few companies can report on the impact of their pledges on deforestation. In particular, soy and palm oil face barriers to traceability to the farm level. However, encouraging new technological developments will help move tracing commodities further upstream to the level of production and will tie them to local forest impact.

- **Companies producing or sourcing from deforestation hotspots are more advanced in operationalizing their commitments (approximately 10-20% higher) than those with less exposure to these regions.** This is encouraging given their ability to directly and significantly impact deforestation.

- **The majority of the companies opt to limit procurement to certified products rather than defining company product standards.** Supply chain efforts are generally more advanced in commodities with widely-recognized certification standards and integrated supply chains, which provide easy and accessible options towards sustainability. In line with our findings on commitments, progress towards increasing certified production and/or sourcing has been good for wood products and palm oil, but less so for soy and beef.

- **NYDF endorsers and TFA 2020 member companies are more advanced— across all supply chains—in terms of adopting commitments and translating them into actions.** Companies that are engaged in these initiatives show significant progress in adopting policies and systems to implement their commitments.

CRITERION 3: Support by non-supply chain actors

- **Meeting the targets of the NYDF, including Goal 2, will require collective action.** Unfortunately, limited improvements have been made to forest governance and public sector support in recent years, though specific success stories may provide a model for future collaboration and partnerships.

- **Despite increasing civil society pressure, *Forest 500* reports that only one-third of 150 assessed financial institutions have deforestation-related commitments in place**. The United Nations Environment Programme (UNEP) finds only a small percentage of

institutions that monitor compliance with such commitments, and even fewer that offer financial instruments to support the implementation of sustainability measures in supply chains.

- **Weak forest governance presents a major barrier to private-sector efforts.** Countries have taken measures to reduce deforestation, and REDD+ has increased the political will to improve forest governance. Companies have however experienced little concrete improvement in forest governance and limited public sector support. Nevertheless, the highlighted specific incidents of improved collaboration and listed an increasing number of successful public-private initiatives.

- **A growing number of public-private initiatives supports the elimination of deforestation at the supply chain or landscape level.** Large-scale public programs backed by private sector announcement for preferential sourcing from such program areas provide a chance for 'produce-and-protect' partnerships. Sectoral agreements and moratoria as piloted in the Brazilian Amazon have also shown major impact on deforestation.

CRITERION 4: Overall impact on deforestation

- **Finally, there are currently no available data that provide global coverage to determine whether cumulative company efforts are translating into measurable reductions in deforestation,** though there are two tools being refined and developed – Global Forest Watch Commodities and Trase – that may enable us to provide answers within the next couple of years.

I. Introduction

Two years after its adoption in 2014, a total of 190 governments, private-sector entities, and civil society organizations have endorsed the New York Declaration on Forests (NYDF). [1] The declaration includes ambitious targets to end natural forest loss by 2030, with a 50% reduction by 2020 as a milestone toward its achievement. It also calls for restoring 350 million hectares of degraded and deforested lands by 2030, supporting the private sector in eliminating deforestation from the supply chains of major agricultural commodities by 2020, and providing financial support to reduce emissions related to deforestation and forest degradation. [2]

The endorsers of the NYDF have committed individually and jointly to doing their part to achieve the 10 goals laid out in the NYDF (Table 1). Progress requires committed and continued action from NYDF endorsers; effective monitoring on progress, engagement, and visibility of results is important to boost this resolve. The NYDF Assessment Coalition is an independent network of civil society groups and research institutions that annually evaluates the progress toward meeting the NYDF goals.

The 2016 NYDF Progress Assessment has two parts: a detailed report on Goal 2, which aims to help the private sector halt deforestation associated with agricultural commodities, and a summary report that contains an update on all goals formulated in the context of the NYDF.

Table 1. The 10 NYDF goals

	GOAL
1	At least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030.
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.
3	Significantly reduce deforestation derived from other economic sectors by 2020.
4	Support alternatives to deforestation driven by basic needs (such as subsistence farming and reliance on fuel wood for energy) in ways that alleviate poverty and promote sustainable and equitable development.
5	Restore 150 million hectares of degraded landscapes and forestlands by 2020 and significantly increase the rate of global restoration thereafter, which would restore at least an additional 200 million hectares by 2030.
6	Include ambitious, quantitative forest conservation and restoration targets for 2030 in the post-2015 global development framework, as part of new international sustainable development goals.
7	Agree in 2015 to reduce emissions from deforestation and forest degradation as part of a post-2020 global climate agreement, in accordance with internationally agreed rules and consistent with the goal of not exceeding 2°C warming.
8	Provide support for the development and implementation of strategies to reduce forest emissions.
9	Reward countries and jurisdictions that, by taking action, reduce forest emissions —particularly through public policies to scale-up payments for verified emission reductions and private-sector sourcing of commodities.
10	Strengthen forest governance, transparency, and the rule of law, while also empowering communities and recognizing the rights of indigenous peoples, especially those pertaining to their lands and resources.

Over the last few years, an encouraging number of companies have announced their intent to eliminate deforestation from their supply chains. As of September 2016, more than 415 international companies have pledged to reduce or eliminate deforestation in the production, supply, and procurement of food and household products. [3] Meanwhile, more than 50 tropical forest countries have started to implement measures for the reduction of deforestation and forest degradation (REDD+). Many of these measures receive support from partner governments, resulting in a multitude of bilateral and multilateral REDD+ implementation partnerships. In the wake of the Paris Agreement's entry into force on November 4, 2016, these partnerships are expected to increase in number and deepen in mutual commitment.

Responding to an increased interest in supply-chain efforts, this report summarizes the status and progress of measures taken by private and public actors to address deforestation driven by agricultural commodities. The objective is to support private and public actors in their efforts to eliminate deforestation from agricultural supply chains. Through the provision and dissemination of data and analysis, the NYDF Assessment Coalition encourages collaborative approaches between sectors to address barriers that limit progress toward deforestation-free supply chains.

II. Commercial Agriculture as a Driver of Deforestation

The Big Four: Palm Oil, Soy, Cattle, and Wood

The production of palm oil, soy, cattle, and wood has a massive impact on forests. A recent study estimates these commodities accounted for 40% of total deforestation during the period of 2001–11 and confirms that livestock is the single largest driver of deforestation. [4; 5] Figure 1 illustrates the deforestation footprint linked to major agricultural commodities. It also shows that soy and palm oil are the two most exported commodities with embedded deforestation as a share of overall production, whereas beef is largely consumed domestically. Also, as a result of growing international demand, particularly for beef, palm oil and soy (used as food, animal feed and products, and increasingly as biofuels), forest loss from these commodities is likely to increase. [5; 6; 7] To a lesser degree, other commodities—including rubber, sugar, cocoa, and coffee—also pose a risk for forests.

Deforestation linked to major agricultural drivers
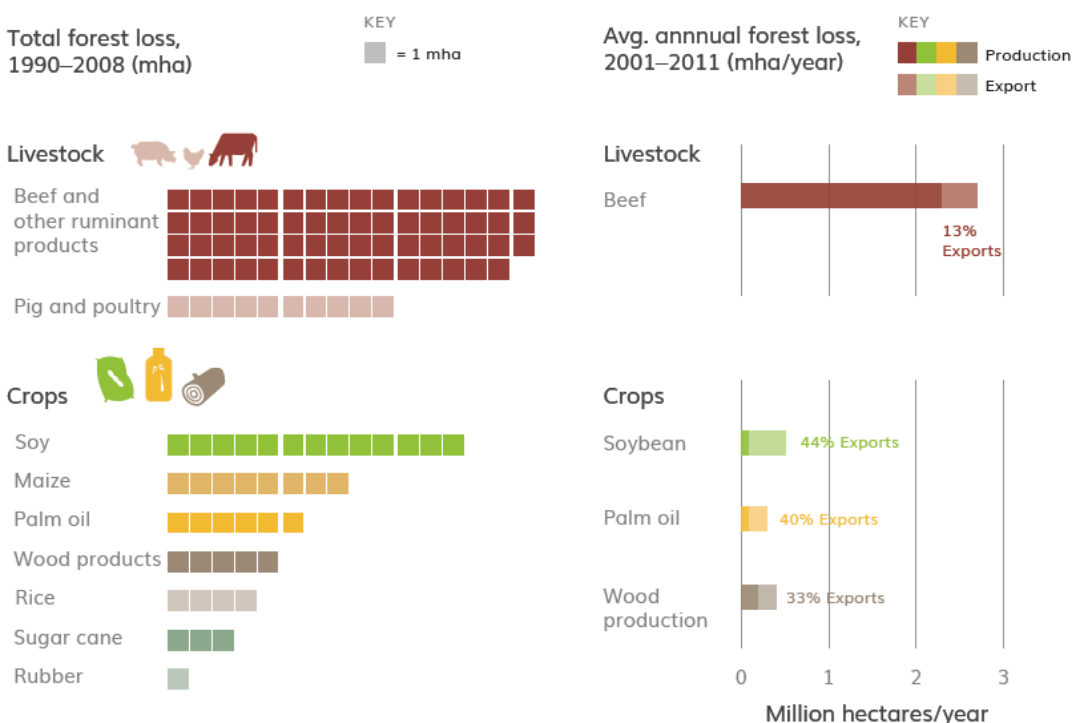
Source: (left) Climate Focus calculations based on data provided by European Commission, 2013; (right) Henders et al., 2015

Figure 1. Figure illustrates two data sources, one for total forest loss between 1990 and 2008 **(8)** and another for average annual forest loss in 2001-2011.

Deforestation Hotspots

Deforestation linked to commercial agriculture varies strongly by region and is particularly pronounced in certain hotspot areas of the tropics: South America for cattle and soy, Southeast Asia for palm oil and wood products, and West Africa for palm oil, logging, and other crops, including cocoa. [8; 6; 9] In 2000–14, tropical countries lost approximately 123 million hectares of tree cover, an area about the size of France, Germany, and the United Kingdom combined. [10]

Brazil and Indonesia have been in the spotlight for their efforts to reduce deforestation, since they contain a large share of tropical forests and have had historically high rates of deforestation. Brazil has reduced its deforestation rate by 70% since 2005, and Indonesia has had an extended moratorium on primary forest conversion since 2011. [11; 12] Despite these encouraging developments, curbing deforestation in Brazil and Indonesia remains a priority—these two countries alone are able to reduce annual land use emissions by approximately 10%.[1] [13; 14] A recent spike in forest fires in Indonesia and the recent increase in deforestation in Brazil also adds reason for continued and urgent action. [15; 16]

Various other deforestation hotspots in the tropics receive less attention (Figure 2).[10] With the fourth and fifth largest area losses, the second and third largest rates of forest loss, and a large

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[1] Agriculture, forestry, and other land use is responsible for 10–12 GtCO2e/yr of global anthropogenic greenhouse gas emissions. (14)

increase in commercial agriculture, Malaysia and Paraguay are particularly important for supply-chain efforts.[17] Palm oil has been the primary driver in Malaysia, with pulp and paper and rubber plantations playing a more recent role. [17] In Paraguay, cattle and soy production have been the primary drivers, largely due to the displacement of activities from Brazil. [17] Southeast Asia (Cambodia, Malaysia, Indonesia, Vietnam, and Laos) had among the highest rates of deforestation in the period 2010–14, much of which was linked to palm oil, timber, and—more recently—rubber, a new forest-risk commodity. [17; 18] West Africa (Sierra Leone, Guinea, Liberia, Cameroon and Cote d'Ivoire) similarly exhibits worrying trends, with an expansion of commercial agriculture (palm oil, sugar, and cocoa) and deforestation rates doubling or tripling since 2001–09. [17; 18]

Map of global deforestation hotspots
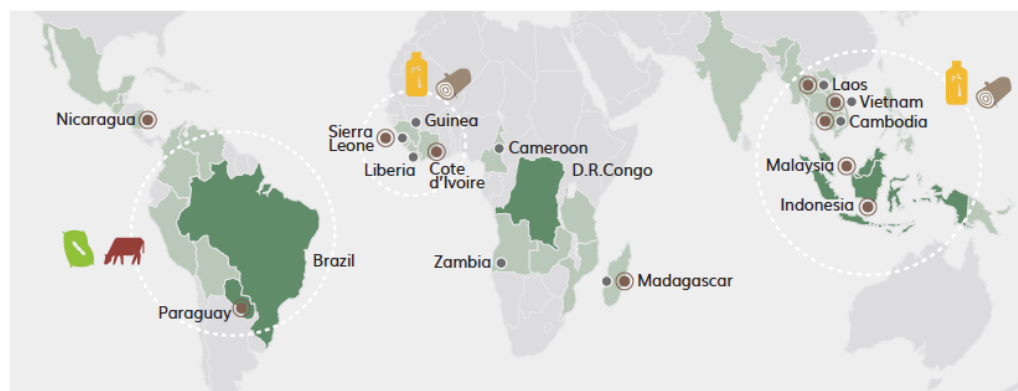
Avg. loss per year (mha 2010-2014)

Brazil	2.35
Indonesia	1.54
D.R.Congo	0.79
Malaysia	0.47
Paraguay	0.41
Bolivia	0.29
Myanmar	0.21
Madagascar	0.20
Cambodia	0.19
Peru	0.19
Colombia	0.18
Mexico	0.18
Angola	0.17
Laos	0.17
Mozambique	0.16

Avg. loss per year (% loss 2010-2014)

Cambodia	2.30
Paraguay	1.86
Malaysia	1.80
Madagascar	1.26
Sierra Leone	1.25
Nicaragua	1.09
Cote d'Ivoire	1.08
Indonesia	1.03
Vietnam	0.99
Laos	0.92
Liberia	0.87
Guatemala	0.82
Guinea	0.75
Tanzania	0.61
Mozambique	0.59

Change in loss per year (% difference between 2001-2009 and 2010-2014)

Sierra Leone	296
Guinea	197
Cambodia	161
Liberia	124
Cameroon	121
Zambia	102
Vietnam	95
Madagascar	91
Laos	91
Myanmar	88
Angola	79
D.R.Congo	71
Peru	66
Cote d'Ivoire	53
Paraguay	51

KEY

- ■ > 300,000 mha loss
- ■ 50,000–300,000 mha loss
- ◎ > 0.9% loss per year (2010-2014)
- ● > 90% change in forest loss/yr between 2001-2009 and 2010-2014

Soy   Beef   Palm oil   Wood

Source: Climate Focus analysis based on Hansen et al., 2013, updated on GFW

Figure 2. Deforestation hotspots in the tropics according to the top 15 countries with highest forest area loss, rates of forest loss and percent change in loss from periods 2001-2009 to 2010-2014. Data is averaged per year and uses a default crown cover threshold of 30%.

A Collaborative Effort to Address Deforestation

Private companies play a critical role in removing deforestation from agricultural supply chains. From farm to fork, commodities move along a supply chain of producers, processors, traders, manufacturers, and retailers that are united in their interest in a stable, high-quality, legal supply of commodities (Figure 3). Motivated by multiple objectives, supply-chain commitments seek to improve livelihoods, eliminate negative environmental impacts, and improve the sustainability and quality of products. Eliminating deforestation from agricultural production contributes to such environmental and social responsibility goals.

Supply chain

DOWNSTREAM   UPSTREAM

Producers   Processors   Traders   Manufacturers   Retailers
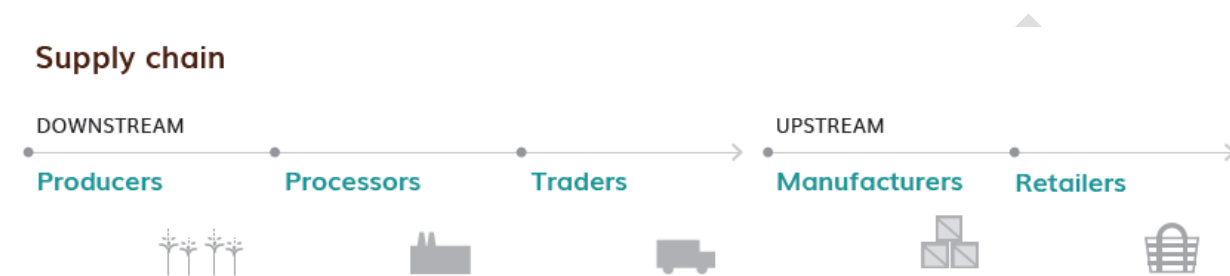
Figure 3. Supply chain structure (from downstream to upstream)

Large off-takers of internationally traded commodities have considerable influence over suppliers and can facilitate their transition to more sustainable behaviors and in particular toward integrated supply chains that are dominated by a handful of powerful players. [19] We know, however, very little about the direct impact of supply-chain commitments on environmental improvements, since in most cases the data are missing. [3] While pledging the elimination of deforestation from supply chains is an important first step, it is the implementation and monitoring of such commitments that will result in real change.

Governments are key partners in the implementation of supply-chain commitments. Many tropical countries suffer from weak or absent forest governance, high levels of corruption, unclear land tenure, and unreliable law enforcement (Box 1). Private actors alone cannot overcome these challenges. They depend on action by, or cooperation with, governments.

Box 1. Summary of main implementation barriers

- Weak governance, in particular lack of enforcement of policies.
- Missing legal and institutional frameworks.
- Difficulties in agreeing on common definitions and goals for deforestation policies, within companies as well as in conjunction with suppliers and other stakeholders.
- Lack of global traceability system.
- Data gaps (e.g., difficulties related to the attribution of deforestation and impact of specific activities).
- Lack of premiums or other incentives for suppliers to transform their business models to low-deforestation impact.

Source: NYDF endorser/TFA member interviews

Civil society has an important role in building capacities, tracking progress, and disseminating information. An increasing number of supply-chain initiatives seek to increase transparency around deforestation-related company commitments to broaden the supply-chain movement,

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enable consumers to make informed choices, and facilitate cooperation between governments and companies. Annex I summarizes the available information from platforms and transparency initiatives that focus on agricultural supply chains. Collectively, these initiatives cover a wide range of geographies, commodities, companies, and approaches for tackling and understanding supply-chain transparency, building trust, and providing a highly complementary set of capabilities and insights.

III. Tracking Progress on Goal 2: Methodology

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.

A new framework to assess progress toward implementing supply-chain commitments guides the 2016 NYDF Progress Assessment, providing a methodology that gives the aspirational Goal 2 of the NYDF a tool for evaluation**.** The assessment framework draws on existing work from other monitoring and reporting platforms and allows for the tracking and comparability of progress, from initial supply-chain pledges to implementation of deforestation commitments by companies to overall impacts on forests. It was developed collectively by the NYDF Assessment Coalition, based on a bottom-up analysis of the core components of forest monitoring and supply-chain operations, as well as extensive consultations with companies and other experts.

The NYDF Assessment Coalition defined four criteria that are critical components for achieving Goal 2 (Table 2). Companies first adopt supply-chain commitments (Criterion 1), then implement these commitments through company policies, operational plans and monitoring and compliance systems (Criterion 2). To increase impact, governments, non-supply-chain private actors (e.g., financial institutions) and nongovernmental organizations (NGOs) also have to support these private-sector efforts and create an enabling environment that encourages and permits action (Criterion 3). Finally, the overall impact of supply-chain efforts on deforestation determines the eventual success of these efforts (Criterion 4). The first three criteria are proxies for assessing private-sector progress, by determining what steps the company has taken or the support that companies have received to eliminate deforestation in its commodity supply chains. The fourth criterion seeks to address whether these efforts actually translate into measurable, reduced deforestation.

Table 2. Assessment Framework to measure progress toward NYDF Goal 2

Criteria	Indicator

1	Commitment to deforestation-free commodities	Deforestation-related commitments by companies		
2	Implementation of private-sector forest commitments	Adoption of deforestation policies to implement commitments		
		Monitoring of compliance		
		Compliance with deforestation-related company policies		
3	Support by non-supply-chain actors (enabling environment)	Deforestation-related commitments by financial institutions		
		Policy support and improvements in forest governance		
4	Overall impact on deforestation	Reduction of deforestation associated with a particular commodity		

This assessment is based on data gathered from four transparency initiatives and complemented with information from interviews. In total, more than 600 corporations were evaluated, based on data from (Forest Trend's *Supply Change.org*, The Global Canopy Programme's *Forest 500* initiative, CDP's forests program, and The Sustainability Consortium). Supplementary interviews were conducted with NYDF endorsers and Tropical Forest Alliance 2020 (TFA 2020) members (26 companies out of 55[2]) to ensure data coverage across endorsers. Potential future data sources for indicators where currently no information is available have also been identified (Global Forest Watch–Commodities and Transparency for Sustainable Economies (Trase), which are discussed later in this report). Following data compilation, we analyzed and assessed progress on the implementation of deforestation commitments, focusing on four major commodities: soy, cattle, palm oil, and wood (including pulp, paper, and timber). While we provide a global analysis, we also assessed supply-chain efforts based on their geographic footprint in the four main deforestation hotspot countries: Brazil, Indonesia, Malaysia, and Paraguay. Finally, we developed case studies to illustrate on-the-ground progress, different implementation strategies, policy support, the role of non-state actors, and barriers encountered by different stakeholders. Details on data sources can be found in Annex II. Box 2 summarizes data gaps and limitations.

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[2] Forty-seven NYDF private-sector endorsers and 20 TFA 2020 members are active supply-chain actors; 12 companies are both NYDF endorsers and TFA 2020 members.

Box 2. Data gaps and limitations

Criteria 1, 2, and 3. Data measuring the adoption of commitments are widely available. Although existing data provide an indication of progress toward implementation, the lack of data providing details on the quality of these actions makes it hard to judge whether action is sufficient and adequate to achieve deforestation-related goals. These data gaps and limitations are due to a variety of factors, the main ones being the complicated nature of supply chains, the large number of actors, companies not having resources to collect data or no mandate from management. Coherence of different datasets (e.g., consistency of definitions) would allow for better comparison of findings.

High level of granularity and differences among supply chains make it difficult to compare interview data. This presents a serious limitation to interviews—and likely beyond—as many details may be misinterpreted in aggregated reporting efforts.

Criterion 4. In 2016 we are unable to provide an assessment of progress against Criteria 4. It is therefore too early to list specific data gaps, as in the absence of data the gap is too large to be identified. We are, however, optimistic that in the coming years Global Forest Watch and Trase will enable us to assess how private sector pledges contribute to the reduction of deforestation.

IV. Tracking Progress on Goal 2: Findings

Criterion 1: Commitment to deforestation-free commodities

KEY MESSAGES

- Deforestation-related pledges have continued to increase since the adoption of the NYDF in 2014, with the number of companies making commitments increasing to 415 from 307 since last year's report. Since commitments do not follow any commonly accepted definitions, analysis of pledges, both in their scope as well as in their ambition, remains challenging.

- Of the companies active in the four big commodities, the majority of commitments address palm oil (59%) and wood products (53%). Soy and cattle receive significantly less attention (21% and 12%, respectively).

- The comparatively few commitments covering cattle—the single largest driver of deforestation—is a matter of concern, although the lack of commitments does not necessarily equal a lack of action. Reasons for limited commitments around cattle include the lack of an accepted industry standard for certification, a highly mobile commodity, a higher percentage of local consumption, and a limited share of beef that is exported to Europe or North America.

- The majority of pledges continue to come from companies that operate mainly downstream in the supply chain (manufacturers and retailers). Upstream palm oil producers in Southeast Asia and meat processors in Brazil have also started to make significant commitments.

- A large share (91%) of company commitments focus on deforestation hotspots. This is encouraging, as action in deforestation hotspots has the potential to establish a clear link between supply-chain efforts and reduced deforestation.

Commitments from companies to address deforestation in their supply chains are driven by consumer demands, by reputational, legal, and environmental pressures, and by the need for a more sustainable and stable supply of agricultural products. In 2010, Nestlé became the first global food company to publicly make a deforestation-free pledge. [20] Since then a multitude of producers, traders, manufacturers, and retailers have expressed intent or commitment toward deforestation-free products, with new commitments often peaking at high-level climate change events. Most recently, the 2015 Paris climate conference saw a series of new commitments, such as Unilever's and Marks & Spencer's "produce-and-protect" announcement to preferentially source from jurisdictions engaged in REDD+ efforts, as well as the commitments of 42 major companies to remove commodity-driven deforestation from all supply chains by 2020 as part of the We Mean Business coalition's Commit to Action platform.

Deforestation-related commitments come in various forms, from signing on to high-level goals such as those formulated in the NYDF to individual targets on the production or sourcing of specific commodities. The diversity of deforestation-related pledges makes a direct comparison difficult, especially since these goals rely on a combination of terms whose definitions and the science behind them are still being refined (Box 3).

Box 3. Concepts and definitions

Companies announcing commitments on and working toward deforestation-free supply chains use a wide range of definitions of what constitutes forest and hence what constitutes deforestation. In addition, companies use different standards to determine what types of forest set-asides should be spared from development.

Gross vs Net Goals for Eliminating Deforestation
Zero (Gross) Deforestation (ZD) means that no forest areas are cleared or converted. [91] Companies, however, use different concepts or may lack a clear definition of what qualifies as a forest area in terms of land cover, tree height or density, and temporary exploitation.

Zero Net Deforestation (ZND) means that clearance or conversion of forests is allowed in one area as long as an equal area is replanted elsewhere, provided that the net quantity, quality, and carbon density of forests is maintained. [59] Without defining the implications of their ZND commitment and the preservation of net quantity and quality of forest areas, there is a risk of wrongly equating the value of natural forests with that of plantations.

Forest Set-Aside Concepts
High Conservation Values (HCVs) are biological, ecological, social, or cultural values that are considered outstandingly significant or critically important at the national, regional, or global level. [58] In this concept, companies pledge to avoid all development in HCV areas, which does not include developments and deforestation outside of HCV areas.

High Carbon Stock (HCS) distinguishes forest areas for protection from degraded lands with low carbon and biodiversity values that may be developed. [60] Companies applying this concept conduct a land cover assessment to identify areas for protection, based on six different classes, with the first four (forests) being considered HCS, while those categorized as scrub and cleared/open land are available for development. [60]

Indicator 1.1: Deforestation-related commitments by companies

Since the Deforestation Resolution of the Consumer Goods Forum in 2010, [21] which led to the establishment of the Tropical Forest Alliance 2020, and since the adoption of the NYDF in 2014, the supply-chain movement has developed rapidly. According to *Supply-Change.org*, 415 (66%) of the 629 researched companies with exposure to deforestation risk have made at least one public commitment to eliminate or reduce deforestation from their supply chains. Since a peak in

new announcements in 2014, the numbers have shown a steady although slightly slowing increase both in first and renewed pledges (Figure 4).[3] Over the last year, 108 additional companies made 212 new commitments.[4] Based on our interviews, almost all (92%) NYDF endorsers and TFA 2020 member companies made public deforestation-related commitments, in addition to signing up to the goals of these initiatives.

Cumulative number of commitments (total and by commodity) and companies that made any commitment
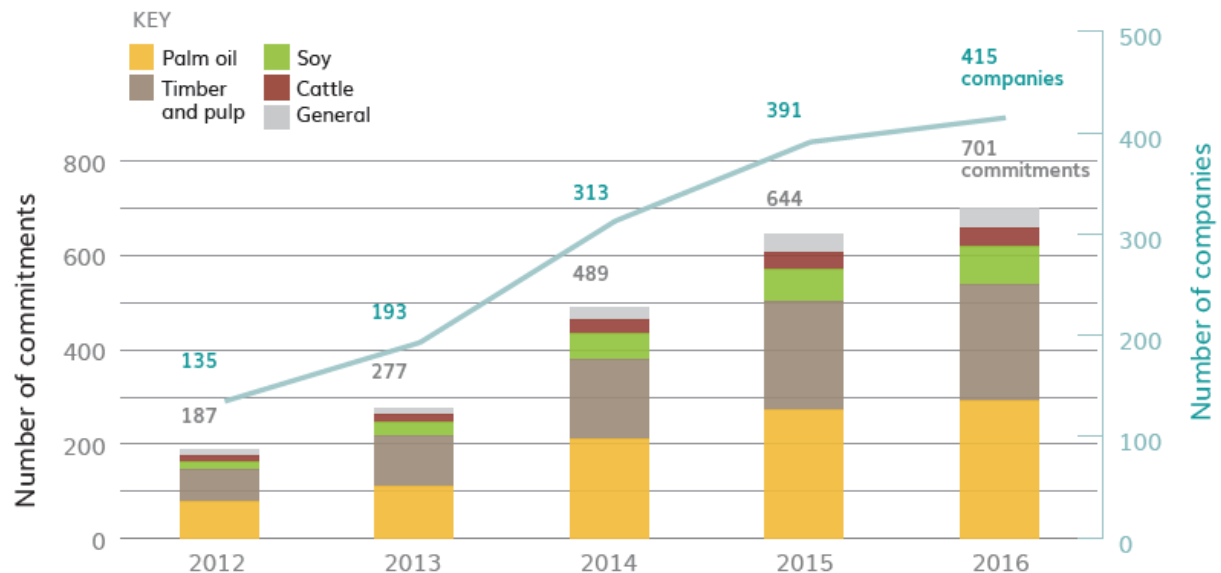
Source: Climate Focus graph based on data from Supply-change.org, 2016

Figure 4. Number of commitments and companies (total and by commodity) that have made commitments.

According to *Supply-Change.org,* only 43 (10%) out of the 415 companies with commitments have set company-wide targets that cover all commodities relevant to the company's portfolio. Similarly, *Forest 500* found that in 2016 only 34 (14%) out of 250 "powerbroker"[5] companies have made company-wide zero gross or other no deforestation commitments[6] across all forest-risk commodities. Most corporate commitments relate to a particular commodity and many relate to a geographic region—for example, excluding sourcing of soy or beef from the Amazon region. Companies adopt and implement deforestation-related commitments selectively in response to reputational, legal, and environmental risk on one hand and to operational feasibility on the other. Our interviews confirm that the availability of standards for a particular commodity, high

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[3] Many companies made several commodity-specific or general commitments, which results in a much higher number of commitments than companies.

[4] New commitments: 155 in 2015 and 57 in 2016.

[5] *Forest 500* defines powerbroker companies as those with large-scale influence over forest-risk commodity supply chains, identified based on a combination of market research data, customs data from ships' manifests, information on the major uses of forest-risk commodities, and market share data for specific product segments and companies.

[6] No deforestation commitments are defined as policies that commit to zero net deforestation and/or zero deforestation of HCV and HCS forests.

level of integration in the local supply chain, costs, and NGO pressure all play into the decision to adopt commitments.

The majority of the 629 companies assessed by *Supply-Change.org* that depend on palm oil (59%) and wood products (53%) for their operations have made commodity-specific commitments (see Figure 5). For soy[7] and cattle the proportion of companies with commitments is considerably lower (21% and 12%, respectively).[8] The comparatively few commitments covering cattle are particularly concerning considering that cattle have a deforestation footprint that is nine times larger than the one associated with palm.[4] The lack of commitments is however not necessarily indicative for a lack of action. Compared to soy or palm oil a smaller share of beef products are traded internationally (Figure 1), which means that they are not covered by deforestation-related commitments of global manufacturers or retailers. Livestock is also more difficult to trace through various ranches and farms, the sector shows high levels of informality, and there is lack of a widely used certification standard (Box 4).

Companies active in commodity with at least one relevant commitment

Palm oil 59%   Timber/Pulp 53%   Soy 21%   Cattle 12%
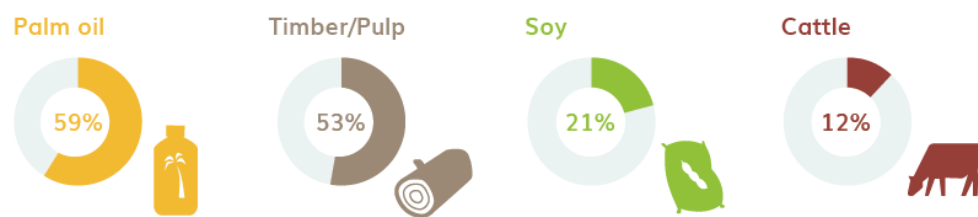
Source: Climate Focus graph based on data from Supply-change.org, 2016

Figure 5. Share of companies (out of 415) active in commodity with at least one relevant commitment.

Consumer-goods companies generally deal with a large numbers of suppliers and therefore have the potential to trigger change along the whole supply chain. However, eventual impact on deforestation depends on producer companies taking action, as are the ones managing the land and have a direct impact on land use change.[3] Most of the companies that made commitments operate downstream in the supply chain, with 67% in manufacturing and 30% in retail (Figure 6). At the same time, we see an increase in upstream companies (producers, processors, and traders) with ambitious deforestation-free commitments, in particular in Southeast Asia. Meat processors and slaughterhouses in Brazil are also actively seeking to reduce deforestation from their operations. Yet the numbers of upstream company commitments are still relatively low (17%, 20%, and 13% of producers, processors, and traders respectively), so there is still significant progress to be made within these types of companies.

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[7] Soy commitments typically do not cover deforestation embedded in animal products through feed.

[8] The same trend is reflected among the 250 companies most influential in these supply chains: Powerbrokers in the palm sector (58% with commitments), timber (45%), soy (19%), and beef/leather (16%). Analysis of companies is based on 2016 *Forest 500* data.

Companies with deforestation-related commitments operating in the supply chain

Source: Climate Focus graph based on data from Supply-change.org, 2016

Figure 6 Share of companies (out of 415) with deforestation-related commitments operating at different levels of supply chains. Companies may operate at multiple levels.

According to *Supply-change.org* data, most of the commitments (89%) come from companies headquartered in the Europe, North America, and Australia. Environmentally sensitive markets with a proactive consumer base and civil society movements can therefore exert a large influence over the supply chain.

Commitments in Deforestation Hotspots

Interestingly, 91% of commitments come from companies sourcing or producing from deforestation hotspots (Figure 7),[9] with the largest shares targeting Brazil and Indonesia (32% respectively), followed by Malaysia (26%) and Paraguay (10%). These findings suggest that risk mitigation seems is a large driver in addressing deforestation in supply chains. Concentration of supply (80% of palm oil is produced in Indonesia and Malaysia and 33% of soy is produced in Brazil and Paraguay) may also be a key driver.[22] The country distributions are relatively in line with the share of commitments by commodity (higher in countries producing palm oil and wood, lower in soy and cattle), with the exception of Brazil. However, while Brazil is largely a producer of soy and cattle, it is also a major producer of wood (10% market share) and is expanding its palm oil production. [22]

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[9] The proportion of companies operating in deforestation hotspots has remained relatively unchanged since 2012 (91–93%).

Cumulative number of commitments and companies that made any commitment in deforestation hotspots

KEY

- Brazil
- Indonesia
- Malaysia
- Paraguay

— Companies producing/sourcing in hotspots
— Total companies with commitments

125 (93% of 135 companies)
178 (92% of 193 companies)
285 (91% of 313 companies)
356 (91% of 391 companies)
377 companies (91% of 415 companies)

* Note that there will be overlap in the number of commitments since a company may source from more than one hotspot country.
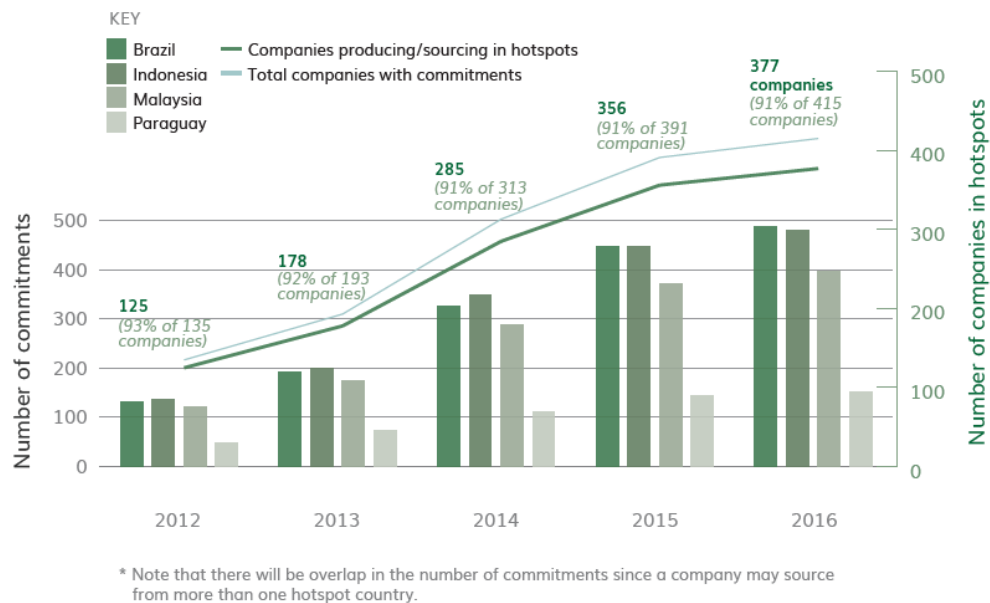
Source: Climate Focus graph based on data from Supply-change.org, 2016

Figure 7 Number of commitments and companies sourcing / producing in deforestation hotspots that have made commitments. Note that there will be overlap in the number of commitments since a company may source/produce from more than one hotspot country.

Box 4. Sustainable pastures: Zero-deforestation beef

The production of livestock is the main source of greenhouse gas (GHG) emissions in the agricultural sector and is a major source of total global emissions. [14] In addition to driving forest conversion for pastures and feed-crop cultivation (e.g. soy and maize), beef and dairy cattle produce GHG emissions through enteric fermentation, manure management, feed production and energy consumption, adding up to about 65% of global agricultural GHG emissions.[94; 19] The demand for livestock products has grown dramatically over the last fifty years, and changing diets, increased wealth, and a growing population make further growth likely, in particular in developing countries. [96] Consequently, cattle ranching is expected to continue to pressure into forest land. Over the last years, supply-chain efforts promoting zero-deforestation beef have grown substantially, but pledges on beef are lagging behind other commodities, in particular palm oil and wood products. While the contexts and circumstances vary among geographies, there are a number of reasons for the comparative lack in progress on pledges:

- *A mobile commodity.* Cows are often not only transferred from calving ranches to fattening farms but are also bought and sold by various additional traders before they arrive at the slaughterhouse. [61] Tracking often stops at the level of the last direct supplier, making monitoring of deforestation links challenging.
- *High levels of informality.* Significant parts of the cattle sector are informal or even clandestine. In most countries, meat production is subject to sanitary and veterinary regulation. Such regulation is however not always enforced or does not extend to non-food production (e.g. in Brazil hides and leather are not covered by food safety standards). [95] Enforcement is difficult where beef production does not go through slaughterhouses that comply with food safety standards or is largely serving local markets (e.g. in Colombia).
- *Lack of incentives.* It has proven difficult to shift farmers' culturally engrained practices. At the Latin American forest frontier, logging, soy production, and ranching has for the longest time been politically supported and rewarded. The 'frontier rancher' continues to be culturally approved across many communities. Profit margins on ranching are low, but deforestation still leads to de-facto land acquisition in some places, which adds value to frontier ranching. While in some countries there are incentive payments for adherence to food-safety standards (e.g. in Colombia to dairy farms for compliance with veterinary and good practice standards), few systems reward the absence of deforestation from beef production. This situation is aggravated by the lack of coherent sectoral policies in many countries.
- *Delay in engagement.* Until today there is no global industry standard for certification of sustainable beef. Cooperative efforts to define standards for beef producers started late, with the Global Roundtable for Sustainable Beef becoming operational as late as 2013, almost ten years after the Roundtable for Sustainable Palm Oil.

But despite these challenges and the comparatively low number of deforestation-related pledges in the cattle sector, recent years have seen a push towards reducing land conversion driven by cattle production. In particular in Brazil a number of policies, fiscal incentives (subsidies and tax breaks), projects and investments have been implemented to address forest conversion driven by agriculture. Supply chain actors have been key in implementing collaborative sector agreements and in facilitating investments into pasture management, technological improvements:

- The three largest meatpackers (JBS, Mafrig, Minerva) have signed agreements with the Federal Public Prosecutor's Offices in various states stating that they would stop purchasing directly from ranches that would clear more land than legally permitted.
- In the Brazilian State of Pará nearly 90% of the federally inspected slaughterhouses have signed agreements with Greenpeace that commit them to avoid purchases of cattle from ranches with deforestation. [90]
- Such agreements are complemented by an increasing number of projects that support sustainable intensification and management of pastures, such as the Novo Campo project in the Brazilian State of Matto Grosso. Novo Campo seeks to improve the economic, social and environmental performance of cattle ranching. [62] The Novo Campo pilot project has recently attracted international investors to scale the program's implementation beyond the piloting phase, [89] and large offtakers, such as McDonalds Brazil, have agreed to purchase meat from the Novo Campo or similar programs.
- The Field-to-Table programs co-sponsored by Walmart Brasil, Mafrig, and TNC is a similar program that aims further scaling of sustainable pasture programs. [88]

The Brazilian beef market is dominated by a few companies that control meat processing, a comparatively high level of sophistication and capacities, an increase in supporting legal agreements and legislation, and a direct link to international export markets; all factors that make supply-chain efforts easier to implement than in neighboring countries with more local and informal markets. But there are promising initiatives emerging in other countries as well. An example is Colombia's "Ganadería Sostenible" program which has started to make additional payments for farmers who combine sustainable practices with forest protection. [63] Leading supermarket chains, such as Grupo Exito, support the Ganadería Sostenible project through the preferential purchase of beef from participating farms.

Criterion 2: Implementation of private-sector forest commitments

KEY MESSAGES

- Most companies are making headway in adopting policies to reduce their exposure to deforestation. They often favor a selective and step-wise approach of piloting the implementation of their commitments with only select commodities or in priority geographies. Their choices are driven by, among other factors, reputational risk and civil society pressure, legal risk management, and operational feasibility to implement pledges.

- Despite some progress in the implementation of supply-chain commitments, many companies still cannot report compliance to their deforestation policies, and it cannot be confirmed whether these systems and policies are adequate in reaching the ambition presented in Goal 2 of the New York Declaration.

- The majority of companies opt to limit procurement to certified products rather than defining their own company product standards. Implementation of global supply-chain commitments is generally more advanced in commodities with widely recognized certification standards and integrated supply chains, which provide easy and accessible options toward sustainability. In line with our findings on commitments, progress toward increasing certified production and sourcing has worked well for wood products and palm oil, but less so for soy and beef.

- Most companies have monitoring systems to trace the origin of their commodities, but they report finding the process challenging. Traceability to the production level is only achieved by a small percentage of companies – particularly for soy and palm oil. The tracking of cattle sales to its various owners and farms comes with its own challenges. However, encouraging new technological developments will help move tracing of commodities further upstream to the level of production and will help tie them to local forest impact.

- Companies producing or sourcing from deforestation hotspots are more advanced in operationalizing their commitments than those with less exposure to these highly deforesting regions. Companies are likely more active on policies and monitoring in deforestation hotspots to mitigate risks.

- NYDF endorsers and TFA 2020 member companies are leading the way in adopting commitments and translating them into actions. Companies that are engaged in these initiatives show significant progress in adopting policies and systems to implement their commitments. A selection bias, however, suggests that more-advanced companies are more likely than companies that are lagging to disclose information on progress.

While commitments are useful in determining companies' intents to address deforestation, they do not indicate progress toward tangible action. Such progress comes in the form of implementing the systems and policies necessary to reduce forest impact. The second criterion

assesses companies' progress in taking operational steps, typically starting with forest-risk assessments and then moving to policy formulation and standard setting, implementation of policies, monitoring of compliance, and evaluation of their effectiveness. Although these steps broadly reflect the implementation process, companies' exposure to deforestation, their role in the supply chain, the countries in which they operate, and their company structure eventually define their strategy to address deforestation and promote sustainability in their supply chains, resulting in a multitude of different implementation strategies.

Indicator 2.1: Adoption of deforestation-related policies to implement commitments

Across data sources, almost all companies assessed have begun to operationalize their commitments. According to CDP data, a large majority of companies (84–87%, depending on the commodity) have assessed their deforestation risks and opportunities (Figure 8). The majority of upstream (56–70%) and downstream companies (64–87%) have also taken steps toward implementation by adopting production or procurement standards. Production standards refer to company-defined environmental safeguards or requirements for the production of raw materials for the selected commodity. Procurement standards, in contrast, define quality requirements for the acquisition of commodities from suppliers. They can define positive (e.g., preferential sourcing of certified products) or negative (e.g., moratoria on purchases from deforested lands) criteria.
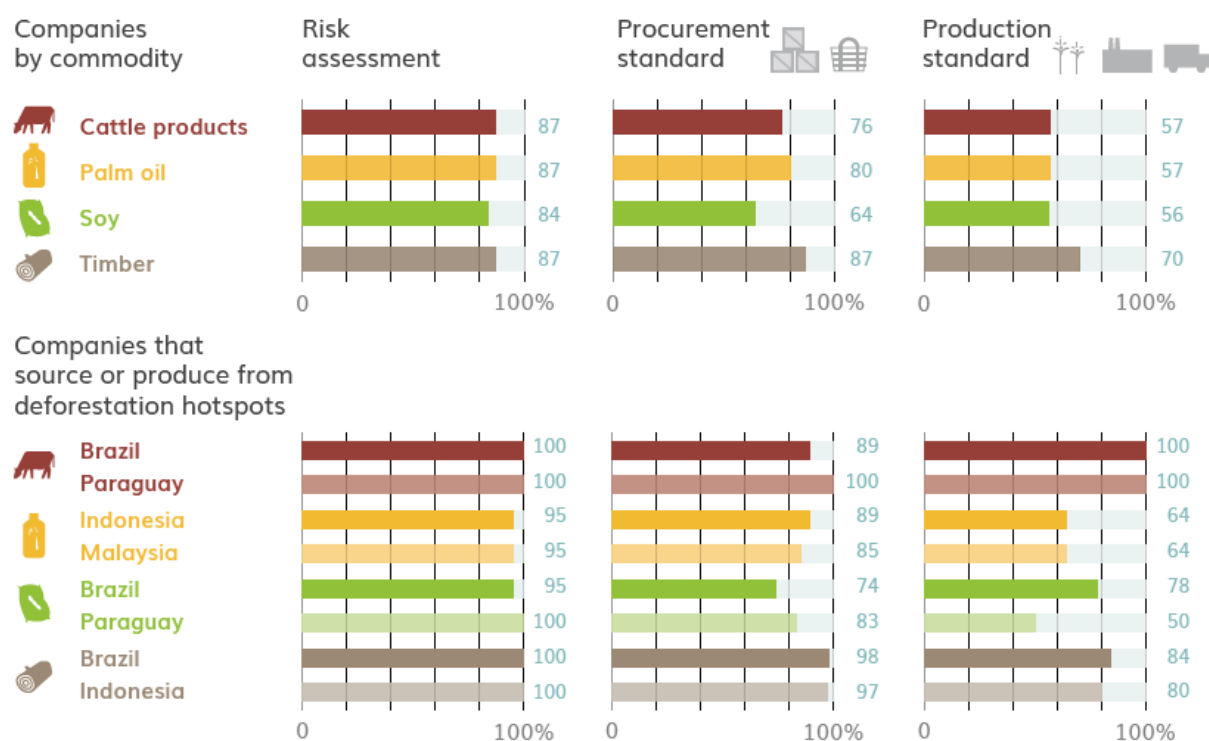
Source: Climate Focus graph based on data from CDP, 2015

Figure 8 Share of companies (out of 179) that adopted specific policies or strategies, by commodity. Procurement standards data are collected only for manufacturers and retailers, while production standards are for producers, processors, and traders.

26

All NYDF and TFA 2020 companies interviewed have adopted operational plans and standards for procurement or production (Figure 9). Often these apply only to select commodities or geographies. Many companies further up the supply chain rely on certification systems that provide a standard that sets requirements for production, forest conversion, and verification and monitoring of compliance (Box 5). A large majority of companies interviewed also associate certification standards with credibility. Two-thirds (68%) of the interviewed companies also use measurable values that demonstrate how effectively they are in achieving their targets. Such Key Performance Indicators (KPIs) related to deforestation are often tied to shares of certified commodity produced or sourced or to a supplier's compliance with set-aside and protection requirements. Several companies are also in the process of defining corporate KPIs tied to local forest impacts. Establishing a common understanding on relevant metrics and definitions across supply-chain actors, geographies, and commodities remains challenging, however. Efforts are also complicated by a lack of data—for instance, for establishing a company-wide baseline of deforestation and relevant indicators to measure progress.

"*Setting up common definitions and goals for deforestation policies remains a challenge both within companies and in communication with suppliers and other stakeholders. We have developed comprehensive deforestation policies but integrating these into KPIs has proved difficult.*" *-NYDF endorser/TFA member interviewee*

Share of companies that adopted specific policies.

INTERVIEWS	"YES" RESPONSE
Have you adopted specific policies to measure your direct forest impact?	Forest risk analysis 76%
	Operational plan 100%
Source: Climate Focus (26 companies: NYDF endorsers/TFA 2020 members)	Production/Procurement Standards 100%
	Key performancec indicators 68%

Source: Climate Focus graph based on data from interviews, 2016

Figure 9 Share of companies (out of 26 NYDF endorsers/TFA 2020 members) that adopted specific policies based on interviews with NYDF endorsers and TFA members

Box 5. The role of certification

Certification standards specify requirements that suppliers may be required to meet relating to a wide range of sustainability criteria, including biodiversity and forest conversion. They govern an increasing global market share in certain commodities, including coffee (40%), cocoa (22%), and palm oil (22%). [44; 92] Since 2008, standards defined by the Roundtable on Sustainable Palm Oil (RSPO), SAN, and UTZ experienced a significant growth in compliant areas, increasing 30-fold, 9-fold, and 6.5-fold respectively. [44] The global market share of certified timber and pulp (11%), sugar (3%), and soybeans (2%) have however remained relatively low. [44; 92] There is currently no industry-supported certification standard. There are small volumes of beef being certified by Rainforest Alliance (through SAN) and the Global Roundtable on Sustainable Beef does not have a global certification standard but rather promotes regional initiatives. The global market share numbers are reflected in the type of commodities companies are seeking certification for, with companies primarily focusing on palm oil and wood and paper products.

	Palm Oil (RSPO)	Soy (RTRS)	Productive Forests (FSC/PEFC)
Brazil	40%	20%	1.8%
Indonesia	19%	—	2%
Malaysia	23.1%	—	23.1%
Paraguay	—	1.4%	1%

Sources: (44; 46; 47)

While certification standards are a central component of private sector commitments to reduce deforestation and forest degradation, there is little empirical evidence regarding their large-scale and long-term impacts on forests. [48] A report in 2012 acknowledged that, in the near term, certification standards have resulted in short-term positive ecological impacts, but these are on a case-by-case basis and not universal across and within all certification schemes. [48] Geographically focused studies concluded that RSPO certification led to reduced deforestation in Indonesian oil palm plantations, [53] and that FSC certification had no effect on deforestation in Mexico [50] but it decreased deforestation in certified forests in Chile [51] and Indonesia. [52] There are currently no empirical studies on the effects of deforestation leakage from certification.

In addition to the elements listed above, there are measures that certification proponents take to address forest loss. Agricultural certification standards can ensure direct impact by setting cutoff dates for deforestation sufficiently far in the past and by accurately identifying production areas, forests, HCV, and other important ecosystems to prevent conversion during plantation establishment. [45] Some certification standards, like RSPO, Roundtable on Sustainable Soy (RTRS), SAN, and UTZ, allow offsetting of past unsustainable practices by protecting or restoring an equivalent area of land originally deforested. [45] Other agricultural certification standards, like Naturland, increase their direct impact by restoring degraded and deforested areas or by establishing minimum forest cover on certified areas. [45] Similarly, some forest certification standards enhance their forest-related impacts by working with governments in locating their plantations next to HCV or primary forests, so as to provide a buffer for these areas. [49]

A major limitation of certification schemes is their lack of influence over the "bottom of the market". [48] In situations without an overarching forest protection framework, other actors may continue to clear and degrade forests in these areas. Certification schemes exert greater influence over production when a large proportion is consumed in environmentally sensitive markets, as in the case of premium certified coffee exported to the North America and the European Union, for example. [48] Influencing the late adopters, however, will require a combination of public policies and enforcement, financial incentives, and civil society movement in less environmentally sensitive markets.

Ultimately, agriculture and forestry commodity certification standards are only as good as the standards they set, implement, and enforce, the scale at which they are adopted, and the level of demand of sustainable versus unsustainable product. Given the limitations of certification standards, they should not be regarded as a silver bullet but as a potential tool to address forest loss.

It also cannot be confirmed whether these systems and policies are adequate in reaching the ambition presented in Goal 2 of the New York Declaration. According to 2016 *Forest 500* data (Figure 10), only around half (49%) of all companies assessed had introduced time-bound, commodity-specific operational plans to guide the implementation of their commitments on palm oil. For all other commodities, the shares were lower, at 43% for pulp/paper, 14% for timber, 21% for soy, and 11% for beef/leather.

Share of companies that adopted commodity-specific policies that are timebound until 2020.
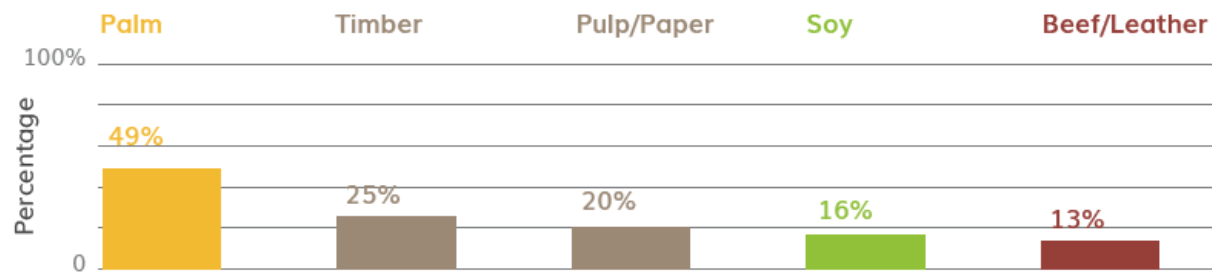
Source: Climate Focus graph based on data from Forest 500, 2016

Figure 10 Share of companies (out of 250) that adopted commodity-specific policies that are time-bound until 2020.

Related to the adoption of procurement standards, CDP's forests program notes in the 2015 Global Forests Report that nearly two-thirds of companies that use certification to ensure security and continuity of their palm oil supply *encourage* (64%) or *prefer* (18%) rather than *require* (18%) certification from suppliers. [23] Company standards and guidelines also often remain general and few companies provide adequate guidance and support for staff and suppliers to implement policies. For instance, in the same CDP report, only five companies explicitly reported that they train their procurement staff on the application of standards, and only one-quarter (26%) of manufacturers and retailers run workshops or provide trainings for their suppliers on sustainable commodities. [23]

Further, only a small share (13%) of manufacturers and retailers reported to be working directly with suppliers on the joint implementation of sustainability requirements, [23] for example by providing technical assistance for obtaining certification or improved production and forest management practices. Other companies are developing outgrower schemes that combine micro-finance with off-take agreements and offer more-secure livelihood alternatives to rural communities in developing countries, often with support from public funding. In the context of larger-scale suppliers, a few sourcing companies also reported organizing trainings or information events to promote their procurement policies.

Companies recognize, however, that multi-stakeholder collaboration across the supply chain and support from outside will be critical in helping companies to formulate and implement deforestation-related policies. NGOs, think tanks, and multi-stakeholder initiatives such as commodity roundtables therefore play an important role in supporting company-tailored implementation strategies. The Forest Trust, Rainforest Alliance, KnownSources, and Global Forest Watch of the World Resources Institute (WRI), to name a few, are working closely with companies to support them in defining and/or implementing their policies and systems (Box 6).

Box 6. Musim Mas and CORE

In the palm sector, soon after the NYDF was signed companies started to act on their forest and social policies differently, depending upon their business culture, suppliers, customers, and other market or political pressures, in ways supportive of the declaration's goals. In Southeast Asia, the big firms growing, processing, and trading palm oil or its derivatives and their co-products have turned to conservation and human rights nonprofit organizations as well as for-profit consulting companies to advise on strategy, design policies or plans for action, assess risk or identify gaps, and even audit the performance of supply chain actors.

In Indonesia, for example, an alliance of Proforest, the Rainforest Alliance, and Daemeter Consulting is working together as the Consortia of Resource Experts (CORE). By working in a consortium, the organizations are able to draw on one another's complementary skills and respond more completely to the needs of plantation companies and independent smallholders. CORE has worked with Musim Mas, Unilever, and Astra Agro Lestari, and other companies are in the pipeline. One central aspect of the work is the inclusion of smallholder growers, who produce up to 40% of Indonesia's palm oil and thus play an important role in achieving corporate goals of the NYDF.

In 2015, CORE was engaged by a leading palm oil company, Musim Mas—headquartered in Singapore and with operations throughout Indonesia, the Asia-Pacific region, Europe, and the Americas—to support the implementation of the company's sustainable palm oil policy. The scope of work began with traceability verification to a small number of refineries. The company engaged CORE to first conduct bio-physical risk assessments for the top 100 mills (out of over 600) that supply Musim Mas. Emphasizing risks within key provinces, such as Riau, Central Kalimantan, and North Sumatra, enabled the company to target efforts on priority landscapes and suppliers. Further, Musim Mas has undertaken traceability assessments and also HCS, HCV, and social assessments of smallholders and independent mills.

CORE applies an approach to verification that includes standardized methodologies for mill-level verification criteria, verification assessments, and reporting, which includes recommendations for continuous improvement. An important element in its approach is supplier workshops, which enable Musim Mas to explain to its key suppliers (mill owners or head managers of small holder producer groups) the purpose of third-party verification audits, to communicate its policy commitments, and to discuss the practical implications for their operations and ways to implement the commitments.

CORE has carried out three on-site verifications for palm oil mills in the Musim Mas supply chain. Seven more are planned. These verifications determine first-hand how well suppliers are doing in meeting its purchasing policies, identify the main issues for improvement, and monitor implementation of company policy on traceability to specific mills, a precursor of monitoring traceability to plantations. Some issues can be implemented by suppliers alone, while others will need additional support from Musim Mas, and still others will require actions at a scale of support including other companies or government. In addition, as a Palm Oil Innovation Group (POIG) member, Musim Mas asked Rainforest Alliance for an evaluation of the Group's operations using the POIG verification indicators and an RSPO NEXT Gap Analysis.

Companies like Musim Mas have turned to specialist practitioners, such as Proforest, the Rainforest Alliance, and Daemeter, as one part of their strategy for responsible production and sourcing, especially where that may help them resolve any issues they have in getting suppliers to be compliant with their policies. The example here is a risk-based approach to analyze and target implementation of corporate policies, which is one that Musim Mas and other companies in the sector are adopting. Importantly, it signifies movement forward in pushing accountability further upstream to mills and producers, which is essential for progress in field implementation of corporate actions to meet NYDF goals.

Source: Rainforest Alliance

Indicator 2.2: Monitoring of compliance with deforestation-related policies

Based on CDP data, the majority of companies have traceability systems in place[10] with higher shares for timber and cattle products (88% and 78% for upstream and downstream companies in the timber sector; 64% and 74% in the cattle sector) (Figure 11). Few of these systems, however, allow companies to trace commodities back to the local level of production. Out of the manufacturers and retailers that have a traceability system in place, almost half (48%) of

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[10] For the traceability analysis for manufacturers and retailers, this analysis considers only the manufacturers and retailers that provide a percentage of total production/consumption traceable.

companies sourcing cattle products are able to trace origin back to specific farms.[11] For soy, the largest share (52%) can only be traced back to the country level; most palm systems (39%) trace back to the processing facility.

Companies with traceability systems and level of traceability

Share of companies with traceability systems
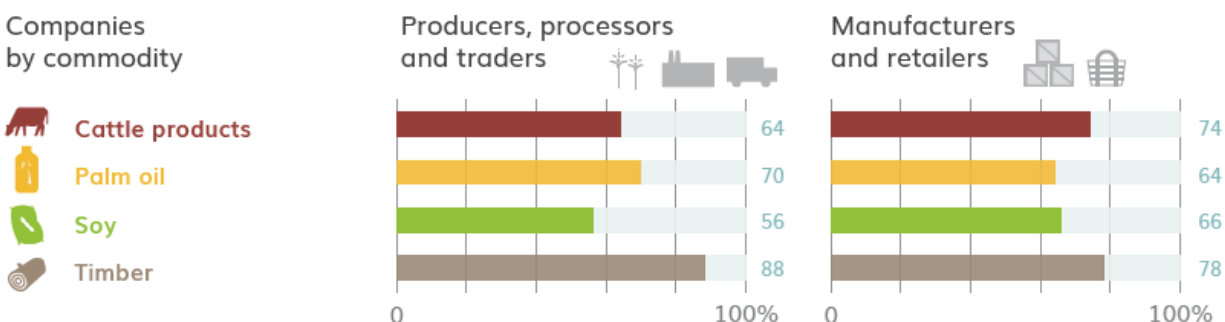
Companies by commodity	Producers, processors and traders	Manufacturers and retailers
Cattle products	64	74
Palm oil	70	64
Soy	56	66
Timber	88	78

Share of manufacturers and retailers that can trace back to specific points of origin

Geographical units:

	Country	Province	Region	Processing units: Mill
Cattle	29	0	10	6
Palm	27	2	12	39
Soy	52	7	10	7
Timber	21	5	9	21

Production units:

	Farm	Plantation	Forest	Forest mgmt. unit
Cattle	48			
Palm		7	2	
Soy	14			
Timber		2	23	13

Source: Climate Focus graph based on data from CDP, 2015

Figure 11 Share of companies (out of 179) that have traceability systems in place, and share of manufacturers and retailers that can trace back to specific points of origin.

In our sample of NYDF endorsers and TFA 2020 members, almost all companies (96%) have a monitoring system in place to track compliance (Figure 12), though further analysis would be required to determine how specific and rigorous these systems are. A large majority of interviewed companies (78%) also reported that their systems included all of their subsidiaries

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[11] Considering that cows pass through various farms in their live cycle, the traceability often refers only to the farm that supplies the cows to the meat processer (the last direct supplier). It is also important to remember that a small share of farms supply beef to international markets.

and suppliers, at least for certain commodities or supply-chain parts (Box 7). However, only a third of interviewees use geo-spatial systems to monitor forest impacts.

Several companies reported that they are further developing their traceability systems. Some are partnering with NGOs and think tanks (e.g., TFT, Rainforest Alliance, WRI) in their efforts to report and in some cases also to measure compliance in a much more tailored manner. Others rely on internal auditing processes or on suppliers to implement monitoring systems (including geo-spatial information) at the production level. A few companies monitor compliance as part of their reporting for sustainability initiatives they participate in (e.g., commodity roundtables, Norwegian Alliance for Sustainable Palm Oil).

It is essential to obtain "up-to-date information and quickly point out the sources of deforestation for collective action in the landscape." -NYDF endorser/TFA member interviewee

Share of companies that have instituted specific systems for monitoring

INTERVIEWS

Do you use a monitoring system to measure your direct forest impact?

Source: Climate Focus (26 companies: NYDF endorsers/TFA 2020 members)

"YES" RESPONSE

Monitoring systems............96%
Traceability systems..........96%
Geo-spatial data...............38%

Source: Climate Focus graph based on data from interviews, 2016

Figure 12 Share of companies (out of 26 NYDF endorsers/TFA 2020 members) that have monitoring systems to measure direct forest impact based on interviews with NYDF endorsers and TFA members

In our interviews, many companies voiced the need for a global and unified traceability system and database. Barriers that were mentioned include high costs and level of resources required for ground-truthing, as well as legal limitations in publishing concession data. Where concessions for conversion of lands are not disclosed by the relevant authorities, companies are often not able to undertake enforcement efforts of conservation areas outside their concession areas.

"A lack of communication and cooperation between upstream and downstream players in the supply chain often complicates the traceability of primary commodities." -NYDF endorser/TFA member interviewee

Box 7. Asia Pulp and Paper Group—Monitoring continued compliance from third party suppliers

Asia Pulp and Paper Group (APP) has a clear set of policies and procedures for engaging (or disengaging) with fiber suppliers that provides an example for other companies that rely on the actions of third-party suppliers to meet their deforestation-related commitments.

As part of their Forest Conservation Policy, APP has committed to an immediate halt to all natural forest clearance in its supply chain and to preventing natural forest fiber from reaching their pulp mills. [93] APP also shifted its business model to focus on a landscape approach, acknowledging that both commercial and conservation activities require integrated and multi-stakeholder land use planning. APP has endorsed the New York Declaration on Forests, and it joined the Bonn Challenge with a commitment of supporting the protection and restoration of degraded forest landscapes in Indonesia.

Working toward these targets involved establishing a strong chain of custody, traceability systems, and consistent monitoring throughout APP's supply chain. Through greater collaboration with suppliers, APP has taken control of its own supply chain while also working with the government, civil society, and communities to address the factors outside of their direct control that lead to deforestation. [69] APP implements a rigorous assessment of each of its suppliers, starting with an Association Procedure launched in 2014 after consultation with NGOs. The Association Procedure defines a mandatory framework for suppliers assessing compliance, systems to detect violations, and mechanisms to deal with grievances. [68]

APP also developed the Responsible Fiber Procurement and Purchasing Policy to ensure that suppliers adhere to responsible forest management. [66] The policy focuses on legality and type of wood being supplied. Furthermore, all suppliers are subject to APP's Supplier Evaluation and Risk Assessment (SERA) framework, which annually evaluates suppliers against at least 12 indicators combining qualifications from APP's internal policies and other global sustainable forest product standards. [68] The SERA includes tools to request information as an initial screening to ascertain the need for more in-depth studies or field assessments. Requirements differ depending on the wood fiber source supplier, with different frameworks for suppliers from industrial plantation forest concession holders, smallholder suppliers from community forests, and imported pulp suppliers. [69] The results categorize a supplier as either a significant or a negligible risk. If labeled a significant risk, suppliers are given the chance to comply with APP policy by following prescribed and time-sensitive "corrective or preventive actions". [65]

Pulpwood suppliers are further assessed through APP's Sustainable Forest Management Scorecard and face ongoing monitoring by independent observers. [65] To improve its forest monitoring ability, APP is currently working to identify higher resolution and near-real-time remote sensing systems to detect forest cover change. If the annual SERA for an existing supplier identifies any unacceptable activities, the case is reviewed and if necessary is brought to the Joint Steering Committee, which consists of top management from APP, Sinarmas Forestry, and APP's implementation partner, The Forest Trust. [67] If the supplier can prove it has fulfilled APP's requirements within the allotted time frame, then it can become or continue as an APP supplier.

APP is also making great strides in transparency through its Monitoring Dashboard, which makes available relevant policy documents and supplier concession maps and which provides updates and details on APP's many other sustainability initiatives. [65] Finally, APP is engaging with local government to combine efforts and information in order to track activities, prioritize areas for monitoring, and work together across broad areas that are difficult to monitor for just one company or one actor alone. [69]

Indicator 2.3: Compliance with deforestation-related policies

Companies use different strategies to measure compliance. Many assess the share of commodities that comply with certification standards or internal standards; others also report on traceability objectives or on compliance with national legislation. However, fewer than half (approximately 45%) of the companies publish quantitative information on compliance with their forest policies, according to *Supply-Change.org* data (Figure 13). This lack of knowledge or disclosure on progress shows that companies are still struggling to implement and monitor their forest policies. The share of companies volunteering information is particularly low for those with company-wide commitments (14%), which may be due to the lack of quantitative indicators that cover all commodities. Some companies use a combination of internal and external

standards to measure and monitor compliance, and some use this strategy to help suppliers build capacity (Box 8).

Missing information from suppliers' sources of commodities is a major challenge that companies face in measuring compliance. Traders and other go-betweens are often reluctant to share commercially sensitive information. Nevertheless, *Supply-Change.org* data show that companies that disclose information claim high levels of compliance, with an average of 70% compliance with company policies, ranging from 60% for palm to 82% for cattle (Figure 13).

"To get all information for a product along the entire supply chain" is challenging and "suppliers are often neither aware nor eager to provide information that would be needed for full traceability." -NYDF endorser/TFA member interviewee

Self-reported compliance of forest commitments

KEY
- Disclosure rate
- Average progress
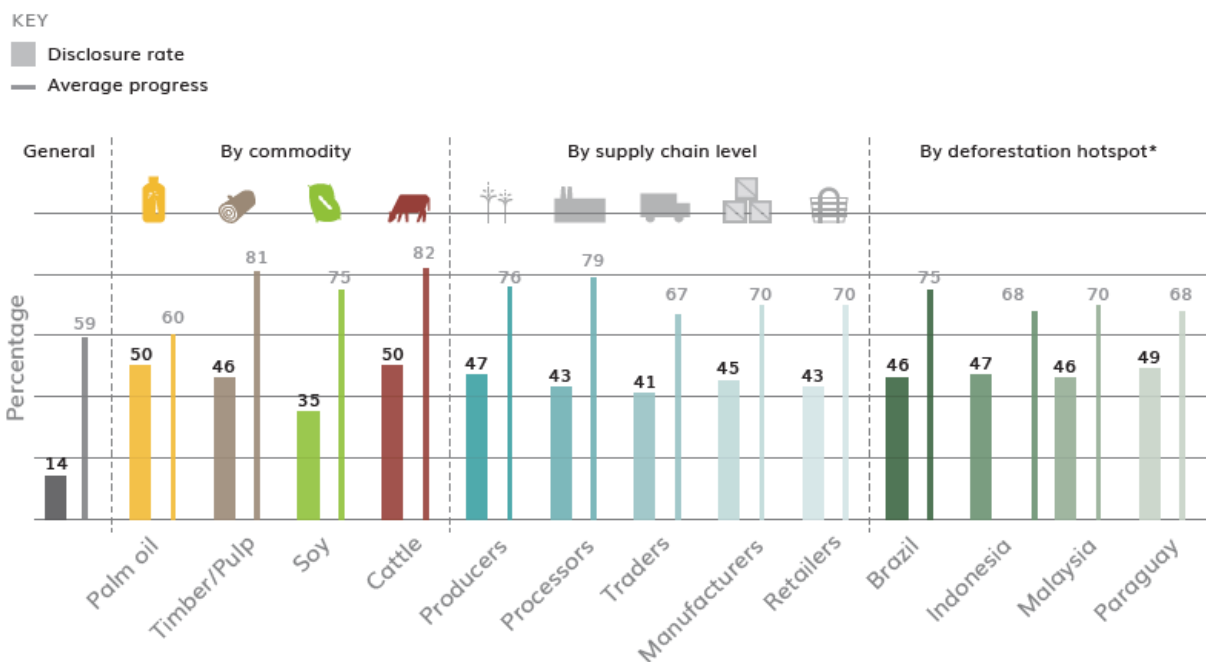
* Based on 643 commitments from companies soucing or producing in deforestation hotspots

Source: Climate Focus graph based on data from Supply-change.org, 2016

Figure 13 Disclosure rate and average progress toward commitments reported by companies (out of 415).

The Sustainability Consortium tracks company compliance based on the share of supply for which companies can exclude the conversion of High Conservation Value (HCV) and High Carbon Stock (HCS) forests. The Consortium collects information primarily from retail and manufacturing companies. Across commodities, 2014 data show that a large group of companies is unable to determine whether their supply excludes the conversion of HCS and HCV forests (Figure 14). Some companies may, however, produce these commodities without deforestation

risks (e.g., sourcing beef or soy from the United States) or without applying these specific concepts.

Number of companies reporting on the share of supply not coming from converted HCV or HCS forests

KEY
- 75–100%
- 50–75%
- 25–50%
- 0–25%
- Unable to determine

Beef and dairy feed: 91
Beef: 46
Paper products: 168
Palm oil: 54
Crops (incl. palm oil and soy): 447

Number of companies
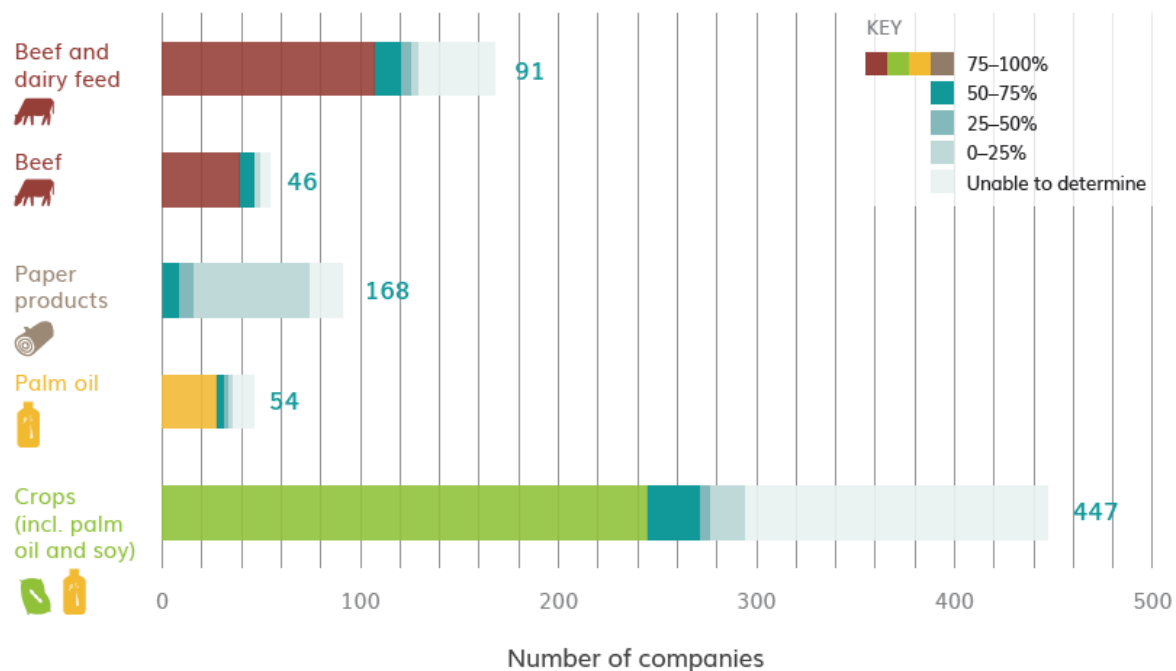
Source: Climate Focus graph based on data from The Sustainability Consortium, 2015

Figure 14 Retail supplier responses to a key performance indicator on deforestation from HCV or HCS forests. Soy-based feed is included in the beef and dairy feed category. Number of companies reporting on the share of supply not coming from converted HCV or HCS forests.

Implementation in Deforestation Hotspots
Companies producing or sourcing from deforestation hotspots are more advanced in operationalizing their commitments. Consistent with the commitment results, high risks of deforestation mean that companies are likely more actively working on the implementation of their pledges.

According to CDP data, the share of companies that have adopted policies or strategies (risk assessment and procurement and production standards) in deforestation hotspots is approximately 10–20% higher than the global group (Figure 8). Interestingly, cattle and timber have the highest percentages (approximately 100% in Brazil and Paraguay and 90% in Brazil and Indonesia respectively) of companies adopting the aforementioned policies.[12] Of the companies that disclosed data on each commodity, approximately 60% report to produce in or source from Brazil, 57% in Indonesia, 60% in Malaysia, and 14% in Paraguay.

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[12] Some of these percentages are taken from a small subset of companies—for example, only four companies in the case of cattle in Paraguay.

These findings are similar for monitoring systems, with significantly higher percentages of companies with traceability systems (close to 100% for soy, cattle and timber) compared with the global situation (Figure 15). Further, more than 50% of sourced cattle from Brazil and Paraguay can be traced back to the last direct supplier. On compliance, however, *Supply-change.org* data show that the disclosure rate and average progress in deforestation hotspots reflect the global averages (Figure 13).

Traceability systems and level of traceability for companies producing and/or sourcing from deforestation hotspots

Share of companies with traceability systems

Companies by commodity in hotspots	Producers, processors and traders	Manufacturers and retailers
Brazil	88	89
Paraguay	100	80
Indonesia	79	75
Malaysia	71	74
Brazil	89	89
Paraguay	100	100
Brazil	96	84
Indonesia	93	87

Share of manufacturers and retailers that can trace back to specific points of origin

Geographical units:

Country		Province		Region		Processing units: Mill	
Br.	29	Br.	0	Br.	8	Br.	4
Pa.	50	Pa.	0	Pa.	0	Pa.	0
Ind.	30	Ind.	0	Ind.	11	Ind.	44
Ma.	31	Ma.	0	Ma.	10	Ma.	45
Br.	59	Br.	6	Br.	12	Br.	6
Pa.	83	Pa.	0	Pa.	0	Pa.	0
Br.	21	Br.	7	Br.	9	Br.	30
Ind.	30	Ind.	7	Ind.	4	Ind.	26

Production units:

Farm		Plantation		Forest		Forest mgmt. unit	
Br.	54	Ind.	11	Br.	21	Br.	9
Pa.	50	Ma.	10	Ind.	15	Ind.	11
Br.	6						

Source: Climate Focus graph based on data from CDP, 2015

Figure 15 Share of companies sourcing or producing in deforestation hotspots that have traceability systems in place, and share of manufacturers and retailers that can trace back to specific points of origin. Some of these percentages are taken from a small subset of companies—for example, only four companies in the case of cattle in Paraguay.
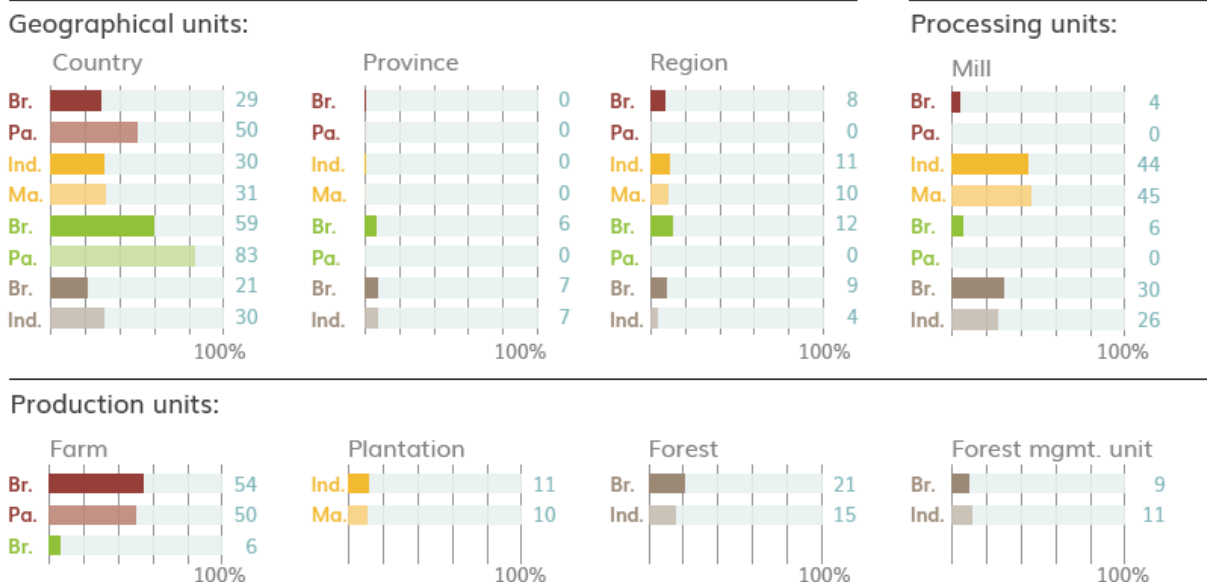
Box 8. IKEA: Compliance from wood suppliers

IKEA plans to become 'forest positive' before August 2020 by continuing to maintain full compliance with their forestry requirements, promote the adoption of sustainable forestry methods beyond IKEA's needs, and contribute to ending deforestation. As part of becoming 'forest positive' IKEA has set a goal that by August 2020 they will contribute to the Forest Stewardship Council (FSC) certification of 10 million hectares of forest in priority areas (from a 2013 baseline), which is more than double the total area needed to supply IKEA. [70] This goal is in addition to the 35 million hectares of FSC forest already added through IKEA's earlier efforts via WWF and IKEA partnership projects. To accomplish this IKEA continues to partner with FSC and WWF to help the certification body grow, but more importantly they work with their suppliers on increasing the rigor of their compliance over time and thereby increase their FSC-certified supply base. This begins with IKEA's Forestry Specific Standards, whereby wood suppliers must meet the following minimum requirements: [71]

- Not from forests that have been illegally harvested
- Not from forestry operations engaged in forest related social conflicts
- Not harvested in Intact Natural Forests or other geographically identified High Conservation Value Forests (HCVF) unless certified according to a system recognized by IKEA
- Not from officially recognized and geographically identified commercial Genetically Modified tree plantations.

IKEA's Planet Positive Strategy includes securing long-term access to sustainable raw materials, ensuring a positive impact on the communities where they source, and using resources within the limits of the planet. One step to achieving these goals includes sourcing 100% of their wood, paper, and cardboard from More Sustainable Sources (MSS), which at the moment means either FSC-certified or recycled wood. IKEA also set the requirement to use only wood from MSS (FSC-certified) in high-risk countries by FY17 – a major shift in the way IKEA manages risk and promotes responsible forestry in those challenging areas. [72] On the way to 100% sustainable wood sources, IKEA works with suppliers on continual improvement by navigating four levels of increasing compliance requirements. [73]

Level 1 is mandatory and Level 4 corresponds to independent certification of wood products (according to the FSC label). Suppliers must meet Level 2 requirements before they can contribute goods to the supply chain. Suppliers have to complete the IKEA Forest Tracing Survey and prove that they maintain an Incoming Wood Register. Suppliers of wood raw material must also train personnel on new policies and inform sub-suppliers of IKEA's minimum requirements and prove that these sub-suppliers agree to implement the policy down the supply chain.[74] Also, the wood must not originate from protected areas, and the supplier must collect wood origin data and identify and verify high risk sources with a plan to either qualify the wood or separate it from IKEA production. Furthermore, there can be no wood from plantations in the tropical and subtropical regions established after November 1994 by replacing intact natural forests. [74; 73] IKEA suppliers can then move to Level 3, called 4Wood, and this step was created to ease the transition from Level 2 to Level 4. The 4Wood standard emphasizes using wood-tracking procedures and other routines to better control wood from procurement through production. The final step is Level 4, where wood suppliers' forests are certified. Currently IKEA relies on FSC certification to determine if a supplier has reached Level 4. [73]

IKEA and its forest specialists work to spread knowledge about forest management and help trace wood back to its origins to verify IKEA wood requirements are met throughout the entire supply chain. Beyond training and monitoring, IKEA surveys and audits its suppliers on a regular basis. [76] IKEA has the ambitious goal to reach 100% certified or recycled wood by 2020 (reaching their 2017 target of 50% two years ahead of time), and they finished FY16 with 61% from MSS. [72] IKEA has been successful because they understand most suppliers can't meet all the IWAY forestry standards without some help, and this is why IKEA works with global and regional partners, like WWF, to expand FSC certified forest areas and support IKEA suppliers and their partners in securing More Sustainable Sources.

Criterion 3: Support by non-supply-chain actors

KEY MESSAGES

- Despite increasing civil society pressure, *Forest 500* reports that only one-third of 150 assessed financial institutions have deforestation-related commitments in place. The United Nations Environment Programme (UNEP) finds only a small percentage of

institutions that monitor compliance with such commitments, and even fewer that offer financial instruments to support the implementation of sustainability measures in supply chains.

- While companies acknowledge their responsibilities, the public sector's role is essential for sustainable land use, and most successful policies have emerged in the context of strong government systems and public-private cooperation.

- Countries have taken measures to reduce deforestation, and REDD+ has increased the political will to improve forest governance. *Forest 500* reports, however, that that only 5 of the assessed 25 countries producing forest-risk commodities have made a zero-net, regional, or commodity-specific zero deforestation commitment.

- Companies also experienced little concrete improvement in forest governance and limited public sector support. They highlighted, however, specific incidents of improved collaboration and listed an increasing number of successful public-private initiatives. Jurisdictional and landscape-level programs are particularly promising where they are paired with private-sector action, such as in "produce-and-protect" partnerships.

The support of governments, financial institutions, and other stakeholders—including NGOs and civil society organizations—is crucial for achieving the shift toward deforestation-free sustainable agriculture. Governments must address governance weaknesses to enable companies to achieve supply-chain commitments. Successful company engagement will require significant improvements of the business environment in many tropical forest countries. Public and private financial organizations also have an important role to play. They are under pressure to follow suit and adopt deforestation-related commitments to support forestry as well as food and agricultural companies that seek to promote good land use practices but also to eliminate deforestation from their investment portfolios.

This indicator is based on an initial assessment of the banking sector by UNEP in 2015, on quantitative information from *Forest 500,[13]* which has developed scoring methodologies and indicators to assess progress for financial institutions and jurisdictions, and on reported progress in developing and implementing REDD+ strategies. [24] This information was supplemented with qualitative insights from company interviews, which reported on the barriers to the implementation of deforestation-related commitments, as well as accompanied case studies.

Indicator 3.1: Deforestation-related commitments by financial institutions
This indicator looks at the engagement of financial institutions, specifically their policies and commitments, in reducing deforestation. Investment decisions can be important drivers of deforestation and environmental degradation, but they also hold the potential to support a shift toward sustainable supply chains. The elimination of deforestation from supply chains will require the integration and leveraging of multiple funding sources—from rural credit to farmers—along with incentives from governments and donors as well as financial instruments supporting private-sector actors along the supply chain. This integration process should be built

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[13] Analysis of jurisdictions and financial institutions is based on 2015 *Forest 500* data.

on a clear understanding of what is required to address the drivers of deforestation and degradation at multiple scales and across multiple geographies.

Despite increasing NGO pressure, financial institutions continue to trail consumer goods companies in adopting policies to eliminate deforestation from their portfolios. [24] Since 2014, *Forest 500* has assessed the commitments of 150 financial institutions to address deforestation in their lending and investment activities. [25] In 2015, while two financial institutions scored over 80% for their commitments, the annual assessment showed that nearly one-third of investors had no commitment to tackle deforestation in any of their activities. The outcome of this disparity between the leaders and those that have yet to take action is that the median score of financial institutions for their commitments remained low in 2015 at 14%.[26] An initial screening by UNEP and partners in 2015 found that very few of the 30 surveyed financial organizations monitor compliance with deforestation-related policies and that only 13% had developed financial products or services supporting sustainable land use investments. [27] To allow financial institutions to self-assess their exposure to deforestation, UNEP and the Natural Capital Declaration—a global initiative to integrate natural capital considerations into financial products and services that was co-convened by UNEP Finance Initiative and the Global Canopy Programme—have developed the Soft Commodities Forest-risk Assessment Tool. Rainforest Action Network and partners in turn launched an online tool to highlight the role that finance plays in enabling tropical deforestation,[14] while Friends of the Earth has a new website that allows investors to identify investments associated with "dirty palm oil" and to make more-sustainable investment choices.[15]

Public banks have a particularly important role in steering rural development. Their ability to pair access to credit with public policy priorities addresses one of the challenges identified by interviewed supply-chain companies, namely the prohibitive costs for small-scale commodity producers (palm oil) to becoming certified. An estimated 80% of available smallholder finance comes from public policy banks (that is, state and agricultural development banks). [28; 6] However, credit also matters for larger operations, and public institutions have significant influence to steer behavior via public credit programs. In fact, a condition imposed on Brazil's public credit program for the Amazon may have been one of the most effective policies to curb deforestation in that region (Box 9).

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[14] See forestsandfinance.org

[15] See deforestationfreefunds.org

Box 9. Brazil's policy to improve rural access to credit in the Amazon

Conditional rural credit can be an effective policy instrument to combat deforestation. One of Brazil´s most traditional mechanisms of supporting agriculture is the use of rural credit to finance short-term working capital, investment, and commercialization of rural production. Rural credit is government-subsidized and can be used to support public policy goals, such as forest conservation. In 2008, Resolution 3,545 of the Brazilian National Monetary Council made rural credit in the Amazon Biome conditional on presenting proof of compliance with environmental regulation, the legitimacy of the land claims, and the legality of the rural operations. In 2008, the rural credit portfolio proposed by the federal government and carried out by official banks and credit cooperatives totaled BRL 78 billion (US$38.5 billion) for all of Brazil. In that same year, the Amazon Biome portfolio provided BRL 2.5 billion (US$1.24 billion) in rural credit. Credit is distributed through government banks and covers a third of the annual financial needs of the Brazilian agricultural sector. Any change and modification to rural credit programs greatly influences the country's agricultural sector. A 2013 study by the Climate Policy Initiative showed that Resolution 3,545 prevented over 2,700 km^2 of forest area from being cleared, representing a 15% decrease in deforestation between 2008 and 2011. [42; 35]

Indicator 3.2: Policy support and improvements in forest governance

For companies, short-term support in improving capacities or addressing financial gaps among local suppliers is essential (Box 10). But governments also need to improve the overall governance to create an enabling environment that removes risks and improves predictability for businesses.

Box 10. Building capacities for smallholder farmers

São Félix do Xingu has been one of the municipalities in Brazil most successful in reducing forest loss. Its herd of cattle (more than 2.2 million head) is one of the largest in Brazil and is largely responsible for its historically high deforestation rate. Standard practices for both small- and large-scale cattle production are low-intensity and highly degrading to the landscape, requiring new forest to be cleared every seven years. Through a public-private partnership—involving, among others, The Nature Conservancy, the Moore Foundation, and EMBRAPA—cattle producers are receiving support to implement more-efficient practices that avoid soil degradation and allow more cattle to be raised on the same amount of land, reducing the need to clear additional forest. Complementary commitments from corporations to eliminate deforestation from their beef supply chains (e.g., Walmart and Marfrig) further promote more-sustainable practices. [29]

The lack of governance and overall policy support remains a major barrier to implementation, and while there are specific geographies where conditions have improved (e.g., the adoption of the new Forest Code in Brazil), there are others where they have worsened (e.g., the demise of IPOP in Indonesia, Box 11). Many countries still do not have adequate legal and institutional frameworks in place, and in some countries, companies report incoherent forest legislation as a major problem (e.g., contradictions between local-level management regulations and national law).

Box 11. Indonesia's Palm Oil Pledge Dissolution

At the UN Climate Summit in New York in September 2014, six palm oil companies—Wilmar International, Cargill, Golden Agri-Resources, Asian Agri, Musim Mas, and Astra Agro Lestari—announced the Indonesia Palm Oil Pledge (IPOP). (57) These companies committed to "*creat[ing] an environment in Indonesia which enables and promotes the production of sustainable palm oil that is deforestation free, expands social benefits, and improves Indonesia's market competitiveness*". (55) The IPOP was meant to influence the Indonesian government to improve laws that protect forest and peatland, but the Indonesian parliament criticized IPOP for both treading on Indonesia's sovereignty and creating barriers for smallholder production (despite support for IPOP from the Oil Palm Smallholders Association). (54; 56)

Less than two years later, the pledge disbanded in July 2016. (55) The IPOP signatories cited Indonesia's efforts to strengthen national certification, Indonesian Sustainable Palm Oil, and the new moratoriums on peat development and palm oil licenses as reason enough to disband IPOP. (57) There were, however, also reports of government coercion to force IPOP's dissolution by threatening them with antitrust action. (54)

The creation and dissolution of IPOP is an example of the strain that exists between government and the private sector. Nevertheless before, during, and after IPOP, forward-looking companies have continued to strive to meet their deforestation-related commitments and inspire others to commit. (56) Those who worked to form IPOP will undoubtedly see its dissolution as a setback, but the now-former IPOP companies continue to implement their sustainability commitments and individually communicate with the government to share ideas and push for governance improvements that will enable President Jokowi to stop forest fires and keep others in the palm oil sector from further deforestation and development on peatland.

The 2015 assessment of jurisdictions by *Forest 500* illustrates that while some governments are leading on tackling deforestation, much remains to be done to support private-sector progress toward meeting Goal 2. In 2015, *Forest 500* assessed 40 countries on their policies, track records, and governance. (25) Of the 25 countries producing forest-risk commodities, one-fifth were found to have a zero-net, regional, or commodity-specific zero deforestation commitment. The median score of these countries, which have the largest (sub)tropical forest coverage but are experiencing commercial agricultural expansion as a major driver of deforestation, was 48% (score range from 28% to 65%), with Latin American countries scoring the highest (53% on average). For 2014, the score was 44%, which indicates a positive development toward reducing forest loss. Likewise, of the 15 jurisdictions assessed as the major trading partners of these 25 producer countries, the median score was only 47% (score range from 30% to 76%), with Germany, the Netherlands, and the United States scoring the highest. (26) These results show that while countries are taking action to enable private-sector commitments, these efforts are not amounting to transformation change and are insufficient to change the business environment at scale.

Over the last few years "political commitments to improve the state of forests have surged substantially." -NYDF endorser/TFA member interviewee

Nevertheless, several interviewees noted that the engagement of tropical forest governments in REDD+ has increased political commitment and in some cases resulted in concrete action. As part of their jurisdictional REDD+ programs, many governments are developing new sustainable land use policies that combine food security, reduction of rural poverty, and conservation of ecosystems. (29) There have also been relevant developments in importing countries and trading partners, including the adoption of legislation to promote legal timber in Japan; substantial

enforcement of existing legislation in Australia, the European Union, and the United States; and the launch of a voluntary initiative to promote legal timber in China. (30)

"Several interviewees noted that policy processes would benefit from a more cooperative and multi-stakeholder approach that involves all actors across the supply chain and at all levels of governance". -NYDF endorser/TFA member interviewee

Notable in this context are jurisdictional efforts that seek to tackle the conversion of tropical forests through concerted and unified action across an entire jurisdictional territory—whether at national or at various subnational levels, from whole national territories to federal states and districts. Initially associated predominantly with the implementation of REDD+, recent years have seen both the number and variety of these initiatives grow considerably, creating a vibrant landscape of approaches. Among others, the range of approaches now includes sustainable rural development policies and territorial governance models (e.g., in Mexico), production-protection arrangements tested in broader scales (e.g., in certain countries like Liberia and in Mato Grosso), green growth compacts (e.g., in East Kalimantan), and jurisdiction-wide low-emission rural development plans (e.g., West Papua). The mode of operation and stage of development varies considerably among these initiatives. Some jurisdictions are based on partnerships with donor governments and focus on results-based payments for REDD+, while others emphasize jurisdictional sustainability certification. The adoption of the first two Emission Reduction Programs by Forest Carbon Partnership Facility participants is indicative of this progress, although the organization is still falling short of its targets.(31) Some countries make use of a dedicated regulatory framework and jurisdictional forest monitoring system, while others rely primarily on action plans anchored in multi-stakeholder coalitions.

Such jurisdictional initiatives offer private actors an opportunity to collaborate with governments in implementing supply-chain commitments. One example is the produce-and-protect initiatives, such as the initiative of Unilever and Marks & Spencer to procure preferentially from jurisdictions areas that have designed and are implementing jurisdictional forest and climate initiatives, or such as the partnership between TFA 2020 members and the government of Liberia (Box 12). (32) The most important and promising element of these initiatives so far has been the opportunity to drive dialogue and convergence of common goals across business, government, and community stakeholders. (33) In the Brazilian state of Mato Grosso, cooperation among the government, the private sector, and NGOs helped bring jurisdictional approaches from REDD+ together with commodity sustainability processes and led to a unified set of goals, milestones, and monitoring approaches. In Paris, several countries also announced a number of additional new partnerships through which they will be able to implement concrete measures to reduce deforestation: (34)
  * Brazil and Norway made a joint announcement to extend their climate and forest partnership until 2020.
  * Colombia announced an ambitious partnership with Germany, Norway, and the United Kingdom to implement its vision for green growth, with a particular focus on halting deforestation in the Amazon region.

- Paraguay announced its commitment to recover and protect 1 million ha of forests by 2030 working in partnership with the Itaipu Binacional company and international support, with potential emissions reductions of 200 million metric tons of CO_2e.
- Liberia has a long-standing commitment through a 4C strategy that integrates community, commercial, conservation, and carbon storage services of forests.

Box 12. Golden Veroleum Liberia

Golden Veroleum Liberia (GVL)—a venture of Golden Agri-Resources (GAR), the world's second largest palm oil plantation company—is developing palm oil plantations in Liberia, a country that has experienced significant deforestation in the past 15 years but is still home to over 40% of the Upper Guinean forest. [77] The company has a concession covering 500,000 acres granted in 2010. [78; 79] GAR announced its Forest Conservation Policy (FCP) in 2011, and GVL implemented the FCP in 2013. [80] The FCP's goal is to ensure that GAR's (and GVL's) operational footprint has no deforestation. The policy commits to no development on High Carbon Stock (HCS) forests, High Conservation Value (HCV) forest areas, and peatlands. The policy also includes a commitment to free, prior, and informed consent (FPIC) and to compliance with all relevant laws and the national interpretation of RSPO Principles and Criteria. [81]

GVL follows procedure to ensure adherence to all aspects of the FCP, and this begins with communities interested in palm oil initiating first contact with GVL. GVL also conducts a land cover assessment that ensures a community has not purposely and pre-emptively cleared additional forest to increase the area available for oil palm. Next, the community officially invites GVL to brief the community on its criteria for development. This includes explaining GVL policy that the land developed will remain community land, that no disputed land will be planted, that resettlement of communities is not considered, and that only land not needed for other purposes will be developed. The community is also informed of GVL's adherence to both its own zero deforestation commitment and RSPO's principles and criteria and that GVL supports community outgrower projects. Also, per GVL's FPIC processes, the community is informed that throughout the formal process they should feel they have adequate time and information to make a collective decision. [82]

After the community is briefed, the members choose their own representatives, and a clear schedule of work is established. GVL then conducts an HCV and HCS assessment that removes the forestlands from possible development land. Then through participatory mapping the exclusionary process identifies other lands to prohibit development on, including the community and its farms, future farmland that anticipates community growth, culturally important areas, and riparian buffer zones. [82] The remaining land is the possible development land that is further divided between GVL and land for community oil palm. Then the FPIC process leads to an agreement between the community and GVL. The agreement establishes the land proposed for development after completing all of the exclusionary processes and a commitment to the FCP and RSPO certification. The benefits GVL provides (jobs, education, infrastructure, etc.) are also laid out in the agreement, as are the community's expectations. [82]

Currently neither HCV land nor HCS forests form part of the agreement area, and as a result neither GVL nor the community is obliged to manage or protect these forests in the gross concession areas. This is of concern, as oil palm development, population growth, and infrastructure development have increased pressure on these forests. [83]

After GVL started working in Liberia, the national government formed a US$150 million dollar partnership with Norway in 2014 to achieve emission reductions from deforestation, improve forest governance, and facilitate the growth of a deforestation-free agricultural sector. [77] Part of this partnership is the smallholder productivity and forest protection initiative of IDH, The Sustainable Trade Initiative, which works with GVL and other palm oil concession–holding companies in Liberia to pioneer a financing model where investment in agricultural intensification is tied to forest conservation. [84]

Through the partnership, GVL is piloting a form of public-private forest governance by introducing Production Protection Agreements (PPAs), in which communities, the Forest Development Authority, and the company agree to conserve forests in exchange for loan finance and technical assistance to increase agricultural productivity in rural communities enabled through the Production Protection Fund. [82; 83] Partners began development in 2016 of a Community Oil Palm and Production Protection roadmap with the intention of starting a pilot program at the end of 2016. [85; 83] Eventually, this should lead to reduced deforestation and forest degradation, increased prosperity, and a verified deforestation-free oil palm producing landscape.

Implementation in Deforestation Hotspots

The reduction of deforestation in the Brazilian Amazon is attributable to a combination of government policies, a few successful public-private initiatives, and private-sector commitments. Driven by an active civil society, a supporting government, and a proactive private sector, two successful public-private initiatives have led to significant reduction in deforestation in the Brazilian Amazon.

- The Soy Moratorium is an example of companies heeding the advice of NGOs and consumer preference and creating their own collective policy to remove deforestation from the soya supply chains to go beyond compliance with existing government statutes. After the Moratorium was created, the Brazilian government, the Bank of Brazil, and the Brazilian Space Agency joined Greenpeace and the cereal and vegetable oil industry associations as signatories to the moratorium. This added additional leverage and technical capacity to the new public-private partnership to remove deforestation from soy production in the Amazon biome. The moratorium was meant to be a temporary policy tool until national policy was developed to replace it, but now the Soy Moratorium has been extended indefinitely until it is no longer needed. Studies have shown that farmers are still more likely to comply with the Moratorium than the Forest Code, and therefore companies must still rely on this stop-gap measure to source deforestation-free soy from the Amazon.

- The cattle industry has an arrangement similar to the Soy Moratorium, called the G4 Agreement (established in 2009). The G4 Agreement includes Brazil's three largest meatpacking companies and Greenpeace, and the companies commit to only buy from direct suppliers that have reached zero deforestation. However, this private-sector approach can prevent only so much deforestation because the three G4 companies only monitor ranches that produce half of Brazil's cattle. Furthermore, there are still loopholes in the policy that allow cattle laundering between G4-compliant properties and other ranchers that are not covered by the agreement or monitoring.

Despite these successes, the cattle industry remains a major deforestation driver in Brazil, and there is the evidence that Brazil's policies have led to a displacement of activities and deforestation to Paraguay. It is therefore of essence that programs similar to those successfully been tested in Brazil are also implemented in Paraguay.[16]

In Indonesia, the policy signals have been weaker and civil society has been less influential. There is a steady increase in private-sector action but still not enough to stem the tide of forest clearing. In the absence of strong policies and successful public-private initiatives (as described in Box 10), private-sector actors largely rely on certification to comply with their deforestation-related commitments.

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[16] The first steps in this direction have already been taken. The Betty and Gordon Moore Foundation in early 2016 extended a grant to a collaboration formed by civil society organizations (WWF, TNC, and NWF) that will work to expand adoption and implementation of zero-beef commitments in the Cerrado and Chaco in Brazil, Argentina, and Paraguay over the next few years.

The most common certification systems in Indonesia are the standard developed by the Roundtable on Sustainable Palm Oil and the less-ambitious national government standard, Indonesian Sustainable Palm Oil. More-ambitious companies have adopted additional commodity-specific zero deforestation commitments. These have taken shape as "No Deforestation, No Peat, No Exploitation" policies. Companies have, however, difficulties combining their deforestation-related commitments with Indonesia's policies on forest conservation set-asides. National policies encourage development goals that limit set-asides and are problematic for palm oil companies that refuse to develop High Conservation Value areas. The national government is taking steps to improve forest governance to reduce deforestation. Since 2011 there has been a moratorium on primary forest and peat clearance and on new palm oil concession permits. However, until national policies are harmonized with the zero deforestation goals of the many progressive palm oil companies, this conflict will continue to arise.

Criterion 4: Overall impact on deforestation

KEY MESSAGES

- While there are regional studies, there are currently no available data that provide global coverage to determine whether cumulative company efforts are translating into measurable reductions in deforestation.

- Two tools are being refined and developed—Global Forest Watch–Commodities and Transparency for Sustainable Economies—that will enable a global impact analysis within the next couple of years.

This criterion addresses the effectiveness of company efforts—in other words, whether commitments, implementation, and support translate into a measurable reduction of forest loss. Such analysis is possible if deforestation in specific places can be traced over time (in hectares and rate) and linked to commodities and the private-sector actors that trade and consume them. To systematically assess the impact of deforestation pledges, it is necessary to link places of production and actors along the supply chain to deforestation impacts. To date, assessments of the impact of agricultural commodity supply chains on deforestation have largely relied on either macro- or micro-approaches. But these approaches cannot establish links between action and deforestation precisely or at scale.

Indicator 4.1: Reduction of deforestation associated with a particular commodity
There are currently no available global data or findings on this criterion, but new tools are being developed and refined that may provide answers within the next couple of years. Two initiatives have set out to provide answers on direct deforestation impact: Global Forest Watch (GFW)–Commodities and Transparency for Sustainable Economies (Trase) establish complementary platforms to monitor commercial agriculture's overall deforestation impacts over time (Box 13).

In February 2014, the World Resources Institute launched its GFW platform, which uses satellite technology, open data, and crowd sourcing to map and monitor forest use and change globally. It includes a feature called Global Forest Watch–Commodities, which allows for analysis of links between deforestation and specific regions or producer companies. Global Forest Watch–Commodities is built as a dynamic online forest monitoring and alert system that breaks down satellite data, such as Landsat and MODIS, into mosaics and overlays it with open-sourced commodity data, such as maps that show where governments have allocated land to specific concessions or companies for agricultural development and maps of commodity production areas released by companies. Over the next couple of years, GFW–Commodities will add more commodity data to enable global measurement of deforestation by commodity type.

Transparency for Sustainable Economies is an interactive supply-chain transparency platform that is being developed by a consortium convened by the Stockholm Environment Institute and the Global Canopy Programme. Trase is able to link downstream supply-chain actors (such as traders, manufacturers, or retailers) to the municipalities of production and their deforestation track records. It combines detailed data on individual shipments of commodities between ports and traders (such as customs declarations and bills of lading) or other sources such as sectoral reports and national customs databases summarizing trade information (e.g., from commercial invoices and certificates of origin). Those are complemented by trade data from official sources, such as national allocation of goods, commodity processing and storage, taxation datasets, and self-declared information by companies. Once actors are linked to places, Trase is able to link actors to impacts by overlaying the supply-chain information with maps of deforestation provided by third parties. Trase was launched in November 2016 with a focus on the international trade of soy, and it will continue to add functionality over time. A key milestone is 2020, by which time Trase aims to cover over 70% of all trade in forest-risk commodities from the tropics and key subtropical countries.

Box 13. Using big data to gauge deforestation impact

A challenge many companies face is monitoring and measuring their deforestation risk and impact. To address this issue, companies need to be able to identify the origin of the commodities they source. One approach is to trace the supply chain all the way to the farm of production, but this is costly and time-intensive, given the complexity and opacity of these commodity supply chains. Instead, big data can provide transparency of these supply chains and at a scale necessary for companies working across many geographies and commodities.

In the case of soy, for example, a major soy trader may source from hundreds of different silos across dozens of municipalities. With the soon-to-be launched Trase platform, companies can identify which municipalities they source from and which of those have higher rates of deforestation, greater water scarcity, and even more reported incidences of labor violations. [86] Preliminary data show that the major soy traders, including Cargill, Bunge, and ADM, source predominantly from a small number of municipalities and can thus narrow their efforts to improve sustainable sourcing to specific areas.

Furthermore, a company can see not only if they source from a municipality, but the amount of the soy produced in that municipality that ends up in their supply chain. For instance, one trader is the source of over 70% of the soy produced in a certain municipality, suggesting a stronger likelihood that the trading company is associated with impacts in that municipality. [86] That municipality is Formoso do Rio Preto in the state of Matopiba in the Cerrado biome, which has been identified as a hotspot of deforestation—with over 70,000 hectares lost since 2012. [86] To avoid deforestation risks, traders can use Trase to identify if they source from that municipality and how much they source, and they can then prioritize interventions with that municipality and growers within it.

Although these traceability data identify traders but not downstream buyers, many retailers and consumer goods manufacturers already have achieved traceability to their first-tier suppliers, which includes these traders. Retailers and manufacturers can then identify which traders are sourcing from areas with greater environmental and social impacts, and they can make engagement with those suppliers a priority.

Another challenge many companies face is understanding where to begin implementing their zero-deforestation commitments and whether they are making progress toward them. Global Forest Watch (GFC)–Commodities offers companies the ability to analyze the impact of key commodities on forests using robust, publicly available, near-real time data.

As an example, many palm oil companies source from hundreds of mills and are unclear on the locations of these mills and which mills may be contributing to deforestation. To address this challenge, in 2016 GFW–Commodities launched the first public-facing global palm oil mill dataset and a PALM Risk Tool. [87] The PALM Risk Tool analyzes spatial data within 50km of each mill to determine the threat to nearby forests. [87] Companies can then identify mills in their supply chains that have a high risk of being associated with deforestation and that are thus a high priority for engagement activities.

V. Concluding Remarks

This report provides a comprehensive picture across all major data sources of the status and progress in implementing efforts to ensure that major agricultural supply chains for palm oil, soy, cattle, and wood are free from deforestation. The report aggregates, cross-references and interprets data from a range of data sources that dive deep into corporate practices and forest-floor developments to provide the most comprehensive assessment of corporate supply chain commitments to date. It draws on and consolidating data from leading think tanks and research organizations engaged in monitoring forest commitments and incorporates insight from original interviews with 26 NYDF endorses and TFA member companies. The team developed a framework that allows a comprehensive evaluation of supply-chain efforts and has compiled, cross-referenced, and interpreted data from all partner organizations, plus filled data gaps

through company interviews.

From using satellites to monitor forest loss to training timber companies to sustainably manage forest, the report highlights innovative private sector strategies designed to reduce the deforestation impact of major agricultural commodities. It also sheds light on the barriers and setbacks facing companies as they attempt to translate their ambitious pledges into actual impact on deforestation. In doing so, the report provides evidence of how this sector is seeking to implement sustainability commitments.

Deforestation-related risk assessments, a dialogue with suppliers, and the revision of procurement rules are first promising steps in the right direction. Yet a lot remains to be done, in particular to develop action plans, trace commodities to the production level and to monitor the eventual impact of commitments on forests. Critical "powerbroker" across commodities have yet to make deforestation pledges. Nearly 90 percent of deforestation commitments come from companies based in North America, Europe and Australia. Corporations in emerging markets are lagging behind their western counterparts.

Where producers engage, they often have a greater impact than companies further downstream the supply chain. They are closer to the deforestation and are essential to address it. It comes as no surprise that where producers engage, they do so more successfully than retailers and manufactures. Two notable examples are palm oil producers and processors in Southeast Asia and meat processors and slaughterhouses in Brazil. Where such private efforts are complemented by public sector engagement, deforestation can successfully be addressed, such as in the case of the agreements between Brazilian Federal Public Prosecutors and meat processors.

Our analysis also shows that NYDF endorsers and TFA 2020 member companies are more advanced—across all supply chains—in terms of adopting commitments and translating them into actions. The public-private nature of these platforms also enables the cooperation that prepares the grounds for additional produce-and-protect partnerships.

Cross-sectoral cooperation enables risks, responsibilities, resources, competencies, and benefits to be shared. The NYDF can provide a platform for the exchange of information and best practices, leading to a cooperative implementation of strategies for sustainable land use that address deforestation at the national level.

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VII. Annexes

Annex I. Supply-Chain Initiatives

This table provides an overview of information platforms and transparency initiatives that focus on agricultural supply chains.

INITIATIVES	DESCRIPTION	COMMODITIES					
		Palm oil	Soy	Beef	Paper Pulp	Timber	Other
Accountability Framework (Rainforest Alliance) *Established in 2016*	The Accountability Framework aims to address gaps in current monitoring initiatives by producing a global accountability framework for sustainability commitments. It is partnering with NGOs and corporate collaborators to develop, test, and implement a unifying accountability framework by 2020. The framework will include guiding principles, implementation guidance, and field-oriented tools that will enable application across landscapes and jurisdictions.	x	x	x	x	x	
Behind the Brands (Oxfam) *Established in 2013*	Behind the Brands assesses the agricultural sourcing policies of the world's 10 biggest food and beverage companies. It uses publicly available information and CDP data to create a scorecard and rank 10 major companies on their agricultural practices for commodities from developing countries.	x	x		x		
CDP's forests program (formerly Carbon Disclosure Project) *Founded by GCP under the name of Forest Footprint Disclosure Project in 2009, the program transitioned to CDP in 2013.*	CDP tracks companies' disclosures on four forest-risk commodities (palm oil, soy, timber, and cattle products) that are the most responsible for deforestation globally. CDP sends an information request form to over 800 companies on behalf of 365 signatory investors annually; 180 companies participated in the self-reporting process in 2015. An annual report is published on progress.	x	x	x	x	x	
***Forest 500* (GCP)** *Established in 2014*	*Forest 500* identifies the 500 powerbrokers globally that are most influential in the race toward a deforestation-free economy. It assesses the public commitments of 250 companies, 150 financial institutions, 50 jurisdictions, and 50 other powerbrokers in an annual assessment based on indicators in four categories: overall forest policy, commodity policies, operations, and reporting and transparency.	x	x	x	x	x	
Global Forest Watch-Commodities (WRI) *Established in 2014*	GFW has developed an analysis tool that uses spatial and temporal information to link forest change, forest cover, forest use (concessions), conservation, and production suitability. GFW-Commodities focuses on companies involved in major commodities that affect forests. Data are available to all users, including government, civil society, and company actors.	x	x		x	x	x

The Supply Chain Transparency Network (SEI and GCP) *Established in 2015*	The Supply Chain Transparency Network brings together initiatives to improve collaboration and information sharing to transform supply chains and reduce commodity-driven deforestation.	x	x	x	x	x	x
Supply Change (Forest Trends) *Established in 2014*	*Supply-Change.org* is an online information platform tracking companies' commitments and actions to remove deforestation from their supply chains. It compiles data from publicly available sources (including CDP's forests program) on companies' commodity commitments, certified area by commodity and progress toward company-set commitment goals. As of 2016, Supply Change was tracking more than 400 companies and 700 commitments.	x	x	x	x	x	
Sustainable Palm Oil Transparency Toolkit (Zoological Society of London) *Established in 2014*	SPOTT monitors companies' environmental impacts and aims to engage with them to provide an agreed-upon transparency framework. SPOTT conducts biannual assessments tracking deforestation-relevant corporate commitments of the 50 largest palm-oil-producing companies, using a scoring system with five categories and 54 indicators.	x					
The Forest Trust *Established in 1999*	TFT works with companies in 14 commodities, and provides an information and transparency platform offering progress updates on member companies' deforestation commitments. Through its transparency tool, TFT develops supply-chain mapping and traceability solutions to track products' origin and to identify environmental impacts.	x	x	x	x	x	
The Sustainability Consortium *Established in 2009*	TSC has developed key performance indicators (KPIs) to evaluate supplier performance on issues, including commodity-specific deforestation impacts. Companies report on their progress according to these KPIs. TSC has 91 members from a range of organizations, including 57 companies.	x	x	x	x	x	x
Trase (SEI and GCP) *Established in 2016*	Trase is a public platform that links production, trade, and customs data with available sustainability information to link production landscapes—and the deforestation impacts within them—to specific traders, manufacturers, retailers, and transporters worldwide. The platform was launched at COP22 in November 2016.	x				x	

Annex II. Assessment Framework Criteria, Indicators, and Data Sources

Criterion 1: Commitment to deforestation-free commodities

Indicator	Data Sources
Deforestation-related commitments by companies	**SupplyChange.org (2016)**: • Share of companies with deforestation-related commitments **Forest 500 (2015**: • Share of companies with zero gross or other no deforestation commitments • Share of companies with commodity-specific commitments that exclude the use of products originating from HCV, primary, intact, or natural forests

Criterion 2: Implementation of private-sector forest commitments

Indicator	Data Sources
Adoption of deforestation policies to implement commitments	**CDP's forests program (2015):** • Share of companies that adopted specific policies/systems by commodity, including production standards (for producers, processors, and traders) or procurement standards (for manufacturers and retailers), and risk assessments **Forest 500 (2015 and 2016)**: • Share of companies that adopted commodity-specific policies that are time-bound until 2020 **Interviews (2016):** • Share of companies that have instituted specific policies, including forest-risk analyses, operational plans, production and/or procurement standards, and deforestation-related KPIs
Monitoring of compliance	**CDP's forests program (2015):** • Share of manufacturers and retailers and of producers, processors, and traders that have in place traceability systems, by commodity • Share of manufacturers and retailers that can trace back to specific points of origin, including country, province, region, mill, farm, plantation, forest, and forest management unit, by commodity **Interviews (2016)**: • Share of companies that have instituted specific systems for monitoring, including traceability systems and monitoring systems and that use geo-spatial data for monitoring
Compliance with deforestation-related company policies	**TSC (2014):** • Number of companies reporting on the share of supply not coming from converted HCV or HCS forests, by commodity **SupplyChange.org (2016)**: • Disclosure rate and average progress toward commitments reported by companies, by commodity and supply-chain level

Criterion 3: Support by non-supply-chain actors

Indicator	Data Sources
Deforestation-related commitments by financial institutions	**Forest 500 (2016)** • Overall score of financial institutions
Policy support and improvements in forest governance	**Forest 500 (2016)** • Overall score of jurisdictions

Criterion 4: Overall impact on deforestation

Indicator	Data Sources
Reduction of deforestation associated with a particular commodity	* Not available for 2016, but we will provide an overview and state of data. Together with Trase and GFW–Commodities, we are working toward providing data for specific countries for the soya, cattle, and palm oil supply chains by 2017.