Progress on the New York Declaration on Forests

Achieving Collective Forest Goals

Updates on Goals 1-10

November 2016

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Contents

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?

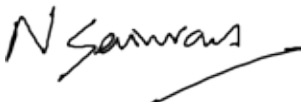
We could not have answered this question more emphatically. Last year saw the adoption of both the Sustainable Development Goals (SDGs) and the Paris Agreement, which together draw a roadmap towards a sustainable and climate friendly future. The coalition that supported the New York Declaration on Forests (NYDF) should feel even more galvanized as a result. These new global frameworks create additional momentum for forest conservation and sustainable development.

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. 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, SDGs, 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. 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.



Nik Sekhran
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Executive Summary

Last year was one of diplomatic successes: The adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement on climate change marked the successful conclusions of many years of negotiations. The former formulates ambitious goals for a sustainable, healthy, inclusive, and low-emissions future, while the latter establishes a framework for long-term climate action, including on forests. With these agreements in place, attention has to shift from talking to implementing. The new agreements reframe the context of the New York Declaration on Forests (NYDF) and provide new impetus for the assessment of progress on the NYDF goals.

The 2016 NYDF Progress Assessment provides a comprehensive review on collaborative efforts to protect tropical forests. It does so by providing an update on the 10 goals formulated in the context of the NYDF (see text box below). Last year, the first edition of the NYDF Progress Assessment proposed a framework and respective indicators for measuring progress toward the NYDF goals and offered an initial assessment on the status of progress toward achieving these goals. The present report summarizes new data and findings around the established indicators. This general update is complemented by a focus report that provides an in-depth analysis of Goal 2, on eliminating deforestation from agricultural commodity supply chains.

Some NYDF goals relate directly to eliminating deforestation, including halting natural forest loss (Goal 1) and reducing deforestation from agricultural supply chains (Goal 2), other economic sectors (Goal 3), subsistence agriculture and woodfuel collection (Goal 4). The NYDF also formulates ambitious restoration goals (Goal 5). Other goals relate to the broader "enabling environment" that will make ending deforestation possible, including establishing a strong international framework (Goals 6 and 7), providing better financing (Goals 8 and 9), and improving forest governance and securing forest and land rights for indigenous peoples and local communities (Goal 10).

The 2016 NYDF Progress Assessment shows that while the annual net rate of forest loss appears to be slowing, there is no indication that the annual gross rate has changed (Goal 1). However, countries are recognizing the importance of forests for climate change mitigation. In a landmark development, the 2015 Paris Agreement on climate change integrates action on land use, including REDD+ (Goal 7). A substantial number of the nationally determined contributions (NDCs) submitted to the United Nations Convention on Climate Change (UNFCCC) include land use targets, and commitments to restore forests under the Bonn Challenge have doubled in recent years (Goal 5). In terms of financing, combined bilateral and multilateral official development assistance (ODA) as well as commitments for results-based finance for forest emission reductions have grown significantly in recent years, although disbursements continue to lag (Goals 8 and 9). Approaches to forest governance are improving in select countries, reflected in strengthened policy frameworks and legislation, though significant challenges still exist, including a rising number of killings of grassroots activists protecting forests (Goal 10).

Despite these positive developments, there is still much action that needs to be taken to ensure a lasting impact and successful achievement of the NYDF goals. The NYDF Assessment Coalition, a strong network of civil society and research organizations, is committed to supporting these aims and continuing to measure progress toward all 10 goals annually until 2020.

This analysis was conducted by the members of the NYDF Assessment Coalition with the support of the Tropical Forest Alliance 2020 and the Climate and Land Use Alliance.

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

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

Goal 3. Significantly reduce deforestation derived from other economic sectors by 2020

Goal 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

Goal 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

Goal 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

Goal 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

Goal 8. Provide support for the development and implementation of strategies to reduce forest emissions

Goal 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

Goal 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

KEY MESSAGES: 2016 UPDATES ON NYDF GOALS 1-10

GOAL 1: At least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030

- Globally, the annual net loss of natural forest area appears to be declining (a 25% decrease in 2015 compared with a 2000–10 baseline). However, there is no sign that the annual gross rate at which trees are being cleared or harvested is slowing (a 9% increase in 2011–14 compared with a 2001–10 baseline). This indicates that while there may be a significant increase in global regeneration, restoration, and reforestation, tropical forest clearing continues to grow (Figure 1).
- For the period 2001-13, deforestation emissions reached an annual average of 2,270 million metric tons of Carbon Dioxide ($MtCO_2$), which makes deforestation a larger source of emission than Russia's economy-wide emissions in 2012.

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

- Deforestation-related pledges have continued to grow since the NYDF was signed in 2014, with the number of companies making commitments increasing to 415 from 307 since last year's report. The majority of commitments address palm oil (59%) and wood products (53%). Soy and cattle are covered by significantly fewer commitments (21% and 12%, respectively), which is a matter of concern, considering their relevance as major deforestation drivers.
- Some progress has been made toward implementing corporate commitments to removing deforestation from agricultural commodity supply chains, with companies making headway in adopting policies to reduce their exposure to deforestation. But many companies with deforestation-related commitments continue to lack time-bound, actionable plans for how these commitments will be implemented, and the majority of companies do not publicly report on compliance with their own forest policies, making independent verification of progress difficult.
- Weak forest governance presents a major barrier to private-sector efforts. Although companies see limited or no overall global improvement in forest governance and public-sector support, they highlight specific incidents of improved collaboration and listed examples of successful public-private cooperation. There is a recognized need for collaborative and integrated approaches that result in an increased momentum behind programs that link landscape-level public programs paired with private-sector sourcing commitments.

GOAL 3: Significantly reduce deforestation derived from other economic sectors by 2020

- After agriculture, timber extraction, mining, infrastructure development, and human settlements are the most important activities driving the loss of tropical forests.
- However, a number of studies look at the deforestation of other economic activities and several industry initiatives are under development. We expect that these developments will start filling the data gaps in coming years.

GOAL 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

- In the absence of data on interventions to tackle subsistence agriculture as a driver of forest loss, we have to focus our assessment on evaluating the reduction of use of fuel wood, for which limited data are available.
- There has been a steady increase in the global distribution of clean cookstoves in the past year, with nearly 20 million new cookstoves and fuels distributed in 2014. Of those, 12.1 million met the Global Alliance for Clean Cookstove's definition of clean and/or efficient. Financing for cookstove interventions remains flat.

GOAL 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

- There has been a significant increase in new pledges committing to restore forests, bringing us closer to the goal of 150 million hectares by 2020:
  - Nineteen more government and non-governmental entities have made restoration commitments under the Bonn Challenge, doubling the number from the previous year and reaching a total of 38 entities.
  - The area covered by these commitments has also doubled. In total, entities have committed to restoring 124.3 million hectares of forest landscapes. And with 90.3 and 34 million hectares pledged for 2020 and 2030, the Bonn Challenge is 60% and 35% respectively on the way toward reaching its milestones.
- Since early 2015, some 114 parties to the UNFCCC have submitted intended NDCs containing land sector targets. The cumulative restoration and afforestation pledges are estimated to amount to 161.6 million hectares—equal to 46% of the 350 million hectare 2030 restoration target set by the NYDF.

GOAL 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

- The official indicators proposed to measure the forest conservation targets formulated in the Sustainable Development Goals would not directly measure forest conservation (that is, gross forest loss) or restoration.
- Instead, they address a forest conservation and restoration focus on total forest cover, forest cover change, change in carbon stocks, and areas designated for biodiversity conservation and under forest management plans. This may lead to the ambitious forest conservation goal adopted as part of the SDGs being given little attention in practice.

GOAL 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

- The text of the Paris Agreement anchors action on land use, including REDD+, within the overall mitigation framework of the agreement, providing a long-term signal that clarifies the central role of forests in climate change mitigation efforts.
- An analysis of 162 NDCs finds 114 countries have proposed a quantified emission mitigation target that includes land use, while 60 countries have proposed a non-emissions target on land use, including goals related to overall forest cover, forest conservation and afforestation, reforestation, and restoration.

GOAL 8: Provide support for the development and implementation of strategies to reduce forest emissions

- Combined bilateral and multilateral ODA committed to climate change mitigation and the forestry sector in developing countries increased from US$548 million in 2013 to US$739 million in 2014. This increase was due to the doubling of bilateral ODA commitments, while multilateral ODA saw a small decrease.
- We lack satisfactory datasets to track public finance flows among developing countries, domestic spending in industrial and developing countries to reduce forest-related emissions, or private investments in strategies to reduce forest emissions.

GOAL 9: Reward countries and jurisdictions that, by taking action, reduce forest emissions—particularly through public policies to scale up payments for verified emissions reductions and private-sector sourcing of commodities

- At the Paris Climate Summit, Germany, Norway, Germany, Norway and the United Kingdom announced a collective aim to provide over US$5 billion from 2015 to 2020, if forest countries demonstrate measured, reported and verified emission reductions.
- Since 2014, pledges and commitments for results-based finance for forest emissions reductions have grown by more than US$6.4 billion. Disbursements continue to lag behind, amounting to just US$440 million, as many countries are still in the process of preparing large-scale REDD+ programs in line with donor requirements. Norway's International Climate and Forest Initiative is responsible for the majority of bilateral commitments and disbursements.
- Between 2013 and 2015, the forest carbon market grew from US$152 million to US$762 million, according to Forest Trends data. Carbon volumes also increased from over 25 $MtCO_2e$ emission reductions transacted in 2013 to just under 88 $MtCO_2e$ in 2015.

GOAL 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

- New data on killings of land and environment defenders show 2015 was the worst year on record, with 181 killings recorded—an average of 3 every week.
- There have been relevant developments in strengthening policy frameworks to strengthen forest governance, including the adoption of legislation to promote legal timber in Japan; 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.
- While implementation of many Voluntary Partnership Agreements agreed under the Forest Law Enforcement Governance and Trade (FLEGT) Action Plan of the European Union (EU) continues to face hurdles, Indonesia looks set to be the first country to issue FLEGT licenses for exporting to the EU at the end of 2016.

I. Introduction

Since its adoption in 2014 at the United Nations Climate Summit, 190 governments, companies, civil society and indigenous peoples' groups have endorsed the New York Declaration on Forests (NYDF). The declaration sets ambitious targets to end natural forest loss by 2030, including a 50% reduction by 2020 as a milestone toward its achievement. In addition, the declaration calls for restoring 350 million hectares of degraded and deforested lands by 2030, supporting the private sector in eliminating deforestation in the supply chain of major agricultural commodities by 2020, and providing financial support to reduce emissions related to deforestation and forest degradation.[1]

Meeting the goals of the NYDF requires the ongoing resolve of its endorsers. Effective monitoring of progress and wide dissemination of results will be important to boost this resolve. In 2015, with the support of multiple collaborators, Climate Focus developed a framework for assessing the progress toward meeting the 10 goals of the NYDF, summarizing their status on the one-year anniversary of its signing. The progress report was published as a summary text accompanied by detailed, standalone reviews for each goal, and can be downloaded at *forestdeclaration.org*.

The present report updates the analysis of last year's report, and is complemented by a separate report that focuses on Goal 2. Acknowledging that progress toward the goals is incremental, we will provide comprehensive updates and in-depth analysis focused on one goal every year until 2020. We will also continue to provide brief updates on progress, as compiled in this report, covering Goals 1-10.

The analysis was designed and conducted by the NYDF Assessment Coalition, a network of civil society and research organizations that contribute data and analysis to the annual updates. The Coalition serves as an information platform that tracks progress towards the NYDF goals, and implements a series of activities that encourage ambition and momentum around actions to achieve these targets.

II. Assessment Updates

Goal 1

At least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030

- Globally, the annual net loss of natural forest area appears to be declining (a 25% decrease in 2015 compared to a 2000-10 baseline). However, there is no sign that the annual gross rate at which trees are being cleared or harvested is slowing (a 9% increase in 2011-14 compared to a 2001-10 baseline). This indicates that while there may be a significant increase in global regeneration, restoration and reforestation, tropical forest clearing continues to grow.

- The 2015 update of gross tree cover loss is not yet available on Global Forest Watch (GFW), but a new weekly forest disturbance alert system added to GFW shows little progress toward slowing cumulative forest loss in Peru, Brazil, Kalimantan (Indonesia) and the Republic of Congo in 2015/2016.

- For the period 2001-13, deforestation emissions reached an annual average of 2,270 million metric tons of Carbon Dioxide ($MtCO_2$), which makes deforestation a larger source of emissions than Russia's economy-wide emissions in 2012.

OVERVIEW OF GOAL AND INDICATORS

The NYDF's overarching goal, Goal 1, aims to halt natural forest loss by 2030, with at least a 50% reduction by 2020 as a milestone toward its target. While natural forests clearly do not include monoculture tree plantations, Goal 1 does not specify whether the aim is to reduce and then end gross or net loss of natural forests:

- Ending gross natural forest loss means that, from year-to-year, there would be no measurable clearing of natural forest area.
- Ending net natural forest loss means that the measurable area of natural forest regeneration/reforestation would be equal to or greater than the measurable area of gross natural forest loss over a specified period.

The following two proxy indicators were used to monitor each type of loss:

Table 1: Indicators to track Goal 1

	CRITERION	INDICATORS
1	**Rate of forest loss**	Annual gross forest/tree cover loss (in ha) Annual net natural forest/tree cover change (in ha)

We used data from Hansen et al. (2013, updated by Global Forest Watch)[2] for Indicator 1.1 and data from the Food and Agriculture Organization of the United Nations' (FAO) Global Forest Resources Assessment (FAO FRA 2015)[3] for Indicator 1.2. Each data source uses a different method and both embody substantial uncertainties. Key differences between these two sources of global data were outlined

in last year's report.[4] We are not advocating the use of one over the other for the purpose of monitoring progress towards Goal 1. Instead, we suggest that despite uncertainties and limitations, the two data sets show directional trends that can serve as proxies for monitoring. Improvements in these data, as well as new data, should be considered as they emerge.

FINDINGS

Since no new data have been released since 2015, this section provides a summary of the findings from last year's report, and summarizes recent data developments.

Criterion 1: Rate of forest loss

Indicator 1.1: Annual gross tree cover lost

Satellite-based measurements show that the annual rate of gross tree cover loss has remained fairly steady from 2005-11, and increased 9% in 2011-14 compared to the 2001-2010 baseline (Figure 1).

Deforestation rate increases 16% in the Brazilian Amazon in 2015, but remains below historical levels

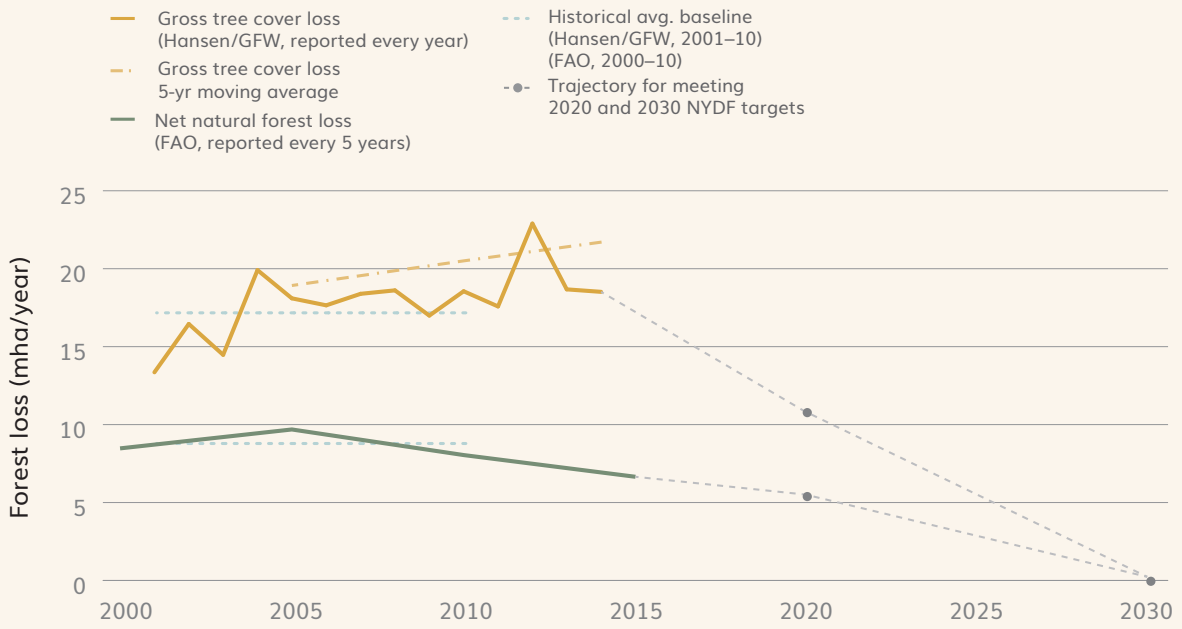
Although the global data sources used to develop proxy indicators for Goal 1 remain unchanged since last year, deforestation data for the Brazilian Amazon are released annually. According to Brazil's National Space Research Institute, deforestation in the Amazon increased 16%[5] to 583,100 hectares for the year ending on July 31, 2015. Despite this recent uptick, the deforestation rate remains well below historical levels; in its Third National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), Brazil reported a 79% reduction in deforestation in the Amazon between 2005 and 2015.[6]

Indicator 1.2: Annual net forest change

If natural forest regrowth is counted as offsetting natural forest clearing, the annual net loss of natural forest/tree cover area appears to be declining from a peak of 9.7 million hectares in 2005 to 6.65 million hectares in 2015 (a 31% decrease from 2005 and a 25% decrease compared to a 2000-10 historical baseline).

Taken together, Indicators 1.1 and 1.2 illustrate that achieving the goal of at least halving the rate of natural forest loss by 2020 will be challenging, but possible. The Hansen/GFW data shows no progress in reducing tree cover loss, but the FAO data demonstrate progress that may in fact achieve a halving in the rate of natural forest loss by 2020 if the current trajectory is maintained.

Gross and net forest loss relative to 2020 and 2030 targets



Source: Climate Focus analysis based on Hansen et al., 2013 (updated on GFW) and FAO FRA 2015

Figure 1. For the Hansen/GFW and FAO estimates, the line represents the default crown cover threshold of 30%. [2; 3]

Additional proposed Goal 1 proxy indicator

In a recent publication Zarin et al., 2016 [7] proposed estimating carbon emissions resulting from gross tropical deforestation as an additional indicator for monitoring progress on Goal 1.

The authors established a 2001-13 emissions benchmark at 2,270 $MtCO_2$ per year by combining the global tree cover loss and GFW woody biomass datasets. All or part of the global datasets were replaced or supplemented with national-level data for Brazil, Indonesia, Democratic Republic of Congo, Malaysia, Colombia, Ecuador, Guyana, and Mexico. These countries cumulatively accounted for two-thirds of the 2001-13 emissions benchmark. The study also outlined two scenarios for achieving the 50% emission reduction target by 2020, both of which emphasize the critical role of Brazil and the need to reverse the trends of increasing carbon emissions in many other tropical countries that have largely offset Brazil's historical reductions.[7]

Moving forward, the emissions benchmark will be revised to incorporate new data where available, and carbon emissions from gross deforestation will be reported annually as a third NYDF progress indicator for Goal 1.

DATA DEVELOPMENTS AND GAPS

There is still no globally consistent data source that accurately estimates the extent or rate of loss of natural forests worldwide, and the global data sources used last year for Goal 1 remain unchanged. We therefore focus this update on five new developments that work in some way towards addressing specific limitations associated with Criterion 1 (annual gross forest/tree cover loss).

Data Development #1. Plantations mapped for seven tropical countries

Many countries report national statistics on the area of land in plantations, but their extent and locations are often not documented. GFW commissioned maps that delineate the location and extent of tree plantations in 2013/14 in seven tropical countries (Brazil, Indonesia, Malaysia, Cambodia, Peru, Colombia, Liberia) through visual interpretation of moderate- and high-resolution satellite imagery and other ancillary spatial information. These maps will be important inputs to refine post-2014 estimates of tropical deforestation rates by differentiating between tree cover losses occurring within natural forests versus loss associated with plantation harvests.

Data Development #2. Weekly forest disturbance alerts on Global Forest Watch complement annual tree cover loss estimates

In collaboration with Hansen et al., 2016[8] GFW has released a Landsat-based, weekly alert system for humid tropical forests that provides interim updates on forest disturbance events. The system is currently operational for Peru, Brazil, the Republic of Congo and Kalimantan (Indonesia). Although these alerts are not meant to replace annual estimates, they indicate that there has been little to no progress towards slowing the rate of loss or associated emissions in Peru, Brazil or the Republic of Congo in 2015/16.[9]

Data Development #3. Following the Paris Agreement, nine more tropical countries submitted forest reference emission levels to the UNFCCC

Over the last ten years, significant progress in forest area change monitoring has been made across many tropical developing countries.[10] This is reflected by the increasing number of countries developing and submitting their forest reference (emission) levels to the UNFCCC, which include estimates of historical deforestation and emissions from deforestation (15 country submissions by November 2016).[11]

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

- 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.
- 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. 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.
- Companies 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.

OVERVIEW OF GOAL AND INDICATORS

Agriculture is the world's largest driver of forest loss. In particular, beef, soy, palm oil, and wood have a massive impact on forests.[12; 13] This goal looks at private sector efforts to halt deforestation, with an emphasis on eliminating deforestation from the supply chains of key commodities.

This year the NYDF Assessment Coalition published a separate focus report on Goal 2 which includes an updated assessment framework that provides a more comprehensive tool for measuring progress towards Goal 2.[14] The indicators from last year simply covered the market share of certified commodities

and support for the production of low deforestation, or deforestation-free commodities by companies and governments. The reworked assessment framework now includes four criteria and seven indicators encompassing the supply-chain transformation process, from commitment to enabling environment to impact (Table 2).

Table 2: Indicators to track Goal 2

CRITERIA		INDICATORS
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 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 supplied by four transparency initiatives (Forest Trends' *Supply-Change.org*, The Global Canopy Programme's *Forest 500* initiative, CDP's Forest Program, and The Sustainability Consortium and complemented with information from interviews with NYDF endorsers and companies that are members of the Tropical Forest Alliance 2020 (TFA 2020).

FINDINGS

Criterion 1: Commitment to deforestation-free commodities

Indicator 1.1: Deforestation-related commitments by companies

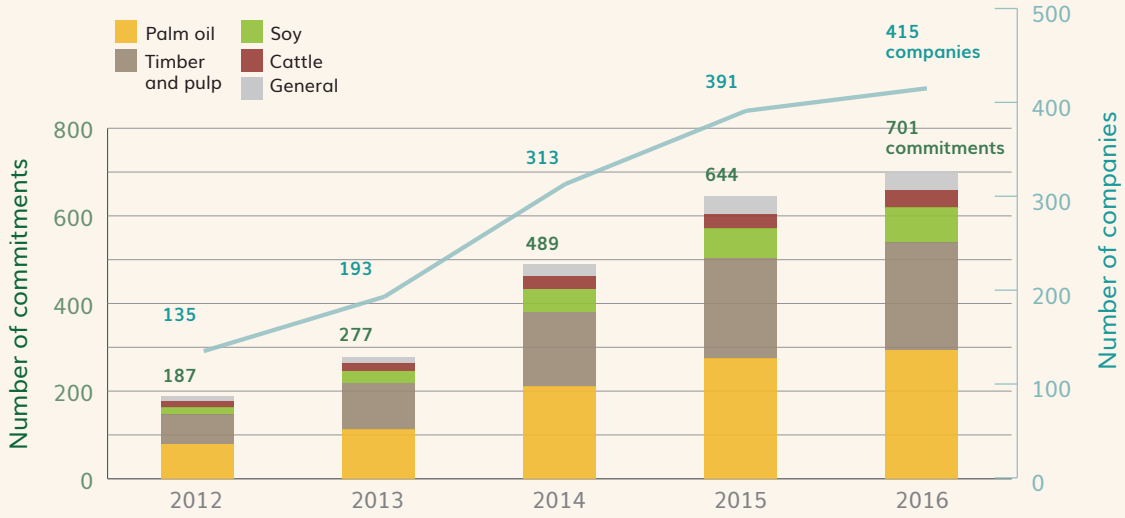
According to *Supply-Change.org*, 415 (66%) of the 629 researched companies with exposure to deforestation risk have made at least one public commitment to eliminate or reduce deforestation from their supply chains (*Supply-Change.org*). Since a peak in new announcements in 2014, the numbers have shown a steady, although slightly slowing increase both in first and renewed pledges (Figure 2).[i] Over the last year, 108 additional companies made 212 new commitments.[ii] 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.

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"[iii] companies have made company-wide zero gross or other no deforestation commitments across all forest-risk commodities.[iv] 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 stan-

dards for a particular commodity, high levels 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. For soy[v] and cattle the proportion of companies with commitments is considerably lower (21% and 12%, respectively).[vi] 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.(12)

Commitments (total and by commodity) and companies that made any commitment



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

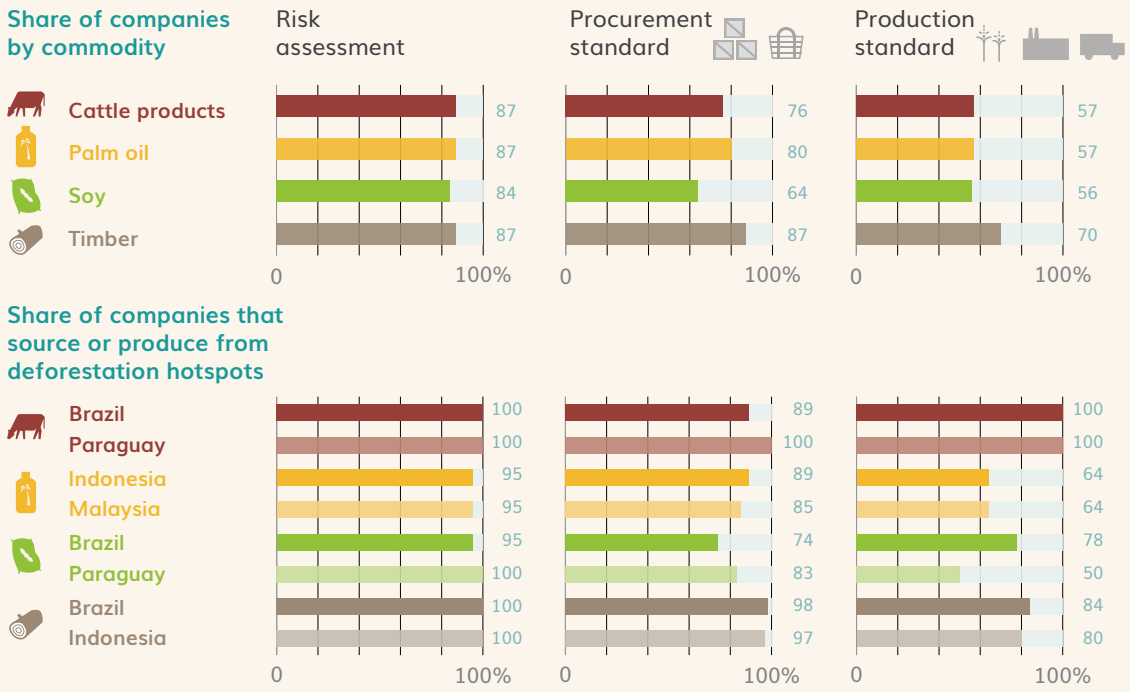
Figure 2. Cumulative number of commitments (total and by sector) and cumulative number of companies that made any commitment(72)

Criterion 2: Implementation of private-sector forest commitments

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. The majority of upstream (56–70%) and downstream companies (64–87%) have also taken important steps toward implementation by adopting production or procurement standards.

Companies that have adopted specific forest-related policies/strategies



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

Figure 3. Share of companies [out of 179 companies] that made specific implementation steps, by commodity. Procurement standards data is collected only for manufacturers and retailers, production standards for producers, processors and traders.

Indicator 2.2: Monitoring of compliance with deforestation-related policies

Based on CDP data, the majority of companies have traceability systems in place,[vii] 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). 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 companies sourcing cattle products are able to trace origin back to specific farms. 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.

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.

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, less than half of companies publish quantitative information on compliance with their forest policies (*Supply-Change.org*). 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. Nevertheless, 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.

Criterion 3: Support by non-supply-chain actors

Indicator 3.1: Deforestation-related commitments by financial institutions

Despite increasing NGO pressure, *Forest 500* reports that only a third of 150 assessed financial institutions have deforestation-related commitments in place, and they continue to trail consumer goods companies in adopting policies to eliminate deforestation from their portfolios.[viii] An initial screening by United Nations Environment Programme 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.

Indicator 3.2: Policy support and improvements in forest governance

Companies also experienced little concrete improvement in forest governance and limited public sector support; they however highlighted 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.

DATA DEVELOPMENTS AND GAPS

The assessment was unable to report progress against Criterion 4 since there are currently no available data that provide global coverage to determine whether cumulative company efforts are translating into measurable reductions in deforestation. However, two initiatives are being refined and developed —Global Forest Watch–Commodities and Transparency for Sustainable Economies (Trase)—that will enable a global impact analysis within the next couple of years.

Goal 3

Significantly reduce deforestation derived from other economic sectors by 2020

- After agriculture, timber extraction, mining, infrastructure development, and human settlements are the most important activities driving forest loss.
- There are still no comprehensive and continuous efforts to measure the impacts of these sectors on forests. However, a number of studies look at the deforestation of other economic activities and several industry initiatives are under development. We expect that these developments will start filling the data gaps in coming years.

OVERVIEW OF GOAL AND INDICATORS

Other sectors not covered in Goal 2, including timber logging, mining and infrastructure are major causes of deforestation, driving more than one third of global forest loss.[16] Due to the lack of data that link aggregate forest loss to specific sectors we remain unable to define criteria and indicators that measure relevant impacts or progress in addressing these drivers. Our assessment therefore relies on case studies and policy review. The assessment of progress towards eliminating deforestation from wood products is covered in the Report: *Progress on the New York Declaration on Forests: Eliminating Deforestation from the Production of Agricultural Commodities – Goal 2 Assessment Report.*

FINDINGS

Public initiatives that address deforestation driven by other economic sectors

Governments play a key role in addressing deforestation that occurs in relation to mining and infrastructure development. Policies, regulation and law enforcement can help avoid, reduce, mitigate or compensate forest loss. Mitigation strategies range from project-specific interventions, due diligence and approval processes (e.g. environmental impact assessments) to incentives that reward better practices or fines for illegal ones. Other strategies include higher-level and integrated policy measures, such as land-use planning and restricting mining in designated areas. In addition, governments play an important role in supporting private sector efforts to reduce deforestation impacts by promoting better practices (e.g. in public-private partnerships).

Accountable management of natural resources

Several governments have recognized the deforestation risk associated with mining. Efforts to reduce the impact of mining concessions on forests include sustainable or green mining plans in Guyana and the Republic of Congo, and a restriction on mining in protected areas in Indonesia. Furthermore, 49 countries (Cameroon, Colombia, Democratic Republic of Congo (DRC), Indonesia, Liberia, Peru, among others) are members of the Extractive Industries Transparency Initiative (EITI), which aims to gather and share information along the mining value chain from the point of extraction. As of 2015, 31 out of the 49 signatory countries have obtained the EITI global standard for the promotion of transparent and accountable management of natural resources.[17] Additional efforts are however necessary, including to address environmental risks related to illegal mining activities.

Private initiatives that address deforestation driven by other economic sectors

Private-sector actors can engage in voluntary sustainability efforts through company policies and standards or by participating in coordinated sustainability initiatives.

Private standards on responsible mining

Private-sector efforts to reduce mining-related deforestation impacts are still in their infancy. The Initiative for Responsible Mining Assurance (IRMA) is in the process of developing a Standard for Responsible Mining. The Standard aims to promote four overarching principles, one of which is Environmental Responsibility – a general principle without direct reference to deforestation. IRMA is planning to pilot certification for responsible mining operations in 2017. Similarly, the Alliance for Responsible Mining (ARM) has developed the "Fairmined Standard for Gold and Associated Precious Metals" to support the sustainable development of artisanal and small-scale mining communities.[18] However, ARM only certifies small-scale mining organizations. The standard includes requirements for the legality of mining operations, environmental protection, labor conditions, traceability and socio-economic development.[19]

DATA DEVELOPMENTS AND GAPS

Data on impact and progress on mining and infrastructure are still unavailable but monitoring initiatives by several think tanks are expected to release new tools and information to provide quantitative and global mapped data. We are also discussing with partners whether risks associated with mining could be integrated into existing sustainability initiatives, e.g. CDP's efforts to measure and disclose environmental information from companies and jurisdictions could be expanded to mining and infrastructure.

Data Development #1. Trase

In 2016, the Stockholm Environmental Institute and the Global Canopy Programme established the Trase initiative, which links commodity trade data to deforestation and other environmental impacts. The initiative could also shed further light on the link between economic activities and deforestation.[14]

Data Development #2. New estimates of deforestation impact from mining and large dams

Several initiatives have recently quantified the impact of mining and hydropower, providing valuable insight to stakeholders.

- A study from the University of Puerto Rico released in 2015 highlights the link between gold mining and extensive deforestation, especially in the most biodiverse parts of tropical rainforests in South America.[20] The authors' results suggest that between 2001 and 2013, nearly 168,000 hectares of tropical forests were lost due to gold mining. Moreover, 89% of this forest loss occurred in just four eco-regions,[ix] where mining activities increased substantially before and after the global economic downturn, often in close proximity to conservation areas.
- An initiative by the NGO Fern, *www.coalforest.org*, provides updated information that links geo-spatial data on mining concessions and deforestation threat for several hotspot countries.[21] The initiative estimates that in Indonesia, India, Colombia and DRC, coal mining alone is threatening a combined forest area of close to 8.9 million hectares. It will be expanded to other countries as new information becomes available.
- Greenpeace recently published a report that quantifies the massive deforestation risks associated to plans of the Brazilian government to expand hydropower and industrial waterways for soy transportation.[22]

Goal 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

- In the absence of data on interventions to tackle subsistence agriculture as a driver of forest loss, the assessment focuses on indicators measuring support for reduced exploitation of unsustainable woodfuel.
- Data indicates a steady increase in the distribution of clean cookstoves in the past years, with nearly 20 million new cookstoves and fuels distributed in 2014. Of those, 12.1 million met the Global Alliance for Clean Cookstove's[x] definition of clean or efficient cookstoves.
- Financing for cookstoves has been flat in recent years based on latest Official Development Assistance data, the value of voluntary carbon market transactions and funding channeled through the Alliance.
- Methods for linking cookstove interventions to other sustainable development outcomes are improving through the use of international cookstove performance standards, yet there is still a lack of ground-level data and research on their impacts. New initiatives and data collection efforts are underway and can potentially fill these gaps.

OVERVIEW OF GOAL AND INDICATORS

Goal 4 seeks to address forest loss by supporting economically sustainable alternatives to slash-and-burn farming and unsustainable harvesting of fuel wood from natural forests. Yet, no global datasets quantify government, corporate, or civil society support for alternatives to deforestation driven by basic needs; hence the ability to monitor progress toward achievement of this goal continues to be inadequate.

The two criteria identified with sufficient data available relate to the support for clean and/or efficient cookstoves (subsequently referred to as 'clean cookstoves') or other strategies to reduce unsustainable woodfuel consumption (Box 1).

Box 1: Improving the link – clean cookstoves and sustainable development

Clean cookstove programs have been established specifically to address a variety of problems related to health, poverty, and the environment. Measuring their impact can however be challenging, especially given that not all cookstoves are replacing traditional woodfuel stoves. Challenges relate to the variability in the quality and efficiency of cookstoves constructed worldwide, differences in adoption and drop-out rates from country to country, and lack of systematic data at the ground-level on the impacts of such interventions on forests, health, and livelihoods.

The Global Alliance for Clean Cookstoves has been supportive of international standards developed following International Organization for Standardization (ISO) procedures. In 2012, interim guidelines were developed to evaluate the efficiency, emissions, and safety of cookstoves and fuels based on a tier framework.[23] The tier framework facilitates the provision of standardized data on the quality of stoves, which can then be used in concert with other ground-level data to better estimate ground-level impacts.

The Global Alliance for Clean Cookstoves aims to promote the adoption of clean cookstoves and fuels in 100 million households, estimating that US$1 billion in investment would be needed to achieve this target. The World Health Organisation estimated that providing cookstoves to half of the world's population that still depends on woodfuel would require an annual investment US$34 billion.[24]

Clean cookstoves can reduce deforestation and forest degradation by either replacing the use of woodfuel with alternative energy sources or reducing the consumption of woodfuel through the use of more efficient cookstoves.[xi] Clean cookstoves also reduce cardiovascular and respiratory illness associated with woodfuel burning, in particular in women and children who are disproportionately affected by traditional use.

Table 3: Indicators to track Goal 4

CRITERIA		INDICATORS
1	**Global distribution of clean and/or efficient cookstoves**	Number of cookstoves distributed
2	**Financial support for woodfuel interventions**	Funds spent in support of cookstove programs (in US$)

FINDINGS

Criterion 1: Global Distribution of Clean and/or Efficient Cookstoves

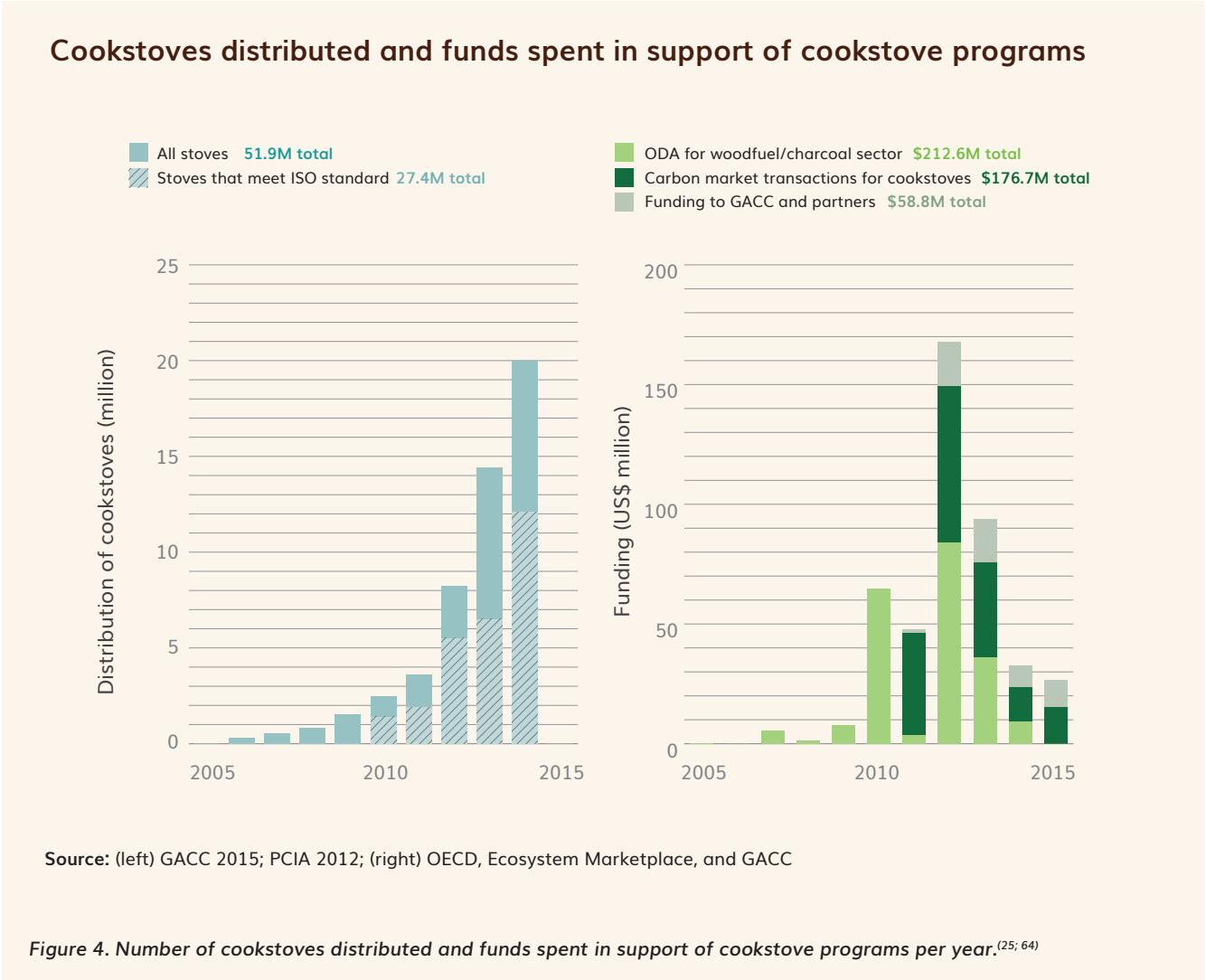
Indicator 1.1: Number of cookstoves distributed

The global distribution of clean cookstoves continues to grow with a nearly 40% increase over the previous year in the number of cookstoves distributed in 2014 (Figure 4). In addition, the distribution of stoves that meet international standards of cookstove and fuel performance has significantly increased in recent years.[25]

Criterion 2: Financial support for woodfuel interventions

Indicator 2.1: Funds spent in support of cookstove programs

Official Development Assistance (ODA), voluntary carbon markets, and funding channeled through the Alliance to support clean cookstove and woodfuel interventions increased substantially from 2011 to 2012 (from US$48 to a peak of 168 million) followed by a decline in 2013, 2014 and 2015 (US$94, 33, and 27 million[xii]) (Figure 4). Support is still far from estimated needs to provide clean and healthy energy alternatives to the world's woodfuel-using population.



Source: (left) GACC 2015; PCIA 2012; (right) OECD, Ecosystem Marketplace, and GACC

Figure 4. Number of cookstoves distributed and funds spent in support of cookstove programs per year.[25; 64]

DATA DEVELOPMENTS AND GAPS

Data measuring forest impacts due to basic needs, as well as progress in supporting efforts to address these drivers, is limited. Moving forward, we seek to cooperate with additional research partners that are collecting new datasets on subsistence agriculture to address this gap. Data for both indicators also have several limitations, including the lack of categorization and public availability of information. Significant financing for the sector also comes from private, in-country, non-governmental, or philanthropic donors. These sources are not tracked by comprehensive datasets. In the following we present several initiatives that could potentially address these limitations in the future.

Data Development #1. Linking cookstoves to forest impact

We are in discussions with the Alliance and other partners about the development of criteria to assess sustainable development impacts (e.g. numbers of trees prevented from felling, illnesses or sick days prevented, jobs or income created) of distributing cookstoves. Such criteria could include deforestation and forest degradation specifically and could be linked to the Sustainable Development Goals.

Data Development #2. Forthcoming GFW mapping system on shifting agriculture

The University of Maryland is currently working on a mapping system with the objective of being able to globally differentiate stable agricultural cultivation cycles from unsustainable agricultural shifting patterns. This work will contribute to mapping and tracking shifting cultivation patterns and resulting impacts on deforestation across tropical forest countries.

There is no simple correlation between shifting cultivation and forest loss. Poverty and low-yielding production practices can drive forest loss by increasing the land footprint required for subsistence, but not always, and traditional rotational cultivation is not necessarily bad for forests. While shifting agricultural cultivation is not a central driver of deforestation, it is a type of subsistence agriculture that typically involves small-scale clearance of land by burning plant material or forest cover. Collecting information on shifting agricultural patterns via a geospatial mapping system, as is currently under development, is essential to assessing its real impact on tropical forests.

Data Development #3. National forest reference emission levels include new data

As the number of countries that develop and submit their forest reference (emission) levels to the UNFCCC increases, new data sets on the impact of subsistence agriculture and wood extractions are expected to become available. Where countries have spatially explicit reference levels, they become able to identify areas where farms and communities exercise pressure on forests and will be able to prioritize these areas in their REDD+ strategies.

Data Development #4. Country-specific GACC data on cookstoves

Country-level data on cookstove distribution, adoption, and use could provide insights as to whether countries with the greatest dependence on woodfuel are receiving sufficient support. The Alliance is working to collect relevant data. Recent data indicates that China, India, Cambodia, Kenya, and Nigeria were the top five countries worldwide for cookstoves and fuel distribution by Alliance partners from 2012 to 2014.[26]

Goal 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

- There has been significant development under this goal by way of commitments toward achieving the Bonn Challenge goal of restoring 150 million hectares by 2020.
- The number of entities (countries, subnational regions, companies, and NGOs) committing to restore forests under the Bonn Challenge has doubled over the previous year, reaching 38. The area covered by these commitments has also doubled. In total, entities have committed to restoring 124.3 million hectares of forest landscapes, and with 90.3 and 34 million hectares pledged for 2020 and 2030, the Bonn Challenge is 60% and 35% towards its milestones, respectively.
- Since early 2015, 114 parties to the UNFCCC have submitted intended nationally determined contributions containing land sector targets. The cumulative restoration, reforestation, and afforestation pledges are estimated to amount to 161.6 million hectares—equal to 46% of the 350 million hectare 2030 restoration target set by the NYDF.

OVERVIEW OF GOAL AND INDICATORS

Goal 5 adopted the 2011 Bonn Challenge target of restoring 150 million hectares of forest by 2020, and expanded it to an additional 200 million hectares by 2030. In support of the Bonn Challenge, IUCN began piloting a methodology for tracking implementation and progress toward these goals in multiple countries in October 2016.[27; 28] While this methodology is being tested we will continue to use the restoration pledges made under the Bonn Challenge and the UNFCCC as imperfect proxies to signal progress. It is important to recognize that the UNFCCC pledges do not always specify the type of land (degraded or other landscapes) being restored nor are the pledges all bound by the same timeframe.

Table 4: Indicators to track Goal 5

CRITERIA		INDICATORS
1	**Forest restoration pledges under the Bonn Challenge**	Size of pledges committed by 2020 and 2030 (area in ha)
2	**Afforestation, reforestation, and restoration commitments in Intended Nationally Determined Contributions of Parties to the UNFCCC**	Size of pledges committed (area in ha)

FINDINGS

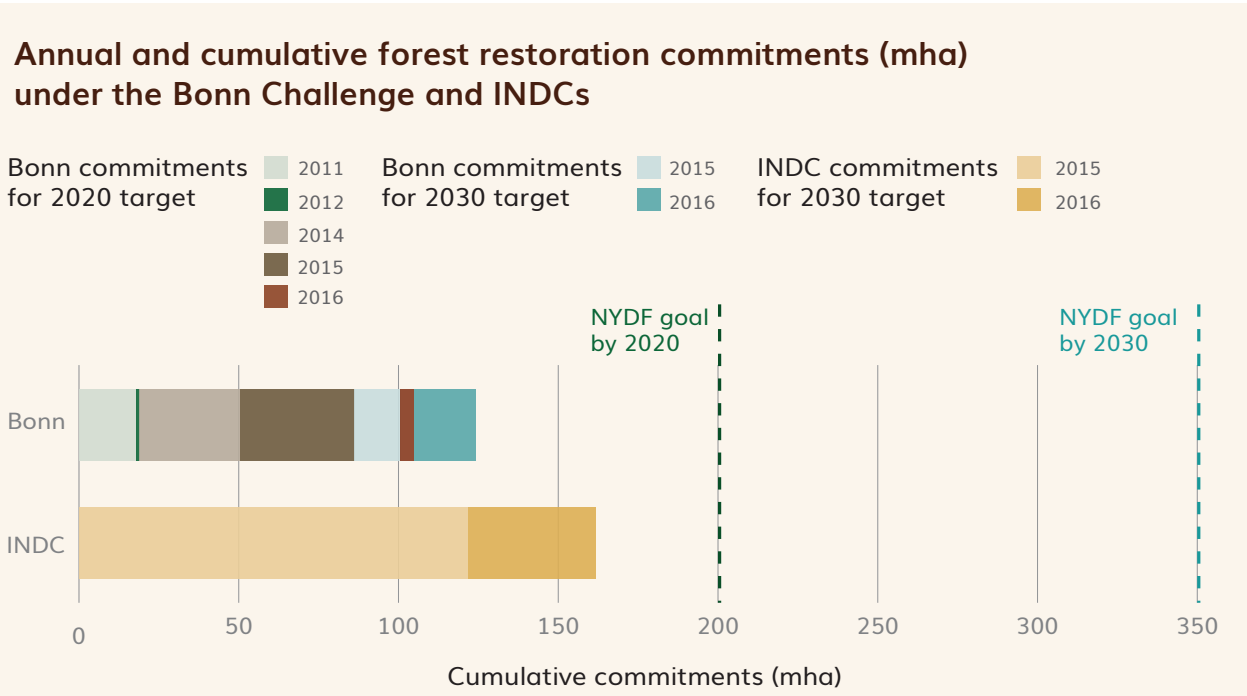
Criterion 1: Bonn Challenge forest restoration pledges

Indicator 1.1: Size of pledges committed by 2020 and 2030

Under the Bonn Challenge, forest landscape restoration is defined as "the long-term process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes".[28] Current pledges include activities such as restoration of forest lands (including planted forests, natural regeneration, or silvicultural enhancement); restoration of agricultural lands (including agroforestry and improved fallows); and restoration of protective land and buffers (including mangrove restoration, watershed protection, and erosion control).[29]

Since the 21st session of the Conference of the Parties (COP) held in Paris in December 2015, the number of Bonn Challenge commitments and hectares pledged has doubled from 19 to 38 and 62.6 to 124.3 million hectares, respectively (Figure 5). Since 2011, 31 countries, four subnational regions, one company, and two associations have made commitments under the Bonn Challenge. With 90.3 million hectares pledged for 2020 and 34 million hectares pledged for 2030, to date the Bonn Challenge has achieved 60% towards its 2020 milestone and 36% towards its 2030 overall total.[27]

The commitments continue to be clustered around high-level events that serve to accelerate action on forest landscape restoration. This past year saw 18 million hectares pledged at the Paris Climate Summit, 11.5 million hectares at the Africa High-Level Bonn Challenge Roundtable, further commitments made at the roundtable for Bonn Challenge Latin America in Panama, and the World Conservation Congress in 2016.[30] Since July 2016, 14 African countries have endorsed the Kigali Declaration – a Pan-African commitment to accelerate forest landscape restoration interventions in support of the Bonn Challenge. The Kigali Declaration was launched at a regional Bonn Challenge ministerial meeting, hosted by the Government of Rwanda, and supported by the East African Community and IUCN.[27; 31] The African Forest Landscape Restoration Initiative (AFR100) and Initiative 20x20 in Latin America are also fostering collaboration in support of the Bonn Challenge.[32]



Source: Climate Focus analysis based on Bonn Challenge and INDC data in Oct 2016

Figure 5 Bonn Challenge forest landscape restoration commitments and INDC forest restoration, reforestation and afforestation commitments under the UNFCCC. [30,33]

Criterion 2: Commitments in INDCs

Indicator 2.1: Size of pledges committed

Since early 2015, 114 parties to the UNFCCC submitted intended nationally determined contributions (INDCs) containing land-sector targets with forest landscape restoration, reforestation, and afforestation pledges totaling an estimated 161.6 million hectares—which, if pledged to the Bonn Challenge would equal 46% of the overall 350 million hectare 2030 restoration target.[3; 33] Since the 2015 NYDF Progress Assessment, the number of parties with land-sector targets has increased by 46 and an additional 40 million hectares, bringing us 11% closer to the 350 million hectare 2030 target. Goal 7 provides more details on intended and final NDCs in the land-sector. The specificity of forestation and restoration pledges vary significantly, with some having explicit hectare targets, regions, and timelines, and others providing a percentage-of-forest-cover goal for the country, forest stock volume goals,[xiii] or targets conditional on support. While some NDC targets overlap with Bonn Challenge commitments, this rough estimate provides a glimpse of the potential restoration efforts underway, and shows a path for reaching the 2030 target.

DATA DEVELOPMENTS AND GAPS

There are two new developments to be released this year that will help address the gap in data and monitoring for forest and landscape restoration.

Data Development #1. Expanded Forest Landscape Restoration Website

In November 2016, IUCN is launching a new website, an information hub on InfoFLR.org to complement the existing *BonnChallenge.org* site, which will capture and consolidate information, news, analyses, resources, and ongoing updates on restoration initiatives around the world. InfoFLR will feature a comprehensive package of information on more than 90 countries including domestic targets, policies and programs related to restoration; information on how restoration is dealt with in their NDCs, National Biodiversity Strategies and Action Plans and other plans; and the status of assessments to identify restoration opportunities, among other things.[27] Providing this comprehensive information in a standardized format will make it easier to identify and present global trends.

Data Development #2. Bonn Challenge Barometer

The second development is a progress tracking protocol called the Bonn Challenge Barometer. The Barometer seeks to achieve that by measuring real, on-the-ground progress that proves restoration is underway. It is being led by IUCN with support from the German Government. The scope of the Bonn Challenge Barometer includes tracking country and jurisdictional progress along three themes indicative of progress:[27]

- First is *policy commitment and financing for restoration* which lists pledges to restore degraded and deforested landscapes (in hectares) with additional information defining the nature and extent of targeted landscapes and evidence of stakeholder support. Additional evidence for policy commitment and financing include: the existence of national/sub-national policies, plans and measures related to forest landscape restoration, domestic budget allocations in support of restoration, and private-sector funding for restoration.
- Second is the presence of *technical knowledge and underpinning*. The Barometer will track whether a country has maps and analysis of national/sub-national restoration potential, and if they have identified priority areas for restoration and interventions.
- Third is *on-the-ground progress* focused on hectares under restoration and estimated carbon benefits per activity type. This measure also includes an estimation of biodiversity and jobs benefits from restoration underway.

Goal 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

- Since the Sustainable Development Goals (SDGs) were adopted in 2015 attention has been focused on establishing the frameworks for implementing and monitoring them. Indicators are being developed to measure the various targets at the global level, and the choice of indicators has the potential to influence how the targets are interpreted in practice.
- The indicators currently proposed to measure the SDG targets that address forest conservation and restoration focus on total forest cover, forest cover change, change in carbon stocks and areas designated for biodiversity conservation and under forest management plans.
- The proposed indicators would not directly measure gross forest loss or restoration. This may undermine the ambitious forest conservation goal adopted as part of the SDGs.

OVERVIEW OF GOAL AND INDICATORS

The objective of Goal 6 is the adoption of targets on forest conservation and restoration as part of the SDGs. In addition, it provides three qualifiers: such targets should be 1) quantifiable; 2) ambitious; and 3) relate to the year 2030.

The SDGs, adopted in September 2015, are a set of 17 ambitious goals agreed on by the United Nations. They replace and amend the Millennium Development Goals, which expired in 2015, and address a broad range of themes covering the pillars of sustainable development, namely the social, economic and environmental pillars. Each goal is framed broadly and then broken down into a number of specific targets. In addition, a list of indicators to monitor implementation and report on progress toward meeting the goals and targets at a global level are under development by an Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs).

While Goal 6 targets a specific action (i.e. the inclusion of targets within the SDGs) the precise contours of how the forestry goals are interpreted is still being determined through the development of indicators to measure progress toward meeting them. This year's assessment therefore focuses on the developments in designing these indicators and how the indicators as they are currently proposed affect the ambition of the targets adopted in 2015. We track progress according to two indicators, one focusing on forest conservation targets and the other on restoration targets.

Table 5: Indicators to track Goal 6

CRITERION		INDICATORS
1	**Adoption of forest-related targets in SDGs**	Inclusion in the SDGs of an ambitious, quantitative 2030 target for forest conservation Inclusion in the SDGs of an ambitious, quantitative 2030 target for forest restoration

FINDINGS

In February 2016 the IAEG-SDGs presented their proposal for the global indicator framework for monitoring the SDGs. This framework included a list of 230 indicators designed to monitor the 169 targets included within the SDGs. The group proposed that these indicators be divided into three 'tiers,' based on the availability of existing methodologies and data for measuring them.[34] The UN Statistical Commission agreed to this framework in March 2016, but acknowledged that it only represented a "starting point", and that more work would need to be done to refine the indicators over time. Responsibility for developing methodologies for those indicators for which they were not available ("Tier III Indicators") was given to a range of international organizations with specific competences in the relevant areas. Table 6 summarizes the indicators agreed upon for the forest-related targets under SDG 15 – Targets 15.1 and 15.2.

Table 6: Indicators for SDG Targets 15.1 and 15.2

TARGETS	INDICATORS	TIER CLASSIFICATION
15.1. By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.	15.1.1 Forest area as a proportion of total land area. 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.	Tier I
15.2. By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.	15.2.1 Progress towards sustainable forest management.	Tier III

While the indicators for Target 15.1 can already be measured based on existing data, the task of developing methodologies for measuring Indicator 15.2.1 has been given to FAO. In September 2016 an informal group of different international bodies set up by FAO presented an update on progress, including the development of the following proposed sub-indicators:[35]

1. Annual average percent change in forest area (most recent available 5-year period).
2. Annual average percent change in stock of carbon in above-ground biomass (most recent available 5-year period)
3. Share of forest area whose primary designated function is biodiversity conservation (most recent period). Share of forest area under a forest management plan, of which forest area certified under an independent forest management certification scheme (most recent period).

These proposed indicators will be considered by the IAEG-SDGs in October 2016 and, if agreed upon, will be presented for adoption by the UN Statistical Commission in March 2017.

It should be noted that forests bear considerable relevance also for other SGDs. For example, forests are highly relevant for resilience-building and adaptation to natural hazard events in many countries susceptible to climate change, which is directly linked to Target 13.1.[36]

Criterion 1: Adoption of forest targets in SDGs

Indicator 1.1: Forest conservation

Our 2015 assessment found the conservation target adopted in SDG 15.2 – specifically the aim to "halt deforestation" – to be both quantifiable and highly ambitious. Although it does not specifically refer to stopping the loss of natural forests, we interpreted the language of the text to refer to stopping *gross deforestation* by 2020. This interpretation is supported by the plain language of the target ("halt deforestation") and the fact that forest enhancement is dealt with separately.

The indicators adopted by the UN Statistical Commission and the sub-indicators currently proposed by FAO do not allow for measuring progress toward this ambitious goal. By focusing only on total forest area and change in forest area they only measure net, rather than gross, deforestation, and so do not provide information on the extent to which deforestation of natural forests is still taking place. At the same time, the assessment of carbon stocks does provide some indication of this, since new growth forest will generally have significantly lower carbon stocks than old growth forest.

Indicator 1.2: Forest restoration

In contrast to the target on forest conservation, the parts of SDG 15.2 dealing with restoration, afforestation and reforestation are not quantifiable. Instead, proposals for quantifiable targets on reforestation were removed from the final version of the SDGs. Adopting indicators that measure the extent of forest restoration would have probably allowed for overall progress to be measured. However, the adopted indicators and proposed sub-indicators do not allow for any specific measurement of forest restoration, afforestation and reforestation. Measurements of change in carbon stocks nevertheless provide an indication of the quality of existing forests.

DATA DEVELOPMENTS AND GAPS

It is not clear whether the decision not to specifically measure gross deforestation or forest restoration is due to a lack of available data.

Goal 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

- The text of the Paris Agreement anchors action on land-use, including REDD+, within the overall mitigation framework of the agreement, providing a long-term signal that clarifies the central role of forests in post-2020 mitigation efforts.
- The Green Climate Fund is currently preparing modalities to operationalize REDD+ results-based payments, the final piece of the puzzle needed in the REDD+ operational framework.
- An analysis of the 162 INDCs indicates that 98 Parties have proposed a quantified emission mitigation target that includes land use, while 60 Parties have proposed a non-emissions target on land use, either in lieu of or in addition to an emissions target covering the sector. Non-emissions targets are diverse, and include goals on overall forest cover, forest conservation and afforestation, reforestation and restoration.

OVERVIEW OF GOAL AND INDICATORS

Goal 7 aims for the inclusion of forest-related mitigation measures in a post-2020 climate agreement. The Paris Agreement, which entered into force on 4 November 2016 and is applicable beginning in 2020, commits Parties to collectively limit the average global temperature rise to below 2°Celsius above pre-industrial levels, with an aspirational goal of limiting it to 1.5°C. It builds on existing negotiations, decisions and protocols adopted under the UNFCCC, including the Kyoto Protocol, and the collection of COP decisions that have been taken in the negotiations leading up to the Paris Climate Summit. These decisions include, among others, the framework for REDD+.

The Paris Agreement establishes a framework for collective action, the credibility of which will depend on the bottom-up commitment of Parties to mitigate greenhouse gas emissions through domestic action (Nationally Determined Contributions or NDCs). In anticipation of the Paris Agreement, 162 Parties to the UNFCCC have submitted intended NDCs (INDCs) that describe their mitigation goals, with developed countries communicating these goals through economy-wide emission reduction targets and developing countries communicating economy-wide, jurisdictional or sectoral targets – which may be absolute or intensity-based – together with specific actions, depending on the national capabilities and circumstances. These NDCs comprise the substance of the Agreement's mitigation approach, with the text of the Agreement providing a framework for accountability and assessment.

With this in mind, our indicators reflect elements of an agreement on REDD+, focusing on both the framework and the substance of mitigation actions, excluding assistance to developing countries, which is addressed in Goals 8 and 9. Indicator 1.1 assesses whether the final text of the Paris Agreement – and its accompanying COP decision – includes references to land-use and REDD+. Indicator 1.2

explores developments that relate to the operationalization of the REDD+ framework. Indicator 2 analyzes whether the INDCs submitted as of August 2016 include commitments in relation to the land-use or forestry sector and what accounting rules they apply to these commitments.

Table 7: Indicators to track Goal 7

CRITERIA		INDICATORS
1	**References to land use (including REDD+) in the Paris Agreement**	Inclusion of broad agreement to address land use as part of mitigation framework of agreement Finalization of the operational framework for REDD+
2	**References to land use (including REDD+) in submitted NDCs**	Inclusion of land-use or forestry mitigation targets within NDCs and, in the absence of final NDCs, in INDCs

FINDINGS

Criterion 1: References to land use (including REDD+) in Paris Agreement

Indicator 1.1: Inclusion of agreement to address land use

The Paris Agreement dedicates a full article (Article 5) to land-use and forests, cementing the role of forests and other carbon sinks in achieving the overall mitigation goal of the Agreement. The text adopted provides a long-term signal that clarifies the central role of forests in post-2020 mitigation efforts.

Article 5 contains two paragraphs. The first encourages all Parties to take action to conserve and enhance sinks and reservoirs of greenhouse gases, including forests and biomass. Though each Party will determine the role of land use in its NDC (see Indicator 1.2), this provision clarifies the overall expectation that Parties will include land-use to the extent possible. This expectation is also emphasized by the accounting rules for NDCs, which encourage broad coverage.

In its second paragraph, Parties are "*encouraged*" to implement and support REDD+, through results-based payments and alternative policy approaches, such as joint mitigation and adaptation, which the COP confirmed in Paris is understood as an alternative to results-based finance for REDD+.[54] This provision explicitly incorporates the existing REDD+ framework adopted under the UNFCCC within the framework of the Paris Agreement, for the first time anchoring these rules in a high-level agreement.

Indicator 1.2: Finalization of operational framework for REDD+

The Green Climate Fund (GCF) – which became operational in November 2015 and approved its first funding proposals in June 2016 – adopted an "Initial Logic Model and Performance Measurement Framework" for REDD+ Results-based Finance (RBF) in 2015. Building on this, in March 2016 the Board of the GCF requested the Secretariat to make a proposal for operationalizing REDD+ RBF, which was presented in October 2016.[55] Based on this proposal, the Board requested the Secretariat to develop a call for proposals that would include detailed modalities for making REDD+ RBF, in line with UNFCCC decisions. This proposal will be presented to the Board at its 16th meeting, expected to take place in Summer 2017.

Criterion 2: References to land use (including REDD+) in submitted NDCs

Indicator 2.1: Inclusion of land-use or forestry mitigation targets

For this indicator, we analyzed the content of 157 INDCs submitted in the run up to the Paris COP, as well as three INDCs and three NDCs that were submitted in 2016.[xiv] An analysis of the 162 INDCs or NDCs indicates that 98 Parties propose a quantified emission mitigation target that includes land use. Of these, 86 plan to adopt an economy-wide or multi-sector target that includes land use, while 12 plan to adopt only a specific emissions target on land use, and one adopts both. In contrast, 42 Parties exclude land use from their emissions mitigation targets, mostly due to accounting challenges, though a number of countries indicate they will revisit this decision at a later date.

In addition, 60 Parties propose a non-emissions target on land use, either in lieu of or in addition to an emissions target covering the sector. Some of these targets are contained in the mitigation sections of the INDCs, while others are in the adaptation section. The non-emissions targets include goals on overall forest cover, forest conservation and afforestation, reforestation and restoration, typically quantified in terms of hectares of forest (see Indicator 5.2 on afforestation, reforestation, and restoration commitments). They also include goals on a given proportion of forests to be designated as national parks or other protected areas. Three additional Parties specify actions in the land-use sector but do not propose a quantifiable goal.

These overall numbers are in line with the analysis undertaken in the 2015 report. The decision of a relatively large majority of countries to include land-use within their emission targets, and of most additional countries to at least adopt a non-emission target on land use, means that Indicator 2 can be considered to have been met. At the same time, it is important to note that many of these targets are subject to the provision of international financing, and their implementation will likely require significantly more finance than has currently been pledged for land-use mitigation.

DATA DEVELOPMENTS AND GAPS

Despite this, it is important to highlight that there remain large uncertainties regarding how countries will account for their land-use sector emissions. While most countries confirm they intend to account for their emissions using IPCC guidelines, there are discrepancies as to whether 1996 or 2006 guidelines will be used, and only a handful of countries indicate their intention to use the 2003 IPCC Good Practice Guidance for the land sector. Several countries indicate specific approaches, including the net-net approach, the reference level approach, or a combination of these. Other countries clarify their targets are subject to further guidance on accounting for land-use emissions.

The diversity of approaches and substantial gaps in detail indicate that a good deal of work remains to be done to clarify the scope of and assumptions underlying the broad inclusion of land use within emissions targets in INDCs. Other analysis has also highlighted the lack of clarity and consistency regarding the accounting of land-use emissions in INDCs, and notes that several countries have stated this as a reason for omitting the land-use sector from their targets.[37]

Goal 8

Provide support for the development and implementation of strategies to reduce forest emissions

- Combined bilateral and multilateral ODA committed to climate change mitigation and the forestry sector in developing countries increased from US$548 million in 2013 to US$739 million in 2014. This increase was due to the doubling of bilateral ODA commitments, while multilateral ODA saw a small decrease. Major donors include Germany, Japan, and the UK.
- We lack satisfactory datasets to track public finance flows among developing countries, domestic spending in developed and developing countries to reduce forest-related emissions, or private investments in strategies to reduce forest emissions.

OVERVIEW OF GOAL AND INDICATORS

This goal focuses on communicated ODA support[xv] for strategies to reduce forest emissions. 'Strategies' are defined as concerted efforts to reduce emissions from forests, whether through high-level policies or laws, government programs, private sector initiatives or local projects. In the 2015 report, we defined five criteria, listed in Table 8. This update is focused on Indicator 1.1, the only indicator for which updated data are available to measure quantitative progress.

Table 8: Indicators to track Goal 8

CRITERIA		INDICATORS
1	**International public climate finance flowing to the forestry sector in developing countries**	Climate-relevant ODA for forestry committed by OECD countries and multilateral institutions at the global level (in US$) South-South cooperation on reducing forest emissions – Case Studies
2	**Domestic public finance to reduce forest emissions**	Public spending in developed NYDF signatory countries on reducing forest emissions – Case Studies Public spending in developing NYDF signatory countries on reducing forest emissions – Case Studies
3	**Private sector investment in strategies to reduce forest emissions**	Shifting equity and debt investments toward sustainably produced commodities – Case Studies Capital investment in production of sustainable forest commodities – Case Studies Corporate Social Responsibility initiatives to reduce forest emissions – Case Studies

CRITERIA		INDICATORS
4	**Indigenous peoples' investments in strategies to reduce forest emissions**	Case Study
5	**Civil society investments in strategies to reduce forest emissions**	Case Study

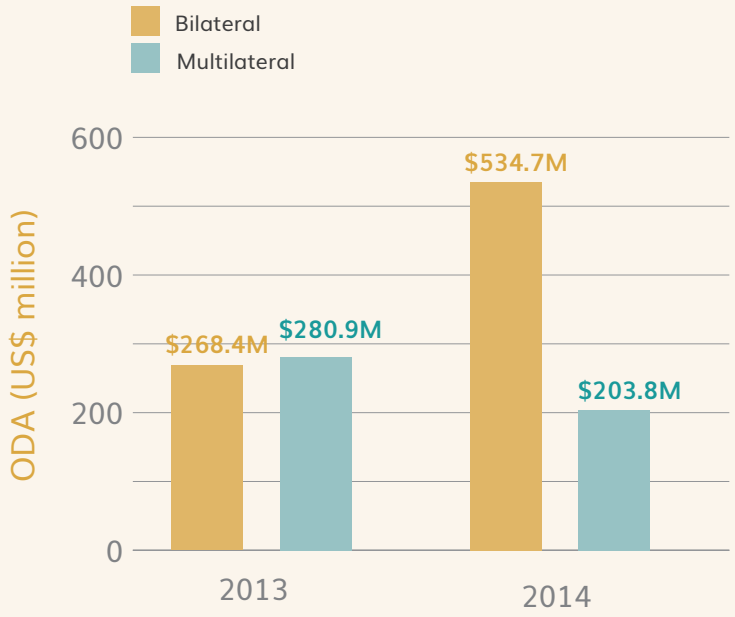
FINDINGS

Criterion 1: International public climate finance targeted at forestry in developing countries

Indicator 1.1: Climate-relevant ODA for forestry committed by OECD countries

According to OECD data, overall ODA commitments to climate change mitigation in the forestry sector increased substantially between 2013 and 2014, from US$548 million to US$739 million. Bilateral ODA relevant to this indicator has doubled since last year, from US$268 to 535 million in 2014, while multilateral ODA saw a decrease from US$280 to 204 million (Figure 6). In both years, grants were the main financial instrument of bilateral ODA, while multilateral ODA was largely given in the form of loans and in the case of a few donors, equity. The large increase in bilateral ODA was primarily due larger allocations from three of the top five donors, in particular the UK, Japan, and Germany. Note that United States ODA for forests is not officially linked to climate mitigation, but to biodiversity, which excludes the significant amounts of US forest assistance from our data.

Bilateral and multilateral ODA committed to the forestry sector



Source: Climate Focus calculations based on OECD DAC: Climate-related development finance project in 2013-14

Figure 6. Bilateral and multilateral ODA (in US$ million) committed to climate change mitigation in the forestry sector.

New disbursement mechanism for forest finance through the GCF

A new multilateral funding opportunity for forests is expected to come through the new disbursement mechanism for forest finance by the Green Climate Fund. Within its finance matrix, the GCF has established "*scaling up finance for forests and climate change*" as one of its five investment priorities.[38] By scaling up disbursements to programs that reduce forest carbon emissions (e.g. agroforestry, forest conservation and management), GCF plans to provide additional investment for projects and programs that support and complement results-based incentives.

Central African Forest Initiative (CAFI) to prevent deforestation

CAFI, a coalition between the European Union, Germany, Norway, France, the UK and Central African partners, such as the Central African Republic, the DRC, Cameroon, the Republic of Congo, Equatorial Guinea, and Gabon, as well as Brazil, was launched in 2015 to increase international financial support for REDD+ in the Central African region.[39] CAFI's goal is to initiate forest policy reform as well as support measures that address direct and indirect drivers of deforestation.

The CAFI fund has an initial target of US$500 million until 2025 and is administered by the United Nations Development Program's (UNDP) Multi-Partner Trust Fund Office. In October 2016, commitments amount to US$250 million. DRC is the first country with an approved investment plan and will receive up to US$200 million in a combination of investment and results-based finance. Other partner countries are in the process of developing their investment plans.

World Bank's support for forests

In its Forest Action Plan for the financial years 2016-2020, the World Bank expresses its goal to take further steps in linking forest protection with sustainable economic and social development.[40] The plan defines two focal areas for action: sustainable forest management and forest-smart interventions in other sectors. In addition, in its Climate Change Action Plan, the World Bank further commits itself to help developing "*REDD strategies in more than 50 countries, develop/implement a large-scale, multi-sectoral program promoting "forest-smart" development and mobilizing IBRD/IDA/REDD+ financing in 10 countries, and prepare Country Forestry Notes in at least 20 countries*".[41] As part of the African Climate Business Plan from 2015, the World Bank reinforces its support to Africa's forest agenda by pledging to support forest protection and sustainable forest management practices.[42] Expected outcomes, understood to be conservative estimates, include 20 million hectares of conserved forest cover, 40 million tons CO_2e in emission reductions and carbon sequestration, and around 8 million hectares under biodiversity protection.

DATA DEVELOPMENTS AND GAPS

Data on ODA commitments for climate change mitigation and forestry are available from OECD. Transparency could be enhanced if OECD members would differentiate between results-based finance as disbursement category and provide information not only on pledges, but also on disbursement of forest finance. For all other indicators, there is a complete lack of data sources that provide comprehensive, continuous globally comparable information on funding.

Goal 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

- Since 2014, pledges and commitments for results-based finance for forest emissions reductions have grown by more than US$6.4 billion. Disbursements continue to lag behind, amounting to just US$440 million, as many countries are still in the process of preparing large-scale REDD+ programs in line with donor requirements. At COP21, Germany, Norway and the UK collectively pledged to provide more than US$5 billion over the period of 2015-2020 for reported and verified emission reductions. Norway's International Climate and Forest Initiative (NICFI) made the largest majority of commitments and disbursements of the bilateral partnerships.
- Recent progress in the formulation of REDD+ programs points to a potential uptake in the speed of RBF disbursements.
- Between 2013 and 2015 the forest carbon market grew from US$152 million to US$762 million, according to Forest Trends data. Carbon volumes traded increased from over 25 $MtCO_2$-equivalents ($MtCO_2e$) in 2013 to just under 88 $MtCO_2e$ in 2015. Much of this growth can be attributed to several transactions in the Australian Emissions Reduction Fund, which made up 69% of total transactions tracked in 2015.

OVERVIEW OF GOAL AND INDICATORS

Goal 9 seeks to encourage and reward tropical forest countries and jurisdiction through financial incentives for their verified emissions reductions (VERs) in the forestry sector. In the 2015 report, we defined two indicators, with Indicator 1 focusing on public Results-based Finance (RBF) and Indicator 2 on payments by private sector entities as part of carbon market transactions (Table 9).

Table 9: Indicators to track Goal 9

CRITERIA		INDICATORS
1	**International payments for verified emission reductions (VERs) committed and disbursed through multilateral and bilateral funds and public programs**	Payments for VERs through public programs (in US$)
2	**Value of purchases of forest VERs through voluntary and compliance markets**	Payments for VERs through carbon market transactions (in US$)

In 2015, the private sector gave important signals in support of sourcing of commodities to reward countries for efforts that lead to reduced emissions. In December 2015, Marks & Spencer and Unilever announced a new "produce-and-protect" approach with the intent to prioritize commodity sourcing from areas that have designed and are implementing jurisdictional REDD+ initiatives.[43] These developments may lead to a new indicator in 2017.

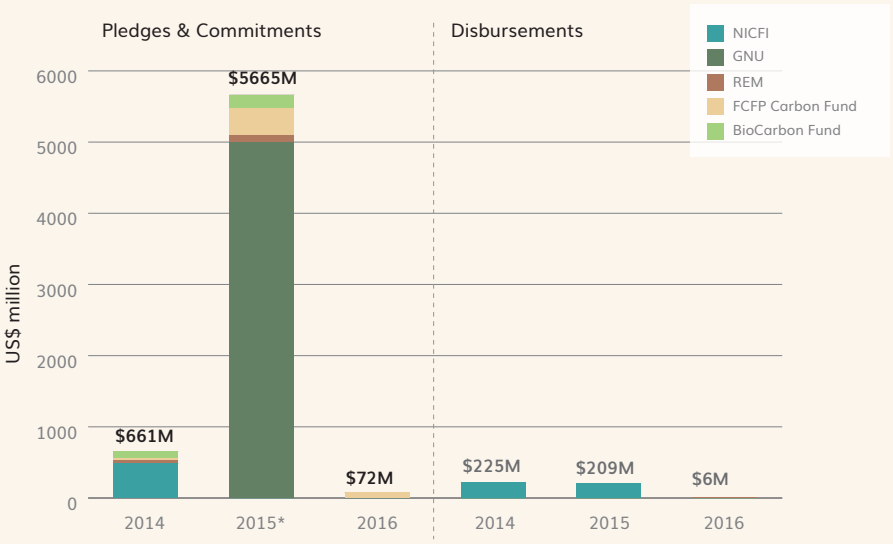
FINDINGS

Criterion 1: International payments for VERs

Indicator 1.1: Payments for VERs through public sources

Between 2014 and 2016, donors made new commitments for REDD+ RBF of almost US$6.4 billion, and disbursed roughly US$440 million of this amount (Figure 7). At COP21 in Paris, the governments of Germany, Norway and the United Kingdom (GNU) collectively pledged to support countries that reduce emissions from deforestation and forest degradation with more than US$5 billion over the period of 2015-2020.[56] The majority of commitments over the past two years were made by Norway's NICFI (around US$481 million).[xvi] Additional pledges for Germany's REDD for Early Movers Program (REM), and two World Bank administered funds (the Forest Carbon Partnership Facility (FCPF) and the BioCarbon Fund) amounted to US$916 million. Also, nearly US$100 million of REM and US$146 million of BioCarbon Fund commitments made up pledges for a new partnership between GNU and Colombia.[57] Furthermore, the Norwegian Government has been responsible for almost all disbursements (US$430 million) made since 2014, largely using proxy-based verification of results. The remaining disbursements were made by the REM. In total, the US$6.4 billion is a combination of pledges and commitments whereby countries have either pledged money to a fund nominally or have since deposited that pledge to the fund as a commitment (Figure 7).

Pledges, commitments and disbursements of REDD+ RBF by NICFI, GNU, REM, FCPF Carbon Fund and BioCarbon Fund



Source: NICFI, REM, FCPF and BioCarbon Fund

Figure 7. Annual commitments of REDD+ RBF by NICFI, REM, FCPF Carbon Fund and BioCarbon Fund and annual disbursements by NICFI and REM (in US$ million). FCPF Carbon Fund and BioCarbon Fund have not yet disbursed any RBF. Commitments to FCPF Carbon Fund were retrieved from the last FMT note on the Carbon Fund budget for Fiscal Year 2017. BioCarbon Fund commitments were retrieved from the fund website. FCPF Carbon Fund data refers to financial years. REM commitments provided by the KfW, amounts are as of August 2016. Amounts may vary due to currency fluctuations.

Progress in the formulation of national and jurisdictional REDD+ programs

Recent developments indicate that 'readiness' investments may soon start to yield payments for emissions reductions. Earlier in 2016, FCPF participants approved the final stage of program submissions by the DRC and Costa Rica, the "Emissions Reductions Programme Document" (ER-PD) that lead the way to contract negotiations. Several other countries are expected to submit their ER-PDs at the next Carbon Fund meeting in December 2016. In 2015, the governments of Germany, Norway and the UK signed an agreement to make US$100 million in RBF available to Colombia under the German REM Program.

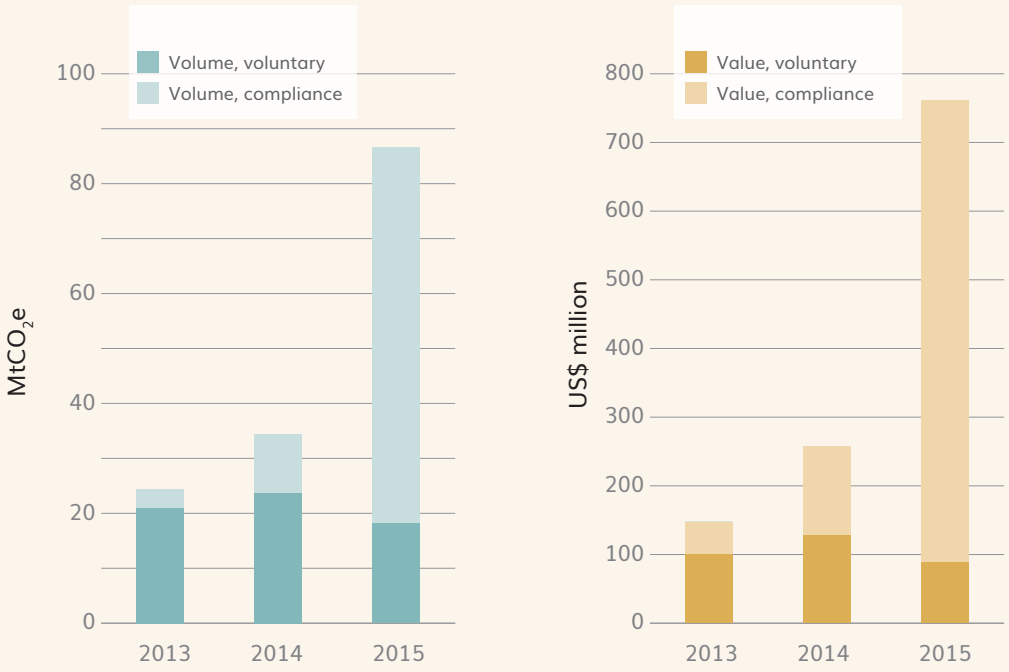
Criterion 2: Value of purchases of VERs

Indicator 2.1: Payments for VERs through voluntary and compliance carbon markets

Since 2013, the value of the forest carbon market increased by more than five times from US$152 to 762 million in 2015 (Figure 8). Volumes grew from 25 to 88 MtCO2e transacted. This expansion can largely be attributed to the compliance market and transactions in the Australian Emissions Reduction Fund, accounting for more than 60 MtCO2e transacted in 2015. In contrast, the voluntary market, after a small increase in 2014, saw a decline to 2009 levels (18.2 $MtCO_2e$) in 2015.

In 2015, voluntary offsets were mostly bought from Latin America (worth US$21 million), followed by Africa (US$19.5 million) and Asia (US$13.1 million). Apart from Australia, the compliance market originated credits mainly from the Californian cap-and-trade program (US$63 million). The carbon price for voluntary credits increased from US$4.7 per ton in 2013 to US$5.4 in 2014 and decreased to US$4.9 in 2015. The average price for compliance credits increased from US$9.7 to 12.7 from 2013-14. In 2015, it ranged from US$3.1 for the New Zealand emission trading scheme to US$9.7 for the Australian and the Californian cap-and-trade-programs.

Forest carbon market in volume and value



Source: Climate Focus graphics based on data provided by Forest Trends

Figure 8. Forest voluntary and compliance carbon market in 2013, 2014 and 2015 value (US$ millions) and volume (millions of credits total). Compliance prices can differ significantly and there is has not been an aggregate yet. The estimated price for the California-Quebec ETS is for example around US$9.7 per ton, for the Australian carbon tax/ERF it is US$9.7 per ton, and for the New Zealand ETS it is around US$3.1 per ton.

DATA DEVELOPMENTS AND GAPS

Regular public and accessible updates on all commitment and disbursement values of all RBF programs would improve the progress assessment towards this goal.

Goal 10

Strengthen forest governance, transparency, and the rule of law, while also empowering communities and recognizing the rights of indige-nous peoples, especially those pertaining to their lands and resources

- For all but one sub-indicator, the datasets used to assess progress for Goal 10 are not updated annually, and none of these have been updated in the period since our 2015 assessment report was published. Updated information is available only on the number of violent deaths connected to forest or land issues.
- New data on land- and forest-related killings show 2015 was the worst year on record, with 181 killings recorded, compared to 113 in 2014, and an average of 104.6 killings annually from 2010-2014.
- There have been relevant developments in policy frameworks to strengthen forest governance, 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.
- While implementation of many Voluntary Partnership Agreements established under the EU's Forest Law Enforcement Governance and Trade (FLEGT) Action Plan continue to face hurdles, Indonesia looks set to be the first country to issue FLEGT licenses for exporting to the EU at the end of 2016.
- The launch of the LandMark map represents an important development in enhancing data on the land rights of indigenous peoples and local communities, while data collection efforts planned under the Sustainable Development Goals framework may also be an important future source of data.

OVERVIEW OF GOAL AND INDICATORS

Goal 10 mandates advances in forest governance, transparency and the rule of law, together with the empowerment of communities and indigenous peoples in relation to their land and resource rights.

Forest governance is an encompassing concept that includes transparency and the rule of law. It is founded in strong, transparent and well-functioning policies and institutions. Community empowerment and the land and forest tenure rights of local communities can also be considered as one of the com-ponent elements of forest governance. Recognition of these rights can often lead to better governance overall, though arguably also goes beyond questions of 'good governance', and extends to moral rights to lands that have traditionally been owned and stewarded by such communities. Given the complex and multi-faceted nature of this goal, attempts to measure it are bound to be imperfect. In our 2015 report we chose three sets of indicators for which robust data is available and which cover many of the central elements of forest governance. These are listed in Table 10.

Table 10: Indicators to track Goal 10

CRITERIA		INDICATORS
1	**Improvement of forest governance through the strengthening of institutions and policies**	Change in policy scores of producer countries in key areas of governance of the forest sector - overall (aggregate) policy scores and score for specific areas Change in policy scores of processor and consumer countries in key areas of governance of the timber trade - overall (aggregate) policy scores and scores for specific areas
2	**Extension and strengthening the rule of law, as indicated by illegal logging as a percentage of total logging, the quantity of imports of timber with high risks of illegality, and the number of killings related to land disputes**	Illegal logging as a percentage of total logging Imports of timber with a 'high risk of illegality' as a percentage of total imports Number of killings annually with a clear, proximate and documented connection to forest or land issue
3	**Land and forest rights of indigenous people and local communities**	Percentage of land area that is (i) owned by and (ii) designated for Indigenous Peoples and Local Communities (IPLCs) Number of tenure regimes (i) recognizing ownership of forest by Indigenous People and Local Communities (IPLCs) and (ii) providing for the designation of forest for IPLCs

The datasets used to evaluate these indicators have not been updated since we assessed them for the 2015 report, with the exception of the data for Indicator 2.3. There have nonetheless been a number of notable developments with respect to the strengthening of institutions and policies.

FINDINGS

Criterion 1: Improvement of forest governance through the strengthening of institutions and policies

There have been a number of notable developments in the development and implementation of policies designed to strengthen forest governance that are worth highlighting.[46]

Development #1. Producer countries

A number of timber-producing countries have been making progress in developing legal frameworks for ensuring the legality of timber exports, primarily in the context of Voluntary Partnership Agreements (VPAs) under the EU's Forest Law Enforcement Governance and Trade (FLEGT) Action Plan. While six countries have already concluded and are implementing VPAs, the agreements have experienced a number of challenges in implementation, and most have not yet completed the development of the Timber Legality Assurance Systems mandated by the agreements and required for producing certified timber.

Indonesia has however completed and begun to implement its legality assurance system – one of the key steps needed to meet the terms of its VPA – and is expected to be the first country to issue FLEGT

licenses for exporting to the EU in November 2016.[47] Having already implemented its legality assurance system for several years, the system has been strengthened and enhanced under the VPA, allowing for FLEGT licenses to be issued.

Development #2. Consumer and processor countries

Japan became the fourth major consumer of forest products to adopt legislation designed to combat the trade of illegal timber or promote legal timber. In contrast to laws in Australia, the European Union and the United States, Japan's Law to Promote the Distribution and Use of Legally Logged Wood focuses on the promotion of legal timber rather than restricting illegal imports, and relies on voluntary company engagement. Nonetheless, the law represents an important step in enhancing demand-side measures to combat illegal logging. Progress in developing legal frameworks to control illegal logging is also underway in South Korea, where the government is currently working to operationalize a clause in its Forestry Act 2012 that requires it to establish measures to prevent the distribution or use of illegal timber, both domestic and international.

Meanwhile consumer countries with legality assurance systems in place appeared to make good progress in implementing those systems. A survey undertaken by Forest Trends indicated that there have been substantial enforcement actions underway under the EU, US and Australia timber legality frameworks in the six month period September 2015 – March 2016, including 495 company site inspections, 396 Corrective Action Requirements and 55 sanctions.[48] In addition in 2015, the US Department of Justice secured the first criminal conviction under its timber legality legislation, resulting in a fine of US$13.5 million – the highest financial penalty for timber trafficking awarded to-date.

In the European Union the long-awaited independent evaluation of the EU FLEGT Action Plan was released in 2016.[49] The review highlighted a range of successes in implementing the Action Plan and improving forest governance in targeted countries, and considered to be "*fully relevant, comprehensive and future-proof*." However, it also raised a number of challenges. While recommending that its main pillars and action areas be retained, it advised that FLEGT support to producing countries be delivered in a more demand-driven and flexible manner, and that delays and problems affecting VPAs be addressed and the private sector be more involved. The review also highlighted the importance of focusing on non-VPA countries and building international coalitions if global illegal logging and trade is to be addressed.

There was also progress in enhancing legality in processor countries. In April 2016 China launched the China Responsible Forest Product Trade and Investment Alliance (China RFA). The China RFA is a voluntary partnership of companies engaged in timber production, processing and trade who are committed to trading in legal timber. Members – which to-date include 18 forest product trading companies – undergo a due diligence process and provide annual reports on traded products, while the Alliance provides guidelines and tools for legality assurance.

Criterion 2: Extension and strengthening the rule of law

Indicator 2.3: Number of killings connected to a forest or land issue

New figures for Indicator 2.3, on the number of killings related to land and natural resource disputes are available. While our 2015 report provided figures of annual deaths from 2010-14, recent analysis by Global Witness shows the number of killings recorded in 2015 to be the highest on record. In this year there were 181 killings recorded with a clear, proximate and documented connection to a land or forest

issue. This compares with 113 in 2014, and an average of 104.6 killings annually from 2010-2014.

As with previous years' assessments, it is assumed that the 2015 figures show only part of the picture, with many more killings going unreported. The incompleteness of the data means that it remains difficult to establish a clear global trend on this issue. Nonetheless, the extent of the increase of reported killings in 2015 – whether representative of more killings, greater reporting, or both – emphasizes the acuteness and gravity of this issue, and the governance failures it points to.

All the killings recorded in 2015 were linked to the control of land and natural resources, which are the subject of a large number of disputes across all major regions, and whose "alarming number" has recently been highlighted by the United Nations Special Rapporteur on the rights of indigenous peoples.[50; 51] The largest number[(40)] were linked to mining and extractive industry developments, followed by agribusiness, hydroelectric dams and illegal logging. The largest number continue to be documented in Latin America, though there was a major increase in documented killings in Asia, which in 2015 accounted for almost one third of the total. All killings took place in tropical forest countries, and over a third of victims were indigenous peoples. There continues to be little prosecution of perpetrators linked to these killings, indicating grave failures in the rule of law across tropical forest countries.

DATA DEVELOPMENTS AND GAPS

Much of the data that has been used for the assessment of Goal 10 is not updated annually, and so assessments of progress will only be available periodically, in accordance with the priorities and availability of resources of the organizations collecting it. More frequent data collection would enable more regular assessment of most of the indicators under this goal. The substantive data gaps highlighted last year with respect to these indicators – including the limited number of countries included in the assessments of policy frameworks, illegal logging and imports at high risk of illegality – remain relevant.

The data gaps highlighted in our 2015 report with respect to the figures on killings related to land and forest disputes also remain relevant, in particular that the research is still limited to killings and not to other forms of violence, and that these killings are likely underreported.

There have been a number of important data developments in the past year that can be expected to enhance the assessment of the land and forest rights of indigenous people and local communities in the future.

Data development #1. LandMark to provide information on land rights of Indigenous Peoples and local communities

An important development in collecting data on the land and forest rights of Indigenous Peoples and local communities was made in November 2015 with the launch of the LandMark map.[(52)] LandMark is the first online, interactive global platform to provide maps and other critical information on lands that are collectively held and used by Indigenous Peoples and Local Communities (IPLCs). It includes both bottom-up information on specific land areas that are reported as in practice owned or occupied by IPLCs, and national-level estimates of the proportion of total land that is owned or occupied by IPLCs. In addition, the platform maps the legal security of IPLC lands under different countries' legal frameworks.

Data development #2. Development of indicators on tenure security under the Sustainable Development Goals

As part of the Sustainable Development Goals adopted in 2015, countries agreed to, by 2030, ensure that all women and men have ownership and control over land and other forms of property (Target 1.4). In March 2016, the body charged with developing indicators to measure progress toward the SDGs, agreed that this target be measured based on the following indicator:

Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure.

Given the lack of data and agreed methodologies for assessing this indicator, UN Habitat and the World Bank have been tasked with developing detailed methodologies for assessing it. These are expected to be finalized in October 2017, and data will be collected every year for more developed countries, and every 3-5 years for less developed countries.

Data development #3. WRI study finds substantial mitigation benefits and high cost-effectiveness of securing land rights for indigenous groups

A recent report by WRI quantified the economic value of securing land rights for the communities who live in and protect forests, focusing on Indigenous Peoples in the Amazon.[53] The analysis shows that the registration of Indigenous land rights can provide a low-cost and cost-effective investment for mitigation and other ecosystem services. Deforestation rates in areas with secure land rights were found to be 2-3 times lower than in comparable areas without registration.

Endnotes

[i] Many companies made several, commodity specific or general commitments, which results in a much higher number of commit¬ments than companies.

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

[iii] *Forest 500* defines power broker 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.

[iv] Zero Gross commitments are defined as policies that commit to no deforestation of all natural forests. Other No Deforestation commitments are defined as policies that commit to zero net deforestation and/or zero deforestation of HCV and HCS forests across all commodity supply chains.

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

[vi] 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%), beef/leather (16%). Analysis of companies is based on 2016 *Forest 500* data.

[vii] 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.

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

[ix] The Guianian moist forest ecoregion, the Southwest Amazon moist forest ecoregion, the Tapajós-Xingú moist forest ecoregion and the Magdalena Valley-Urabá region.

[x] The Global Alliance for Clean Cookstoves is referred to as the Alliance for the remainder of the Goal 4 section.

[xi] Note that not all stoves that were replaced by clean cookstoves were traditionally woodfuel-based.

[xii] 2015 ODA data are not yet available.

[xiii] The NDC land-use targets for China and India are based on an increase in forest stock volume, and these targets in cubic meters were converted to hectares through the use of proxies for volume of carbon (m3/ha) taken from FAO regional standards.

[xiv] Note that the EU-28 submitted a single INDC, and so the 162 INDCs analyzed represent 189 countries.

[xv] Several donors categorize and report REDD+ results-based finance as ODA. Therefore the amounts of funding presented in this goal overlap with results-based finance reported under Goal 9.

[xvi] In 2015, Norway made an additional pledge of continued RBF for Brazil at the same level as prior payments.

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