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

Key Messages

- There are no signs that tropical deforestation is slowing. Average greenhouse gas (GHG) emissions from tropical deforestation between 2014 and 2016 increased by 25 percent as compared to the baseline (2001-13), heightening the need for renewed urgency in taking action to meet the New York Declaration on Forests (NYDF) and other climate goals. In 2016, tropical deforestation was a larger source of emissions than the European Union's entire economic activity.
- We are not on track to meet Goal 1's milestone of halving natural forest loss globally by 2020. Although partly offset by forest regrowth, the disappearance of natural forests continues. The average annual rate of global tree cover loss has increased by more than one-third since 2014, the year the NYDF was adopted.
- 2016 saw the highest loss of tree cover globally in more than 15 years. This was fueled in part by a strong El Niño event the previous year that led to unprecedented droughts and wildfires, as well as by the continued expansion of agricultural production for commodities like palm oil in Southeast Asia and soy in Latin America.

Taking regrowth into account, the average rate of net forest loss in 2010-15 declined by 23 percent compared to the baseline (2000-10). Regenerated or newly planted trees, however, are unlikely to offset carbon emissions from natural forests, and biodiversity also differs markedly between older and younger forests with respect to both ecosystem structure and functions.

OVERVIEW OF GOAL AND INDICATORS

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

- Ending gross natural forest loss would mean that, from year-to-year, there would be no measurable clearing of natural forest area.
- Ending net natural forest loss would mean 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 time period.

Three proxy indicators were used to monitor each type of loss (Table 1).

Table 1: Indicators to track Goal 1

CRITERIA	INDICATOR
1. Rate of forest loss	1.1 Annual global gross forest/tree cover loss (ha) 1.2 Annual global net natural forest/tree cover change (ha) 1.3 Annual tropical deforestation (ha) and associated carbon emissions (tCO_2)

For the purpose of assessing progress toward Goal 1, we suggest that, despite uncertainties and limitations, two global data sets can serve as proxies for forest area monitoring to show directional trends. We use data from Hansen et al. (2013, updated through the year 2016 by Global Forest Watch)[1] for Indicator 1.1 and data from the United Nations Food and Agriculture Organization's (FAO) 2015 Global Forest Resources Assessment[2] for Indicator 1.2. Key differences between these two sources of global data were outlined in the 2015 NYDF Progress Assessment.[3] In the 2016 NYDF Progress Assessment, we added Indicator 1.3 as an additional proxy for monitoring tropical deforestation and associated emissions based on an analysis by Zarin et al. (2016). For this year's assessment, we update their analysis through the year 2016.[4]

FINDINGS

Criterion 1: Rate of forest loss

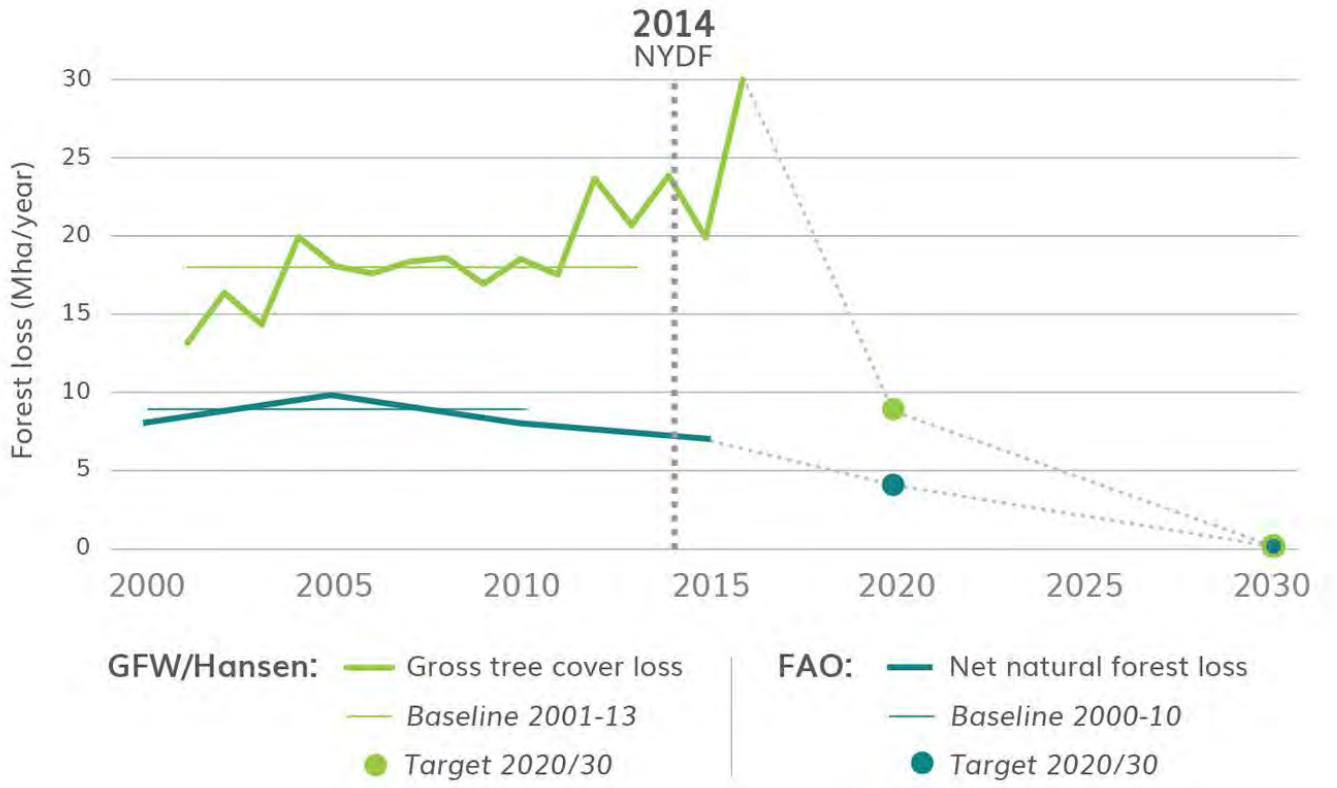
Indicator 1.1: Annual gross forest loss

If natural forest loss is understood as gross forest loss, then satellite-based measurements indicate that it is becoming increasingly unlikely that the goal of halving natural forest loss globally by 2020 will be met. The global annual rate of gross tree-cover loss rose by an average of 35 percent between 2014 and 2016 compared to a 2001-13 baseline period (Figure 1). Global tree cover loss in 2016 was the highest since measurements began in the year 2000 and was 51 percent higher in 2016 than in 2015.

Indicator 1.2: Annual net forest change

If natural forest regrowth is counted as offsetting natural forest clearing, then the annual net loss of natural forest appears to be declining after peaking at 9.7 million hectares in 2005 (Figure 1). Compared to the 2000-10 baseline period, average rates of net forest loss in 2010-15 declined by 23 percent.

Figure 1: Forest loss relative to 2020 and 2030 targets (Mha/year)



Source: Hansen, M. C., Potapov, P. V., Moore, R., Hancher, M., Turubanova, S. A., Tyukavina, A. et al. (2013). ***High-resolution global maps of 21st-century forest cover change*** [Data file and codebook]. Available from Global Forest Watch Website and Food and Agriculture Organization.(FAO) (2015).***Global forest resources assessment***. Retrieved from FAO website.

Note: For the Hansen/GFW and FAO estimates, the line represents the default crown cover threshold of 30%.

Indicator 1.3: Gross tropical deforestation and associated carbon emissions

In the tropics, rates of deforestation and associated carbon emissions are on the rise. More than one-quarter of all tree cover loss globally in 2016 occurred in Brazil and Indonesia alone. Average annual emissions from tropical deforestation over the years 2014-16 were 25 percent higher than over the historical average benchmark period (2001-13).[5]

Brazil achieved steep reductions in deforestation for over a decade, but official government data indicate that deforestation rates in the Amazon were 29 percent higher in 2016 than in the previous year.[6] Outside of Brazil, emissions from deforestation have increased in nearly every tropical forested country compared to the 2001-13 baseline. Emissions reached a peak of 5 gigatons of Carbon Dioxide equivalent (Gt CO_2e) in 2016, and the uncontrollable fires that burned large areas of

Indonesia's peatlands in late 2015 led to additional peat emissions of 0.4 Gt CO_2e.[7]

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[1] Hansen, M.C., Potapov, P.V., Moore, R., Hancer, M., Turubanova, S.A., Tyukavina, A., et al. (2013). Hansen/UMD/Google/USGS/NASA Tree Cover Loss and Gain Area. University of Maryland, Google, USGS, and NASA. Retrieved from www.globalforestwatch.org

[2] Food and Agriculture Organization. (2015). Global Forest Resources Assessment. FAO report.

[3] Climate Focus. (2015). Progress on the New York Declaration on Forests – An Assessment Framework and Initial Report. Prepared by Climate Focus, in collaboration with the Environmental Defense Fund, Forest Trends, The Global Alliance for Clean Cookstoves, and The Global Canopy Program.

[4] Zarin, D.J., Harris, N.L., Baccini, A., Aksenov, D., Hansen, M.C., Azevedo-Ramos, C., et al. (2016). Can carbon emissions from tropical deforestation drop by 50% in 5 years? Global Change Biology, 22.

[5] Based on an updated analysis of Zarin et al. (2016). In their original analysis, all or part of the global datasets were replaced or supplemented with national-level data for Brazil, Indonesia, the Democratic Republic of Congo, Malaysia, Colombia, Ecuador, Guyana, and Mexico. These countries cumulatively accounted for two-thirds of the historical average emissions benchmark. In the absence of annual updates from some countries listed above, we reverted to the use of Global Forest Watch (GFW) gross tree cover loss and biomass loss as proxies for deforestation and emissions in Colombia, Ecuador, Guyana and Mexico. This allowed us to update estimates through the year 2016 while ensuring as much consistency and comparability as possible with the historical average benchmark. We also incorporated new data for Brazil for the period 2001-2015, based on version 4.0 of SEEG (updated October 2016) that reflects information as presented in Brazil's third national GHG emissions inventory to the UNFCCC. SEEG has not released its estimate for 2016, so 2016 data for Brazil for year 2016 reflect GFW data.

[6] Brazilian National Institute for Space Research. (2016). PRODES estima 7.989 km2 de desmatamento por corte raso na Amazônia em 2016. Retrieved from http://www.inpe.br/noticias/noticia.php?Cod_Noticia=4344

[7] Lohberger, S., Stängel, M., Atwood, E.C., & Siegert, F. (2017). Spatial evaluation of Indonesia's 2015 fire-affected area and estimated carbon emissions using Sentinel-1. Global Change Biology 2017;00:1-11