



## GOAL ASSESSMENT

PROGRESS ON THE NEW YORK DECLARATION ON FORESTS

# Goal 5 assessment

## Restoring degraded landscapes and forestlands

November 2020

The New York Declaration on Forests (NYDF) is a voluntary and non-binding international declaration aimed at halting global deforestation by 2030 with more than 200 endorsers: national and sub-national governments, multi-national companies, groups representing Indigenous and local communities, and non-governmental organizations. Published annually, the NYDF Progress Assessment evaluates the global status of forests as well as overall efforts made toward achieving the NYDF goals.

This update presents progress as of 2020 toward achieving Goal 5:

### 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.**

## Key messages

- Our ability to assess restoration progress continues to be challenged by incomplete data, but based on available information, we estimate that the goal of restoring 150 million hectares of forest by 2020 is not on track.
- An analysis of Central America using satellite data reveals that three countries – El Salvador, Costa Rica, and Guatemala – had net increases in tree cover between 2011 and 2018, while three countries – Belize, Honduras, and Nicaragua – had net losses. The results provide an indication of the highly dynamic nature of tree cover, with hundreds of thousands of hectares of trees gained and lost in each country.
- Restoration involves many kinds of interventions, which adds complexity to producing data on restoration progress; multiple data sources are needed to capture the variety of restoration approaches.

- While satellite data on tree cover gain and loss is used as a proxy for restoration progress, this data cannot identify why that change is happening. For instance, tree cover gained via plantations, abandoned land, or active restoration interventions are often indistinguishable in remotely sensed data.
- New restoration pledges have been made by corporate actors, and multiple new initiatives link restoration practitioners with finance. Still, it remains to be seen whether these efforts will enable restoration efforts to scale in time to realize existing global goals.

## Overview of goal and indicators

The New York Declaration on Forests (NYDF) Goal 5 endorses and builds on the Bonn Challenge, a global initiative launched in 2011 with the goal of bringing 150 million hectares (Mha) of the world's deforested and degraded land into restoration by 2020. In 2014, the NYDF adopted the 150 million hectare goal and extended the ambition to restore an additional 200 million hectares by 2030. Together, these initiatives represent a “goal continuum” of 350 million hectares by 2030.

Goal 5 of the NYDF provides a means to deliver on other international commitments to increase forests, including the United Nations Framework Convention on Climate Change (UNFCCC) program on forest, REDD+ (reducing emissions from deforestation and degradation), UN Convention on Biological Diversity (CBD), Aichi Target 15, Sustainable Development Goals 6.6 and 15.2, and the United Nations Decade on Ecosystem Restoration (2020-30).

The 2019 NYDF Progress Report<sup>1</sup> provided an in-depth progress assessment of Goal 5 and drew two main conclusions about the progress towards fulfilling restoration commitments. First, the Bonn Challenge pledges totaling 170.6 million hectares indicate political will, but according to the assessment only a small amount of restoration has been reported to be in progress. Second, there are ongoing efforts to assess areas under forest landscape restoration (FLR) and land degradation in the context of international commitments (e.g. the Aichi Biodiversity targets, Bonn Challenge, UNCCD, and regional initiatives). However, these efforts are limited in scope, assess efforts at the country or region level, and follow different methods that may not be fully consistent and comparable. Therefore, tracking progress of global restoration commitments is technically complex, and there is not consistent reporting in place.

Due to ongoing data gaps, this progress update relies on the 2019 NYDF Progress Report findings, and where possible, information has been updated based on developments in the past year.

Our assessment of Goal 5 focuses on restoration that falls under the concept of forest landscape restoration (FLR) adopted by the Bonn Challenge. FLR aims to restore ecological integrity at the same time as improving human well-being through multifunctional landscapes.<sup>2</sup> While the process and intent of FLR is well-defined, there continues to be various interpretations of what is included.<sup>3</sup> For the purposes of this assessment, we report on FLR activities that yield an increase in tree and/or forest cover, as well as growing scattered trees in rural agricultural landscapes and in plantations and agroforestry systems. FLR goals are of course more than just increasing tree cover, but are linked to socio-economic, biodiversity, carbon, or other goals. Any assessment of FLR

should make efforts to go beyond growing trees to include monitoring ecosystem function, ecosystem services, and socio-economic outcomes.

At present, there are no global datasets available that measure increases in forest or tree cover as a proxy for progress on FLR; therefore, this is not included in the assessment.

## Assessing progress

The 2020 NYDF Goal 5 update employs a similar framework used to complete the comprehensive assessment in 2019. The first criterion, the rate of forest and tree cover gain, provides a global overview of biophysical restoration progress. The second criterion was adapted from the Bonn Challenge Barometer and reports on three indicators related to key political and socio-economic conditions necessary to catalyze FLR. As the first criterion does not yet fully capture FLR progress, the second criterion was established to serve as a proxy for tracking early developments and enablers of restoration.

**Table 1. Criteria and indicators to track Goal 5**

Criteria	Indicators
<b>1. Rate of forest cover and tree cover gain (hectares established over time)</b>	1.1. Forest cover gain from FLR (ha) 1.2. Tree cover gain inside and outside the forest (ha)
<b>2. Forest landscape restoration efforts (political and socio-economic advancements towards)</b>	2.1. High-level pledges 2.2. Planning and finance for FLR activities

## Findings

### Criterion 1: Rate of forest cover and tree cover gain (hectares established over time)

The first criterion measures progress on biophysical restoration using two indicators. The first, forest cover gain, relates to tree cover increases within forest landscapes. The second, tree cover gain inside and outside forest landscapes, includes forest landscapes in addition to areas with sparse tree cover, such as agricultural lands.

#### Indicator 1.1: Forest cover gain from FLR (ha)

##### **Global forest cover has increased to meet only one fifth of the NYDF 2020 target**

There is not currently any data set available to track annual progress on forest cover gain. Therefore, to assess progress on this indicator we draw on a global, systematic literature review conducted for the 2019 Progress Report by researchers at the University of Virginia. Peer-reviewed literature and publicly available reports and databases were assessed to build a comprehensive database of areas where forests were restored between 2000-10; from 2011-13 (start of the Bonn Challenge); and since 2014 (signing of the NYDF). Research was finalized in August 2019 and has not been updated since.

## **Global forest cover gain**

The 2019 literature review<sup>a</sup> finds that while data limitations make progress difficult to quantify, there are indications that we are not on track to meet the goal of restoring 150 million hectares of forest across landscapes.<sup>4</sup> Since 2000, approximately 26.7 million hectares of forest landscapes have experienced tree cover gain (20.5 Mha reforestation, 6.2 Mha afforestation), representing 18 percent of the 2020 goal. Since 2011 (start of the Bonn Challenge), 3.1 million hectares have undergone forest restoration (2.4 Mha reforestation, 0.7 Mha afforestation). After the launch of the Bonn Challenge and NYDF, the average rate of forest restoration decreased from approximately 2 million hectares per year between 2000-10, to less than 1 million hectares per year after 2011.

The literature review results diverge for a few reasons from the findings of the Second Bonn Challenge Barometer report,<sup>5</sup> which found that FLR is under way on 43.7 million hectares since 2011. The Bonn Challenge Barometer report included a detailed assessment of restoration progress using the Barometer protocol indicators, including: 1) success factors: policies, finance, planning and 2) results and benefits: area under restoration, restoration activity, climate impacts, biodiversity impacts, socio-economic impacts. The report covered six pilot countries: Brazil, El Salvador, Mexico, Rwanda, Sri Lanka, and the United States; and shorter “rapid assessments” in 13 additional countries. Meanwhile, the literature review only included restoration from the six pilot countries – as they provided information on area under restoration, timelines, and restoration activities – while the remaining 13 “rapid assessment” countries did not. Further, the literature review excluded activities in the Barometer report that did not increase forest cover (including silviculture, conservation, rangeland restoration, and soil restoration).

Currently, this literature review is the only systematic global assessment of forest restoration (through reforestation and afforestation) progress to date. However, it comes with some caveats: Because of the time lag between implementing restoration activities and being able to observe reportable results, it is likely that many interventions that had been undertaken at the time of publication of the 2019 NYDF Progress Report were not yet reflected in the literature. In addition, academic and grey literature may be biased in their selection of geography and scale, leading to a higher representation of large restoration projects over small-scale restoration. The review therefore provides a conservative estimate of progress. At the same time, the reviewed studies do not provide continuous data and therefore do not address the issue of permanence, meaning it is unclear whether the identified restoration efforts are sustained over time.

### **Indicator 1.2: Tree cover gain inside and outside the forest (ha)**

#### **Areas of high tree cover gain frequently also experience the highest rates of loss**

The second indicator of increased cover gain is evaluated using satellite-based monitoring of biophysical progress. Analysis conducted for the NYDF 2019 Goal 5 Progress Report used a suite of data and tools to create a regional monitoring system to measure progress on forest restoration. A pilot-scale analysis was developed for the five countries of the Mekong region – Cambodia, Laos, Myanmar, Thailand, and Vietnam – to demonstrate how, given additional

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<sup>a</sup> The full methods and findings of the literature review are available in the 2019 NYDF Assessment Report and the Goal 5 Technical Annex: <https://forestdeclaration.org/images/uploads/resource/2019NYDFGoal5.pdf>

investment of resources, this analysis could be improved further and scaled up to a global restoration monitoring system.

The results of this pilot indicate that most restoration in the Mekong region between 2010-17 took place outside of forests, while deforestation has continued at a higher pace than forest restoration. However, throughout much of the region, the story is diverse and there have been mixed results across and within countries. In some areas, such as north-central Cambodia and central Laos, the predominant change is tree cover loss; while in the eastern part of Thailand and along the border of Vietnam and southern Cambodia, the predominant change is tree cover gain. Both findings are important and illustrate the need to consider the net impact of tree cover loss and gain on the landscape.

## Case study: Central America

Building on the lessons learned from the Mekong pilot study, partners at World Resources Institute (WRI) developed a case study using new tree cover gain data for Central America, which was produced by the University of Maryland's Global Land Analysis and Discovery (GLAD) Laboratory, that harnesses a new algorithm for gain detection. One major difference between this case study and the Mekong case study is that this one only includes data on tree cover gain in densely forested areas and does not include data on "trees outside the forest." While measuring progress on sparse tree cover is an important component of a restoration monitoring system, data were not available in time for this publication.

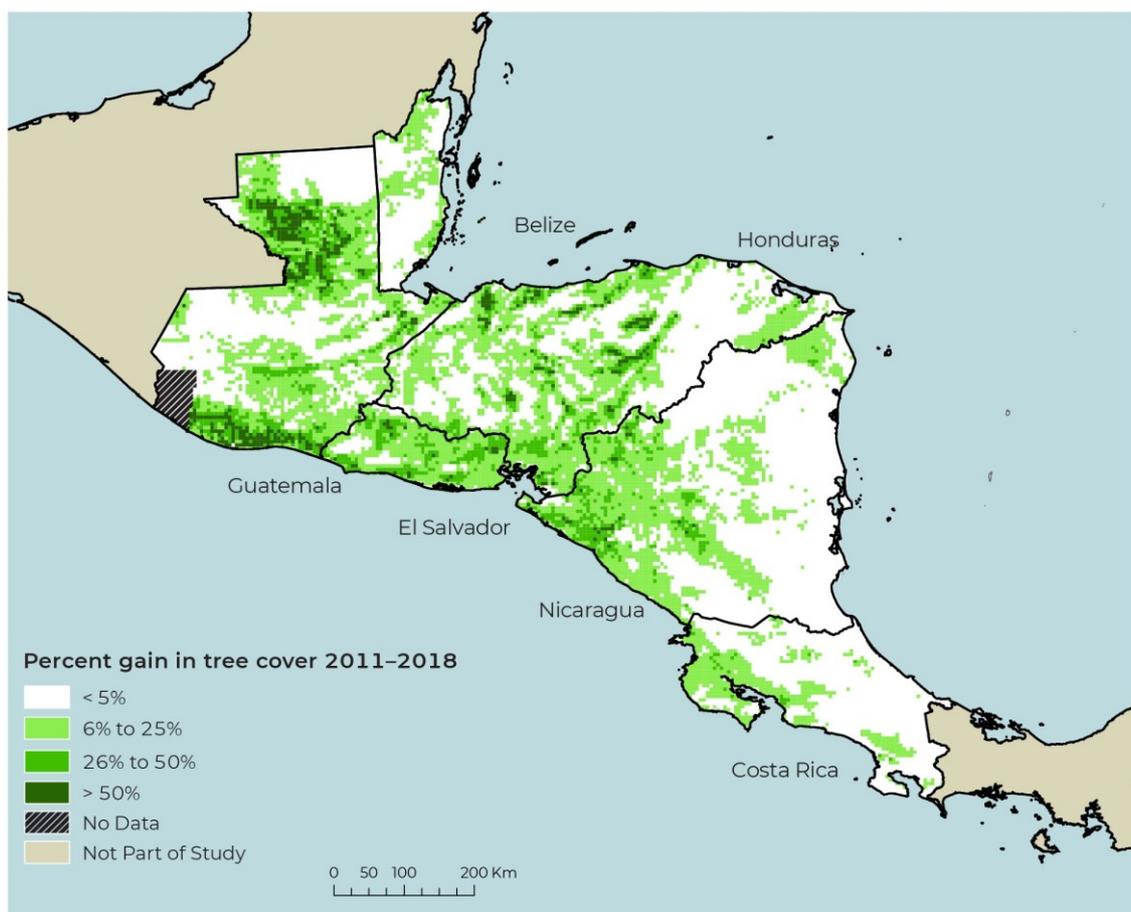
### Results

Since the Bonn Challenge began in 2011, the Central American countries of Belize, Cost Rica, El Salvador, Guatemala, Honduras, and Nicaragua collectively experienced 1,903 million hectares of gross tree cover gain (Figure 1). However, those gains were offset by 2,222 million hectares of tree cover loss in the region, resulting in a 320 million hectares net loss of tree cover overall (Figure 2). Between 2011 and 2018, three countries in Central America – El Salvador, Costa Rica, and Guatemala – had net increases in tree cover, while three countries – Belize, Honduras, and Nicaragua – had net losses (Figure 3). The results indicate the highly dynamic nature of tree cover, with hundreds of thousands of hectares of trees gained and lost over the eight-year period in each country.

El Salvador demonstrates the most significant net increase in tree cover over the period (see Figure 3). While it is the country with the lowest baseline area of tree cover to start, net tree cover increased in most parts of the country (see Figure 2). Guatemala and Honduras have the highest gross gains in tree cover in Central America, indicating progress on tree-cover gain. Yet due to the significant deforestation happening elsewhere in the country, Honduras reports an overall net loss of tree cover and Guatemala only a slight net gain. These results underline the importance of viewing gains and losses both individually and together.

Viewed on the map of net change (see Figure 3), the findings reveal an interesting trend across the region where areas of net tree cover gain and loss tend to be concentrated together. Wide swaths of net loss are concentrated in the eastern part of Nicaragua, central Guatemala, and along the Caribbean coast of Costa Rica. Meanwhile, net tree cover gain is concentrated along the Pacific coast across most of Central America. Honduras appears to have the most interspersed pattern of net gain and net loss throughout the country.

**Figure 1. Map of gain in tree cover for the period of 2011–2018 across six countries of Central America.**



Note: Data are categorized according to percent tree cover gain per pixel on a 5 km x 5 km basis.

Source: Data produced by the University of Maryland and interpreted by World Resources Institute, 2020.

## Methods

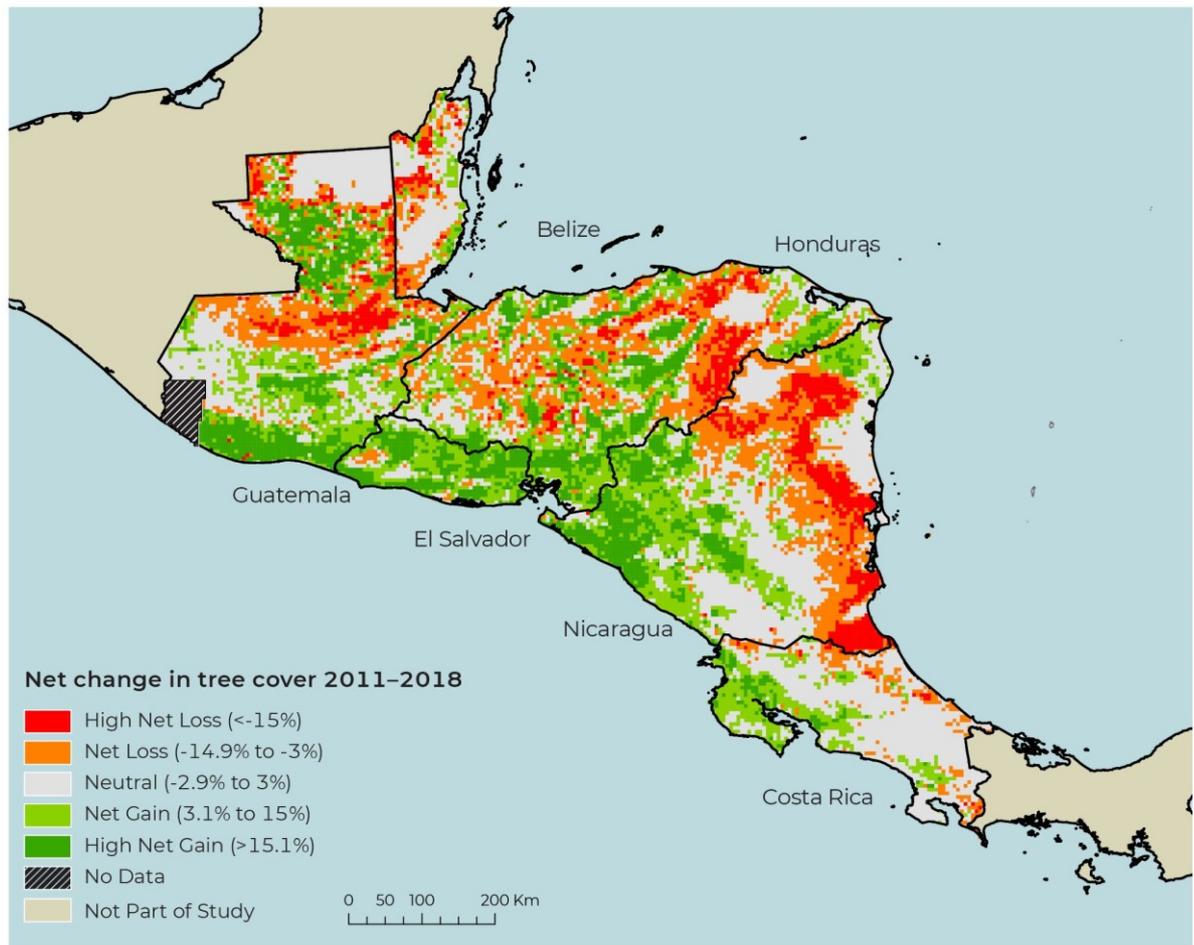
The data used for the Central America case study was sourced from the University of Maryland's Global Land Analysis and Discovery laboratory. They include tree cover baseline data for 2010, tree cover loss over the period 2011-18 (which are currently available on the Global Forest Watch platform), as well as newly-developed and yet unpublished data on tree cover gain over the period 2011-18.

The tree cover gain data for this pilot uses a new method for estimating increases in tree cover. Analyzing Landsat imagery, the output data represent detected regrowth of trees at estimated height categories of 2-5 meters (m) or greater than 5 meters, thus capturing slower-growing and/or shorter tree species as well as those that are taller and faster-growing. All satellite imagery used have a native resolution of 30 meters but are summarized for this case study on a 5 kilometer (km) by 5 kilometer grid cell basis to represent an approximation of change at a landscape scale. To establish the baseline, the total tree cover in the landscape (5 km x 5 km grid cell) in 2010 was summed. For each subsequent year, 2011-18, the total tree cover loss and tree cover gain (for all height categories) were summed for that period, and results are reported relative to the 2010 baseline. A canopy cover threshold of 30 percent was used for the tree cover and tree cover loss datasets. The maps in Figures 2 and 3 display the data as the percent gain or percent net change (gain + loss), respectively, for each 5 kilometer

x 5 kilometer pixel relative to the 2010 baseline. A portion of southwestern Guatemala was excluded from the analysis for lack of data on tree cover gain for that area.

These data need to be supplemented with other data that capture the change in sparse tree cover on non-forest landscapes, or “trees outside of forests” to fully estimate restoration in this region, due to the many types of restoration interventions that involve sparse tree cover. Higher resolution Sentinel-2 data (10 m resolution) combined with new artificial intelligence algorithms are in development that can be useful in detecting these sparse tree cover. In addition, Collect Earth, a tool that uses a sample-based approach of visual interpretation of high-resolution satellite data (< 10 m) to generate information on sparse tree cover, has proven very effective at capturing this type of data.

**Figure 2. Map of net change in tree cover for the period of 2011–2018 across six countries of Central America.**



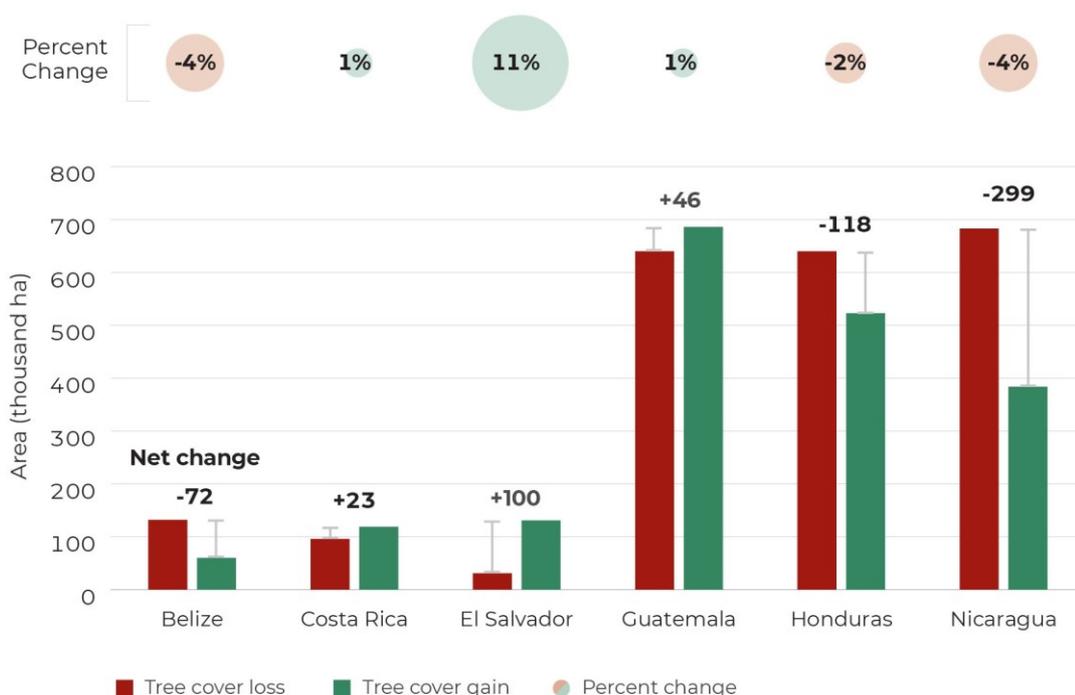
Note: Data are categorized according to percent tree cover change per pixel on a 5 km × 5 km basis.

Source: Data produced by the University of Maryland and interpreted by World Resources Institute, 2020.

### Data limitations and potential

Tree cover gain is a vital biophysical indicator on which other indicators of restoration progress are dependent (e.g. increase in biodiversity and socio-economic improvement). However, tree cover gain is difficult to measure. Producing globally-consistent, remotely-sensed data is more difficult than tree cover loss due to the longer time horizon that is required to account for the relatively slow rate of tree growth, as well as the sensitivity of sensors to detect new growth.

**Figure 3. Assessment of net change in tree cover for the period of 2011–2018 against a 2010 baseline for six countries in Central America.**



Source: Data produced by the University of Maryland and interpreted by World Resources Institute, 2020.

While remote sensing techniques show physical changes, they do not provide an explanation behind these. Some of the tree cover gain presented here can be attributed to monoculture plantations as opposed to natural forest, which do not qualify as restoration for many scientists and practitioners. As the map makes clear (see Figure 2), much of the tree-cover loss in Honduras and Nicaragua is taking place in a concentrated swath along the eastern parts of those countries. While one may assume these losses are the result of common land-use practices across the area, we know that some of the tree cover losses in Nicaragua can be attributed to the impacts of recent hurricanes, as opposed to human-caused deforestation.

Forest and landscape restoration include many different types of interventions that serve to increase landscape productivity. These interventions range from restocking areas of dense forest cover to regenerating individual trees on agricultural land, to improving soil stability and productivity. Given this range of possibilities, it is difficult for just one sensor to detect the variety of interventions that embody a restored landscape. Several developments are under way to advance restoration monitoring order to address these and other existing gaps (Box 1).

## **Criterion 2: Forest landscape restoration efforts (political and socio-economic advancements)**

The second criterion was adapted from the Bonn Challenge Barometer framework on “Success factors,” which identify the key enabling conditions for FLR. The indicators assessed consider FLR efforts, including commitments, uptake, and financial support as a proxy for progress on restoration.

### **Box 1. Developments in restoration monitoring**

Several initiatives are under development to build capacity to monitor restoration progress at various scales – ranging from project-level to global.

In the months since the publication of the 2019 NYDF Progress Assessment, focused on Goal 5, Climate Focus and the Goal 5 assessment partners have collaborated on the development of a multi-stakeholder initiative to address the data gaps identified in the assessment. The Global Restoration Observatory (GRO) is to serve as a central intelligence hub that contributes science-based, independent, and globally-consistent information to ongoing efforts to assess areas under forest landscape restoration in the context of the NYDF, as well as other international commitments such as the Bonn Challenge, UN Decade on Ecosystem Restoration, Aichi Biodiversity targets, UNCCD and regional initiatives. This initiative will complement country-owned, regional, and project assessments and inform decision-makers about the status of existing and potentials for new restoration efforts.

Meanwhile, in support of the UN Decade on Ecosystem Restoration, and in preparation for its official launch in early 2021, an FAO-led task force on Monitoring was launched in March 2020. The Task Force on Monitoring brings together technical experts from 60 organizations working collaboratively to develop a framework to monitor and report restoration actions at all levels from national governments, civil society and the private sector, as well as enhance monitoring capacity and visibility for underrepresented ecosystems of critical value. The Framework on Ecosystem Restoration Monitoring (FERM) will enable monitoring and reporting of the progress of restoration efforts throughout the duration of the decade and will enable the identification of key indicators to measure the progress of restoration efforts at various levels across key ecosystems requiring restoration.

Meanwhile, a map of the potential carbon sequestration rates of young, naturally regenerating forests has been published this year by The Nature Conservancy, World Resources Institute, and numerous collaborators. The map provides an example of the kind of data that would support a broader understanding of FLR by improving spatial estimates of net fluxes from forests.<sup>6</sup>

### **Indicator 2.1: High-level pledges**

#### **The private sector steps up support for FLR**

As of August 2020, there have been 63 Bonn Challenge pledges made by countries, sub-national governments, and companies. These pledges total 172.82 million hectares of restoration for 2020 and 2030 combined – an update of five individual pledges covering more than 2 million hectares since 2019.<sup>7</sup>

#### **FOREST LANDSCAPE RESTORATION PLEDGES IN THE PUBLIC SECTOR**

As reported in the 2019 assessment, nearly half (45 percent) of commitments made on areas that have restoration plans in place under the Bonn Challenge will be met by planting monoculture tree plantations; one third (34 percent) of the area will be allowed to naturally regenerate; and agroforestry will account for the remainder (21 percent).<sup>8</sup> An analysis of FLR in countries' nationally determined contributions (NDCs) under the Paris Agreement found that 49 NDCs (30 percent) have quantitative restoration-aligned targets for mitigation and/or adaptation.<sup>9</sup> There are approximately 56.7 million hectares of FLR-aligned activities (i.e. planted forests and woodlots, silviculture, assisted regeneration, watershed mangrove restoration, agroforestry, and improved fallow) under NDCs' unconditional or conditional targets.

## PRIVATE-SECTOR COMMITMENTS TO SUPPORT FOREST LANDSCAPE RESTORATION

A key development since the 2019 assessment is the small, but growing, number of companies that have made pledges that include restoration activities. The nature of the pledges ranges from making explicit restoration commitments to embedding regenerative strategies into their business models, supply chains, or sustainability commitments. Net-zero deforestation commitments may also involve the use of reforestation as a means of offsetting deforestation taking place throughout supply chains. However, it is important to note that net-zero commitments and restoration cannot compensate for the irreplaceable forest loss that is taking place because of agricultural expansion.

In analysis undertaken for the 2019 NYDF Goal 5 Progress Report, 16 major companies were found to include elements of FLR in their plans to transition to sustainable supply chains.<sup>b</sup> Of the 16 companies analyzed, only a third had explicit, quantified commitments (e.g. hectares, number of trees, or amount of money to be invested or donated) related to FLR activities. In most cases, these commitments were not overarching targets, rather pledges of support to individual FLR projects. An additional seven companies did not have specific commitments but mentioned using FLR activities to implement their sustainability strategies.

Whilst there is room for increased strength in these commitments, the trend looks set to continue. Over the past year, an increasing number of companies have made commitments relating to forest restoration. AstraZeneca, Mars, Mastercard, Nestle, Starbucks, Timberland, and many others have made restoration pledges containing quantified restoration goals. In addition, Amazon has pledged upcoming funds to be spent restoring forests and other ecosystems (see more under indicator 2.2, below).

### Indicator 2.2: Planning and finance for FLR activities

#### **Planning support and financial transparency remain key hurdles for effective FLR implementation**

Successfully implementing FLR requires planning that includes systematic site identification; identifying and developing appropriate activities for specific contexts; enacting new policies (and leveraging existing policies); committing finance (and leveraging existing finance); and improving monitoring capacities. While efforts are underway to drive more informed planning for FLR, there are no new developments on this enabler since the 2019 assessment.

Access to finance is also essential for achieving FLR commitments. New developments in the past year to increase finance for FLR include the proliferation of corporate pledges, and a handful of initiatives developed to better link financing to restoration implementation (see Box 2). While most of the corporate restoration pledges cited under indicator 2.1 above do not include quantified financial commitments, one notable exception is a recent USD 10 million grant from Amazon to support restoration in the Appalachian Mountains, the first grant from its newly established Climate Fund.

If FLR activities are to be scaled up to meet global goals, the expected costs of FLR projects must be clearly communicated to investors, donors, and other financiers. According to estimates produced by The Economics of Ecosystems and Biodiversity, global cost-per-

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<sup>b</sup> The companies assessed were: Coca-Cola, International Paper, Kimberly Clark, H&M, Procter & Gamble, Natura – The Body Shop, Olam, Kingfisher, Taylor Guitars, Marks & Spencer, IKEA, 3M, Apple, Komatsu, Travelers Companies Inc., Michelin.

hectare estimate of FLR range from USD 2,390 to USD 3,450 (FAO and Global Mechanism of the UNCCD), depending on the activity and type of restoration, not including the opportunity costs of forgoing alternate land uses.<sup>10</sup>

In 2018, the Bonn Challenge Barometer update stated that USD 10 billion had been contributed to FLR activities in the United States, and a combined USD 1 billion in Brazil, El Salvador, Mexico, and Rwanda.<sup>11</sup> This accounts for financial flows required to implement the projects included in the Barometer progress report. In some cases, these financial flows include an estimate of costs of input and labor contributed to projects, as well as domestic and philanthropic support for the FLR activities.

### **Box 2. Initiatives designed to generate private finance for restoration**

**Trillion Trees** is a partnership between three global conservation organizations: BirdLife International, Wildlife Conservation Society, and WWF. It was founded in 2017 to restore, save, and better protect one trillion trees by 2050. Trillion Trees centers on three core approaches: improved protection of the world's remaining forests; reduced deforestation to keep forests standing; and the restoration of forest landscapes, to return the right trees to the right places. The main focus of the partnership is to help connect funders with forest conservation and restoration ventures, providing support and leveraging additional finance for investable projects.

**It.org** was launched by the World Economic Forum in January 2020 and was designed as a 10-year effort to support the UN Decade on Ecosystem Restoration by mobilizing greater private-sector ambition and engagement to conserve and restore one trillion trees within this decade. It.org was developed to complement existing initiatives – such as the Trillion Trees Initiative, the Bonn Challenge, and the Global Partnership on Forest and Landscape Restoration – and to mobilize funds and political support to help them meet their objectives.

**Terra Match** is a platform designed to link the people who run vetted tree-growing projects with those who want to fund their work. Inspired by restoration commitments being made through the It.org initiative and Mastercard's Priceless Planet coalition, World Resources Institute identified a gap between restoration finance and implementation. Terra Match will allow project funders to search their restoration database for projects that match preferred criteria. Project developers can also search for available offers that match their needs, such as funding amount, reporting requirements, and their goals, providing insight into what funders are looking for.

## Endnotes

<sup>1</sup> NYDF Assessment Partners. (2019). *Protecting and restoring forests: A story of large commitments yet limited progress*. Retrieved from Accessible at [www.forestdeclaration.org](http://www.forestdeclaration.org).

<sup>2</sup> Laestadius, L., K. Buckingham, S. Maginnis, and C. Saint-Laurent. (2015). Back to Bonn and beyond: A history of forest landscape restoration and an outlook for the future. *Unasylva* 245 66:11-18

<sup>3</sup> Mansourian, S. (2018). In the eye of the beholder: Reconciling interpretations of forest landscape restoration. *Land degradation & development*, 29(9), 2888-2898

<sup>4</sup> NYDF Assessment Partners. (2019).

<sup>5</sup> Dave, R., Saint-Laurent, C., Murray, L., Antunes Daldegan, G., Brouwer, R., de Mattos Scaramuzza, C. A., et al. (2019). *Second Bonn Challenge progress report: Application of the Barometer in 2018*. Retrieved September 22, 2020, from <https://portals.iucn.org/library/node/48446>.

<sup>6</sup> Cook-Patton, S. C., S. Leavitt, D. Gibbs, et al. (2020). Mapping carbon accumulation potential from global natural forest regrowth. *Nature* 585, 545–550.

<sup>7</sup> Bonn Challenge, <http://www.bonnchallenge.org/>

<sup>8</sup> Lewis, S. L., Wheeler, C. E., Mitchard, E. T., & Koch, A. (2019). Regenerate natural forests to store carbon. *Nature*, 568(7750), 25–28.

<sup>9</sup> IUCN and Climate Focus. (2018). *Forest landscape restoration in NDCs - Methodological framework for the analysis and resulting database*.

<sup>10</sup> FAO and Global Mechanism of the UNCCD. (2015). *Sustainable financing for forest and landscape restoration: Opportunities, challenge* FAO & Global Mechanism of the UNCCD (2015). Sustainable financing for forest and landscape restoration: Opportunities, challenges and the way forward. Discussion paper. Rome, Italy.

<sup>11</sup> Dave, R. et al. (2019).

# Acknowledgments

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## About the NYDF Progress Assessment:

The NYDF Progress Assessment is a continual and collaborative process achieved collectively by partner organizations and researchers. Since 2015, the NYDF Assessment Partners have annually published updates on progress toward each of the ten goals of the NYDF. Working groups for individual goals form the basis for developing and revising goal-specific assessment frameworks. They also generate key data and analytics on findings, attempting to narrow knowledge gaps. All assessment findings undergo a rigorous peer review process conducted by experts across the globe.

## The NYDF Assessment Partners include:

CDP, Center for International Forestry Research (CIFOR), Chatham House, Clean Cooking Alliance, Climate Focus, Conservation International (CI), Environmental Defense Fund (EDF), Fauna & Flora International, Forest Foundation Philippines, Forest Trends, Global Canopy, Institute for Global Environmental

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