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

- Ambition of governments and companies to restore degraded and deforested lands continues to grow, with 12.9 million hectares in new pledges added to the Bonn Challenge since 2017 for a total area of 168.9 million hectares in pledges.
- While evidence of progress aggregated at a large scale remains a challenge, a sample of five jurisdictions shows that over 13 million hectares are under restoration, which represents 41 percent of their aggregated pledges.[1]
- With the 2020 target year approaching, countries and organizations are increasing their focus on measuring progress of ongoing efforts. While countries are adopting new policy arrangements and strengthening capacities for bringing degraded forests and land into restoration programs, measuring progress on the implementation of pledges remains a challenge.
- Of 165 parties to the United Nations Framework Convention on Climate Change (UNFCCC) who submitted Nationally Determined Contributions[2] as of 2017, 49 stated quantified mitigation and/or adaptation targets aligned with the forest landscape restoration approach, estimated to cover 57 million hectares. Other mitigation and adaptation activities in the NDCs point to an additional 57 million hectares of planned actions for forest landscape restoration. These measures would double the total mitigation and adaptation potential of forests and land in NDCs to 114 million hectares.[3],[4]

OVERVIEW OF GOAL AND INDICATORS

Goal 5 endorses the 2011 Bonn Challenge as a global initiative bringing together public and private, and national and subnational actors to achieve the target of bringing 150 million hectares of deforested and degraded land into restoration by 2020 and called for an additional 200 million hectares by 2030.

The Bonn Challenge and Goal 5 endorsing it are about bringing hectares into restoration,[5] which includes and goes beyond the actual planting of trees and other woody plants. Bringing degraded land into restoration to derive diverse and lasting benefit requires transformative processes including policy change and strengthened national implementation and monitoring capacities.

The potential of forest landscape restoration

Forest landscape restoration (FLR) is defined as the long-term process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes.[6] The concept encompasses a mosaic of land uses and transitions including planted forests and woodlots, natural regeneration, silviculture, agroforestry, improved fallows (land left uncultivated to restore soil fertility), mangrove restoration, watershed protection, and erosion control.[7] Nature-based solutions, such as the FLR approach, can deliver up to one third of the climate mitigation required by 2030.[8] In addition to this mitigation potential, the restoration, conservation, and sustainable management of forest landscapes enhances the resilience of local communities by improving food and water security and generating livelihoods.

Assessing progress

As in recent years, to assess progress on Goal 5, we provide an update on restoration pledges made under the Bonn Challenge and FLR commitments under the Nationally Determined Contributions (NDCs) that countries submit under the Paris Agreement. The different stages in the process of undertaking restoration; the broad range of biophysical conditions where restoration takes place; the multiple jurisdictions, institutions, or actors involved; as well as the diversity of the types of restoration interventions being implemented to achieve the Bonn Challenge and the NYDF goal, make aggregating hectares being brought into restoration technically challenging. While there are still limited data on progress toward the implementation of Bonn Challenge pledges, the Bonn Challenge Barometer of Progress, which aims to provide a universal reporting framework, is working to close this gap (the Barometer is described further under Data developments, below).

The new indicator under Criteria 1 in the 2018 Goal 5 assessment, adapted from the Bonn Challenge Barometer of Progress, aims to allow the NYDF to reflect on progress toward reporting the area under restoration (Indicator 1.3 in Table 1) by relying on progress made by Bonn Challenge pledgers. The Bonn Challenge Barometer thus refers to area brought into restoration as an area where restoration measures – aligned with the FLR principles – have been initiated or are influencing the landscape *to slow or reverse ecological, social, or economic processes* driving degradation or unsustainable land-use stewardship.[9]Landscapes brought into restoration include, for example, agricultural areas where agroforestry and on-farm trees could improve sustainable food and commodity production, or trees planted in managed natural forests, or the connection of forest fragments, among many other approaches.

In 2018, a review and interpretation of countries´ NDCs[10] provides an additional depth of analysis to this year's assessment.[11] The study (further described under Data developments, below) identified additional FLR potential in countries' NDCs beyond the stated targets, which were expressed as voluntary commitments, intended measures, and/or national priorities (referred to in the analysis as non-targets). Though not counted in the goals that countries will hold themselves accountable to under the global stock-take process of the Paris Agreement, these ambitions can have significant impacts for forest landscape restoration and climate change mitigation and adaptation if they are translated into action. Drawing from this study, the 2018 Goal 5 assessment provides the following information:

- The type of landscape restoration activity indicated in NDC commitments, including planted forests, natural regeneration, agroforestry, and mangrove restoration
- The conditionality of the targets[12]
- The intention of the NDC targets to serve as mitigation or adaptation measures
- An updated accounting of nontarget FLR ambition in NDCs versus the 2017 progress assessment[13]

Table 1: Criteria and Indicators to track Goal 5

CRITERIA	INDICATOR
1. Forest landscape restoration pledges under the Bonn Challenge	1.1 Number of pledges announced 1.2 Area of pledges for 2020 and 2030 (ha) 1.3 Area under restoration (ha)
2. Forest landscape restoration activities in Nationally Determined Contributions (NDCs) of Parties to the United National Framework Convention on Climate Change	2.1 Number of NDCs that include forest landscape restoration activities 2.2 Size of forest landscape restoration activities in NDCs under mitigation and adaptation and their conditional nature (ha or tCO_2e) 2.3 Size of differentiated forest landscape restoration activities in NDCs (ha or tCO_2e) 2.4 Size of aggregate forest landscape restoration activities expressed outside official NDC mitigation targets (ha or tCO_2e)

Findings

Criterion 1: Bonn Challenge forest landscape restoration pledges

Indicator 1.1: Number of pledges announced

The Bonn Challenge continues to attract new pledges toward its 2020 and 2030 goals. There is a call to action to shift the focus toward implementing current commitments with increased financing and technical support, while continuing to add commitments. Since the launch of the Bonn Challenge in 2011, 56 national and subnational governments, nongovernmental organizations (NGOs), and private companies have made commitments, up from 45 as of the *2017 NYDF Progress Report*. FLR commitments now total around 168.9 million hectares including 2020 and 2030 pledges.

Two developments in 2018 signal continued and growing political will for restoration. In March, 10 state members of the Commission of Central African Forests adopted a *common strategy for the mobilization of financial and technical resources for the implementation of Bonn Challenge commitments*.[14] Countries will each conduct assessments of the economic benefits of restoration while creating a regional investment program to engage potential funders. In June, the Astana Resolution, adopted at the first Bonn Challenge Regional Ministerial Roundtable for the

Caucasus and Central Asia region, called on development partners, international finance institutions, and the private sector to support national and regional efforts and investment in FLR and for the development of a strategy to scale up and finance FLR efforts.

Indicator 1.2: Area of pledges for 2020 and 2030

Since the *2017 NYDF Progress Report*, Bonn Challenge pledges have increased from roughly 156 million hectares to 168.9 million hectares. Of this total, approximately 94 million hectares are pledged for 2020 and 74.6 million hectares for 2030. This means that, in pledges at least, the first Bonn Challenge milestone of 150 million hectares has been surpassed.[15]

Indicator 1.3: Area under restoration

Initial Barometer results based on case studies of five countries show that about 13.4 million hectares have been reported as under restoration. The December 2017 *Barometer Spotlight Report* provides a snapshot of progress:

- Brazil had committed to restoring 12 million hectares of deforested or degraded land by 2030, complementing the earlier Atlantic Forest Restoration Pact (PACTO) pledge of 1 million hectares. While restoration initiatives are underway in Brazil and policy and financial mobilization continue to progress, lack of national aggregated data remains a challenge for reporting on restoration. Several reports show progress at the landscape and jurisdictional levels – for example PACTO has reported over 39,620 hectares under FLR interventions since 2010 – but there is no system for capturing national progress.
- El Salvador made a pledge to restore 1 million hectares by 2030 and has identified over a million hectares with opportunities for restoration. Under the country's Action Plan for Restoration of Ecosystems and Landscapes, about 108,000 hectares have been restored.
- The Mexican states of Campeche, Quintana Roo, and Yucatan have jointly committed to bring into restoration 0.95 million hectares by 2020 and an additional 1.05 million hectares by 2030. Based on data from Mexico's National Forestry Commission, Quintana Roo's restoration program extends over 57,000 hectares.
- A recent analysis by Rwanda's Ministry of Land and Forestry shows that Rwanda has brought into restoration a total of 900,000 hectares since 2011, representing 45 percent of its 2-million-hectare Bonn Challenge pledge, encompassing activities such as ecological restoration in the Gishwati-Mukura National Park, restoration of agroforestry and plantations, and establishment of protective forests for watershed management.
- In 2011, the United States committed to bringing 15 million hectares into restoration, supported by the all-lands approach led by the U.S. Forest Service in the Department of Agriculture. Between 2011 and 2016, the United States has conducted restoration across 12.3 million hectares including restoring or maintaining forest and grassland health, reforestation, removing invasive species, improving wildlife habitat, and initiating risk management measures for catastrophic wildfires.

In addition to the progress reported under Barometer, the government of India has reported that approximately 9.8 million hectares of degraded land have been restored since the launch of the Bonn Challenge. This assessment – based on information on FLR interventions submitted by state

and non-state organizations, including NGOs and the private sector – emphasizes the need for additional efforts to provide a more comprehensive overview of all restoration activities underway by all actors nationwide.[16]

Criterion 2: Forest landscape restoration commitments in NDCs

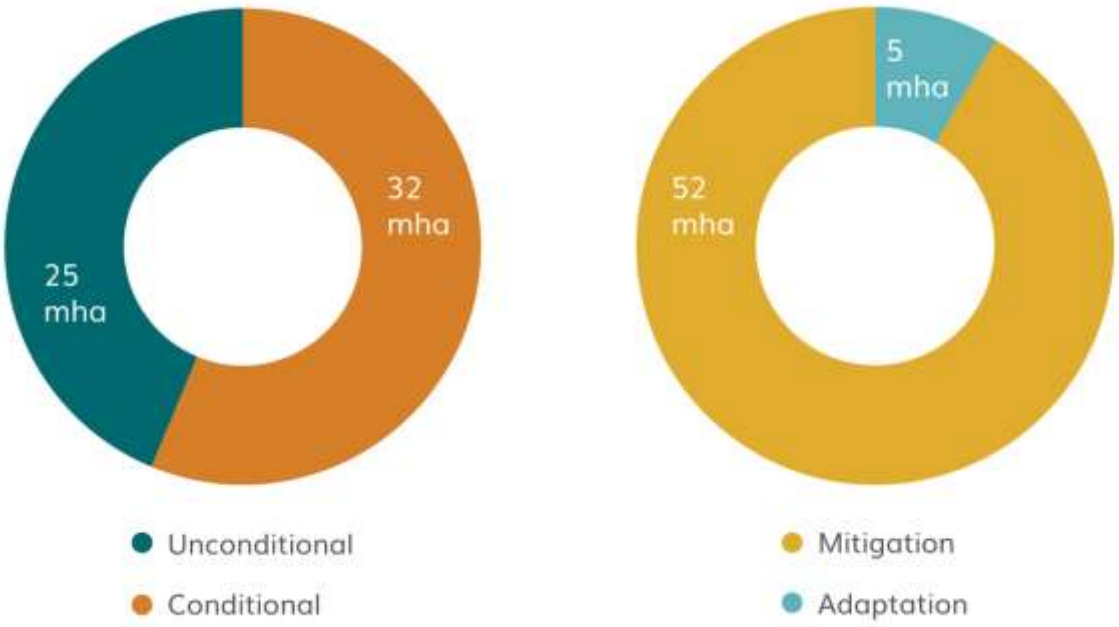
Indicator 2.1: Number of NDCs that include forest landscape restoration activities

Of 165 NDCs, 127 contain FLR commitments for mitigation and adaptation, as expressed under both sectoral and economy-wide mitigation targets.[17] Only 26 percent of the mitigation commitments are quantified; and of these, the targets expressed in hectares are 16 percent of the total 350-million-hectare restoration target for Goal 5. Quantitative commitments for adaptation add a minimal amount to this total because they represent only 6 percent of NDCs.[18] When considering greenhouse gas monitoring objectives described by countries under the mitigation component of NDCs, 93 countries include FLR activities under economy-wide FLR commitments, and 57 take a sectoral approach.

Indicator 2.2: Size of forest landscape restoration activities in NDCs under mitigation and adaptation and their conditional nature

Although three quarters of NDCs contain forest and land commitments, less than one third (30 percent) make quantifiable mitigation and/or adaptation commitments. The total area of quantified commitments equals 57 million hectares. Of these, 52 million hectares are intended as climate mitigation commitments, while 5 million hectares are adaptation commitments (see Figure 1). Almost half of these commitments (25 million hectares or 7 percent of the 350-million-hectare 2030 target) are from developing countries and would be met unconditionally. Another 32 million hectares of the developing-country target commitments will require support from international donors. Commitments that are expressed in terms of emissions reductions, rather than in hectares, total 3.3 gigatons of CO_2 equivalent, with 99 percent from mitigation commitments and conditional on international support.

Figure 1. Forest landscape restoration commitments in Nationally Determined Contributions by conditionality and climate targets, in million hectares

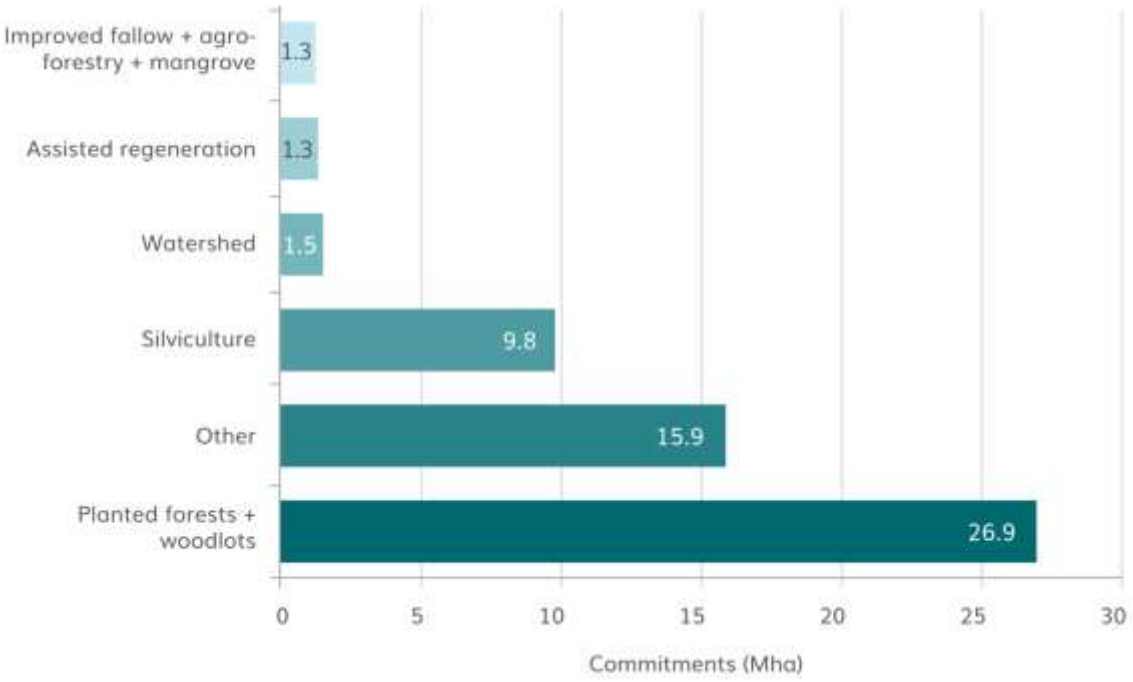


Source: International Union for Conservation of Nature & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*

Indicator 2.3: Size of differentiated forest landscape restoration activities in NDCs

Measured in hectares, FLR commitments in NDCs favor certain approaches to forest landscape restoration including reforestation, silviculture, and other[19] restoration activities (see Figure 2). The same is true for FLR commitments measured in gigatons of CO_2 equivalent: 98 percent of the 3.3 gigatons of CO_2 equivalent in commitments will be achieved through reforestation activities rather than other forms of forest management. While FLR activities are broadly described in NDCs, the descriptions do not always specify the policies or measures expected to achieve the commitments.[20]

Figure 2. Forest landscape restoration commitments in Nationally Determined Contributions by type of activity, in million hectares



Source: International Union for Conservation of Nature & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*

Indicator 2.4: Size of aggregate forest landscape restoration action expressed outside official NDC mitigation targets

NDCs often include contextual content that falls outside the scope of explicit mitigation and adaptation targets, which can describe voluntary national efforts or intended measures. Such "non-targets" represent substantial restoration goals and could double the impact of NDCs, adding another 57 million hectares to overall ambitions. Non-targets expressed as emissions reductions add an additional 5.4 million metric tons of CO_2 equivalent. When non-targets are combined with commitments, 114 million hectares, or one third of Goal 5's 2030 target, is reflected in the NDCs.

Data developments

New developments underway will help address gaps in data and provide evidence of successful FLR implementation.

- **The Bonn Challenge and its Barometer of Progress.** This initiative, launched by the International Union for Conservation of Nature (IUCN) with the support of the Government of Germany in 2016, initiated several pilots in 2017. The Barometer aims to provide a flexible and universally applicable framework to help countries identify, assess, track and report on progress on implementation of their Bonn Challenge and NYDF

restoration commitments. The Bonn Challenge Barometer of Progress was developed as a framework for tracking commitments under the Bonn Challenge, as well as to identify opportunities for knowledge sharing and collaboration, and for leveraging targeted technical and financial resources to scale up restoration. The Barometer represents a powerful tool for pledgers to demonstrate sustained political will and transformational changes to achieve their commitments, while avoiding imposing an additional reporting burden on pledgers because it aligns with other international reporting requirements and national reporting schemes. The Barometer tracks progress under two overarching dimensions: "success factors," which include improvements in policies and institutional arrangements, and commitments to finance restoration, technical knowledge, and baseline data collection and identification of priority restoration interventions; and "results and benefits," which include hectares brought under restoration, associated benefits to biodiversity and carbon sequestration, and jobs generated. In 2017, pilots of the Barometer in five countries showed how countries were improving coordination and policy coherence across land-use policies by formalizing cross-sectoral and multi-level roundtables and task forces to address essential enabling conditions for sustained FLR strategies. The Barometer *2017 Spotlight Report* highlights the importance of mainstreaming FLR approaches in national climate and development policies, as in the case of El Salvador's Landscape and Ecosystem Restoration Strategy. Funding and implementing capacities were identified as barriers for greater restoration efforts. [21]

- **Estimate of carbon sequestered in the area under restoration.** Under the Bonn Challenge Barometer, the mitigation impact of bringing hectares into restoration will be tracked by estimating the carbon sequestered in those hectares – and through particular restoration activities – reported by countries (as described in Indicator 1.3). The Bonn Challenge Barometer has not yet started reporting this information, but it is anticipated that climate impacts from restoration may already be monitored and reported under other national reporting commitments, such as the UNFCCC or the Convention on Biological Diversity. To ensure consistent reporting at the global level, the Bonn Challenge's mitigation impact data will be informed by those reports in considering area under restoration, as well as FLR activity-specific removal factors for improved accuracy.
- **Forest landscape restoration in NDCs analysis.** The 2018 FLR in NDCs analysis by IUCN and Climate Focus[22] aims to inspire more robust and ambitious NDCs towards 2020 by understanding NDCs as statements of political intent rather than as climate action plans for climate. This interpretation and the analysis provided highlight opportunities and challenges for NDCs to convert political intent into quantified commitments. The analysis examined the "role and potential" of FLR approaches for maximizing the mitigation and resilience potential of nature-based solutions. While reforestation, afforestation, and silviculture are the most referenced land-based mitigation strategies in NDCs for greater carbon sequestration, only 30 percent of NDCs offer measurable commitments, and only 9 percent of those express such commitments in metric tons of CO_2 equivalent. Agroforestry is considered a mitigation strategy in 24 percent of NDCs, but a smaller number of NDCs offer measurable commitments.

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[1] Considering all measures that have been initiated or are influencing the landscape to slow or reverse ecological, social, or economic processes driving degradation or unsustainable land-use stewardship.

[2] As per ratification of the Paris Agreement. UNFCCC Secretariat (n.d.). NDC registry (interim).

[3] International Union for the Conservation of Nature (IUCN) & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*

[4] These figures are estimated using only quantifiable commitments for a 2021–30 implementation period and are expressed in hectares.

[5] Considering all measures that have been initiated or are influencing the landscape to slow or reverse ecological, social, or economic processes driving degradation or unsustainable land-use stewardship.

[6] The Global Partnership on Forest and Landscape Restoration. (2016). What is forest and landscape restoration?; IUCN. (2018). What is FLR?InfoFLR.

[7] Dave, R., Saint-Laurent, C., Moraes, M., Simonit, S., Raes, L., & Karangwa, C. (2017). *Bonn Challenge Barometer of Progress: Spotlight report 2017*.Gland, Switzerland: IUCN.

[8] Griscom, B.W., Adams, J., Ellis, P.W., Houghton, R.A., Lomax, G., Miteva, D., et al. (2017). Natural climate solutions. *Proceedings of the National Academy of Sciences of the United States of America*, *114*(44), 11645-11650.

[9] International Union for the Conservation of Nature (IUCN). (2017). The Bonn Challenge Barometer...

[10] The FLR in NDCs analysis applied a common approach to interpret FLR activities in an attempt to compare and aggregate current and potential ambition and action described by countries in NDCs. For more detailed information on the methodological considerations applied, see the FLR in NDCs methodological framework .

[11] International Union for the Conservation of Nature (IUCN) & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*

[12] Unconditional targets are those that a country commits to implement without outside support; conditional targets are contingent, in most cases, on international financial, technical, and capacity-building support.

[13] The 2017 assessment defined nontargets as all targets outside of explicit mitigation targets, but now the targets in the adaptation section of NDCs are accounted for separately from nontargets.

[14] International Union for the Conservation of Nature (IUCN). (2018, March 21). Global headway for Bonn Challenge at Brazil and the Republic of Congo events. *IUCN*, *News*.

[15] The Bonn Challenge. (n.d.). Home.

[16] SDG Knowledge Hub. (2018, August 16). India presents the first Bonn Challenge Country Progress Report.

[17] Sectoral mitigation targets refer to targets for specific sectors of the economy, and economy-wide targets include the forest and land sector in national-level targets with other sectors.

[18] Only quantifiable commitments expressed in hectares have been considered for estimating this figure, summing 56.7 million hectares. Quantifiable commitments expressed in metric tons of CO_2 equivalent represent 3.28 $GtCO_2e$.

[19] The methodological framework for the FLR in NDCs analysis uses "other" as an FLR typology when a country indicates general restoration of forests or includes forests in a list of areas for restoration but fails to specify the type of FLR activity planned.

[20] International Union for the Conservation of Nature (IUCN) & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*

[21] International Union for the Conservation of Nature (IUCN). (2016, October 19). IUCN launches the Bonn Challenge Barometer of Progress. *IUCN, News*.

[22]. International Union for the Conservation of Nature (IUCN) & Climate Focus. (2018). *Increasing ambition and action on NDCs through FLR: FLR in NDCs analysis.*