Appendix 1: Methodology

In total, 186 Parties have submitted their first NDCs. The data analysed here is based on 168 NDCs (including the European Union's submission on behalf of 28 member states and 10 parties' Intended Nationally Determined Contributions) available as of December 2019.

To understand the current climate ambition and actions from AFOUL/LULUCF sector, this analysis provides an outlook of the forest and land-based targets, particularly, FLR-aligned activities across the first round of NDCs, which can facilitate enhancement and/or update of the scope, robustness, clarity and transparency of forest and land-based targets in the NDC 2020 cycle and beyond. This analysis followed a methodology comprising three steps:

1. Grouped current climate ambition from the forest and land sector described in the first NDCs submitted by Parties into the FLR typology based on IUCN and WRI's Restoration Opportunities Assessment Methodology:[1] The FLR typology includes the following interventions:

Table 1: FLR typology

FLR Interventions

Planted forests and woodlots	**Planting of trees on formerly forested land. Native species or exotics and for various purposes, fuelwood, timber, building, poles, fruit production, etc.**
Silviculture	Enhancement of existing forests and woodlands of diminished quality and stocking, e.g., by reducing fire and grazing and by liberation thinning, enrichment planting, etc.
Assisted regeneration	Natural regeneration of formerly forested land. Often the site is highly degraded and no longer able to fulfil its past function – e.g. agriculture. If the site is heavily degraded and no longer has seed sources, some planting will probably be required.
Watershed protection and erosion control	Establishment and enhancement of forests on very steep sloping land, along water courses, in areas that naturally flood and around critical water bodies.

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[1] IUCN and WRI, 'A Guide to the Restoration Opportunities Assessment Methodology (ROAM): Assessing Forest Landscape Restoration Opportunities at the National or Sub-National Level.'

Mangrove restoration	Establishment or enhancement of mangroves along coastal areas and in estuaries.
Agroforestry	Establishment and management of trees on active agricultural land (under shifting agriculture), either through planting or regeneration, to improve crop productivity, provide dry season fodder, increase soil fertility, enhance water retention, etc.
Improved fallow	Establishment and management of trees on fallow agricultural land to improve productivity, e.g. through fire control, extending the fallow period, etc., with the knowledge and intention that eventually this land will revert to active agriculture.
Other	This category is not part of ROAM and was created for selection when a country indicates 'general' restoration of forests/lands and/or includes a list of FLR activities but fails to differentiate the size of the target for each FLR activity.

2. Applied a common framework to all 168 NDCs submitted (as of December 2019) to interpret the diverse approaches in NDCs under which land-based targets or measures were present and quantify the size of land-based targets. In doing so, it was possible to distinguish FLR-aligned activities in NDCs to better comprehend the role of nature-based solutions like conservation, restoration and sustainable land-use practices[2] as part of land-based NDC targets and aggregate the data to assess the status quo of efforts to restore degraded forest landscapes in NDCs.

Several categories were used for interpreting NDCs in a way that allowed a more accurate understanding of the scope, conditionality, qualitative and quantitative nature of targets and actions across NDCs. The analysis provides detailed qualitative and quantitative information on FLR-aligned targets, disaggregated by:

- Type of target or potential additional ambition (targets or non-targets);
- Scope of mitigation targets for accounting purposes;
- Nature of targets based on conditionality;

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[2] Practices encompassed in the FLR approach.

- Mitigation or adaptation approaches; and
- Specific FLR activities.

3. For comparison, this analysis also provides an outlook of the FLR-aligned activities across Bonn Challenge countries' NDCs, which highlights opportunities to capitalise on existing restoration commitments and quantifiable actions for the enhancement and/or update process of NDC 2020 cycle and beyond.

Methodological considerations

The analysis distinguished between 'targets or contributions' and what was deemed as 'non-target' information, i.e., ongoing or future activities that countries included within their narratives aligned with FLR actions for either mitigation or adaptation or both.

The 'targets' are expressed by countries under the official contribution section of the NDC and thereby represent current ambition and planned actions to be implemented, measured and reported within the NDC period.

The 'non-targets' are not expressed under the official contribution section of the NDC and are instead expressed by countries as ongoing or future efforts to be conducted in addition to or as complementary to their NDC commitments. Therefore, 'non-targets' still represent potential ambition/actions that could be brought under the NDC as part of update and enhancement process in 2020 and beyond.

Both FLR-aligned targets and non-targets can be identified as either 'ambition' or 'action'. Ambition is FLR activities that are defined for mitigation and/or adaptation but are only expressed qualitatively in NDCs. Action, on the contrary, is the FLR activities that are defined by policies, plans or actions with quantitative targets.

This analysis refers to 'ambition' as those targets (or non-targets) with no supporting information on how they will be operationalised and 'action' as those targets (or non-targets) that refer to specific efforts for implementation.

Also, the analysis applied the following considerations and assumptions to assess and compare aggregated quantitative targets[3] under a common NDC period, described in Table 2.

Table 2: Analytical considerations and assumptions to assess and compare aggregated targets

Time period: a common time period was applied to all NDCs
The period *01 January 2021 – 31 December 2030* **was used as the common timeframe to reflect the first two implementation and reporting periods under the Paris Agreement. If governments used different timeframes the following assumptions were applied to their targets:** • *Unclear base year*: **If a target is reported to be achieved by 2030 without reference to a baseline year, it is assumed that implementation occurs over the 2021- 2030 period.** • *Annual targets given*: **When targets are expressed as annual hectares and/or tCO2eq without specific time frames offered, it is assumed to take place in 2021-2030, with annual figures extrapolated across the 10-year period.** • *Beyond implementation period*: **All targets that extend beyond the 2021-2030 implementation period have been converted to a flat annual average and expressed as the cumulative target that would occur during 2021-2030.** **Example: Madagascar has a 45,000 ha restoration target for 2020-2030, but because this falls outside of the temporal zone by one year we divide 45,000 by 11 years to produce an annual figure which is then multiplied across the implementation period to produce the 10-year cumulative target during the NDC period of 40,909 ha.**
Harmonising Measurable Units into hectares or tCO$_2$eq

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[3] In hectares and in tCO$_2$eq/year

The targets we gathered and measured are only in units of *hectares* or *tCO₂eq*. When NDCs reported in other metrics we applied the following assumptions:

- *Tons of carbon:* when the mitigation potential is given in tons of carbon, it is converted to **t**CO2eq by multiplying by 3.67 (or 44/12), as per EPA recommendations.[4]

- *Increased forest cover:* Targets expressed as increases in per **cent forest cover were converted to hectares. The conversion considered the '***x per cent forest cover*' goal against the current forest cover and land area (excluding water bodies) to calculate the expected hectare increase in forest area. The latest reported World Bank forest and land area (excl. water) data were used for land area and to determine the forest cover in hectares as a per cent of land area.**[5] All forest cover targets are assumed to be achieved via the FLR activity 'planted forest and woodlots' unless specified otherwise in NDC language (e.g. through 'regeneration'). All forest cover targets have been converted, if necessary, to only include forest increases that would occur during 2021-2030 based on converting the target into a flat annual average and extrapolating the average across up to 10 years (or to fit the annual average bas**ed on the target date in the NDC. If a forest cover goal is expressed as a percent**age and then followed by a goal or potential expressed as tCO2eq then no hectare-based target is determined.

Determining Non-Targets

Understanding NDCs not as action plans but as statements of political intent, NDCs do not only contain commitments (what we deem to be 'targets'). NDCs may contain references/descriptions of current actions or plans related to climate change which, since are not included in the *contribution* **section have been interpreted to not represent specifically a 'commitment' under the Paris Agreement. In most NDCs the** *contribution* **section is clearly demarcated.**

These 'extra' activities have been given many names: intended measures, voluntary commitments, or national priorities – and for this analysis, we are calling them non-targets. Non-targets may be in an NDC to provide context, convey additional or ongoing actions taken by the country but are not included as part of an NDC. These activities may also be in this category because the country is yet to provide a full quantitative accounting for them. Actions in the land-use sector may often fall under

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[4] https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

[5] Forest cover and conversion data sources: 1) Land area: https://data.worldbank.org/indicator/AG.LND.TOTL.K2 2015 2) Forest area: https://data.worldbank.org/indicator/AG.LND.FRST.K2

the latter category, due to the difficulty of assessing the GHG impacts of complex agricultural, restoration, or conservation activities.

Range-based Targets

NDCs with annual targets expressed as a range (e.g. 20,000-80,000 ha per year) had their upper threshold target used for data gathering purposes, and this annual target is multiplied by 10 years to determine the cumulative target for the 2021-2030 time-period (unless another time period within the NDC period is specified). In cases where a range-based estimate is presented in combination with an estimated cumulative figure, the estimated cumulative figure takes precedence and is used to determine the target over the 2021-2030 time-period.

Quantitative and Qualitative Targets

Qualitative commitments described action to be taken but did not specify the scope of those actions in numerical terms. Quantitative targets provided a target number, expressed either in land area (hectares) or emissions reduction/avoidance (tCO2eq) (i.e. the number of hectares conserved, planted or restored; or the number of tCO2eq avoided or sequestered). The majority of quantitative commitments were expressed in hectares. This is likely because carbon accounting for land use activities as a whole remains a challenge, and many countries confirm so in their NDCs stressing not having the capacity to implement robust accounting procedures for this sector.

Target or Reference

The analysis includes recording the NDCs with a forest target vs forest reference:

- *Forest and/or ecosystem target:* **A LULUCF or AFOLU target is mentioned, qualitatively or quantitatively, in an NDC target**

- *Forest and/or ecosystem reference:* **A LULUCF or AFOLU reference is included, as a target or non-target, within an NDC.**

Scope of commitment for GHG monitoring purposes

The scope of commitments is captured across four options:

- *Economy-wide / multisector*: W**hen LULUCF or AFOLU is considered for greenhouse gases accounting purposes as part of either economy-wide (across all sectors) or multisector (multiple sectors identified but may not be economy-wide).**

- *Excludes land/forest target*: F**or greenhouse gases accounting purposes under the NDC target, when either mentioning explicitly the exclusion of the sector or not mentioning the sector from those multi-sector targets**

- *Sectoral*: **When countries have specific sectoral targets in LULUCF that fall under FLR and/or nature-based negative emissions (e.g. enhanced forest carbon stocks).**

- *Economy and sectoral*: **NDC includes FLR in both an economy-wide and sectoral target.**

Nature of targets

The nature of targets is captured in terms of their conditionality as follows:

- **Conditional: Target achievement is contingent or dependent on the ability of the country to receive additional outside support in some capacity, usually financial, capacity-building, or technology or other resources.**

- **Non-conditional: The target will be reached regardless of outside support.**

When not explicit, the nature is interpreted by examining the NDC's language and context which could suggest an implicit conditionality for achieving mitigation and/or adaptation targets, and also considering the practi**cal implications for NDC revision, implementation, and reporting. Furthermore, when targets that have both unconditional and conditional activity allotments it has been assumed that the conditional target number is inclusive of the unconditional target number – unless there is explicit language differentiating the two (e.g. with terms including 'additional').**

Note: Actions that only focus on reducing emissions in the land sector are not considered in this analysis for aggregating data, however, they are considered as FLR reference when applicable. The FLR targets identified are also differentiated by mitigation and/or adaptation (M and/or A), and this is determined by which section (M and/or A) of the NDC they are described.