
Data sources and methodologies used to track progress towards NYDF Goals 8 and 9 on finance aligned with forest and climate goals.

The technical annex provides an overview of data sources and relevant calculations used to track finance aligned with forest and climate goals and strategies that address forest emissions, reward forest emission reductions, and support deforestation-free supply chain efforts. Compiled data draws on existing work from the individual members of the NYDF Assessment Partners and other international organizations and civil society initiatives.

Introduction

Table 1 (detailed): Annual estimates of financing needs related to a shift toward climate-friendly landscapes

<table>
<thead>
<tr>
<th>COSTS (Type and range)</th>
<th>DESCRIPTION</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD 20 per hectare</td>
<td>Opportunity cost of foregoing deforestation globally through REDD+ projects</td>
<td>Pagiola and Bosquet (2009)</td>
</tr>
<tr>
<td>USD 5 billion</td>
<td>Opportunity cost of land foregoing deforestation in key tropical forested countries (e.g. DRC, Ghana, Bolivia, Brazil, Cameroon, Indonesia, Malaysia, and Papua New Guinea)</td>
<td>Grieg-Gran (2006)</td>
</tr>
<tr>
<td>USD 5 to 20 per ton of CO₂ equivalent avoided</td>
<td>Opportunity cost (payments required) for reducing global deforestation</td>
<td>Kindermann et al. (2008)</td>
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<tr>
<td>USD 15 to 60 billion</td>
<td>Opportunity cost (payments required in direct financial transfers) for reducing deforestation 50% globally by 2020</td>
<td>Morris and Stevenson (2011)</td>
</tr>
<tr>
<td>USD 2 to 3 billion</td>
<td>Capacity building costs in the forest sectors to carry out REDD+ projects in high-risk areas. Estimated for 2010 to 2012.</td>
<td>Morris and Stevenson (2011)</td>
</tr>
<tr>
<td>USD 0.4-1.7 billion per year for 30 years</td>
<td>10% reduction in global deforestation between 2005-2030 could save 0.3–0.6 Gigatons Carbon Dioxide (GtCO₂) per year</td>
<td>Kindermann et al. (2008)</td>
</tr>
<tr>
<td>USD 17.2-28.0 billion per year for 30 years</td>
<td>50% reduction in global deforestation between 2005-2030 could save 1.5–2.7 (GtCO₂) per year</td>
<td>Kindermann et al. (2008)</td>
</tr>
<tr>
<td>EUR 15-25 billion</td>
<td>Finance to achieve a 25% reduction in annual global deforestation rates by 2015. Costs are estimated for results’ based incentives and capacity building in key forested areas</td>
<td>Informal Working Group on Interim Finance for REDD+ (2009)</td>
</tr>
<tr>
<td>USD 31.25 billion</td>
<td>Finance required for global sustainable forest management, about USD 25.58 billion to be raised domestically</td>
<td>Agenda 21 of UNCED (1997)</td>
</tr>
<tr>
<td>USD 167 billion</td>
<td>Finance needed annually until 2030 to transform to sustainable land use sector globally. Total investment needed for institutional structures, policy support, community engagement, and infrastructures</td>
<td>Thompson and Charlton (2016)</td>
</tr>
<tr>
<td>USD 160-233 billion</td>
<td>Direct financing needed to achieve deforestation-free commodity production globally by 2020</td>
<td>TFA 2020 (2017)</td>
</tr>
</tbody>
</table>


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

Criterion 1: Public support for the development and implementation of strategies to reduce forest emissions

Indicator 1.1 International finance

- **OECD** – Bilateral and multilateral mitigation-related development finance commitments (2010-2015) targeted at the forestry sector and deforestation countries, made by members of the OECD Development Assistance Committee (DAC). The database is available for download on the OECD website (Organisation for Economic Cooperation and Development. (2017). Climate Change: OECD DAC External Development Finance Statistics. Retrieved from the OECD Website). Data are annually tracked by the OECD and cover multilateral funds and bilateral donors. Commitments are defined as “firm obligation, expressed in writing and backed by the necessary funds, undertaken by an official donor to provide specified assistance to a recipient country or a multilateral organisation.” (Organisation for Economic Cooperation and Development. (2017). DAC Glossary of Key Terms and Concepts. Retrieved from the OECD Website). Information on disbursements is not available.

- **OECD** – Grey development finance for deforestation countries (2010-2015) targeted at the agriculture and forestry sector by OECD-DAC. For the preparation of the report, grey finance data were retrieved from the OECD Creditor Reporting System (CRS) aid activities database, which refers to ODA recipients in developing countries (Organisation for Economic Cooperation and Development. (2017). Creditor Reporting System (CRS) Aid Activities database. Retrieved from the OECD Website). This aid activities database is currently not downloadable (as of 24 October 2017).

- **OECD** – Regional or geographically unspecified support to the forestry sector, by OECD-DAC. "Unspecified" can be understood or explained as "The Aid Activity database registers information on where aid goes at the level of individual aid receiving countries. The countries are categorised as developing countries or territories eligible to receive official development assistance (ODA). (See DAC List of ODA Recipients.) Each activity has only one recipient. This is to avoid double-counting when summing up activities in different ways. Activities that benefit several recipients are classified by Region or sub-region (e.g. Africa, Sub-Saharan Africa). The category: developing countries, unspecified, is used if an activity benefits several Regions." (Organisation for Economic Cooperation and Development. (2017). Technical Guide to terms and data in the Creditor Reporting System (CRS) Aid Activities database. Retrieved from the OECD Website).

- **Page 18** – “We pay particular attention to developing countries with high deforestation (see Figure 3 for countries with >30,000 hectare gross forest loss in the period 2010-2015 – “deforestation countries”). For the purposes of this analysis, we identified a number of non-annex I parties under the UNFCCC with significant deforestation loss and rates of loss. Calculations were made using gross forest loss data based on 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]. Retrieved from the Global Forest Watch website. Updated by Global Forest Watch. Countries were ranked by cumulative forest loss from 2010-2015, and average rate of loss from 2010-2015. Rate of loss was calculated based on average gross tree cover loss (2010-2015) and tree cover (2000), considering tree cover above 30 percent.

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

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- **Indicator 1.1 International finance**

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- **Page 21** – “Forests in deforestation countries receive a share of finance that is (i) disproportionate to their mitigation potential – over 70 times lower than the overall global development finance for climate change, and (ii) 40 times lower than grey financing to the agriculture sector in deforestation countries.” (i) was calculated by dividing mitigation finance for all sectors (USD 167 billion, OECD, 2010-15) by mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-15). (ii) was calculated by dividing finance for agriculture in deforestation countries (USD 87 billion, OECD, 2010-2015) by mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-2015).

- **Page 22** – “[...] the large majority (65 percent) to countries that we classify as deforestation countries.” The USD 2.3 billion of mitigation finance for forestry in deforestation countries was calculated by taking 65 percent of a cumulative USD 3.6 billion of mitigation-related development finance to the forestry sector (OECD, 2010-2015).

- **Climatefundsupdate.org** – REDD+ readiness and implementation finance (since 2010) from multilateral sources. Commitments made to REDD+ projects to financially support REDD+ preparation and implementation (i.e. phases 1 and 2). Tracked readiness finance data covers commitments made through multilateral agreements by the FIP, FCPF Readiness Fund, the UN-REDD Program, and CAFI. (Climate Funds Update.


- **Page 24 – “Close to USD 1.7 billion in REDD+ finance has helped to strengthen capacities, policy dialogue, and the development of REDD+ strategies.”** The USD 1.7 billion was calculated by taking the sum of the USD 1.4 billion in cumulative REDD+ commitments (Climatefundsupdate.org) and the USD 260 million in bilateral support (FCPF Annual Report 2017).


**Indicator 1.2: Domestic finance**

- **FCPF – REDD+ investments planned or already invested by domestic governments.** Climate Focus analyzed the financial plans outlined in the Emissions Reductions Program Documents (ERPDs) submitted to the FCPF by Mexico, Costa Rica, Chile, Republic of Congo, Ghana, and Democratic Republic of Congo. Only Mexico, Chile, Costa Rica, and Ghana clearly included intended domestic investments. Values for domestic investments in Table 5, page 29 were taken from the expected sources of funds, where “government budget” or similar was clearly stated. Timeframes for the financial plans range from 5 years to 10 years and are as follows: Mexico, 2016-2020; Costa Rica, 2016-2025; Chile, 2017-2025; Republic of Congo, 2018-2027; Ghana, 2017-2021; and Democratic Republic of Congo, 2016-2025. (Forest Carbon Partnership Facility. (n.d.) Redd+ countries. Retrieved from www.forestcarbonpartnership.org/redd-countries-1).

- **Forest Trends’ REDDX initiative – REDD+ funds from domestic sources in the Brazilian States of Amazonas and Acre (2012-2015).** REDDX analyzed REDD+ funds coming from domestic sources. For purposes of this assessment, cumulative commitments and disbursements from the Government of Amazonas Government of Amazonas (own resources), the Brazilian Government, Brazilian Public Partnerships (Petrobras and Amazon Fund), and other Brazilian private initiatives were considered in the analysis of the State of Amazonas. Domestic sources amount to USD 334 million, or 85 percent of total funding (USD 394 million) for the given time period. For the analysis of the State of Acre, only domestic public flows were analyzed. Total commitments and disbursements by the Government of Acre (own resources) and the Brazilian public sector were considered. Public domestic sources amounted to USD 82.6 billion, or 20 percent of total funding (USD 413 billion) for the given time period. (Bastida, C. A., Cenamo, M. C., & Silva-Chávez, G. (2017). Mapping financial flows for REDD+ and land use in Brazil: National and subnational analysis for the period 2009 through 2016. Washington, DC: Forest Trends).


Criterion 2: Private investment targeted at reducing forest emissions

Indicator 2.1: Policies for investment in forest-risk commodities

• Page 31 – “Total green finance commitments in deforestation countries from international public sources amounts to USD 8.7 billion.” The USD 8.7 billion is the sum of USD 2.3 billion in cumulative mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-15), REDD+ readiness and implementation finance (cumulative USD 1.7 billion since 2010, Climatefundsupdate.org and FCPF Annual Report 2017), and REDD+ results-based finance commitments (cumulative USD 4.1 billion since 2010, bilateral communications with NICFI and REM and BioCarbon Fund and FCPF Carbon Fund websites).


• Forest 500 – International rankings of governments, companies, and financial institutions with greatest impact on forest risk commodity chains (2015-2016). For the assessment of investor’s policies in forest-risk commodities, Climate Focus collected data from the Forest 500 initiative that tracks private investor policies and assigns scores. Forest 500 is an international rating agency that publishes yearly rankings of those governments, companies, and financial institutions that have the greatest impact on forest risk commodity chains. Financial institutions are selected and ranked on the basis of their deforestation policies, i.e. institutions with commitments related to zero-deforestation, specific commodities, or the protection of untouched forests. Selected institutions either invest directly or at risk of investing in or lending to companies engaged in forest risk commodity supply chains.


• Forestsandfinance.org – Safeguard policies by banks that provide financial services to forest-risk sectors (2015). An assessment study on bank’s policies in Southeast Asia. Forestsandfinance.org generates policy scores of banks, including shares of forest-risk finance. Methodology: Banks' scores derive from the performance across three criteria – scope of commitments, environmental standards, and social standards – each of which is divided into multiple indicators. For each of the 15 indicators, the range of possible values is 0-2. The total policy score is the sum of the score on each indicator, with the maximum score being 30. (Rainforest Action Network, Tuk Indonesia, & Profundo. (2016). Bank Policy Assessment Summary. Retrieved from http://forestandsfinance.org/wpcontent/uploads/2016/09/webMatrixEnglish.pdf).


Indicator 2.2: Investments in sustainable commodity production and conservation


• Climate Bonds Initiative – Finance for forest emission reduction activities through green bonds (2016). The Climate Bonds Initiative, an international organization, developed standards and certifications for bonds with

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

Criterion 1: Public payments for verified emission reductions

Indicator 1.1: International payments

- **German Development Bank, KfW – Progress in results-based finance agreements for multilateral and bilateral initiatives (since 2010).** Climate Focus assessed payments committed and disbursed in the context of bilateral agreements with Norway’s International Climate and Forest Initiative (NICFI), the German REDD Early Movers (REM) program, as well as payments committed to REDD+ programs by the FCPF Carbon Fund (Climate Focus. (2015). Results-based Finance for REDD+: Emerging Approaches. Frankfurt, Germany: KfW). Data were updated from source publication based on communications with donors.
- **NICFI, REM, BioCarbon Fund ISFL, and FCPF Carbon Fund – Results-based REDD+ commitments and disbursements by program (since 2010).** Multilateral and bilateral commitments for results-based REDD+ finance by NICFI and REM, the BioCarbon Fund ISFL and the FCPF Carbon Fund. For bilateral donors, commitments and disbursement are based on personal communications with donors. Commitments to the FCPF Carbon Fund and BioCarbon Fund’s ISFL were retrieved from publicly available documentation.
- **NICFI, REM, BioCarbon Fund ISFL, and FCPF Carbon Fund – Results-based REDD+ finance commitments and disbursements by recipient country (since 2010).** Results-based REDD+ finance commitments and disbursements by recipient country, based on data shared by NICFI and REM (since 2010), and BioCarbon Fund ISFL and FCPF Carbon Fund commitments retrieved from funds’ official websites. FCPF Carbon Fund commitments are based on Letters of Intent signed with governments. At this stage commitments are still allocated in a competitive process, so the amount of disbursements will likely not exceed USD 868 billion.
- **FCPF – FCPF Carbon Fund’s available amounts for the purchase of emission reductions (2016).** Based on publicly available annual data provided by the FCPF on funds mobilized from 11 donors for results-based REDD+ finance (Forest Carbon Partnership Facility. (2016). Portfolio management and decisions on ER-PDs).
- **Germany, Norway, and the UK – REDD+ financing pledge of USD 5 billion by 2020 (2015).** Commitments for results-based REDD+ finance also include the REDD+ financing pledge of USD 5 billion by 2020, announced by a partnership of the German, Norwegian, and UK government in 2015 in Paris (Lima-Paris Action Agenda. (2015). Partnerships, progress to protect & restore forest [Press release]).

Indicator 1.2: Domestic payments

- **Government of Brazil – Decision to allocate the right to sell REDD+ emission reductions and on the guidance for the use of REDD+ funds by Amazon states and federal entities (2017).** Steps taken by the Brazilian government to access and use international funds for REDD+ in the Amazon biome (Resolution 6/2017. (2017). National REDD+ Commission, Brazil), and of the domestic discussion on eligibility criteria and guidance for entities for the use of respective REDD+ funds (Resolution 7/2017. (2017). National REDD+ Commission, Brazil).
Criterion 2: Support for supply chain efforts to incentivize reduced forest emissions

Indicator 2.1 Public and private sector support for jurisdictional sourcing initiatives in the context of zero-deforestation commitments

- **World Wildlife Fund for Nature – Jurisdictional Approaches to Zero-Deforestation Commodities (2016).** Our analysis is based on a table created by WWF of most relevant initiatives relying on landscape approaches to zero-deforestation commitments. Information in the report was drawn from interviews, desk research, and subjective assessments of both strategy and stage of development of initiatives pursuing jurisdictional approaches to zero-deforestation commodities. The report’s authors define landscape approaches as those that “have been maturing in the context of conservation, natural resource management, and REDD+ efforts for decades, [and] are marked most notably by the engagement of stakeholders across sectors working together to reconcile competing land use objectives.” In contrast, jurisdictional approaches “are similar but take place at a scale that matches the administrative boundaries of sub-national or national governments.” (WWF. (2016). WWF discussion paper: Jurisdictional approaches to zero deforestation commodities. WWF-US).

- **AlphaBeta – Jurisdictional programs in tropical forest regions and focused on forest-risk commodities by stage of program development (2017).** The report’s authors define three stages of maturity concerning sustainable development plans. Developing plans: Jurisdictions that “are in the design and program planning phase”; Finalized plans: Jurisdictions that “have ratified their plans and [that] are currently working to develop the capacity and pilot projects around these plans”; Started implementation: Jurisdictions that “have commenced implementation of their programs at a jurisdiction-wide level.” The AlphaBeta report defines jurisdictional approaches as aiming “to reconcile competing social, economic and environmental objectives,” focusing on mitigating pressure on forests, creating deforestation-free alternatives for livelihoods for local populations, and ensuring the equitable distribution of benefits across a jurisdiction’s population. To determine the list of active jurisdictional programs, the report made use of a variety of sources, including academic literature, consultations with experts, and institutions supporting reduced deforestation, yielding a preliminary list of 61 jurisdictional programs. From there, 27 jurisdictions were removed due to their lack of relevancy to TFA 2020’s mandate. Jurisdictional programs removed were those not operating in tropical forest regions, or jurisdictional programs without a focus on TFA 2020’s key commodities (i.e., palm oil, pulp, cattle, soy, cocoa, and coffee). The remaining 34 jurisdictions were analyzed. (AlphaBeta, (2017). Supporting jurisdictional leadership in net zero deforestation through sustainable value chains: Opportunities for TFA 2020.).


- **CDP – Jurisdictional approaches jurisdictional approaches to certification taken by companies to reduce or end deforestation in their supply chains (2016).** More than 820 companies are annually assessed by CDP, analyzing their corporate commitments to sustainable management and mitigation of forest risks for sourcing and production of the four agricultural commodities most responsible for deforestation. (CDP. (2016). Revenue at risk: Why addressing deforestation is critical to business success. Berlin: CDP).

Concluding Remarks

- **Page 48 – “While there are promising developments, finance for Goals 8 and 9 – roughly USD 20 billion since 2010 from different sources – is insufficient and does not reflect the importance of forests as part of the climate solution.”** The USD 20 billion was calculated by taking the sum of all green finance estimated for the purposes of this assessment: Mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-15), REDD+ investment plans of Mexico, Chile, Costa Rica, and Ghana (USD 9.5 million, ERPDs of Mexico, Chile, Costa Rica, and Ghana), Sustainable commodity production and conservation investments in developing countries (cumulative USD 2.7 billion since 2004, capital committed in sectors relevant to green finance for forests – sustainable food & fiber and habitat conservation – in Latin America, Asia, and Africa, Forest Trends), REDD+ readiness and implementation finance (cumulative USD 1.7 billion since 2010, Climatefundsupdate.org and FCPF Annual Report 2017), and REDD+ results-based finance commitments.
(cumulative USD 4.1 billion since 2010 bilateral communications with NICFI and REM and BioCarbon Fund and FCPF Carbon Fund websites).

- **Page 49** – “Public international finance for agriculture in deforestation countries is nearly 40 times greater than mitigation finance for forestry.” This was calculated by dividing finance for agriculture in deforestation countries (USD 87 billion, OECD, 2010-2015) by mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-2015).

- **Page 49** – “Private grey finance (e.g. capital stocks) in agriculture, forestry, and fishing is over 200 times higher than mitigation finance for forests.” This was calculated by dividing finance capital stocks in agriculture, forestry, and fisheries in deforestation countries (USD 414 billion, FAOSTAT, 2010-2014) by mitigation finance for forestry in deforestation countries (USD 2.3 billion, OECD, 2010-2015).

**Key Terms and Definitions**

For the purposes of the 2017 NYDF Progress Assessment report we defined key terms as follows:

- **Addis Ababa Action Agenda** – A 2015 agreement that provides a foundation for financing and implementing the SDGs.
- **Capital stocks** – Value of assets held by producers.
- **Commitment** – An announcement or agreement from a donor country to provide financial support to a recipient country or fund.
- **Concessional finance** – Loans extended on terms substantially more generous than those on the market. The concessionality is achieved either through interest rates below those available on the market, by grace periods, or by a combination of the two.
- **Conditional finance** – Funds to which requirements are attached to their disbursement or usage.
- **Covenant** – An agreement or contract that constitutes a pledge by a covenantee, the party to which something is promised, to either do or refrain from doing something.
- **High-conservation-value (HCV) forests** – Forests considered outstandingly significant or critically important at the national, regional, or global level for biological, social, cultural, or ecological reasons.
- **Intact forests** – Forests that are unbroken, i.e. not fragmented.
- **Natural forests** – Forests that reproduce naturally and originate from the original forest cover.
- **Primary forests** – Similar to natural forests, these forests have never been logged and remain untouched by human activity.
- **Readiness** – Strategies and processes at national or subnational levels that prepare developing countries to get ‘ready’ to access and make use of financial sources for climate change mitigation and adaption or for REDD+.
- **REDD+** – Efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks.
- **Sustainable Development Goals** – A set of 17 global economic, environmental, and social goals. An initiative of the United Nations, the goals replace the Millennium Development Goals and cover the period 2015-2030.