Rainforest Foundation Norway

Approaching the Point of No Return

Progression towards saving the world's last remaining tropical forests through enhanced ambition in the Nationally Determined Contributions

Analyses of six Key Tropical Forest Countries: Brazil, Indonesia, The Democratic Republic of the Congo, Peru, Myanmar and Colombia

Rainforest Foundation Norway is one of the world's leading organisations in the field of rights-based rainforest protection. We are working for a world where the environment is protected and human rights are fulfilled.

This report is an initiative of the Rainforest Foundation Norway, with input from partners in Brazil (Rede de Cooperação Amazônica), Indonesia (Madani), DRC (GTCR-R), Myanmar (POINT), Peru (Derecho, Ambiente y Recursos Naturales - DAR) and Colombia (Asociacion Ambiente y Sociedad) and the assistance and guidance of Aya De Leon, Nicole Torres and Elizabeth Crespo (Parabukas, Philippines), Socrattese Onoya, Virginia Young and Stephen Leonard

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Content

Executive Summary

Forests can, and have to, contribute substantially in reaching the objective of the Paris Agreement of limiting global warming to well below two degrees and pursuing efforts to limit the increase to 1.5 degrees. Without a radical shift in land use policies to halt deforestation and forest degradation and to restore degraded forest and peatlands, it is virtually impossible to achieve the Paris Agreement objectives.

The Nationally Determined Contributions (NDCs) define the mitigation ambition of countries under the Paris Agreement. This report examines the role of tropical forests in the NDCs of six key countries - Brazil, Indonesia, The Democratic Republic of the Congo, Peru, Myanmar and Colombia – and what their NDCs mean for the future of tropical forests in these countries.

None of the NDCs analyzed are in line with current international goals of halting deforestation by at least 2030. Deforestation would continue even if these climate targets are met and in a few of the countries, deforestation is even likely to increase.

Indonesia is the only country in this analysis that specify in their NDC that deforestation is to be reduced from current levels. They have specified an emissions target for their forestry sector (including peat fire) for 2030 of 217 million tonnes CO_2 by 2030, or as low as 64 Million tonnes CO_2 conditional of international financial support. This corresponds to a 66-90 percent reduction from 2010-levels.

The NDC also specifies that this target implies an annual deforestation of 325 000 hectares. This is an improvement on current deforestation levels, but still means that 3.25 million hectares of forest, the size of Belgium, will be deforested by 2030 even when reaching the NDC target.

Brazil's NDC does not specify a mitigation ambition for forests, but its foundation document describes a 72 percent reduction of deforestation emissions by 2025 and a 90 percent reduction by 2030, compared to 2005-levels. However, since deforestation in Brazil was very high in 2005, this target does not mean any substantial reduction in deforestation by 2025 from current levels. With deforestation in the Amazon already reduced by approximately 65 percent since 2005, there is substantial room for increased ambition, at least in the period until 2025.

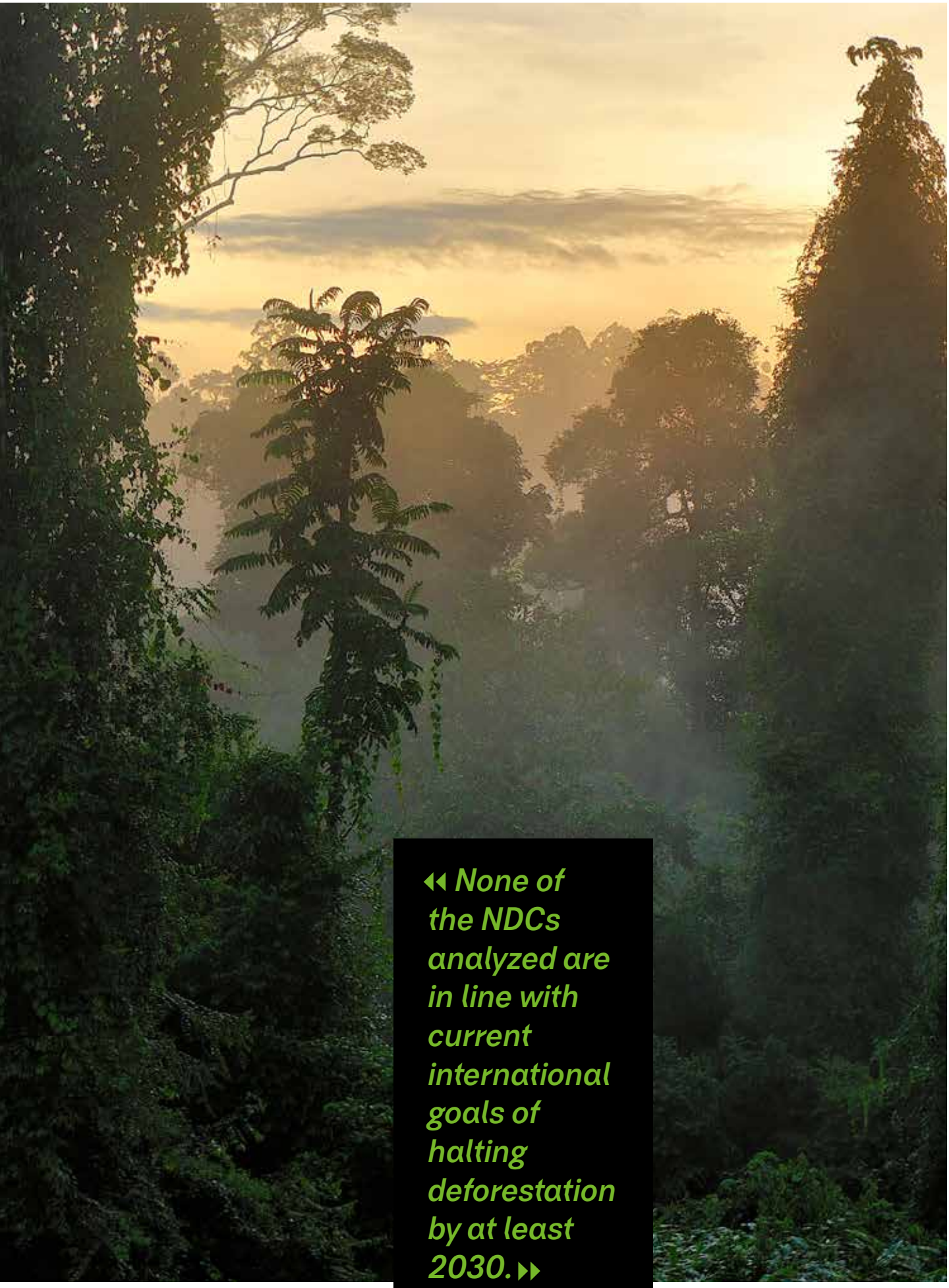
The Democratic Republic of the Congo (DRC) expects emissions from its land-use and forestry sector to approximately double from 2010 to 2030 in their business as usual scenario. The NDC target means that emissions from this sector would still increase, but at a slower rate. If the NDC targe is reached, emissions in this sector will be 50 percent higher in 2030 than in 2010. Much of this reduction is to be achieved through afforestation and reforestation measures, meaning that we can expect deforestationlevels to increase by 2030, compared to 2010, even after implementing the NDC.

Peru estimates a 70 percent increase in emissions from deforestation and degradation in the country from 2010 to 2030, in their business as usual scenario. The Peruvian mitigation target is to reduce emissions by 20% or 30% compared to this scenario, and in that reduce emissions from forest and land use by 71-77%. However, this means that emissions from the forest and land use sectors can increase even if the targets are met – by 21 percent from 2010 to 2030, or by 3 percent if international financial help is provided.

Colombia and **Myanmar** do not provide enough detail in the NDC to assess the expected emissions from forests. In Myanmar's case, this is because their NDC only presents plans and measures, and not a quantitative target. However, the NDC mentions that estimates of the mitigation effect of the plans and measures have been produced. Myanmar should be encouraged to present these mitigation effects in an updated NDC before 2020. Colombia has committed to clarifying its goals for forest emissions before 2020.

A common feature of the NDCs is that forest degradation has not been sufficiently included. As recent studies suggest that emissions from degradation of tropical forests could supersede those of deforestation, it is important that tropical forest countries make every effort to include this in their NDC, and that they receive support to develop the capacity to monitor and address such forest degradation.

Another important area that is currently underdeveloped in the NDCs is the issue of indigenous peoples' and local communities' rights. The



None of the NDCs analyzed are in line with current international goals of halting deforestation by at least 2030.

Photo: Thomas Marent

preamble to the Paris Agreement states that parties should "respect, promote and consider" the rights of, amongst other groups, indigenous peoples and local communities. Indigenous peoples are the best guardians of the rainforest and 1000 gigatonnes of CO_2 is stored in collectively managed lands globally. It is therefore important that the NDCs recognize and promote the role they play in domestic climate policy and respect their right to Free, Prior and Informed Consent before any mitigation action is taken on their land.

Rainforest Foundation Norway and partners urges the countries analyzed in this report to use the time between now and 2020 to clarify what their NDC will mean for emissions from deforestation and forest degradation, and to increase their ambition in order to secure a halt in deforestation and forest degradation no later than 2030. They should also clarify the role of forest restoration and forest planting in their NDC and strive to make sure that these restoration efforts will support efforts to protect primary forests and restore forests to their natural state.

It is important to recognize that all of the countries analyzed in this report should receive substantial financial support in order to realize their full mitigation potential in the land-use and forestry sector. Developed countries should therefore significantly increase their climate finance, including finance that goes to forests.

RECOMMENDATIONS FOR REVISED AND IMPROVED NDCS:

- Set a quantitative emission target for forest and land use sector
- Clarify what the NDC means for deforestation and forest degradation
- Include targets and measures to reduce and end deforestation and forest degradation by 2030
- Make new and ambitious restoration targets, and link these efforts clearly to protecting primary forests and restoring degraded forests
- Clarify how the country will respect and promote the rights of indigenous peoples and local communities when implementing their NDC, especially regarding how the right to free, prior and informed consent will be respected and how secure land tenure rights is part of their strategy to reduce emissions from forests.

RECOMMENDATION FOR THE PARIS RULEBOOK:

The findings of this analysis underline the need to develop clear guidance related to mitigation efforts in forests. In this context, we would recommend that the guidance for NDCs to be adopted at COP24 request parties to include the following information in their NDCs:

- Clear and quantifiable targets related to the forest sector, including for deforestation, forest degradation and restoration
- Information regarding what the NDC means for deforestation
- Information regarding whether, and how, the NDC includes efforts to reduce forest degradation
- Information regarding what type of forest restoration and reforestation measures the country plans to make, and how this contributes to primary forest protection and regeneration of degraded natural forests
- Information as to whether all types of forests and all territories are included and if not, explanation as to why not, and steps being taken to do so;
- Separate accounting for sources and sinks
- Information concerning rights of indigenous peoples and local communities and measures being taken to respect and promote the rights of indigenous peoples and local communities, including the role of free, prior and informed consent and the role secure land tenure rights play in their mitigation strategy

Introduction

Photo: Kyrre Lien, Regnskogfondet

With the completion of the Paris Agreement in 2015, Nationally Determined Contributions (NDCs) have become a centrepiece of climate action. Most countries have developed an NDC, and are encouraged to submit an updated, and preferably enhanced, version by 2020. With the bottom-up architecture of the Paris Agreement, the NDCs are a primary source of information regarding countries plans for climate action and provide us with crucial information to see, measure and assess the trajectory we are on when it comes to addressing climate change.

The mitigation ambition currently reflected in the NDCs is highly insufficient. According to the 2017 Emissions Gap Report, "the estimated emissions gap in 2030 is 11 to 13.5 Gigatonnes CO_2e for the below 2°C target (>66 percent 'likely' chance),and 16 to 19 Gigatonnes CO_2e for the 1.5°C target (50-66 percent 'medium' chance)."[1] Assessments of NDCs that have been done show that the world is well off track and more likely on a pathway to a devastating 2.7 degrees of warming or more[2], resulting in serious climate related impacts, which will be felt most by vulnerable people in developing countries and causing significant loss and damage.

Recent estimates suggest that stopping deforestation and other "natural climate solutions" could provide at least 37 percent of the

1) UN Environment (2017) The Emissions Gap Report 2017. A UN Environment Synthesis Report. Page 27.
2) Climate Action Tracker Update (2015) 2.7°C is not enough – we can get lower.

cost-effective emissions mitigation needed by 2030 to meet the goal of keeping global warming below 2°C[3], however different scientists and authors are currently putting forward different scenarios and there remains no consensus on the numbers or the most appropriate pathways. A recent report published by the Climate, Land, Ambition and Rights Alliance (CLARA) estimates that 'ecosystem based pathways' could avoid and sequester around 14.77 Gigatonnes CO_2 per year. Agricultural emissions could be reduced by a further 7.5 Gigatonnes $C0_2$ per year and the total potential carbon storage capacity that could be achieved through securing rights over indigenous and customary lands is at least 1000 Gigatonnes CO_2[4]. Combined with rapid mitigation in fossil fuel emissions, this could be enough to limit warming to 1.5 °C.

What is clear from this research is that the objectives of the Paris Agreement will not be achievable if deforestation continues at current pace and its impacts are not reversed[5].The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has made recent urgent calls to treat the biodiversity crisis as seriously as the climate crisis.[6] The importance of such natural climate solutions is also reflected and addressed through multiple international initiatives. The Sustainable Development Goal 15 is to halt deforestation by 2020. The New York Declaration on Forests (NYDF) goal is to halve natural forest loss by 2020 and end it by

◂◂ Given the crucial role forests play in meeting the goals of the Paris Agreement, there is a clear need for clarification of forests' role in the NDCs and in countries efforts to meet their obligations under the Agreement. ▸▸

2030[7]. The Bonn Challenge has an ambition to bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030[8].

Analyses of NDCs have found that references to forests are "deeply embedded" in them but are very different from one another. 3/4 of all NDCs include forest-related targets, while only 20 percent present quantifiable targets corresponding to the forest sector, either under economy-wide or sectoral approaches.[9] Given the crucial role forests play in meeting the goals of the Paris Agreement, there is a clear need for clarification of forests' role in the NDCs and in countries efforts to meet their obligations under the Agreement.

Gaining a deeper understanding of the level of ambition related to reducing or ending deforestation and forest degradation, ecosystem restoration initiatives and recognition of rights as it is - or is not - communicated in the NDCs of major tropical forest countries will contribute an important part of the understanding needed in terms of achieving the Paris Agreement goals.

Background to the analyses of Six Majors Tropical Forest Countries

Deforestation and forest degradation in tropical forests currently represents about four gigatonnes CO_2e of emissions per year, while boreal and temperate forests overall function as a sink.[10] In order to limit global warming to 1.5 degrees tropical forests must become a net sink.

Recent research by Kemen and colleagues on deforestation trends in the tropics, found that deforestation increased by 53 percent between 2001 and 2012[11], with "[o]ver 80% of observed tropical deforestation occurring in just four countries:

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3) Griscom, B.W., J. Adams, P.W. Ellis, R.A. Houghton, G. Lomax, D.A. Miteva, W.H. Schlesinger, D. Shoch, J.V. Siikamäki, P. Smith, and P. Woodbury. (2017) "Natural Climate Solutions," Proceedings of the National Academy of Sciences 114 (44): 11645–50,
4) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
5) Houghton, R. A., Birdsey, R. A., Nassikas, A., & McGlinchey, D. (2017). Forests and Land Use: Undervalued Assets for Global Climate Stabilization: Why protecting and restoring forests and promoting sustainable agriculture and land use is more important than ever for the future of our planet, Woods Hole Research Center.
6) Watts, Johnathan. "Destruction of nature as dangerous as climate change, scientists warn". The Guardian, 23.mars 2018.
7) The New York Declaration on Forests, Global Platform. https://nydfglobalplatform.org/
8) The Bonn Challenge. http://www.bonnchallenge.org/content/challenge
9) IUCN Forest Brief, No. 21 (2017) "Bonn Challenge and the Paris Agreement: How can forest landscape restoration advance Nationally Determined Contributions?" Page 2.
10) Houghton, R. A. & Nassikas, A. A. (2017)" Global and regional fluxes of carbon from land use and land cover change 1850-2015: Carbon Emissions From Land Use". Global Biogeochemical Cycles. 31 (3), 456–472.
11) Hansen M C et al (2013). "High-resolution global maps of 21st-century forest cover change". *Science* 342(6160): 850–853.
12) Kemen G Austin *et al (2017), Environ. Res. Lett.* 12(054009): 4.
13) Rhett Butler (2016) Largest area of tropical forest, by country. Mongabay, January 11, 2016. Available at: https://rainforests.mongabay.com/deforestation_forest.html.
14) MacDicken, Kenneth G. (2015) "Global Forest Resources Assessment 2015 How are the world's forests changing?" Second edition. Page 17.
15) A FREL is a baseline for assessing performance under REDD+. Paragraph 8 of COP decision 12/CP.17 establishes that «forest reference emission levels and/or forest reference levels expressed in tonnes of carbon dioxide equivalent per year are benchmarks for assessing each country's performance in implementing the activities referred to in decision 1/CP.16, paragraph 70;", i.e REDD+

Brazil, Indonesia, Democratic Republic of Congo, and Malaysia."[12] There was a significant increase in deforestation in 39 countries, with Indonesia, DRC, Malaysia, and Cambodia at the top of the list.

This report provides an analysis of six countries, which host a large part of the world's tropical forests, namely: Brazil, Indonesia, The Democratic Republic of the Congo (DRC), Peru, Myanmar and Colombia. They are all among the top 15 countries globally in terms of tropical forest cover area. Brazil, the DRC, Indonesia, and Peru, respectively, are the four largest rainforest countries in the world; with Colombia number seven and Myanmar number fifteen.[13] At the same time, Brazil, Indonesia, Myanmar, and the DRC are among the countries reporting the greatest annual net loss of forest area between 2010 and 2015.[14] In this context, this report seeks to shed light on the following questions:

- What can we tell from the current NDCs of these six countries in terms of future deforestation, forest degradation, ecosystem restoration and corresponding emissions?
- How does that correspond to what recent research tells us is needed from tropical forest countries in order to meet the 1.5 degree target
- To what extent do the NDCs recognize the key role played by indigenous peoples and local communities and their rights in achieving mitigation outcomes in forest?

The analysis will focus on the NDCs of these six countries, but use supporting documents referenced to the NDCs and country submissions of Forest Reference Emissions Level (FREL)[15] to the UN Convention on Climate Change (UNFCCC). The content of the FREL submissions and technical assessments undertaken by the UNFCCC can shed considerable light on the parameters and scope of the NDC concerning forests.

Photo: Thomas Marent

The UNFCCC and the Paris Agreement

Photo: Thomas Marent

In the Paris Agreement, parties are called upon to ensure that human rights, the rights of indigenous peoples and ecosystem integrity is integrated into the treatment of all climate actions[16]. These overarching principles are included in the preamble and thus became applicable to all climate actions contemplated by the operative clauses of the Agreement. Article 5 of the Paris Agreement supports land-based mitigation and adaptation actions in a comprehensive way, acknowledges the central role of forests and creates openings for new approaches. Article 5.1 encourages all parties (both developed and developing) to adopt ecosystem-based mitigation options and to ensure that conservation and enhancement of natural forests

16) The Paris Agreement, preamble

does not result in the conversion of natural forests to other land uses. It also encourages recognition that biodiversity is essential for increasing ecosystem resilience and resistance – essential for ensuring the permanence and effectiveness of mitigation actions, including the protection and restoration of carbon rich forests and lands.

It is important to note, that when considering the consistency and complementarity of NDCs with the Paris Agreement, many of the NDCs were submitted as intended NDCs (INDCs) prior to the completion of the Paris Agreement negotiations. There was little to no guidance as to what was expected from Parties and hence, the current NDCs are not comparable and quite different in their level of detail and substance[17]. The obligation to have an NDC was then established with the Paris Agreement, which state that "each party shall prepare, communicate and maintain successive nationally determined contributions."[18] The Paris Agreement and Paris COP Decision contains some further requirements for the NDCs, but they are quite general and current negotiations are seeking to resolve many outstanding questions related to guidance for these NDCs.

The Paris Agreement establishes that each country's NDC should reflect its highest possible ambition but that this has to be seen in light of Party's common but differentiated responsibilities and respective capabilities (CBDR-RC)[19]. It also states that developing countries shall receive support in order to implement their NDC.[20] Pursuant to Article 4.4, Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances." Article 4.6 further states that "The least developed countries (LDCs) and small island developing States may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances."[21] All of the countries in this analysis are considered developing countries under the UNFCCC, and Myanmar and DRC are categorized as LDCs. Thereby, these provisions provide them with a lot of discretion in deciding what type of targets their NDCs will contain, further adding to the challenges of gaining a clear picture of expected climate action in these six major tropical forest countries.

Parties at the Paris Climate Summit recognized the need to develop further guidance for the NDCs "in order to facilitate clarity, transparency and understanding of nationally determined contributions".[22] This is an ongoing and highly contested issue at the UNFCCC negotiations, mandated to be concluded at COP24 in December 2018.

The massive gap between the nationally determined mitigation actions and the requirements of meeting the objectives of the Paris Agreement is a major challenge. To address this challenge, the Parties established a process "to assess the collective progress towards achieving [the Paris Agreement's] long-term goals" known as the Global Stocktake (GST), to be conducted every five years from 2023[23]. The GST is intended to be "comprehensive and facilitative" and take into account equity and the best available science.[24] Based on the outcome of the GST, countries are asked to submit new and more ambitious NDCs, to meet the objectives of the Paris Agreement.

Similar to this, albeit with a more limited scope, the UNFCCC will conduct a Facilitative Dialogue in 2018, intended to inform the countries of the collective need for action before they submit updated NDCs for the first round starting in 2020. In the Facilitative Dialogue, and in subsequent national processes to enhance the ambition in the NDCs, countries have to ask themselves what more they can do in order to avoid global warming above 1.5 degrees. The expectation is that the Facilitative Dialogue will produce a clear call for the parties to the Paris Agreement to increase their ambition before 2020, and that this will be followed up by the individual parties as they prepare to submit an updated NDC in early 2020. For the countries in this analysis, addressing emissions from deforestation and forest degradation will be a key issue.

17) The Paris Decision provides some more detail regarding what information parties should provide in their NDCs. Paragraph 27 in the Paris Decision list information that parties may include in their NDC "in order to facilitate clarity, transparency and understanding". The list includes "quantifiable information on the reference point (including, as appropriate, a base year), time frames and/or periods for implementation, scope and coverage, planning processes, assumptions and methodological approaches including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals, and how the Party considers that its intended nationally determined contribution is fair and ambitious, in light of its national circumstances, and how it contributes towards achieving the objective of the Convention as set out in its Article 2;" This information was also available for parties who communicated their iNDCs prior to the Paris Climate Summit, as the specific wording was contained in COP decision 1/CP.20 made in Lima in 2014., when countries was invited to communicate intended nationally determined contributions. the Paris Agreement also established an obligation for parties to account for their NDCs in a way that "promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting."
18) The Paris Agreement, article 4.2
19) Paris Agreement, article 4.3
20) Paris Agreement, article 4.5
21) The Paris Agreement, article 4.6
22) Paris Decision 1/CP.21, paragraph 28.
23) The Paris Agreement, Article 14.1
24) Ibid

The need for transformative change in rainforest countries

Photo: Thomas Marent

The recent IPCC report on 1.5 degrees[25] underscored the growing scientific consensus around the vital role land and forests play in achieving the temperature targets set out in the Paris Agreement. The civil society led CLARA Report[26] shows what it calls the 'missing pathways' – pathways not included in the IPCC 1.5 report - to achieve the 1.5 target and the potential to achieve substantial mitigation (and adaptation) outcomes through what may be termed as transformational pathways towards stopping deforestation, responsible use of forests, ecosystem protection and restoration and recognition of rights.

The CLARA report is groundbreaking in that it shows that it is possible to achieve an annual mitigation of 21 gigatonnes of CO_2e by 2050 through a series of natural measures, many of which are well understood and extensively studied, and in many cases already being done. These 21 gigatonnes in avoided emissions and increased sequestration, combined with fast and drastic cuts to fossil fuel emissions, can provide deep enough emissions reductions to meet the 1.5 degree target without having to resort to committing massive land areas in order to achieve negative emissions through untested, expensive geoengineering 'techno fixes' such as bioenergy with carbon capture and storage, which if deployed on a large-scale would not only slow the transition away from fossil fuels, but would also have massive negative effects on forests, biodiversity, food security and human rights.[27]

One of the "natural measures" the CLARA report proposes is to halve deforestation by 2020, and then stopped completely by 2030, in line with the New York Declaration on Forests. Combined with also ending forest degradation by 2030, the report calculates that this can help us avoid 4.07 gigatonnes CO_2/y in emissions.

While the extent of emissions from deforestation is fairly well known and accounted for, forest degradation represents a very significant and largely unaccounted source of emissions. Logging – often referred to as sustainable forest management - reduces the average carbon stock in a forest by 30-70 percent compared to the stock in a primary forest.[28] Research has also shown no positive effect of reduced impact logging on the carbon stock in tropical forests[29], which is the cornerstone of sustainable forest management, and that industrial logging is "several hundred years out of sync with the life cycles of high-value timber, making industrial logging in tropical forests practically unsustainable[30]. Avoiding emissions by preventing logging in primary forests and allowing degraded forests to regenerate has both immediate and long-term mitigation benefits, as primary forests provide a low cost and effective means of increasing sequestration and long term carbon storage. Primary forests also play a vital role in supporting biodiversity, which again supports and underpins the integrity of its natural ecosystems and confers resilience to threats like fire, drought and climate change, reducing the risk of loss of forest and its carbon storage capacity.[31] Tropical forest countries that have large areas of primary forests with high biodiversity, such as the six focused on in this study, need to prioritize ending deforestation and degradation of primary forests, and they need to be supported in this effort.

The CLARA report is groundbreaking in that it shows that it is possible to achieve an annual mitigation of 21 gigatonnes of CO_2e by 2050 through a series of natural measures

The CLARA Report[32] assumes that 25 percent of the worlds degraded natural forests, 600 million hectares, can be allowed to be restored back to its natural state, through ending selective logging and other forest degradation, and then be protected from further human disturbance together with the worlds remaining primary forest. This could, and should, be combined with efforts to strengthen community-based land tenure, as this will strengthen the restoration and protection of these areas. Achieving this would help sequester about 1.83 Gigatonnes CO_2/y in addition to avoided emissions from continued degradation and deforestation.

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25) Intergovernmental Panel on Climate Change (2018) Summary for Policymakers. Global Warming of 1.5°C.
26) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
27) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
28) Keith H., Lindenmayer D., Mackey B., Blair D., Carter L., McBurney L., Okada S., & Konishi-Nagano T., (2014). Managing temperate forests for carbon storage: impacts of logging versus protection on carbon stocks. Ecosphere, 5(6) Article 75, 1-34
29) Martin, P. A. et al. (2015) Impacts of tropical selective logging on carbon storage and tree species richness: A meta-analysis. Forest Ecology and Management. 356224–233.
30) Zimmerman, B. & Kormos, C. (2012) Prospects for Sustainable Logging in Tropical Forests. BioScience. 62 (5), 479–487.
31) Mackey B, Cadman S. (2017) Assessing the risk of to the conservation staus of temperate rainforests from exposure to mining, logging and climate change. A Tasmanian Case Study, Biological Conservation 21519-29
32) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.

There is a significant potential for mitigation in allowing natural forests to regrow and expand. The Bonn Challenge and New York Declaration on Forests both have targets of restoring 350 million hectares of degraded landscapes and forest-lands by 2030. 80 percent of the pledges under the Bonn Challenge are in tropical regions. These interventions should focus on regenerating natural forests to protect, link and buffer areas of primary forest and be linked to improving food and agricultural production (including wood production) in well-designed landscape scale initiatives. This approach would also be cost effective, as many forests will regenerate naturally with no or minimal, intervention and help achieve multiple benefits for climate and communities.[33]

Restoring 350 million hectares has the potential to deliver about 3.9 Gigatonnes CO_2/y in sequestration, if restoration effort is focused on restoring closed-canopy natural forests[34]. Failure to differentiate between plantation tree crops and natural forest has fuelled the false assumption that all forests have equal climate mitigation value. It has also underpinned policy failure to recognize the superior mitigation value of protecting existing primary and other natural forest compared to planting new trees. If the restoration efforts lead to the establishment of plantations instead of natural forests, the mitigation effect will be significantly reduced, as their carbon sequestration potential of naturally regenerating forests is 97 percent higher than with plantations[35]. Therefore, it is important that countries make sure that their forest restoration effort focuses on natural forests, is linked to avoiding deforestation and forest degradation and improves the protection of primary forests.

In the Amazon alone, indigenous territories store 102 Gigatonnes CO_2 which represents about one third of the entire Amazon region's aboveground carbon.

It is important and necessary to implement these measures in forests globally, however, tropical forests has a key role to play as they are currently a source of emissions globally, whereas boreal and temperate forests overall function as a sink.[36]

All of these mitigation efforts undertaken in tropical forest countries need to be combined with, and supported by, efforts to strengthen community-based land tenure. Research has shown that areas where indigenous peoples and local communities have secure land rights have significantly lower rates of deforestation, and far better protection of biodiversity and ecosystems integrity.[37] There is also evidence that indigenous peoples and local communities are achieving conservation outcomes equivalent to government-funded project with a lot less resources.[38] As previously mentioned, at least 1000 Gigatonnes CO_2 is stored in collectively managed lands globally, which has to remain stored there if we are to meet the 1.5 degree target. In the Amazon alone, indigenous territories store 102 Gigatonnes CO_2 which represents about one third of the entire Amazon region's aboveground carbon[39]. This shows that expanding the lands which indigenous peoples and local communities have recognized and secure land rights to in this and other regions are essential in order to meet both our climate mitigation targets and other targets to protect and preserve ecosystems and biodiversity.

This research shows the need for a radical change in the land use practices globally, and especially in tropical forest countries, in order to reach the 1.5 degree target. By 2030, which is the implementation period of most of the NDCs, we have to end deforestation completely and stop the degradation of primary forests, while also embarking on restoring degraded forests and peatland back to their natural state and allowing natural forests to expand. This has to be combined with increased recognition of the land rights of indigenous peoples and local communities, to underpin the protection and restoration of tropical forests, to maximize their carbon storage.

33) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
34) ibid
35) Wheeler, C. et al. (in press) The mitigation potential of large-scale tropical forest restoration: assessing the promise of the Bonn Challenge.
36) Houghton, R. A. & Nassikas, A. A. (2017) Global and regional fluxes of carbon from land use and land cover change 1850-2015: Carbon Emissions From Land Use. Global Biogeochemical Cycles. 31 (3), 456–472.
37) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
38) ibid
39) ibid

What the NDCs tells us about rainforests and indigenous peoples rights

Photo: Kyrre Lien, Regnskogforndet

The six NDCs analyzed in this report vary greatly, making it somewhat difficult to compare them. The NDCs differ in their time frames, targets, scope, coverage and level of detail. For example, Brazil has a 2025 target with an indicative 2030 target, while all the other counties have 2030 targets. Brazil is also the only country in this analysis that has set its target against a reference year. Peru, Colombia, Indonesia and the DRC all have targets that involve a reduction relative to a business as usual projection (BAU). Myanmar does not have an emissions reduction target, but instead specifies different policies and measures intended to reduce emissions. The way they refer to human rights, especially indigenous peoples and local communities rights, also vary.

Mitigation ambition in forests
Most of the NDCs in this analysis do not specify what their target means for deforestation or emissions from land use, land use change and forestry (LULUCF). The notable exception is Indonesia, which in considerable detail, shows targeted emissions for different sectors, including forestry, for both the unconditional and conditional target. The NDC also specifies what level of deforestation and forest restoration is assumed for these targets, which is very helpful in order to understand what the NDC will mean for forests in Indonesia. DRC also specifies the level of emissions from LULUCF their NDC aims for. Though neither Brazil nor Peru provides the same level of detail, supporting documents references in the NDC provide further insight into what their targets will mean for their forests. For Colombia and Myanmar, it is not possible to assess the level of LULUCF emissions.

Though some data is missing for a complete picture, our analysis of the NDCs of these six tropical forests countries still show that they all fall short of being on a course towards halving deforestation by 2020, and ending it by 2030. Brazil would achieve net removals in its LULUCF sector by 2030 if it follows the supporting document to the NDC[40], while Indonesia would achieve a 90 percent reduction in this sector, dependent on international support. However, such net-targets would mean ongoing deforestation in these major tropical forest countries up to and probably beyond 2030.

> ***These numbers also suggest that deforestation in Brazil will not be reduced before 2025.***

In DRC emissions in the LULUCF sector would increase by approximately 50 percent after implementing the NDC. The main efforts in the NDC relate to afforestation and reforestation measures. Deforestation is estimated to double from 2010 to 2030 even when implementing the NDC. Peru's deforestation and emissions will also be higher in 2030 compared to where it was in 2010 even after implementing its NDC.

These finding are alarming, and support the need for a paradigm shift in the way the world approaches tropical deforestation, degradation, restoration and recognition of rights if we are serious about achieving the targets agreed in the Paris Agreement.

BRAZIL

In 2014, it was estimated that Brazil had 494.5 million hectares of forest cover, meaning that the total area of remaining forest covers 58.9 percent of the country's total land area.[41] This makes Brazil the largest rainforest country in the world.

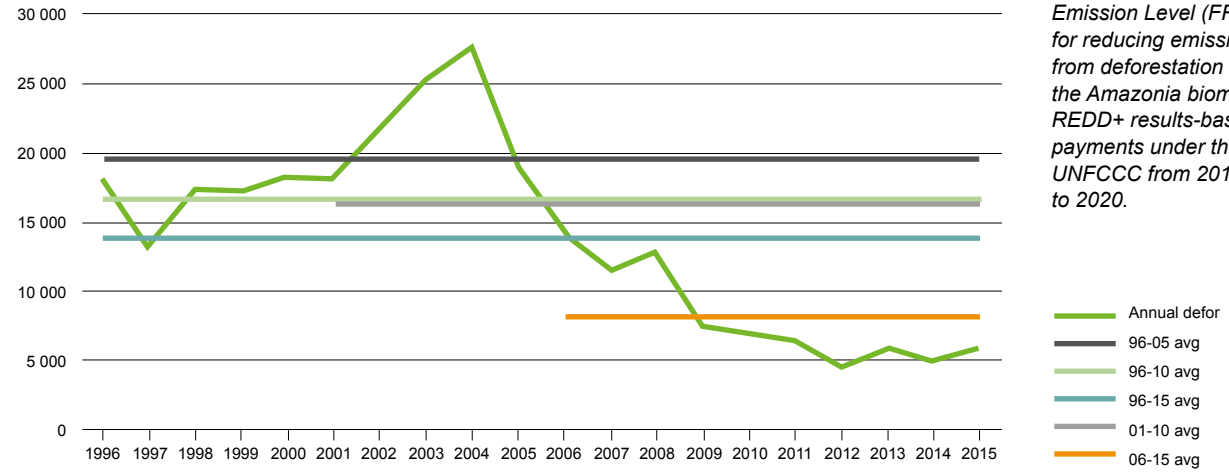
Brazil's NDC states its intention to reduce greenhouse gas emissions (GHGs) by 37 percent below 2005 levels in 2025 (reaching 1.3 Gigatonnes CO_2e in 2025).[42] This target is somewhat in line with the upper end target Brazil has made to the Copenhagen Pledges, where it has committed to reduce its emissions including LULUCF by between 36.1 percent and 38.9 percent in 2020 compared to a BAU scenario[43]. The NDC also contains an 'indicative contribution' to reduce greenhouse gas emissions by 43 percent below 2005 levels by the year 2030 (reaching 1.2 GigatonnesCO_2e in 2030).[44] There is no conditional target in Brazil's NDC.

Brazil's biannual report to UNFCCC show emissions of 1.2 Gigatonnes in 2012, which suggests that they are on their way to meet their 2025 target[45]. The reason the 2012 emissions is so much lower than those of 2005 is because Brazil's LULUCF emissions decreased by 86 percent in that period due to the successful implementation of anti-deforestation laws and policies.

The legacy of high emissions from deforestation in the Amazon, and the change that has occurred since, is evident in Brazil's FREL covering the Amazon (Brazil has recently submitted a FREL covering the Cerrado, which has not been analysed here). The FREL[46], covering the period 2016-2020, uses the average annual emissions from gross deforestation

40) Federative republic of Brazil (2015) Fundamentos para a elaboração da Pretendida Contribuição Nacionalmente Determinada (iNDC) do Brasil no contexto do Acordo de Paris sob a UNFCCC.
41) Food and Agriculture of the United Nations, Country Reports, Brazil, available at http://www.fao.org/countryprofiles/index/en/?iso3=BRA
42) Federative Republic of Brazil (2015). Intended Nationally Determined Contribution towards achieving the objective of the United Nations Framework Convention on Climate Change. Page 1.
43) Federative Republic of Brazil (2010) Brazil information on Appendix 2 of the Copenhagen Accord. Page 2.
44) Federative Republic of Brazil (2015). Intended Nationally Determined Contribution towards achieving the objective of the United Nations Framework Convention on Climate Change. Page 2
45) Ministry of Foreign Affairs, Brazil (2017) Second Biennial Update Report of Brazil to the United Nations Framework Convention on Climate Change.

FIG. 1: DEFORESTATION, AMAZON (BRAZIL), KM²



Source: Federative Republic of Brazil (2018) Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC from 2016 to 2020.

in the Amazon from 1996 to 2015 as the baseline, which amounts to 750 million tonnes of CO_2 per year coming from 1.4 million hectares of deforestation[47]. These emissions correspond to about 1.5 percent of total global emission, showing the importance of reducing emissions from the Amazon.

Deforestation rates have been significantly lowered since 2005, with the average area of deforestation between 2006 and 2015 at around 0.8 million hectares per year, and as low as 0.5 million hectares in 2012.[48] During the period of Brazil's previous FREL (2011-2015), Brazil generally reported REDD+ results of at least 600 Million tonnes CO_2 for each year, against a baseline (FREL) of 907.9 Million tonnes CO_2[49], meaning that the reported emissions from the Amazon were below 300 Million tonnes each year. Only a small share of these results has been payed for, mostly by the Norwegian Government. Reduced emissions is good news for the Amazon and the global climate, but it does call into question how suitable 2005 is as a reference year for the NDC, and how suitable the FREL is as a baseline for mitigation in the Amazon as it is heavily influenced by pre-2005 deforestation numbers.

The NDC doesn't specify emission reductions per sector, meaning that LULUCF ambition is not quantified. However, the foundation document for the NDC calculated the Brazilian target based on a 72 percent reduction in gross LULUCF emissions by 2025 compared to 2005[50]. Based on this, we can expect LULUCF emissions to be reduced to 392 Million tonnes in 2025 and 143 Million tonnes in 2030. The document also expects removals of 274 Million tonnes CO_2 both in 2025 and 2030, making net LULUCF emissions 118 Million tonnes CO_2 in 2025, and the LULUCF sector a net sink of 131 Million tonnes CO_2 in 2030[51].

These numbers also suggest that deforestation in Brazil will not be reduced before 2025, at least not significantly, as the 392 million tonnes of expected LULUCF emissions in 2025 are roughly similar to the reported emission in 2012[52]. However, deforestation will have to go down some by 2030, and removals through restoration and reforestation must increase in order to meet the projection in the foundation document[53]. In both of these scenarios, Brazil falls short of ending deforestation completely. In the NDC, Brazil references a target to end *illegal* deforestation in the Amazon by 2030, and to compensate for emissions from legal deforestation, which confirms that Brazil has no plan or intention to end deforestation by 2030.

Concerns have been raised that Brazil is likely under-reporting emissions from the LULUCF sector, by underestimating emissions from forest degradation[54]. The FREL also

46) Federative Republic of Brazil (2018) Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC from 2016 to 2020.
47) Federative Republic of Brazil (2018) Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC from 2016 to 2020.
48) Ibid
49) UNFCCC. REDD+ Web Platform. Available at: https://redd.unfccc.int/submissions.html?country=bra
50) Federative republic of Brazil (2015) Fundamentos para a elaboração da Pretendida Contribuição Nacionalmente Determinada (iNDC) do Brasil no contexto do Acordo de Paris sob a UNFCCC.
51) Ibid.
52) Ministry of Foreign Affairs, Brazil (2017) Second Biennial Update Report of Brazil to the United Nations Framework Convention on Climate Change.
53) Federative republic of Brazil (2015) Fundamentos para a elaboração da Pretendida Contribuição Nacionalmente Determinada (iNDC) do Brasil no contexto do Acordo de Paris sob a UNFCCC.

FIG. 2: SHOWING EMISSIONS PER SECTOR (IN MILLION TONNES CO2E – GWP - 100)

Sector		1990		2005		2025		2030	
Energy		194	14%	332	16%	598	44%	688	57%
Agriculture		356	25%	484	23%	470	35%	489	40%
Forests and land-use	Emissions	826	58%	1,398	66%	392	29%	143	12%
	Removals			211	10%	274	20%	274	23%
	Balance			1,187	56%	118	9%	-131	-11%
Industrial processes		48	3%	77	4%	98	7%	99	8%
Waste		12	1%	54	3%	61	5%	63	5%
Total		**1,436**		**2,133**		**1,346**		**1,280**	
Reductions compared with 2005						**37%**		**43%**	

Source: Federative Republic of Brazil (2015). Basis elements for the elaboration of Brazils iNDCs in the context of the Paris Agreement under the UNFCCC.

does not include forest degradation as a carbon source[55] on the basis that degradation is due to forest fires and selective logging, which do not have such a clear-cut pattern for PRODES (the Amazonian Deforestation Monitoring Program in Brazil set up in as far back as 1988) to include it in its satellite imagery.[56] However, Brazil have been working to include degradation in its FREL for some time, and has included preliminary information considering forest degradation for a future national FREL is provided in Annexes III and IV of the FREL submission.[57]

Brazil's NDC contains a restoration commitment to restore and reforest 12 million hectares of forests by 2030[58], which is an amount equivalent to their pledge under the Bonn Challenge[59], but there is no reference to what type of restoration efforts this will be. This should be clarified in Brazils revised NDC, along with setting a LULUCF sector target that involves ending deforestation and forest degradation.

COLOMBIA

More than 52 percent of Colombia's national territory is covered by forest ecosystems, ranging from tropical dry forest to very humid high mountain forests. According to the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) these areas spanned 59.3 million hectares in 2017.[60]

The unconditional target in Colombia's NDC is a 20 percent reduction on Business as Usual (BAU) emissions by 2030. Subject to the provision of international support, Colombia says it could increase its ambition to a 30 percent reduction on BAU.[61] Since the BAU involves a 50 percent increase in national emissions from 2010 to 2030, both the conditional and unconditional targets involve an increase in emissions compared to 2010.

Neither the target nor the BAU is disaggregated into different sectors, so the NDC does not provide information on expected LULUCF emissions in 2030. There is also no reference to the targeted level of deforestation, forest degradation or to their international restoration pledges. However, Colombia commits to, before 2020, "clarify publicly its unconditional and conditional goals for reductions in forest emissions between 2020 and 2030.[62] That will represent a significant improvement of the NDC, and should include targets that involve ending deforestation and forest degradation and clarify the role and ambition regarding restoration.

Further, the NDC states that the BAU was developed using data on deforestation from the FREL that was submitted to UNFCCC in 2014.[63] Colombia's FREL, covering 2013-2017, estimates that emissions from deforestation in the Amazon would increase to 10 percent above the average deforestation between 2000 and 2012, unless additional mitigation efforts were implemented. This equals 51.6 Million tonnes CO_2e in annual

54) Asher, Claire (2018) Brazil's actual forest-related CO2 emissions could blow by Paris pledge. Mongabay
55) Federative Republic of Brazil (2018) Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC from 2016 to 2020. Page 11
56) Ibid, page 67.
57) Ibid. at 83.
58) Federative Republic of Brazil (2018) Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC from 2016 to 2020. Page 3.
59) Bonn Challenge, Brazil, available at: http://www.bonnchallenge.org/content/brazil
60) Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) (2017) National Natural Forest Area Report.
61) Government of Colombia (2018) Nationally Determined Contribution of Colombia (unofficial English translation). Page 2.
62) Ibid
63) Ibid, page 3

emissions by 2017, stemming from deforestation of 91.171 hectares.[64]

If the same growth rate was to continue (10 percent increase every 5 years), deforestation in the Colombian Amazon would reach 110 000 ha per year by 2028, and the corresponding emissions would be at 68 Million tonnes CO_2.

Even though the NDC does not provide details on the emissions level and deforestation through its implementation period, there is nothing indicating that Colombia will halt deforestation by 2030. As the unconditional and conditional targets represent a 67 Million tonnes and 100 Million tonnes emission reduction for the entire economy by 2030 respectively, all or 2/3 of these reductions would have to be taken through reducing emissions from deforestation in the Amazon for Colombia to reach net zero emissions from deforestation, given that the growth rate in the FREL is representative. Moreover, that would still leave out emissions from deforestation outside the Amazon.

THE DEMOCRATIC REPUBLIC OF THE CONGO

The DRC has 234.5 million hectares of forests, representing 63 percent of the total country area.

The DRC's NDC contains a target to reduce its emissions by 17 percent by 2030 compared to a BAU emissions scenario (430 million tonnes CO_2e) – a reduction of just over 70 million tons of CO_2.[65] The target for LULUCF emissions is about 300 million tonnes CO_2 in 2030, which is a reduction of about 70 million tonnes below the BAU projection for the LULUCF sector – a reduction similar to the overall target. Still, if the NDC target is reached, emissions from the LULUCF sector will be 50 percent higher in 2030 than in 2010.

Further, the NDC identifies how different mitigation measures will reduce emissions, with afforestation and reforestation amounting to 15 Million tonnes CO_2 and sustainable forest management 8.4 Million tonnes CO_2[66]. The NDC also references a plan to plant three million hectares of forest by 2025, which will help sequester three million tonnes of CO_2 per year, but it's unclear how this relates to the 15 Million tonnes CO_2 of afforestation and reforestation mentioned above.

The NDC also states that given the amount of investment needed to achieve the DRC's mitigation goal, which it has calculated to be USD 12.54 billion and that in the context of national development priorities, the country can fund only a minimum portion of its NDC[67].

There is no separate target for ending or reducing deforestation in the NDC. Whilst the NDC does not make any reference to its FREL, the FREL states that the overall objective of the national strategy is to stabilize forest cover at 63.5 percent of the national territory and achieve net-zero forest loss by 2030[68]. This target is supported by the Congolese Forest Code of 2002, requiring anyone who conducts a deforestation activity to proceed with reforestation at their expense in order to fully compensate for the forest loss[69]. Therefore, we can assume that there will be continued deforestation in DRC in and after 2030, but that this forest loss will potentially be "netted out" by reforestation and afforestation, assuming compliance with the Forest Code.

It is also problematic that the NDC mentions sustainable forest management as a mitigation measure as this often involves logging of primary forests. Logging in primary forests, even if it is reduced impact logging, leads to a considerable degradation of the forest carbon stock.[70]

It's interesting to note that the FREL and the BAU in the NDC are very different, where the FREL projects emissions at a much higher level than the BAU in the NDC. This is despite the NDC covering the entire economy (including the LULUCF sector) while the FREL only covers natural forests. The FREL states that the average annual emissions from deforestation were 332.4 Million tonnes CO_2 in the period 2000-2010, and 827.8 Million tonnes CO_2 for 2010-2014[71]. Based on the growth rate for this entire period, and

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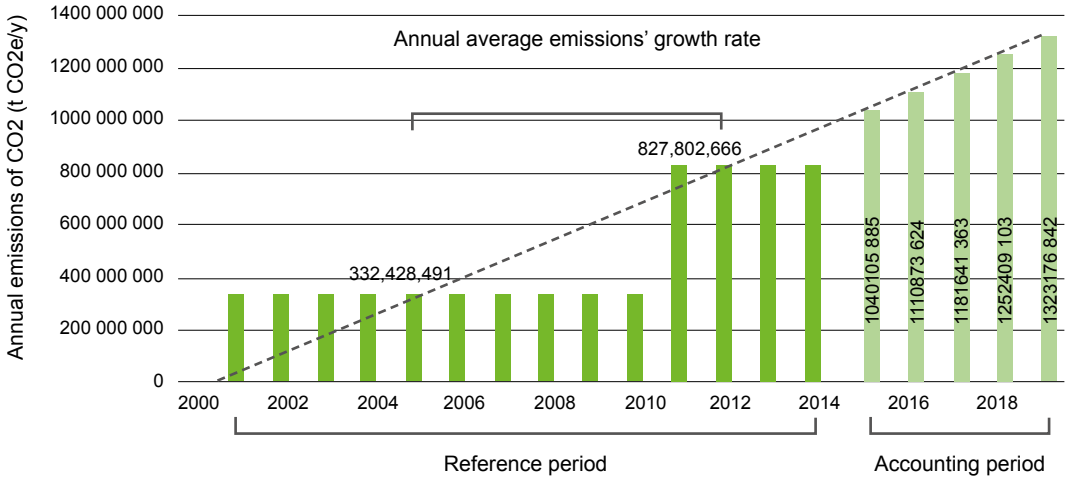
64) Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) (2014) Proposed Forest Reference Emission Level for deforestation in the Colombian Amazon Biome for results–based payments for REDD+ under the UNFCCC. Page 30.
65) Republique Democratique du Congo (2017) Soumission de la contribution national prevue determine au niveau national au titre de la Convention des Nations Unies Sur Les Changements Climatiques. Page 9.
66) Republique Democratique du Congo (2017) Soumission de la contribution national prevue determine au niveau national au titre de la Convention des Nations Unies Sur Les Changements Climatiques.
67) Ibid. page 1
68) Republique Democratique du Congo (2018) Niveau d'emissions de reference des forets pour la reduction des emissions dues a la deforestation en Republique Democratique du Congo.
69) Article 52 of the Statute
70) Keith H., Lindenmayer D., Mackey B., Blair D., Carter L., McBurney L., Okada S., & Konishi-Nagano T., (2014). Managing temperate forests for carbon storage: impacts of logging versus protection on carbon stocks. Ecosphere, 5(6) Article 75, 1-34
71) Republique Democratique du Congo (2018) Niveau d'emissions de reference des forets pour la reduction des emissions dues a la deforestation en Republique Democratique du Congo. Page 53.

FIG. 3: ANNUAL HISTORICAL EMISSIONS (2000-2014) AND PROJECTED EMISSIONS DURING THE ACCOUNTING PERIOD (2015-2019) OF THE DRC



Source: Figure 9-1 in DRCs FREL, page 57, «Extrapolation of the FREL»,

adjusted for national circumstances, the FREL is estimated to give an increase in emissions from deforestation of 70 Million tonnes CO_2, about 6 percent, per year from 2015 to 2019, ending up at 1.3 million tonnes of CO_2 emissions in 2019[72]. This is very different from the BAU in the NDC, which says that total LULUCF emissions were about 200 Million tonnes CO_2 in 2010 and expected to grow to 350 million tonnes CO_2 by 2020 and approximately 400 million tonnes CO_2 in 2030[73]. It is important to recognize that the FREL has not been through technical expert review yet, but following such a review there is a need to harmonize the BAU in the NDC with the FREL. The historical data used in the FREL should give a more updated and correct picture of the emissions from deforestation in the DRC, however, the emissions projections in the FREL are so high that there is reason to question its realism and thereby how legitimate it is as a baseline for payments for emissions reductions.

INDONESIA

A 2018 report prepared by the Indonesian Ministry of Environment and Forestry states that the country had 120.6 million hectares of forestland in 2017. Of this, 68.8 million hectares are classified as production forests, 29.7 million hectares are protection forests and 22.1 million hectares are conservation forests.[74]

Indonesia's target is to reduce unconditionally 29 percent of its greenhouse gases against the BAU scenario by the 2030.[75] The target can be increased up to 41 percent by 2030, subject to availability of international support for finance, technology transfer and development and capacity building.[76]

The NDC is commendable in that it contains clear targets for emissions for different sectors, including for forestry, and it clearly states how much deforestation and land restoration this involves. It is also a quality that the NDC makes references to the FREL that the country submitted in 2015,

The unconditional target involves forestry emissions of 217 million tonnes CO_2 in 2030, which is a reduction of 70 percent compared to the BAU of 714 million tonnes CO_2, and a 66 percent reduction compared to 2010 emission levels. The conditional target going up to 41 percent requires maximum emissions of 64 million tonnes CO_2e from forestry, which is a 90 percent reduction below the BAU and 82 percent below 2010 levels.[77]

The NDC also states that deforestation in the BAU is projected to be 820 000 hectares per year between 2020 and 2030, while under both the conditional and unconditional target, Indonesia seeks to limit deforestation to 325 000 hectares per year from 2021-2030[78].

This is a substantial reduction in deforestation compared to the BAU and the FREL. The FREL is based on the period from 1990 to 2012, in which the average level of deforesta-

72) Ibid. Page 55-57
73) Republique Democratique du Congo (2017). Soumission de la contribution national prevue determine au niveau national au titre de la Convention des Nations Unies Sur Les Changements Climatiques. Page 10.
74) Republic of Indonesia, Ministry of Environment and Forestry (2018) The State of Indonesia's Forests 2018. Page 8.
75) Republic of Indonesia (2016) First Nationally Determined Contribution. Page 7.
76) Ibid.
77) Ibid. Page 9
78) Ibid. Page 14.
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FIG. 4: NDC PROJECTED BAU AND EMISSION REDUCTION FROM EACH SECTOR CATEGORY

No	Sector	GHG Emission Level 2010*	GHG Emission Level 2030 (MTon CO_2e)			GHG Emission Reduction (MTon CO_2e)		GHG Emission Reduction % of Total BaU		Annual Average Growth BAU (2010 -2030)	Average Growth 2000 -2012*
		MTon CO_2e	BaU	CM1	CM2	CM1	CM2	CM1	CM2		
1	Energy*	453,2	1,669	1,355	1,271	314	398	11%	14%	6,7%	4,5%
2	Waste	88	296	285	270	11	26	0,38%	1%	6,3%	4,0%
3	IPPU	36	69,6	66,85	66,35	2,75	3,25	1,10%	0,11%	3,4%	0,1%
4	Agriculture	110,5	119,66	110,39	115,86	9	4	0,32%	0,13%	0,4%	1,3%
5	Forestry**	647	714	217	64	497	650	17,2%	23%	0,5%	2,7%
	Total	**1,334**	**2,869**	**2,034**	**1,787**	**834**	**1,081**	**29%**	**38%**	**3,9%**	**3,2%**

Source: Republic of Indonesia (2016) First Nationally Determined Contribution. Page 9. *Including fugitive **Including peat fire

Notes: **CM1**=Counter Measure (unconditional mitigation scenario) **CM2**=Counter Measure (conditional mitigation scenario)

tion was 918,678 ha[79]. The FREL also covers emissions from forest degradation and peat decomposition, something that is highly commendable. Based on this the FREL set a baseline of 570 million tonnes in emissions for 2016, with 293.2 million tonnes from deforestation, 58 million tonnes from forest degradation and 151.7 million tonnes from peat decomposition. It also expects an increase in emissions from peat decomposition over the period, leading to an increase in the FREL to 590 million tonnes in 2020[80].

The FREL shows that there is considerable variation in the deforestation rate over the period the FREL is based on. While deforestation was about 786 000 ha per year in 2011-2012, it was as high as 2.2 million hectares per year between 1996 and 2000, and as low as 444 000 hectares per year from 2000 to 2003[81]. This indicates that Indonesia has been able to implement policy shifts with considerable effect on its deforestation, in periods leading it to deforestation rates not far of its NDC target of maximum 325 000 ha per year. It also indicates that Indonesia's current trajectory is very different from where it was in the pre-2000 period, and that a baseline where the average deforestation rate from the 1996-2000 years is included is probably not the most relevant benchmark for Indonesia going forward.

While the NDC target is lower than recent deforestation figures, it would still lead to continued deforestation, amounting to 3.25 million hectares for the period 2020 to 2030. The NDC also fails to achieve net zero emissions from forestry by 2030, as emissions in the conditional scenario would still be 64 Million tonnes.

The NDC specifies that the conditional emission target for forestry sector of 64 million tonnes CO_2 in gross emissions require an ambitious target to turn 12 million hectares of currently unproductive land into plantations up to 2030, 800 000 ha per year, with a survival rate of 90 percent. The historical trend for land rehabilitation is 270 000 hectares according to the NDC, with a low survival rate. The NDC has no explanation to what type of restoration effort this will be, but the use of the term "plantations" does give the indication that it will be establishment of plantations and not restoration of forests back to their natural state, something that would increase the mitigation effect greatly.[82] It also requires 2 million hectares of peat restored by 2030 with 90 percent survival rate[83].

Despite that the FREL does cover forest degradation and peat decomposition, and that the NDC makes clear references to the FREL, the NDC does not specify any target for emissions from any of these sources. The NDC specifies that the emission target for forestry includes peat fire, but says nothing on peat composition and forest degradation, though there are references in the NDC to reducing forest degradation[84]. Clarifying the role of forest degradation, peat fire and peat decomposition should be addressed in future revisions of the NDC.

79) The Ministry of Environment and Forestry, Indonesia (2015) National Forest Reference Emission Level for Deforestation and Forest Degradation. Page 42
80) Ibid.
81) Ibid. Page 24
82) Wheeler, C. et al. (in press) The mitigation potential of large-scale tropical forest restoration: assessing the promise of the Bonn Challenge.
83) Republic of Indonesia (2016) First Nationally Determined Contribution. Page 15
84) Republic of Indonesia (2016) First Nationally Determined Contribution. Page 15

MYANMAR

The country report submitted as part of the latest FAO Global Forest Resources Assessment states that there is 29 million hectares of national forestland in Myanmar in 2014, covering 43 percent of the country's total area. Of this, 3.2 million hectares are designated primary forests, 24.9 million hectares are naturally regenerated forests and 944 000 hectares are planted forests.[85]

As Myanmar is a least developed country, the Paris Agreement allows them to "communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances".[86] The NDC states that Myanmar did collect information to estimate its emissions and that an estimate was produced, but that is was decided not to include it in the INDC due to the short deadline[87]. The INDC was submitted in August 2015, prior to the Paris Climate Summit. This should indicate that Myanmar will submit an updated NDC, with a quantitative emissions target or different sectors including LULUCF, before 2020.

The NDC specifies targets and policies Myanmar plans to implement within the forestry, energy, transportation, waste and agriculture sectors. In forestry, their plan includes a National Permanent Forest Estate Target, which is to increase Reserved Forests and Protected Public Forests to 30 percent of the national land area and that sites under the Protected Area System should cover an additional 10 percent of the national land area by 2030.[88] As part of the implementation plan of these targets, the NDC mentions both its work on REDD+ and its involvement with FLEGT, which will lead to increased capacity on legal aspects related to forestry[89].

◂◂ This means that Peru's NDC targets represent a 21.7 percent increase of LULUCF emissions compared to 2010. ▸▸

Further, the NDC mentions some objectives for its forests management, like reducing deforestation so that forests can give a significant mitigation contribution, preserving the natural forests cover to maintain biodiversity and ecosystems, increase the resilience of mangroves and its capacity for Sustainable forest management[90]. The plan to preserve the level of natural forests cover should be seen in relation to the references in the NDC to implement sustainable forests management, and lead to the conclusion that they cannot allow for logging in its primary forests, even if it is reduced impact logging.

Further, it is important that the plan to increase the National Permanet Forest Estate, Reserved Forests and Protected Public Forests is done following indigenous peoples right to Free, Prior and Informed Consent, and in no way reduces their or other local communities' traditional use of the forests.

Myanmar's FREL uses 2005 to 2015 as its reference period. It calculates that its average annual forest loss in that period was 387 527 hectares and that the corresponding emissions were 48.6 million tonnes CO_2 per year.[91] That is a significant amount of emissions from deforestation that has to be reduced, and preferably removed, by 2030. The FREL mentions that work on improvement of data on historical forest enhancements is currently ongoing, and that this will inform calculations in the document, whether as part of the Technical Assessment, or as part of a revised submission.[92] As REDD+ is referenced in Myanmar's NDC, we can expect that their intention is to bring emissions from deforestation below the level of the FREL, although it is not possible to conclude by how much.

PERU

The total remaining forest area in Peru was 74.1 million hectares in 2014, or 57.9 percent of the country's land area, according to FAO.[93]

Peru's NDC was submitted in September 2015 as an INDC. It states that their target is a 30 percent reduction relative to its 2030 BAU scenario, with 20 percent to be done unconditional of international support and an additional 10 percent conditional of international financial support.[94] The BAU in the NDC is specified both with and without LULUCF emissions, something which makes it possible to calculate BAU emissions for the LULUCF sector (see figure 5).

85) Republic of Myanmar, Planning and Statistics Division, Forest Department (2015) Global Forest Resources Assessment, Country Report, Myanmar. Pages 9, 14 and 15.
86) Paris Agreement, article 4.6
87) Republic of the Union of Myanmar (2017) Myanmar's Intended Nationally Determined Contribution. Page 3.
88) Ibid
89) Ibid
90) Ibid, page 7
91) Ministry of Natural Resources and Environmental Conservation , Myanmar (2018) Forest Reference Emission Level (FREL) of Myanmar. Page 38.
92) Ibid. Page vii & 2.
93) Food and Agriculture Organization of the United Nations, Forestry Profile-Peru.
94) Republic of Peru (2015) Intended Nationally Determined Contribution (iNDC) From the Republic of Peru. Page 3.

Our calculations based on this shows that Peru's emissions from the LULUCF sector is estimated to increase by 71 percent from 2010-2030, in a BAU scenario. This appears at odds with Peru's Copenhagen pledge, which is to reduce net LULUCF emissions to zero by 2021[95]. The figure is also at odds with figures from the Biennial Update Report[96], which states that emissions from LULUCF were 71.97 Million tonnes in 2012.

There are no sector specific targets in Peru's NDC. There is also no mention of any target or measure related to deforestation, forest degradation and restoration. Although the NDC does not provide with targets for emissions for LULUCF or forestry, the final report from the Multisectoral Commission in 2015 (foundation document to the NDC)[97] states that 77 percent of the emission reductions needed to meet the unconditional target, and 71 percent of the emission reductions needed for the conditional target, will be achieved by measures in the LULUCF sector. Based on this, we can estimate that the unconditional target corresponds to LULUCF emissions reaching 113 Million tonnes CO_2e in 2030, and 95 Million tonnes CO_2e for the conditional target.

This means that Peru's NDC targets represent a 21.7 percent increase of LULUCF emissions compared to 2010 (the 2010 figure presented in the NDC) for its unconditional target and a 2.8 percent increase for the conditional target.

Peru's FREL also indicates increasing emissions from deforestation[98]. It covers emissions from deforestation in the Peruvian Amazon, which includes 92.7 percent of Peru's forests, and covers the period 2015-2020. It is based on the historical data on deforestation from 2001-2014. Based on this and the

FIG. 5: NDC: GHG EMISSIONS - BAU SCENARIO

	Emissions ($MtCO_2eq$) including LULUCF	Emissions ($MtCO_2eq$) excluding LULUCF	Emissions ($MtCO_2eq$) for LULUCF (our calculation)
2010	170.6	78,0	93.6
2030	298.3	139.3	159,0

Source: Republic of Peru (2015) Intended Nationally Determined Contribution (iNDC) From the Republic of Peru.

FIG. 6: NDC: EMISSIONS TARGET FOR LULUCF SECTOR

	LULUCF BAU	LULUCF unconditional target	LULUCF conditional target
Emissions in 2030	159 Mt	113 Mt	95 Mt
Increase from 2010	71 %	21.7 %	2.8 %

Source: our own calculations, based on numbers from Peru's NDC. Republic of Peru (2015) Intended Nationally Determined Contribution (iNDC) From the Republic of Peru.

FIG. 7: FREL: EMISSIONS AND DEFORESTATION IN THE PERUVIAN AMAZON 2015-2020

Year	2015	2016	2017	2018	2019	2020	2015-2020*
Hectares deforested	168 672	175 418	182 164	188 909	195 655	202 400	1 113 218
Mega-tonnes emissions	77,57	80,80	84,02	87,25	90,48	93,70	513,82

Source: Peruvian Ministry of Environment (2016) Peru's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Peruvian Amazon.

*Our calculation

FREL projects an annual increase in deforestation of about 6 745 hectares and an overall increase in deforestation of 20 percent over the six years the FREL covers. This accumulates to 1.113 million hectares that are expected to be deforested during this period, should no additional action be taken. Further, should the projected increase in deforestation continue between the years 2020 and 2030, around 2.5 million hectares of forest would be lost.

The same extrapolation, based on the growth in emissions projected in the FREL, shows emissions from deforestation in the Peruvian Amazon at about 126 million tonnes CO_2 in 2030, with accumulated emissions at about 1.2 gigatonnes for 2020-2030. This is within the BAU baseline for LULUCF emissions included in the NDC, showing that the BAU is based on a high and sustained growth in deforestation.

95) Republic of Peru (2010) Peru's pledge to the Copenhagen Accord. Page 1.
96) Republic of Peru (2014) Peru's first biannual update report. Page 43.
97) Government of Peru (2015) Informe Final Comision Multisectorial. Resolución Superma N° 129-2015-PCM.
98) Peruvian Ministry of Environment (2016) Peru's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Peruvian Amazon.

Photo: Kyrre Lien, Regnskogfondet

So there is both a need for Peru to revise the numbers used in constructing its BAU and FREL, and to greatly increase the ambition in its NDC and move towards zero deforestation before 2030. There is simply no room for any country to maintain high emissions from deforestation moving towards 2030, let alone increase them. Further, Peru should make efforts to address forest degradation in their updated NDC, as this is a major problem in the Peruvian Amazon due to illegal and selective logging[99].

RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES IN THE NDCS

The Paris Agreement Preamble states that parties should, "when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity[100]."

Consulting indigenous peoples and local communities, in line with the principle of free, prior and informed consent (FPIC), before implementing any climate action which may have consequences for these groups, is very important to avoid that climate actions has negative effects on their rights and livelihood. Further, because of the vital role secure land-tenure rights play for the protection of natural ecosystems, all countries and especially the major tropical forests countries should provide information on how their climate actions will respect and promote land-tenure rights for indigenous peoples and local communities[101].

The role and recognition of the rights of indigenous peoples and local communities, is quite different across

99) Mongabay, Peru country Profile. Available at: https://rainforests.mongabay.com/20peru.htm
100) The Paris Agreement, preamble
101) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.

the six NDCs in this analysis, but generally vague and without concrete commitments. This is somewhat understandable, since there has been and still is a lack of guidance on how parties should include information on how human rights, and the other preambular provisions in the Paris Agreement, has been respected and promoted in the development of the NDC and will be respected and promoted in the implementation of the NDC. Still, without this guidance, several of these countries have made references to indigenous peoples rights.

Brazil's NDC states that the Brazilian government commits to implementing the NDC with respect to human rights and indigenous populations[102], and that the NDC takes into account indigenous lands as forest managed areas consistent with IPCC guidelines, followed by a footnote reference as to the definition of indigenous lands.[103]

Brazil has ratified ILO Convention 169, and the constitution gives considerable rights for indigenous peoples to have their lands recognized. Currently, the government has recognized 720 territories for indigenous peoples, which cover approximately 13 percent of Brazil's land mass[104]. Further, Brazil's NDC does not reference specific safeguards, including the Cancun REDD+ Safeguards or other measures, despite Brazil having submitted several safeguards information summaries as part of REDD+. Brazil's next NDC should include language that gives more visibility to indigenous peoples and local communities, how their respective territories have already contributed to avoiding deforestation and how maintain and increasing such territories is part of their mitigation strategy.

« The major tropical forests countries should provide information on how their climate actions will respect and promote land-tenure rights for indigenous peoples and local communities. »

Colombia makes no reference to human rights or indigenous peoples or local communities in their NDC, either as part of the planning process or in the implementation of the NDC. It mentions the participation of 'stakeholders' once, in the context of reconciling "bottom up and top down strategies".[105] This is a bit strange, considering that Colombia is considered to be relatively progressive on indigenous peoples rights. Colombia's Constitution of 1991, considered by some as "highly progressive in its guarantees of indigenous rights," prohibits discrimination and ensures respect for indigenous cultures and governance and justice systems.[106] The Constitution also effectively ratifies International Labour Organization (ILO) Convention 169[107] on Indigenous and Tribal Peoples. Further, Colombia has an established national FPIC policy – one of the few countries in the world that has incorporated FPIC rights in its laws.[108] So the lack of references could perhaps be a result of Colombia's NDC being submitted prior to the establishment of the Paris Agreement, and before its preambular provisions on the rights of indigenous peoples and local communities was established. As such, we can hopefully expect this to be addressed and improved in a new NDC submitted before 2020.

The DRC's NDC does not place any particular emphasis on the rights of indigenous peoples or rights generally, which could also be because it was submitted prior to the Paris Agreement. However, it does refer to the DRC's vision for implementing adaptation, which is anchored on the framework of the National Action Program for Adaptation to Climate Change (NAPA) from 2006.[109] This program has identified three areas of priority for adaptation interventions: a) securing the livelihoods and lifestyles of rural/urban communities; b) sustainable management of forest resources, and c) protection and preservation of vulnerable ecosystems in coastal areas.

Since 2014, a process has been underway to update the NAPA guidelines and integrate the adaptation issue into sectoral policies and strategies, through a participatory

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102) Federative Republic of Brazil (2015). Intended Nationally Determined Contribution towards achieving the objective of the United Nations Framework Convention on Climate Change. Page 1.
103) Ibid Page 2.
104) Survival web page, Tribes & Campaigns; Brazilian Indians: Available at: https://www.survivalinternational.org/tribes/brazilian.
105) Nicholas Tagliarino, Celine Salcedo-La Viña and Sam Szoke-Burke (2016) "Strengthening Indigenous Land Rights: 3 Challenges to 'Free, Prior and Informed Consent'," World Resources Institute.
106) The REDD Desk web page, "REDD in Colombia".
107) International Work Group for Indigenous Affairs web page, "Indigenous Peoples in Colombia".
108) Tagliarino, Nicholas, Celine Salcedo-La Viña and Sam Szoke-Burke (2016) "Strengthening Indigenous Land Rights: 3 Challenges to 'Free, Prior and Informed Consent'," World Resources Institute.
109) Republique Democratique du Congo (2006) Programme d'Action National d'Adaptation au Changement Climatique de la Changement Climatique de la République Démocratique du Congo.
110) Republique Democratique du Congo (2017) Soumission de la Contribution Nationale Prevue Determinee au Niveau National au Titre de la Convention Des Nations Unies sur les Changements Climatiques. Page 6-7.

and multidisciplinary approach. The country is also committed to protecting the most vulnerable groups from climate risks.[110] However, this participatory approach refers to all potential stakeholders; there is no explicit mention of indigenous peoples or indigenous rights. DRCs new NAPA and NDC should both recognize indigenous peoples special right to free, prior and informed consent related to any action taken on their lands, and clearly state that no mitigation or adaptation measure will be taken without such consent.

In Indonesia's NDC, human rights and the rights of indigenous and forest peoples are mentioned generally, as Indonesia confirms that it "respect, promotes and considers its obligation on human rights, […], the right of adat communities (Indonesia: Masyarakat Hukum Adat and internationally known as indigenous people), local communities", in line with the Paris Agreement.[111] It also makes references to the participation of Indigenous Peoples, or *Masyarakat Hukum Adat* in the planning and implementation of sustainable forest management actions[112] and the traditional wisdom of indigenous institutions that informs sustainable production and consumption patterns, and it states that engagement of non-party stakeholders will be continuously enhanced.[113] However, it does so without mentioning Adat communities specifically when it comes to stakeholder engagement, and without making any reference to prior consultation or FPIC.

Indonesia has not ratified ILO Convention 169, nor does it have any national laws that explicitly require FPIC. Some only call for community consultations or community participation in deliberations, which fall below the standard of what constitutes an FPIC process. The lack of any overarching law to protect and promote Indigenous Peoples rights, is a current gap in policy in Indonesia, and this hampers the recognition of customary forest rights. Without this law, Indigenous Peoples are still marginalized in many development programs, and are heavily involved in land conflicts.[114] Such a law is however under consideration.

"Indonesia should elaborate on the role of Adat communities and the issuance of social forestry licenses in their overall mitigation plans for forests in their NDC."

Indigenous peoples and local communities can have their land rights recognized through the issuance of social forestry licenses, a concept that is referenced in the NDC[115]. At present, the Ministry of Environment and Forestry has allocated 12.7 to 13.4 million hectares of forest areas for social forestry licenses[116], but as of June 2018 social forestry licenses have only reached 1.7 million hectares.[117] In their new NDC, Indonesia should elaborate on the role of Adat communities and the issuance of social forestry licenses in their overall mitigation plans for forests in their NDC.

References to the rights of indigenous and forest peoples are absent also in Myanmar's NDC. This could perhaps also be accredited to the fact that the NDC was submitted prior to the Paris Agreement. Myanmar CSO's have emphasized that a new NDC should "include commitments to recognize the rights of Indigenous Peoples and local communities, women, and other vulnerable and marginalized groups in all climate change adaptation and mitigation actions."[118] This is especially important given that their main mitigation action in the forestry sector is to increase the share of national land defined as Reserved Forest, Protected Public Forest and Protected Area Systems. If this is done without simultaneously ensuring the rights of indigenous peoples and local communities living in these forests, it can be both detrimental to their rights and to the mitigation effect of these measures[119].

Indigenous people's rights are referenced in Peru's NDC, albeit vaguely, by stating that indigenous peoples participated in the input stage of its construction.[120] This participation was confirmed by climate change specialists in Peruvian civil society, who stated that the participatory process was led by a special Multisectoral Commission,[121] which developed a draft that was presented in work-

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111) Republic of Indonesia (2016) First Nationally Determined Contribution. Page 6.
112) Ibid. Page 2-3.
113) Ibid. Page 6.
114) Personal communication, Madani (May 2018).
115) Republic of Indonesia (2016) First Nationally Determined Contribution. Page 7.
116) *Social Forestry, TORA and Forest Area Evolution*, presentation given by Minister Siti Nurbaya Bakar (3 April 3 2018)
117) Republic of Indonesia, Ministry of Environment and Forestry (2018) State of Indonesia's Forests 2018. Page 35.
118) Promoting Indigenous and Nature Together (POINT) (2017), *Myanmar's Climate Change Commitments and Indigenous Peoples Rights,* 1.
119) Ibid. 1
120) Republic of Peru (2015) Intended Nationally Determined Contribution (iNDC) From the Republic of Peru. Page 4.
121) Republic of Peru (2015) Poder Ejecutivo, Resolucion Suprema no. 129-2015-pcm
122) Personal Communication, DAR (May 2018).
123) Republic of Peru (2015) Intended Nationally Determined Contribution (iNDC) From the Republic of Peru. Page 7.

shops to various stakeholders - included indigenous peoples.
Once inputs were incorporated in the draft, the document was published so as to be available for public comments.[122]
Indigenous communities are also mentioned as a vulnerable group of the population, which needs to be addressed on a priority basis.[123]
However, the concept of Free, Prior and Informed Consent is not referenced at all. Nor does it include policies to encourage more land tenure rights amongst indigenous groups, as well as natural resource management rights. Peru's new NDC should make clear that indigenous peoples and local communities will be consulted on the basis of FPIC, and try to link recognition of their land rights with increased mitigation ambition in forests.

The sporadic and vague references to rights of indigenous peoples and local communities in the NDCs, including the right to Free, Prior and Informed Consent, underlines the need to develop clearer guidance on how parties should inform each other about how they have respected and promoted the rights of indigenous peoples and local communities in particular, but also the other provisions in the preambular to the Paris Agreement, both in the preparation and implementation of the NDCs.
However, there is a need for major tropical forests countries to independently recognize the important role played by indigenous peoples and local communities in protecting their forests, especially the most biodiverse and carbon right primary forests, and thereby the crucial role they are, and should continue to be playing in achieving these countries mitigation ambition in forests.
Increased recognition of indigenous peoples and local communities land rights, and promoting secure land tenure, should be a key component in the NDCs of all of these countries.

Photo: Bo Mathisen

The critical role of support

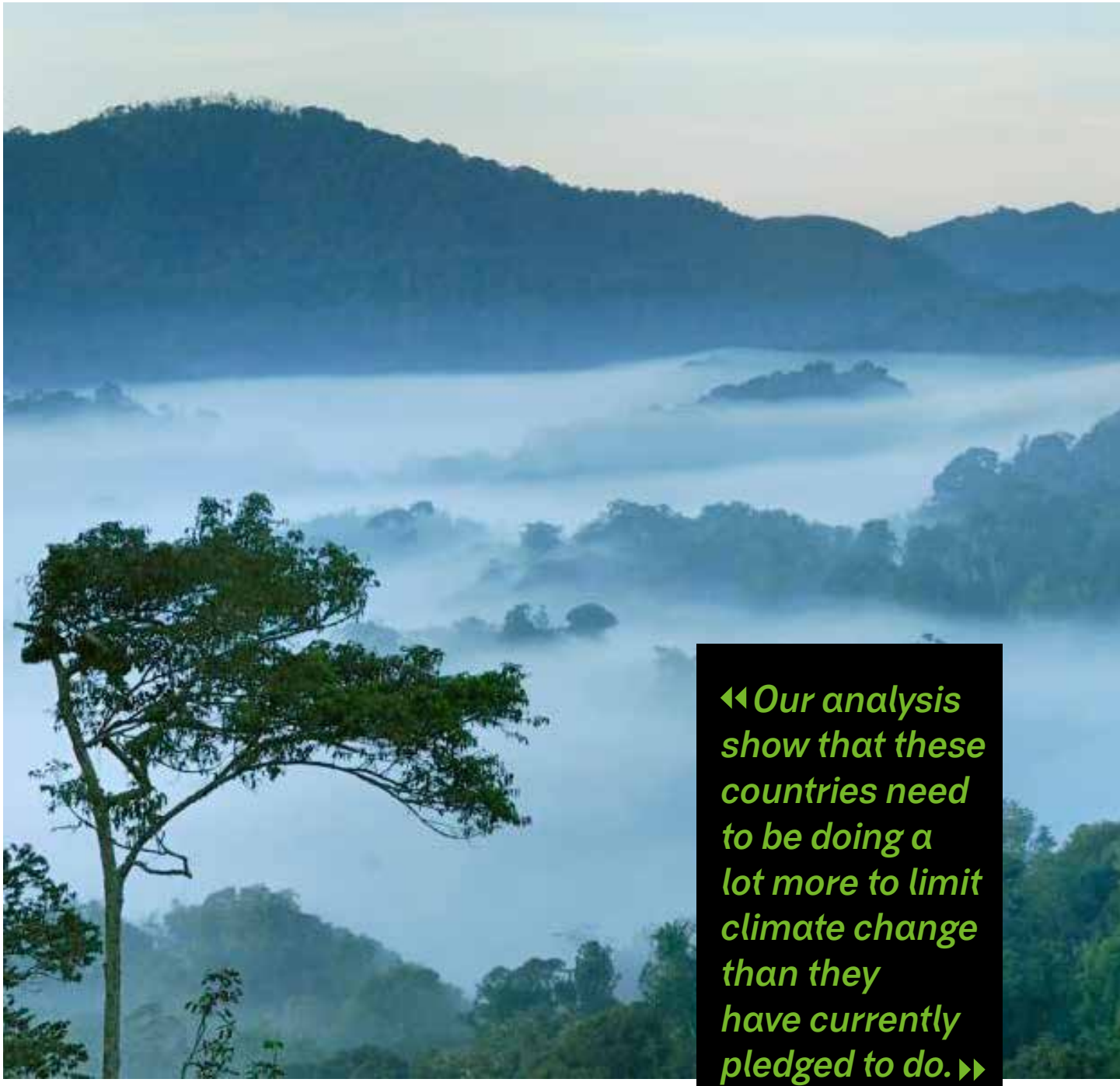

Photo: Thomas Marent

> *Our analysis show that these countries need to be doing a lot more to limit climate change than they have currently pledged to do.*

The NDCs analyzed, and many others, depend on international financial support for full implementation. The finance needed in poorer countries for mitigation, adaptation, and loss and damage, dwarfs the financial commitments that have been made to date[124] and there are no clear plans to show financial commitments from developed countries beyond 2025. Brazil does not have a conditional target, but all other countries in this analysis do. Myanmar states that it is completely dependent on international finance to implement its NDC and the DRC is very heavily dependent on international support for the implementation of its NDC, estimated by DRC to USD 12.54 billion.

This raises the question of finance by developed countries to support climate action in relation to forests. Poor countries with high mitigation potential cannot, without real expectation of support, be expected to properly and appropriately plan for mitigation activities on the scale discussed in the NDCs.[125] This becomes evident when looking at estimations of countries "fair shares" of the global mitigation efforts, as operationalized in the Civil Society Equity Review. In its 2016 report[126], Brazil's NDC is considered to fall somewhat short of its fair share, while Indonesia is rated as doing considerably more than their fair share. The other countries in this analysis all have very low fair shares of the global mitigation effort needed to meet the 1.5 degree target.

At the same time, our analysis show that these countries need to be doing a lot more to limit climate change than they have currently pledged to do, especially by ending deforestation and degradation in their tropical forests and restoring degraded forests back to their natural state. As this can only be done in the tropical forest countries, it has to be paired with considerable financial support from countries with a higher fair share, according to the Civil Society Equity Review. Only then can we achieve the target in the Paris Agreement to limit global warming to 1.5 degrees, while respecting the Agreements provisions on "Common, But Differentiated Responsibility and Respective Capabilities" (CBDR-RC). This suggests that the countries in this analysis, and probably most tropical forest countries, should develop substantially more ambitious targets in their NDCs. At the same time, countries with higher fair shares should support developed countries aimed at strengthening developing countries' own ambitions.

The need for developing countries to receive financial support to reduce emissions from deforestation and forest degradation has been recognized under the UNFCCC through the REDD+ framework. Despite having a framework in place, only two percent of international climate finance goes to forests[127]. There is in other words a clear need for increased will and priority of forests as a climate mitigation solution.

When it comes to provision of international support for reducing deforestation and forest degradation, there are several finance channels well established, mostly to implement REDD+ activities, through UN multilateral initiatives by the World Bank (FPCF), UNDP, UNEP and FAO and also more recently through the Green Climate Fund (GCF).

Many bilateral initiatives are also in place, mostly driven by the Norwegian Government, but also by the UK and Germany. Funding being provided is essentially intended to achieve results in terms of carbon emissions reductions. Some estimates say there has been around US$10 billion in funding support pledged over a period of 10 years, and less than 20 percent of these funds have been disbursed.[128]

At this year's UNFCCC Climate conference, the subject of finance will be a major issue, as parties must decide on important elements related to the operationalization of articles 9.5 and 9.7 in the Paris Agreement. Further, there should be a decision on a process for arriving at the new collective financial mobilization goal from 2025 decided at the Paris Climate Summit.[129] Resolving these issues will be critical for developing countries to be in any position to feel confident that they can increase their ambition in the next round of NDCs. Without drastically increased international financial and technological support for emissions reductions in developing countries, especially to turn tropical forests from a source of emissions to an overall sink, while simultaneously reducing emissions radically in wealthy countries, there is virtually no chance of stabilising the climate system in time to avoid global catastrophe[130].

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124) Civil Society Equity Review (2017) *Equity and the Ambition Ratchet: Towards a Meaningful 2018 Facilitative Dialogue.* Manila, London, Cape Town, Washington, et al.: CSO Equity Review Coalition.
125) Holz. C, Kartha. S, Athanasiou. T. (2018) Fairly sharing 1.5: national fair shares of a 1.5 C-compliant global mitigation effort. Int Environ Agreements 18:117–134.
126) Civil Society Equity Review (2016) Setting the Path Toward 1.5°C – A Civil Society Equity Review of pre-2020 Ambition. Methodological Appendix. Page 5.
127) The New York Declaration on Forests Progress Assessment, goal 8. Available at: http://forestdeclaration.org/goal/goal-8/
128) Norman, Marigold, Alice Caravani, Smita Nakhooda, Charlene Watson and Liane Schalatek (2014). Climate Finance Thematic Briefing : REDD+ Finance (Climate Finance Fundamentals), Heinrich Böll Foundation.
129) The Paris Decision, paragraph 53.
130) Civil Society Equity Review (2017) Equity and the Ambition Ratchet: Towards a Meaningful 2018 Facilitative Dialogue. Manila, London, Cape Town, Washington, et al.: CSO Equity Review Coalition.

Conclusions and Recommendations

Nationally Determine Contributions (NDCs) have become the centre-piece of climate action. They provide crucial information to enable the world to see, measure and assess the trajectory we are on when it comes to addressing climate change. As the NDCs currently submitted are seriously inadequate and put the world on a pathway to a devastating 3 degrees of warming or more, there is a need for every country to take the opportunity to enhance their ambition before 2020, to help bring the world on track to 1.5 degrees.

> *All the countries in this analysis needs to use the time before 2020 to review their targets.*

To achieve the Paris targets, there is a need for a paradigm shift in our approach to forests and land use, consistent with what is presented in the CLARA report. We need to urgently stop deforestation and degradation, no later than 2030; we need to stop converting peatlands; and we need to restore degraded forests and peatlands. We also need to protect the existing natural forests and expand their cover. And we need to improve the land tenure of indigenous peoples and local communities, so that they continue to preform their roles as custodians of the forests.[131]

Tropical forests and all forests around the world are critical for enhancing ambition and achieving the Paris targets of below 2 or 1.5 degrees. Recent estimates suggest that stopping deforestation and other "natural climate solutions" could provide at least 37 percent of the cost-effective emissions mitigation needed by 2030 to meet the goal of keeping global warming below 2°C[132]. There is "unequivocal evidence" that the objectives of the Paris Agreement will not be achievable if deforestation globally is not halted and its impacts reversed, through such activities as forest protection and ecosystem restoration[133].

Our analyses of these six NDCs and FRELs shows that there will continue to be a significant amount of emissions from deforestation and forest degradation throughout the implementation period of the NDCs, and that there will continue to be deforestation in 2030 even if the NDC targets are met. This falls short of what recent climate science tells us is needed from tropical forest countries, and is also not in line with the goal of the New York Declaration on Forests of ending the loss of natural forests by 2030. All the countries in this analysis needs to use the time before 2020 to review their targets in light what the most recent science tells us is needed to meet 1.5 degrees, and see where and how they can increase the ambitions in their NDCs.

131) Dooley, K et al. (2018) Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action. Climate Land Ambition and Rights Alliance.
132) Griscom, B.W., J. Adams, P.W. Ellis, R.A. Houghton, G. Lomax, D.A. Miteva, W.H. Schlesinger, D. Shoch, J.V. Siikamäki, P. Smith, and P. Woodbury. (2017) "Natural Climate Solutions," Proceedings of the National Academy of Sciences 114 (44): 11645–50, October 2017
133) Houghton, R. A., Birdsey, R. A., Nassikas, A., & McGlinchey, D. (2017). Forests and Land Use: Undervalued Assets for Global Climate Stabilization: Why protecting and restoring forests and promoting sustainable agriculture and land use is more important than ever for the future of our planet, Woods Hole Research Center.

RECOMMENDATIONS FOR REVISED AND IMPROVED NDCS:

- Set a quantitative emission target for forest and land use sector
- Clarify what the NDC means for deforestation and forest degradation
- Include targets and measures to reduce and end deforestation and forest degradation by 2030
- Make new and ambitious restoration targets, and link these efforts clearly to protecting primary forests and restoring degraded forests
- Clarify how the country will respect and promote the rights of indigenous peoples and local communities when implementing their NDC, especially regarding how the right to free, prior and informed consent will be respected and how secure land tenure rights is part of their strategy to reduce emissions from forests.

RECOMMENDATION FOR THE PARIS RULEBOOK:

The findings of this analysis underline the need to develop clear guidance related to mitigation efforts in forests. In this context, we would recommend that the guidance for NDCs to be adopted at COP24 request parties to include the following information in their NDCs:

- Clear and quantifiable targets related to the forest sector, including for deforestation, forest degradation and restoration
- Information regarding what the NDC means for deforestation
- Information regarding whether, and how, the NDC includes efforts to reduce forest degradation
- Information regarding what type of forest restoration and reforestation measures the country plans to make, and how this contributes to primary forest protection and regeneration of degraded natural forests
- Information as to whether all types of forests and all territories are included and if not, explanation as to why not, and steps being taken to do so;
- Separate accounting for sources and sinks
- Information concerning rights of indigenous peoples and local communities and measures being taken to respect and promote the rights of indigenous peoples and local communities, including the role of free, prior and informed consent and the role secure land tenure rights play in their mitigation strategy

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Rainforest Foundation Norway supports indigenous peoples and traditional populations of the world's rainforests in their efforts to protect their environment and secure their customary rights. RFN was established in 1989 and works with local environmental, indigenous and human rights organisations in the main rainforest countries in the Amazon region, Central Africa, Southeast Asia, and Oceania. RFN is an independent organisation, and part of the international Rainforest Foundation network, with sister organisations in the United Kingdom and the USA.

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