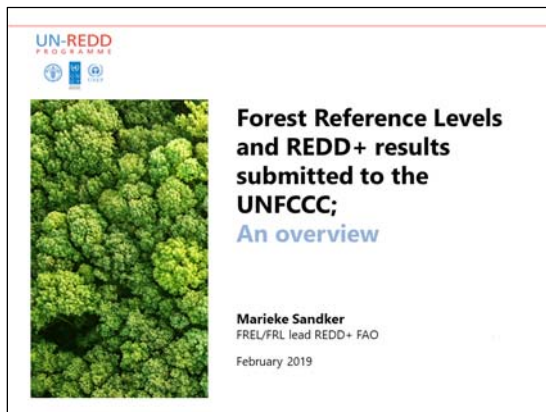


Forest Reference Levels and REDD+ Results Submitted to the UNFCCC; An Overview
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Global Overview of FRLs and REDD+ Results



Good afternoon, everybody. I will give a global overview of forest reference levels (FRLs) and REDD+ results that have been submitted to the UNFCCC so far. After that, I will look into the reference levels. Finally, I want to have a brief discussion on how reference levels and Nationally Determined Contributions (NDCs) relate.

It was in 2007 when REDD+ came to life in the negotiations, a year after the UN-REDD Programme¹ was established. For several years, the details of REDD+ reporting had to be negotiated. Those details were finalized with the Warsaw Framework in 2013, which is our starting point for looking at global progress on FRLs.

¹ <https://www.un-redd.org/>

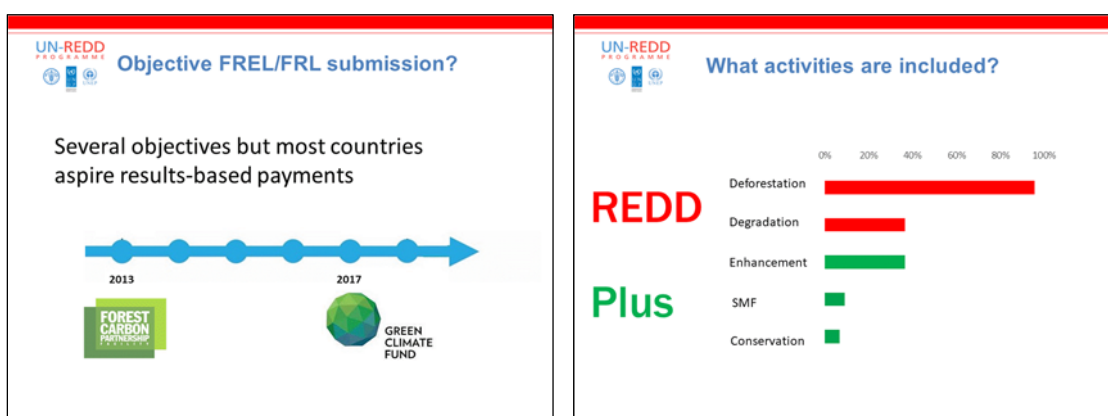
Session 1



To date, we have 44 reference level submissions by 39 countries. Some of these countries submitted twice. This was either to expand the geographical scope (in Brazil's case) or to expand the coverage of REDD+ activities (in Malaysia's case). Other countries like Madagascar re-submitted to provide technical improvements. We have nine REDD+ result submissions by seven countries. Together, these countries have produced emission reductions which are equal to 6.6 billion tons of CO₂ equivalent. This is more than the fossil fuel emissions of the US, Brazil, and Japan together.

If we look at the countries that submitted FRLs and put them on a map, this is what we see. All these countries that have proposed a benchmark for performance on REDD+ cover a total area of 1.5 billion hectares. This is more than 30% of the global forest cover. More importantly, these countries together are responsible for 70% of the worldwide deforestation. This is a significant potential contribution to the climate change problem.

Objectives of FRL Submissions

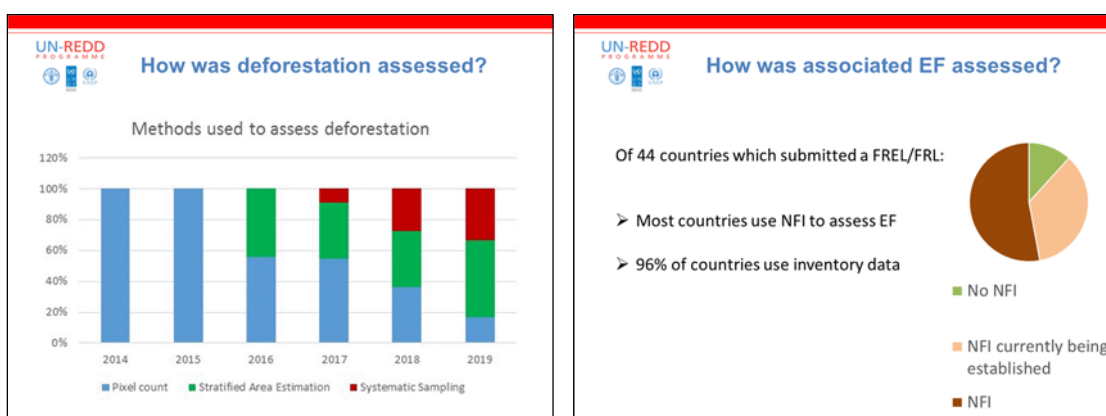


What do these countries state as objectives in their reference levels? These countries state multiple objectives. Some countries specifically say for domestic purposes, to track the progress of their policies and measures they are implementing, but the most frequently mentioned objective of the reference level submission is to get access to results-based payments. In this regard, a pilot program by the Carbon Fund,

the FCPF, in 2013 published a methodological framework with specific guidance on what a reference level needs to look like to be eligible for finance from the Carbon Fund. In 2017, the Green Climate Fund (GCF), the official financing mechanism of the UNFCCC, also started a pilot program that includes a score card with specific criteria that the reference level needs to live up to for being eligible for finance.

A look at the reference levels submitted to the UNFCCC to date shows that deforestation is the most frequently included activity. This is because it tends to be the most significant source of emissions and we are able to get estimates with reasonable reliability for deforestation. Much more challenging are degradation and enhancement. Also lot of countries do not include the 'plus' activities sustainable management of forest and forest conservation because they state that these activities are not additional activities per se, since the GHG fluxes from the forest may be covered entirely through deforestation, degradation and enhancement.

How are FRELs Created?

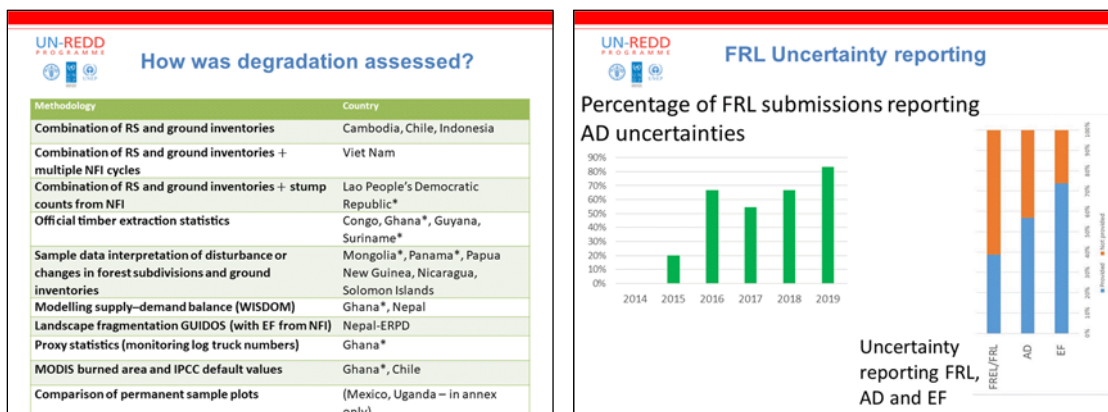


If we look at how deforestation has been included in the reference levels, we see a changing picture. Initially, in 2014 and 2015, countries created maps of change. From those maps, they directly subtracted the area of deforestation. That approach has gradually changed. The remote-sensing community published several papers saying that these maps had errors and needed to be corrected. They suggested correcting those errors by using samples inside the map areas and then getting final estimates based on those samples, so your samples are stratified by your map. Finally, an approach which is used in several countries is systematic sampling. The downside of systematic sampling is the need for a large amount of samples to capture rare features like deforestation with reasonable accuracy. However, the advantage of either stratified area estimation or systematic sampling is that it allows for calculation of confidence intervals around the area estimate.

How was the associated emission factor assessed? Of the 44 countries that submitted a reference level to the UNFCCC, more than half have a national forest inventory, while another big share is in the phase of establishing a national forest inventory. Only 10% of countries do not have a national inventory,

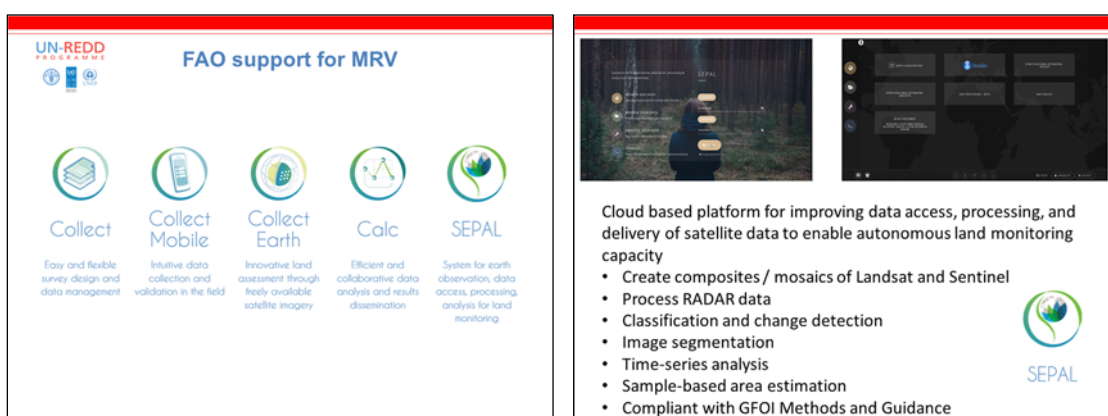
Session 1

but these countries tend to have forest inventory data for estimating their emission factors.



So in big lines we can say there are three different methods to assess deforestation. With degradation, however, a wide scale of solutions are proposed but countries are still struggling to address degradation in the best way as to get reliable and accurate assessments.

Another important progress that has been made from 2014 to 2019 is the substantial increase in submissions assessing and reporting uncertainty around activity data, making the data more transparent. For more than 50 years, countries have been reporting forest area statistics to FAO, but they never estimated their uncertainty around those estimates. This is important for gaining trust, which is needed if you want to work with multiple parties towards a common goal. Uncertainty is most commonly reported around emission factors because it is usually from inventory data and you can quite easily calculate the sampling error. However, uncertainty around activity data is more challenging. Few countries combine the two uncertainties of activity data and emission factors and report overall uncertainties of the emissions in the reference levels.

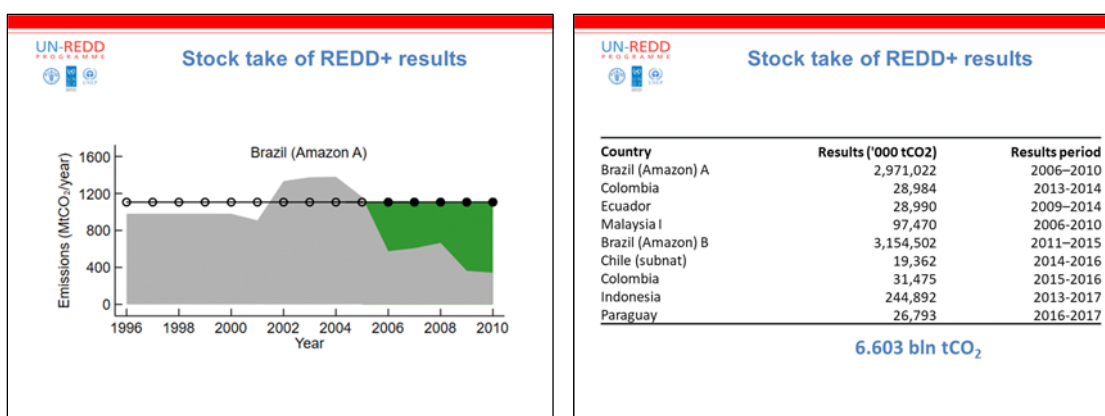


FAO has supported about 70% of all these reference levels submission. It provides several open

source tools such as Collect Earth² to help countries collect and analyze their data.

Additionally, by using platforms like SEPAL³, countries can create their own maps and create their own change detections much easier than before. SEPAL is a cloud-based platform for improving data accessing and processing of satellite data.

Looking into the REDD+ Results



I want to have a quick look at the REDD+ results. Here the example of Brazil, where the line with open dots represents the historical emissions and the line with closed dots is the reference level. Green area is reduction of emissions below the reference level, i.e. REDD+ results. Out of the total 6.6 billion tons of CO₂ equivalent emission reductions reported to the UNFCCC to date, Brazil accounts for 93%, Indonesia accounts for 4%, and all other countries account for either 1% or less.



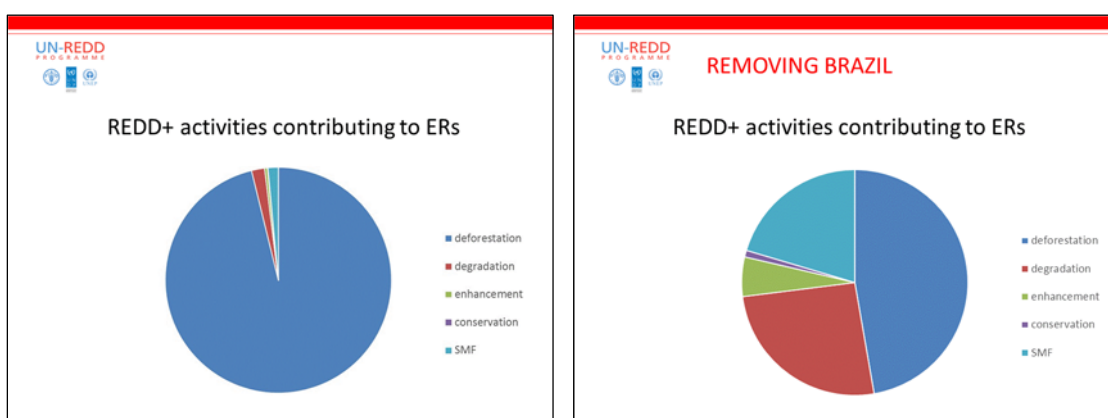
From this 6.6 billion, the part of emission reductions which falls in the period 2014-2018 is 1.58 billion tons of CO₂ equivalents. This period is the period of the GCF RBP pilot programme, therefore REDD+ results that fall in this time frame could be eligible for funding (unless they would have a fail on the

² <http://www.openforis.org/tools/collect-earth.html>

³ <https://sepal.io/>

Session 1

scorecard). The GCF currently contains funds only up to 100,000 tons of CO₂ equivalent in emission reductions, meaning the results submitted are exceeding almost 16 times the available amount in GCF. There is, however, a cap per country. Each country can only get up to 30% of the total portfolio. If we would apply this cap to Brazil, Colombia, and Indonesia, which are exceeding the cap, this would still leave 128 million tons of CO₂ equivalent. After the scorecard filling the emissions reductions eligible for payment would be to some extent reduced but it is also likely more countries will submit additional REDD+ results corresponding to one or several years between 2014-2018 since countries have up to the last board meeting in 2022 to submit concept notes to the GCF RBP pilot programme. This shows that inadequate finance may become an issue.



Where do these results come from? By and large, this comes from deforestation. If we take away Brazil, half is then from deforestation and a big chunk is from degradation and sustainable management of forests.

How do the FRLs and NDC relate?

	REDD+	NDC
Results/target expressed against:	Reference level (usually historical average)	➤ Business-as-usual projection GHG inventory ➤ Base year ➤ Absolute targets e.g. "plant 1 million ha by 2030"
Results period	Usually next 5 years	Mostly the year 2030
	Mostly conditional	Conditional and unconditional

Next, I wanted to look at reference levels and NDCs as relate to climate change mitigation targets. The difference is that reference levels tend to use historical average as this is a requirement from the RBP pilot programmes. NDCs to the contrary tend to use business-as-usual projections or base year, or they

Key Challenges

The country data and quality of the submissions still needs to improve overtime to meet donor expectations, and further investment in REDD+MRV⁴ readiness is necessary. Also for results-based payments, more funding may be needed to live up to country expectations. Finally, it would help if the link between the results reported and what the country does on the ground becomes clearer for donors to gain more trust.

I just want to leave you with these two links ('From reference levels to results reporting: reference levels under the UNFCCC 2018 update' <http://www.fao.org/3/CA0176EN/ca0176en.pdf> / 'Challenges with

⁴ <https://redd.unfccc.int/fact-sheets/redd-mrv-and-results-based-payments.html>

Session 1

measurement and accounting of the Plus in REDD+’

<http://www.climateandlandusealliance.org/wp-content/uploads/2018/10/Challenges-with-measuring-and-account>) for further reading on this topic. Thank you.