FREL and REDD+ in Indonesia

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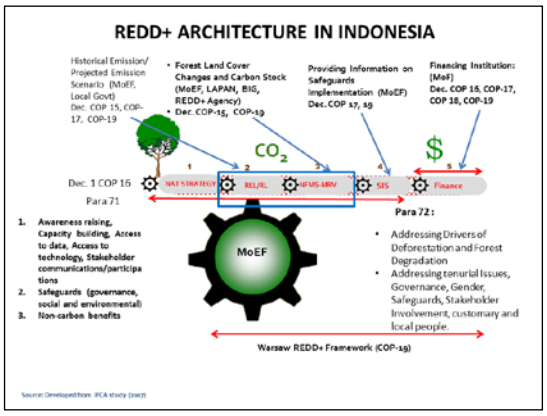
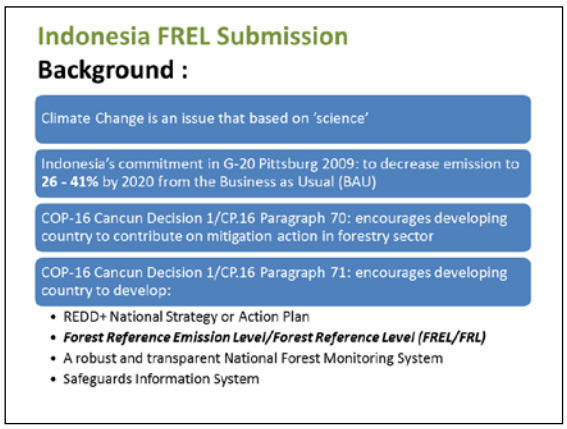


I would like to introduce FREL in Indonesia and how it connected to REDD+ in our country. I will start with one slide of REDD+ architecture in Indonesia that we started in 2007 through a study by the Indonesia Forest Climate Alliance[1] (IFCA). This is the very first look when we started the REDD+ in our country. As we see here, there is a big wheel. One of the four wheels that we want to move is the forest reference emission level (FREL), which is connected to other wheels; national strategy, national forest monitoring system, and also safeguards information system. Then it will come to the finance part.

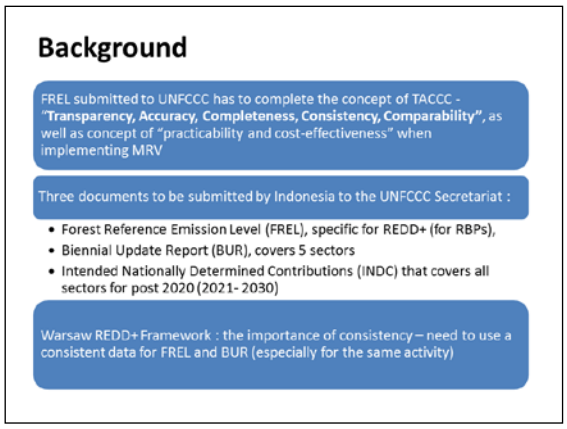
Background: Indonesia FREL Submission



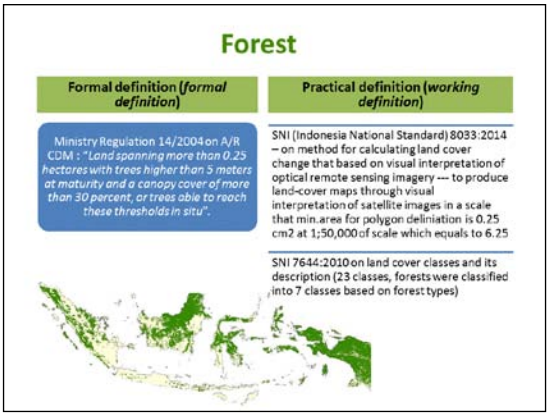
We have submitted our FREL to the UNFCCC in December of last year. I think the biggest background for our submission is that we believe climate change is an issue that is based on science, but is closely related to policy. We have also commitment from 2009 to reduce emissions to 26%, and also 41% by 2020 with international support from business as usual, and then we comply with the COP decision that encouraged developing countries to contribute to mitigation action in the forestry sector. We have to develop forest reference emission levels as one of the elements for REDD+

[1] http://www.dephut.go.id/INFORMASI/LITBANG/IFCA/Pengantar.htm

implementation.



We construct our national FREL with the following principles: transparency, accuracy, completeness, consistency, and comparability (TACCC). These are the principles that we have to follow with our FREL. Also, we follow the concept of practicability and cost-effectiveness when implementing our MRV. Beside the FREL submission, we also are about to submit our biennial update report very soon. Also, we have submitted our INDCs that cover all sectors for post-2020, while our BUR covers five sectors. We see interrelationship and close correlation among these three submissions. We also would like to highlight the importance of consistency when we construct our FREL, especially the consistency on the data that we use for both FREL and BUR, especially for the same activity.

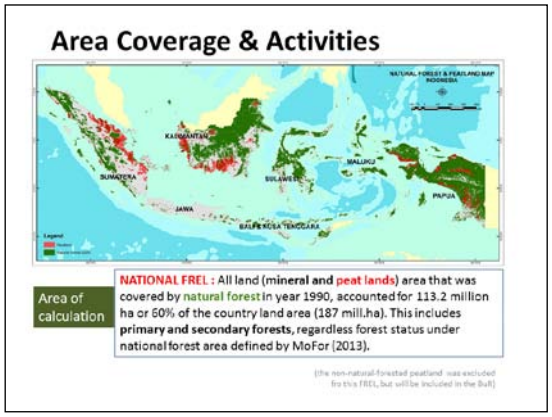


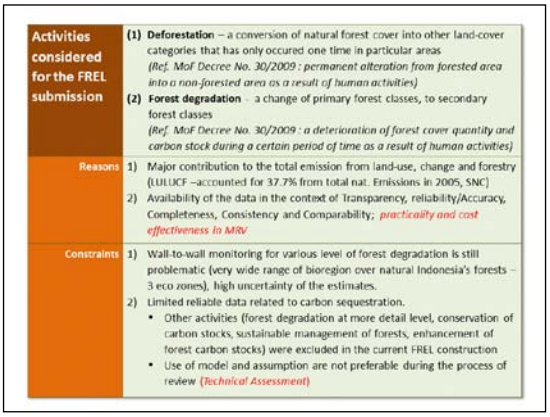
The objectives of our FREL submission are to present national FREL to figure how we construct the FREL, including step-by-step analysis. That has been exercised for establishing FREL for Indonesia. Also, for the broader audience and stakeholders, we want to provide clear, transparent, accurate, complete, and consistent emissions projections as a basis for further discussion with other agencies who have expressed an interest in supporting Indonesia in this REDD+ development in Indonesia, especially when we talk about financing support. We would like to share also with many other countries who are interested in this REDD+ mechanism. We believe that this is very important

towards the results-based payment for REDD+.

On the definition of 'forest', we know that in some part of the discussion this is still a very interesting debate, but we follow the formal definition from Minister of Forestry regulation number 14/2004. We use it in afforestation and reforestation CDM. We define forest as land spanning more than quarter hectares with trees higher than five meters at maturity and canopy cover of more than 30%. In addition, we also use what we call a practical definition or working definition from our national standards. We have two standards. Essentially, when we produce land-cover maps through visual interpretation of satellite images in a scale that minimum area for polygon delineation, it is 0.25 cm^2 square at 1:50,000 scale, which equals 6.25 hectares. Another national standard on land cover classification that we have 23 classes and seven of them are based on forest types. Out of the seven, one is plantation forest, while the rest is natural forest.

Area Coverage & Activities



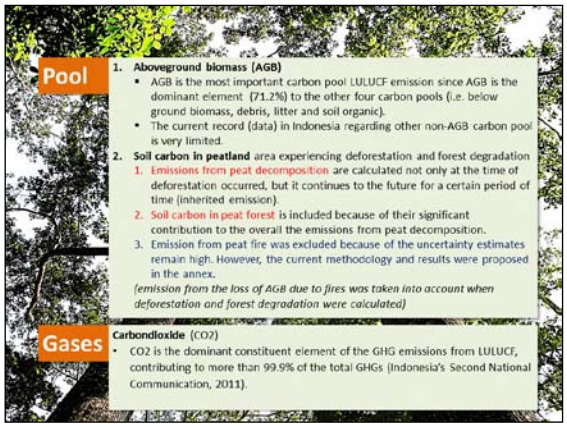


The area coverage and activities that are used for calculation in our FREL is all land, both mineral and peat lands, that was covered by natural forest in year 1990, which accounted for 113.2 million hectare, or 60% of the country land area. This is the picture of our land map.

There are two activities considered for the FREL submission of Indonesia. We use deforestation and forest degradation as activities considered in our FREL. We use these two activities, these major activities because both are major contribution to the total emissions from land-use and forestry. That accounted for 37.7% of total national emissions based on our second national communication. Also we consider this because of the availability of the data in the context of transparency, reliability, accuracy, completeness, consistency, and comparability. Also, we consider the practicality and cost effectiveness when we do that MRV for these two activities.

However, there are some constraints in considering these activities. We still have some problems on wall-to-wall monitoring for various level of forest degradation because we have a wide range of bioregions over our natural Indonesia's forests. Therefore, we face high uncertainty of the estimates when we are dealing with the activity data. Due to the limitation, we decided to pick these activities,

while for the three other activities in REDD+, at the moment were excluded in the current FREL construction. I think this is the difference in our interpretation, in our understanding, the difference between forest reference emission levels (FREL) and FRL. When we include the three activities in the "plus" of REDD+ then we can say that this is our understanding about FRL. However, because we still have difficulties in gathering the data, we are not very sure on the availability of the data, so we exclude the three activities, but maybe in future we will include them.

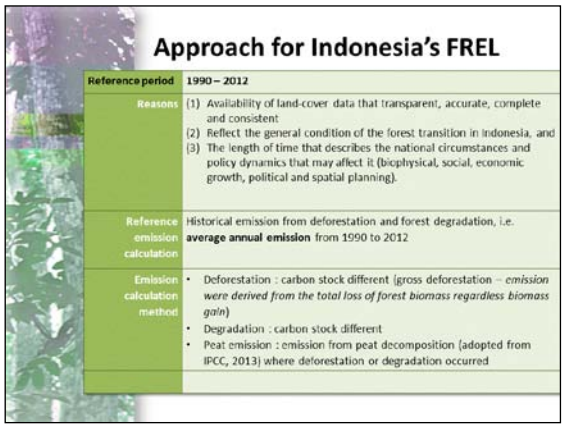


For the carbon pools, aboveground biomass (AGB) is the most important carbon pool because this is the dominant element in our LULUCF emissions (70.2%) to the other four carbon pools, so we concentrate on this AGB and also soil carbon in peatland. We also include this in the calculation of biomass.

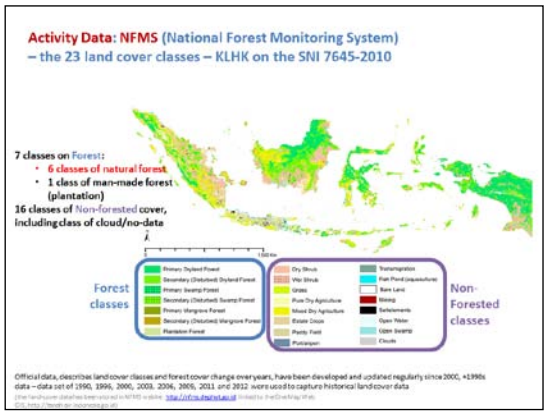
However, maybe you ask the question of why emissions of peat fires were excluded. As we know, last year was very important to our forest and peatland because the occasion of fire. You may be wondering why we are not including that. I think the reason is very clear. We are not ready with the data at the moment, so emissions from peat fires are excluded because the uncertainty estimates are still high. However, now we are in the process of considering the methodology and also some calculation for these emissions from peat fire however.

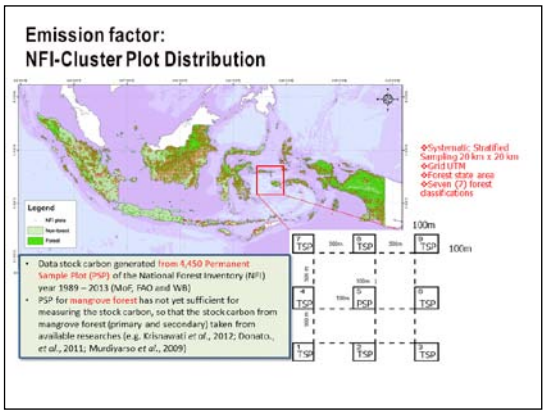
For the gases, we concentrate on the carbon dioxide, while in our INDC, we count the carbon dioxide, methane, and another one I think is N2O. For the FREL, we concentrate on CO2 because the contribution of CO2 in our emission is the biggest in the total greenhouse gas emissions in our second national communication.

Approach of Indonesia's FREL



As for the approach, we use the reference period of 1990 to 2012. The reasons are the availability of the data, and then also because this period reflects the general condition of the forest transition in Indonesia. We have a very long story of forest management, so we consider that this span of time is the best to describe the national circumstances, and also policy dynamics in the country that may affect it, including biophysical, social, economic growth, political and also spatial planning. We use historical emission from deforestation and forest degradation. The annual emission is the average from 1990 to 2012. For the method, we use carbon stock difference. Emissions were derived from the total loss of forest biomass regardless of biomass gain. It is also the same for the degradation. For the peat emissions, we adopt the IPCC guideline. For the peat emissions, we calculate the emissions in the peat where deforestation or degradation occurred.

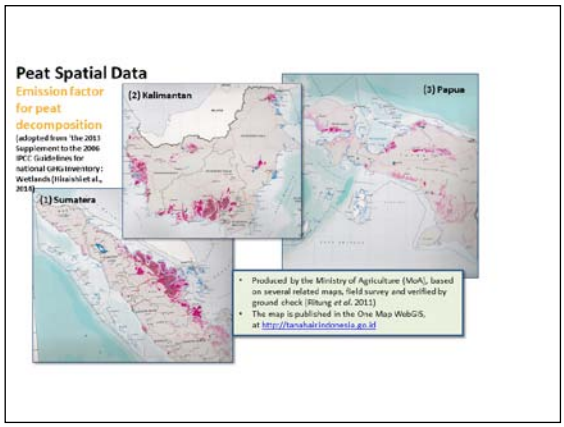




Where does the data come from? For the activity data, we use the national forest monitoring system that comes from the 23 land cover classes. As I mentioned before, we have seven classes based on forest types, and then for the rest non-forest types, including the dry shrubs and then estate crops, paddy fields, and many others. All of this data are managed under one official database. We work with several ministries to make the data.

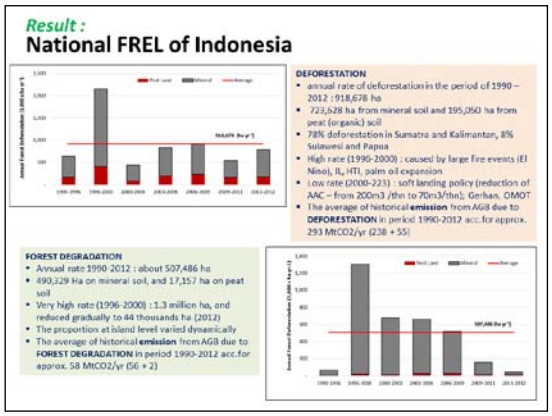
For the emission factor, we generated the data from national forest inventory (NFI) cluster plot

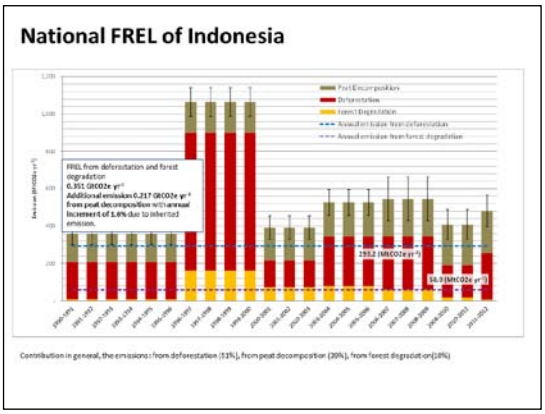
distribution. We have had more than 4000 permanent sample plots around the country since 1989.



This is for peat.

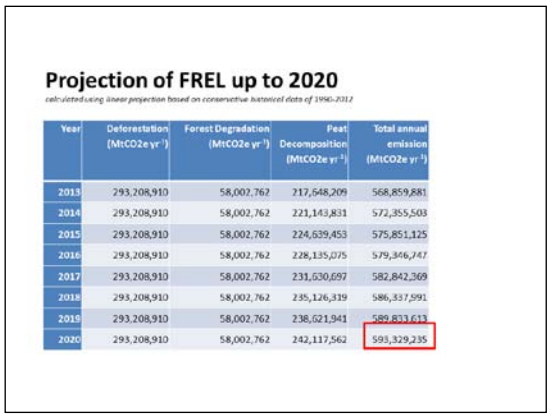
Result: National FREL of Indonesia Result

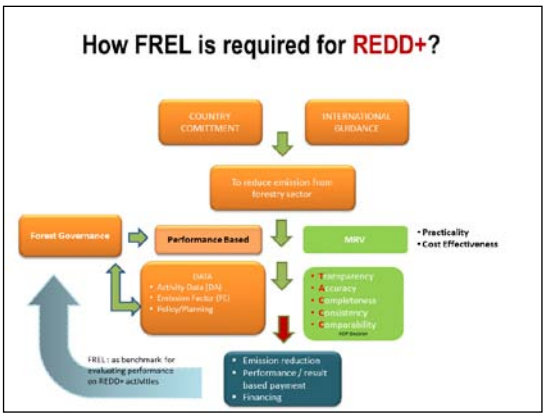




This is the result. The graph shows us that the highest deforestation occurred between 1996 and 2000 because of the fire. For forest degradation, I think the peak is also in the period of 1996 to 2000.

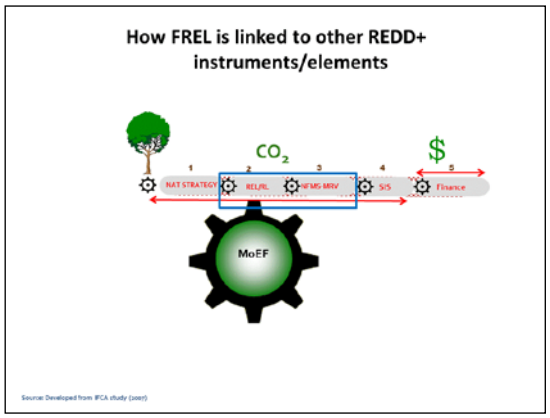
This is the graph of our national forest reference emission level. Forest deforestation is still dominant at 61% followed by peat decomposition and from forest degradation.

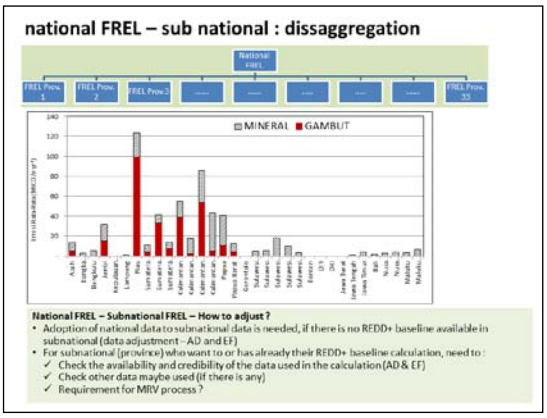




For projection, we have some projection of our FREL up to 2020. I think this is very important when we also need to adjust with our NDC in future.

How is FREL required for REDD+? It is very clear for us that FREL is very important as benchmark for evaluating the performance of REDD+ activities. It will be very important also to improve our forest governance. When we come to performance based payment for REDD+, it will go to emission reduction and then we can get financing support from that end. Then we can go again to improve forest governance.





If we come back to our big wheel, we can keep the big wheel rolling using the FREL, the national strategy, safeguard information systems, and so on.

We have some initiatives also in sub-national level. One important issue is how to link them and how to do this aggregation. We have a discussion about this, and how to adjust is the question. The result of the discussion is that we can use or adopt the national data to sub-national data if there is no REDD+. This line is available in the sub-national level, but we believe that in some provinces they have already established one, so the question then is how to maintain the consistency between the sub-national and national level. Therefore, we need to check the availability and the credibility of the data used in the calculation. Also, we need to check other data that may be used.

Beside the provincial sub-national FREL calculation, we have also many projects that have been working on FREL establishment. As we can see here, there are around 35 projects/pilot/demonstration activities of REDD+ around the country (based on the observation and recording of Ministry of Environment and Forestry since 2011). Most of them have experience in calculating the FREL. So far we use their experience in terms of capacity building, but there are some remaining questions on how we use the result of the calculation contributing to our national calculation. I think one of the ideas is to use the registry system.

There are some challenges ahead, but there are also some room for improvement in activity data, in emission factor, in peat fire calculation, emission calculation, and also in terms of institution because there are some institutions involved in our REDD+, not only the Ministry of Environment and Forestry, but we have also some other institutions. Therefore, I think coordination is also one of the issues that remain.

Thank you very much for your kind attention.