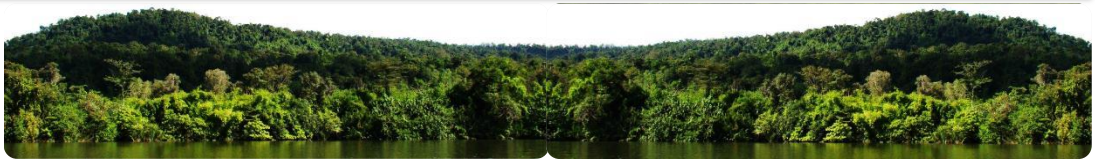
CAMBODIA REDD+ PROGRAMME

- Presentation Title: **National Forest Monitoring Systems, Monitoring & Measuring Reporting and Verification (MRV) and REL/RL**
- Location: **Raffles Hotel Le Royal**
- Date: **20 December 2013**

Content

- Why forest monitoring?
- What are the building blocks of a National Forest Monitoring System for REDD+?
- What are the steps to be taken under MRV? (measurement, reporting and verification)
- What is the difference; and how to establish a REL/RL?



Why forest monitoring?

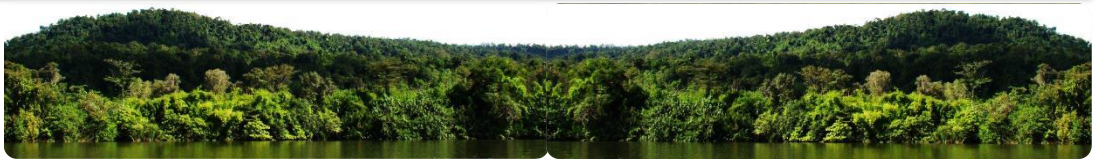
COP19 Decision on results-based finance:

3. Recalls that for developing country Parties undertaking the results-based actions, to obtain and receive results-based finance, those actions should be fully measured, reported and verified…..

If countries want to receive results-based finance then they:

1) need to have results and

2) these results should be MRVed

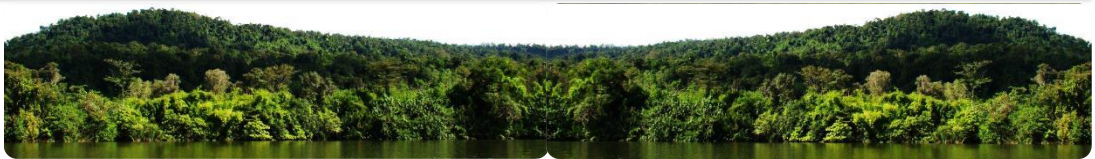


Why forest monitoring?

COP19 decision on forest monitoring

*3. Also decides that robust **national forest monitoring systems** should provide data and information that are **transparent**, **consistent over time**, and are **suitable for measuring, reporting and verifying** anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes….*

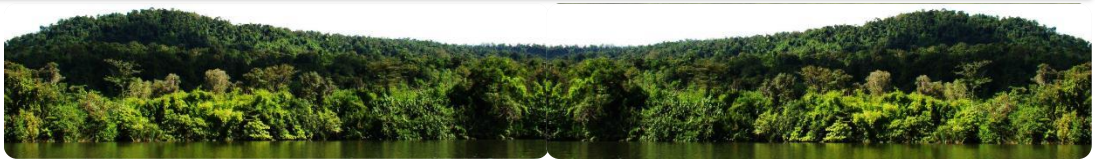
Forest monitoring is necessary in order to MRV the results



Forest monitoring systems

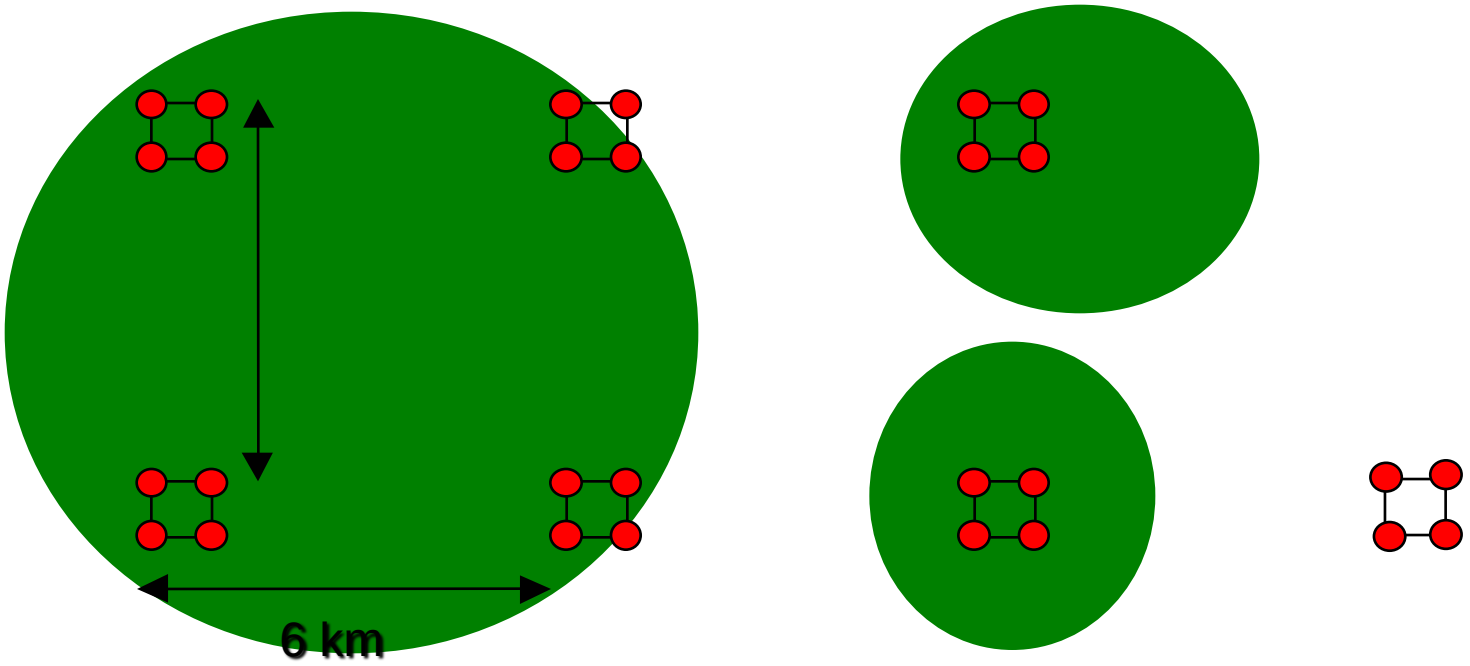
COP15 decision on REDD+

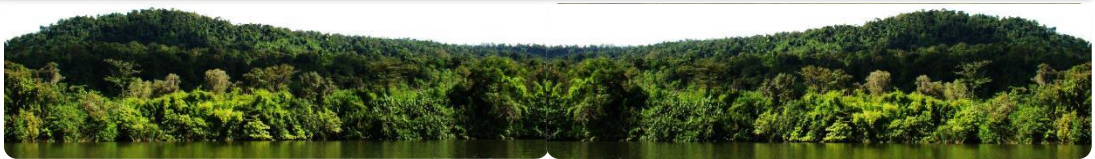
*1. d. (i) Use a **combination of remote sensing** and **ground-based forest carbon inventory approaches** for estimating, as appropriate, anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes;*



Sample based NFI

4200 sample clusters: 6x6 km grid



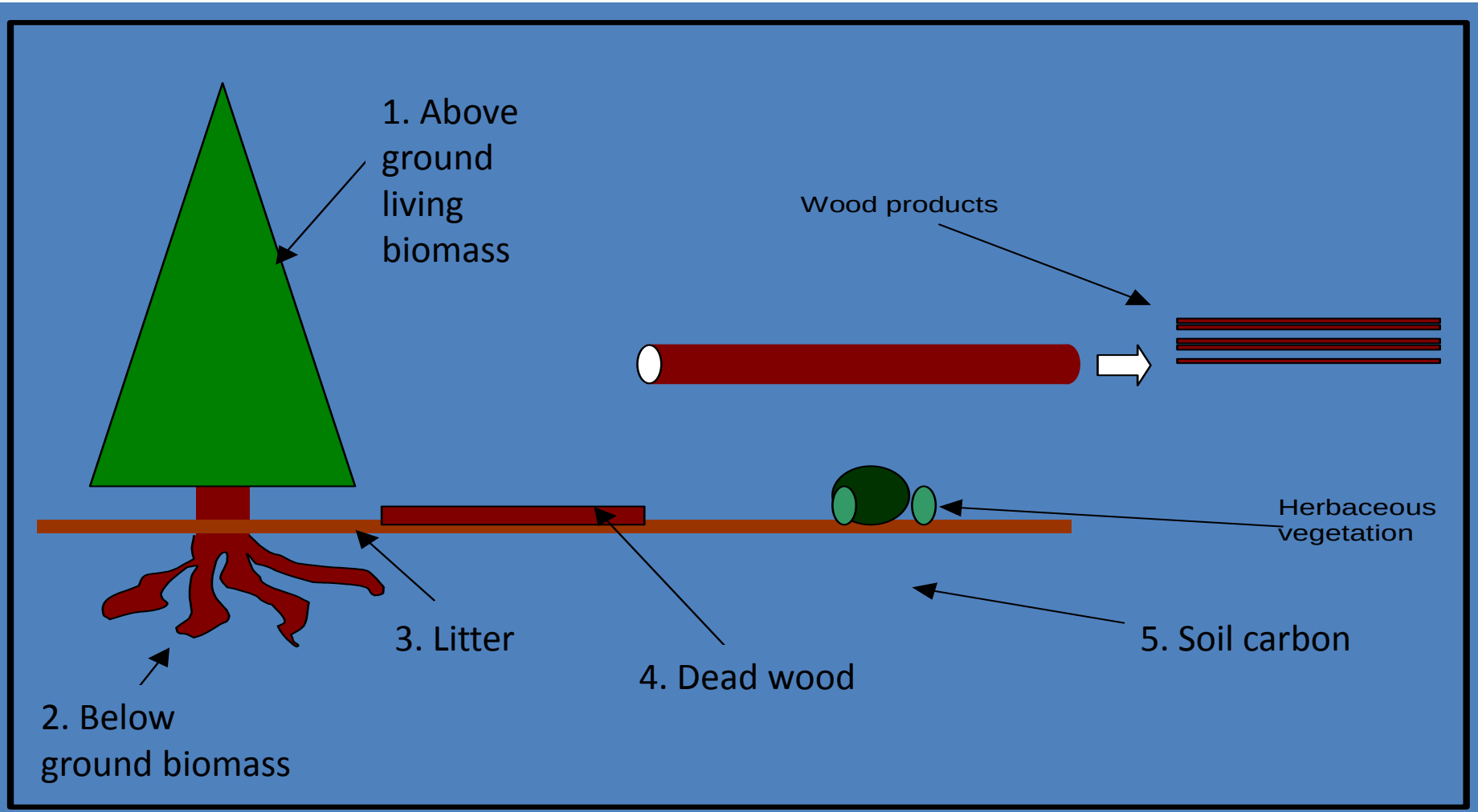


Forest monitoring systems

Teams doing the monitoring needs to be well trained, have good equipment, good data discipline and knowledge about the tree species.

Forest monitoring systems

For REDD+ we split the forest carbon into five carbon pools

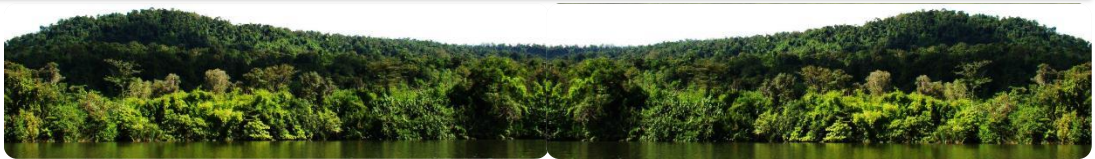


Forest monitoring systems

The NFI gives good data on forest carbon stocks but we also need to know about the forest area.

Here we can use remote sensing.

This is also very helpful for planning the NFI – no need to go to the plot if there is no forests.



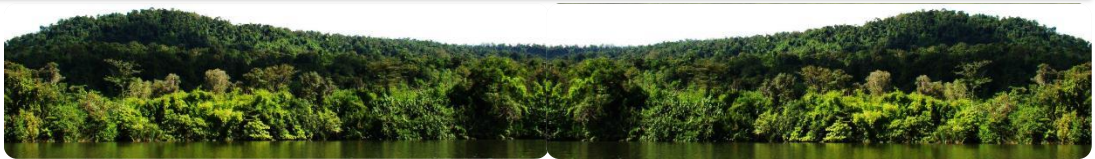
Forest monitoring systems

What about carbon stocks after deforestation?

The NFI focus on forests areas. We are interested in emissions and removals and therefore also interested in knowing what happens with the carbon stocks after deforestation.

Probably not all the soil carbon is lost by deforestation and maybe another vegetation type is taking over.

Different vegetation types can often be detected by remote sensing.

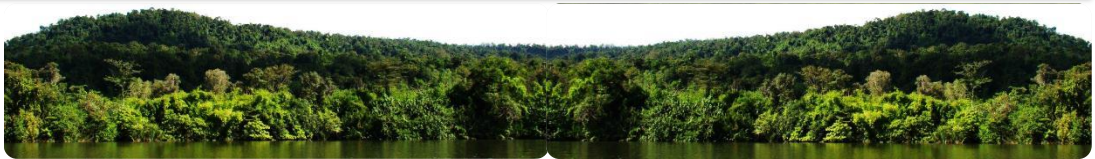


Forest monitoring and MRV

Monitoring is providing knowledge on carbon stocks.

Measuring can be understood as translating this knowledge into emissions and removals of greenhouse gasses.

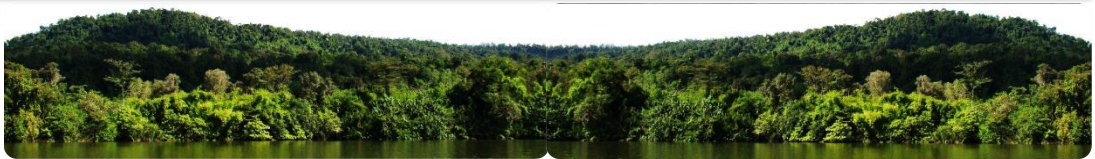
This is what we are interested in
when we think about climate change.
And this is the kind of results we are looking for.



Results should be expressed in tonnes of carbon dioxide (CO2)

COP19 decision on MRV

*4. Agrees that, **the results** of the implementation by Parties of the REDD+ activities, measured against the forest reference emission levels and/or forest reference levels should be **expressed in tonnes of carbon dioxide** equivalent per year*



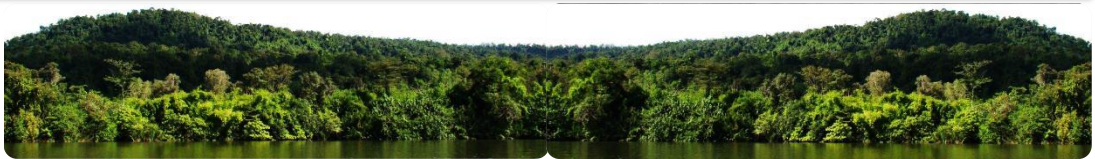
Technicalities

How can measuring the diameter and height of a tree provide information on carbon content above and below ground?

Allometric models

Biomass expansion factors etc.

No need to discuss this today



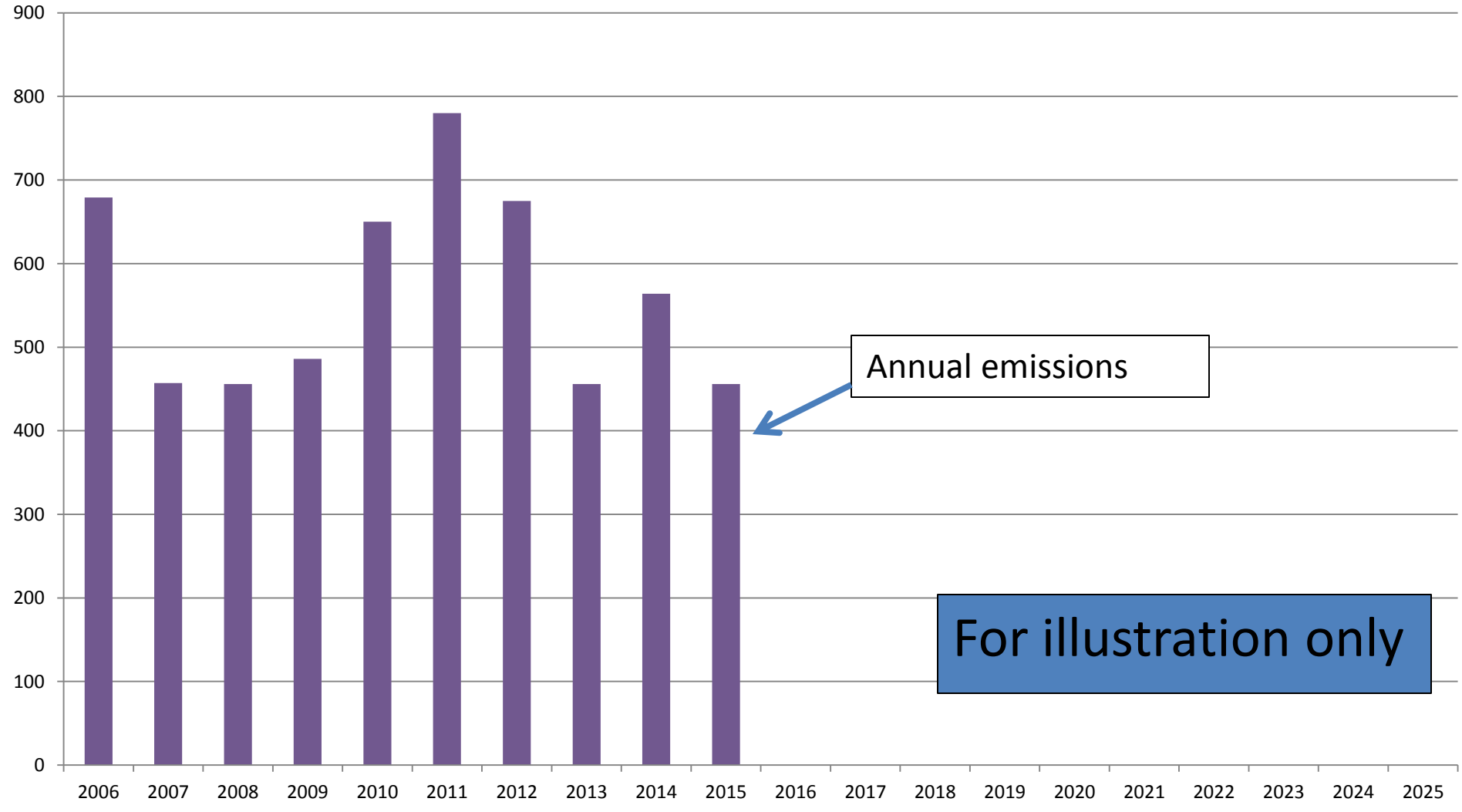
Slide from this morning

For illustration only

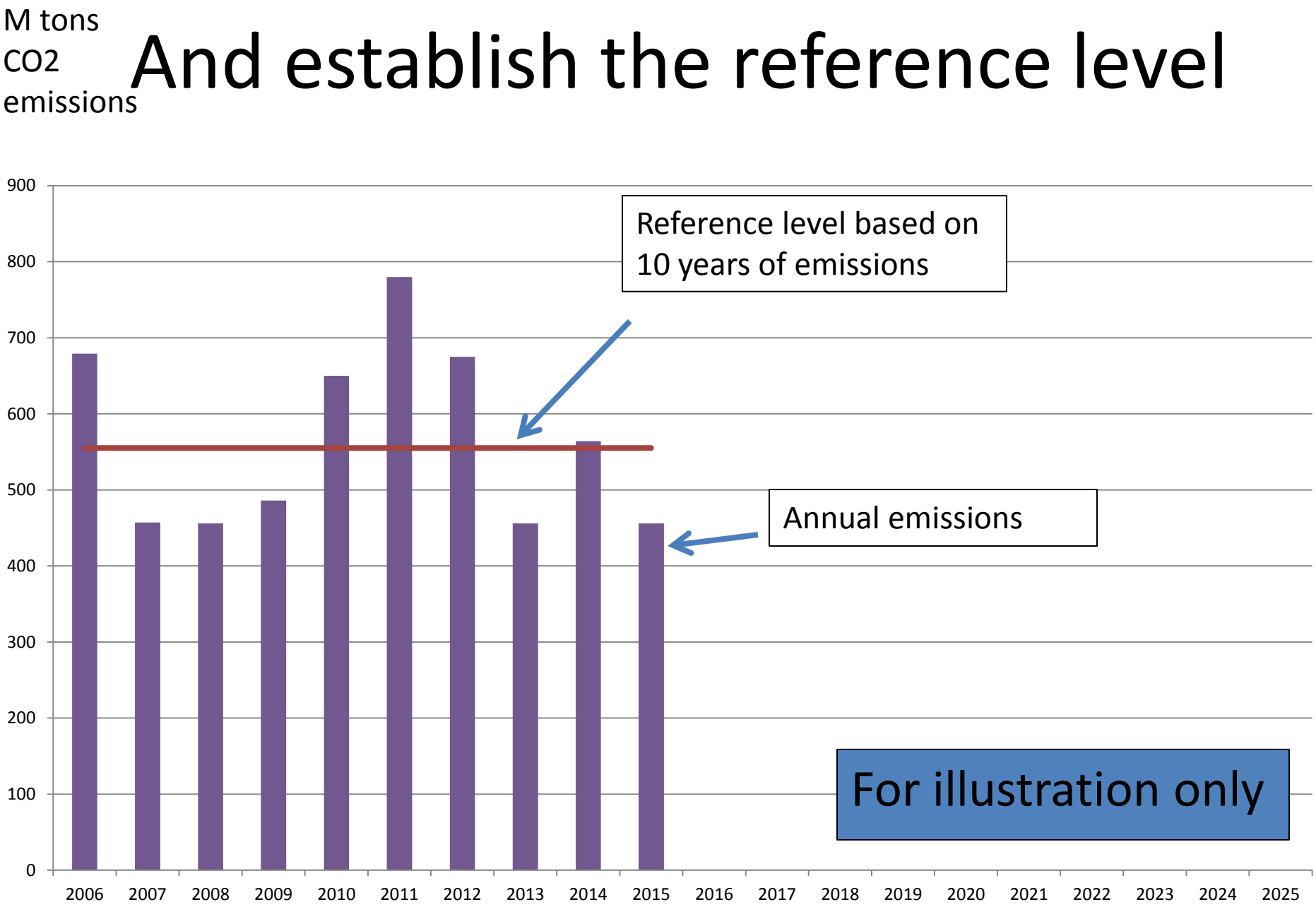
		2015	2020	
	Forest area (ha)	10,000,000	9,850,000	
1	Above ground living biomass	150,000	140,000	
2	Below ground living biomass	50,000	45,000	
3	Litter	25,000	24,000	
4	Dead wood	15,000	15,000	
5	Soil	50,000	47,000	
	Total	290,000	271,000	
	Annual change		-3,800 tC	

Emissions
3,800*3.67=
13,946
tCO2/year

With this information we can estimate annual emissions



And establish the reference level



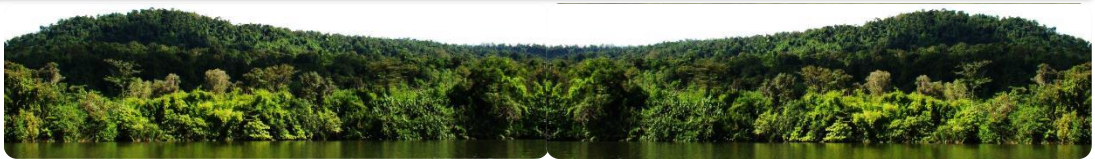
MRV

M: Translating the changes in carbon stocks to tonnes of CO2 emissions or removals and insert the results in the National Greenhouse Gas Inventory

R: Report on the above results

V: Get the results verified

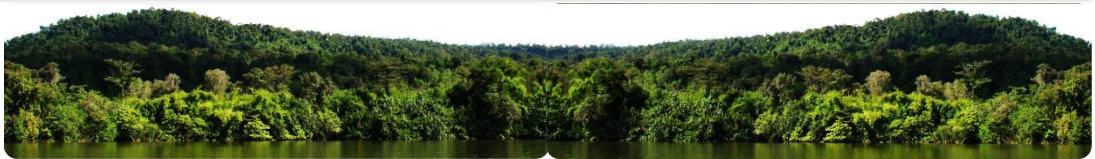
This is MRV



Greenhouse Gas Inventory

Developed countries have to report following a Common Reporting Format.

This is a set of tables to facilitate the reporting and the review process. Most likely something similar will be developed for developing countries including for REDD+.

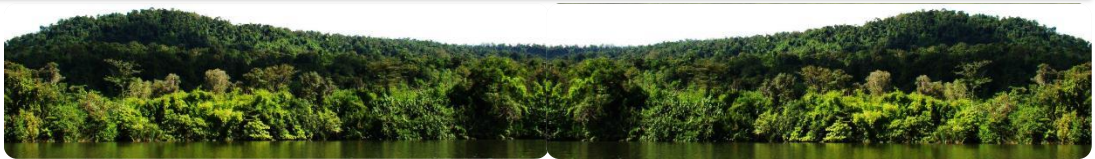


Reporting

COP19 decision on MRV:

Requests developing country Parties seeking to obtain and receive payments for results-based actions, when submitting the data and information through the biennial update reports, to supply a technical annex;

This is the where we need the national greenhouse gas inventory.



Verification

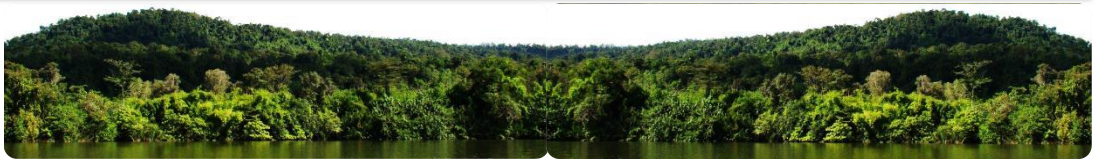
11. Further decides that, as part of the technical analysis, the technical team of experts shall analyse the extent to which:

(a) There is consistency in methodologies, definitions comprehensiveness and the information provided between the assessed reference level and the results;

(b) The data and information provided in the technical annex is transparent, consistent, complete and accurate;

(c) The data and information provided in the technical annex is consistent with the guidelines on construction of the REL/RL;

(d) The results are accurate, to the extent possible;



Verification

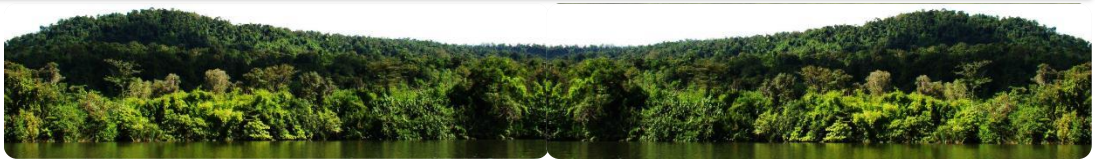
This is the normal system of LULUCF inventory reviews which will produce a technical report to be published on the UNFCCC containing:

(a) The technical annex;

(b) The analysis of the technical annex;

(c) Areas for technical improvement identified, as appropriate;

(d) Any comments and/or responses by the Party concerned, including areas for further improvement and capacity-building needs,

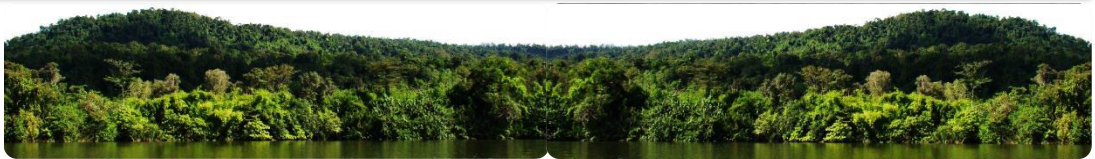


Verification

Last paragraph of the COP19 MRV decision:

*15. Agrees that results-based actions that may be eligible to **appropriate market-based approaches** that could be developed by the Conference of the Parties, as per decision 2/CP.17, paragraph 66, may be subject to any further specific modalities for verification consistent with any relevant decision of the Conference of the Parties*

Parties want the possibility to be able to align REDD+ with other sectors for the 2020 agreement

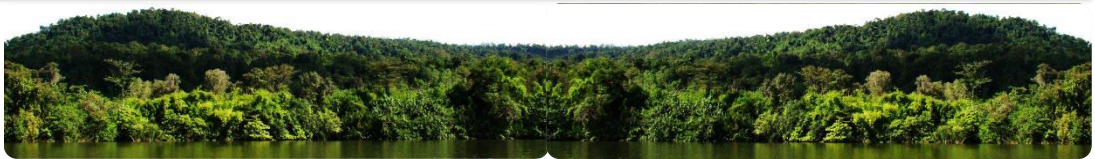


Forest emission reference level and/or forest reference level (REL and/or RL)

COP17 decision on REL/RL

7. *…expressed in tonnes of carbon dioxide equivalent per year are benchmarks for assessing each country's performance…*

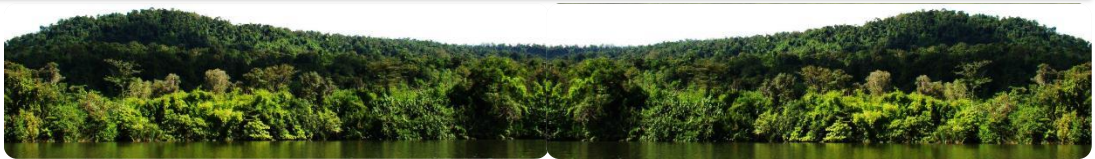
10. *Agrees that a **step-wise approach** to national forest reference emission level and/or forest reference level development may be useful, enabling Parties to improve the forest reference emission level and/or forest reference level by incorporating better data, improved methodologies and, where appropriate, additional pools…*



Forest emission reference level and/or forest reference level (REL and/or RL)

COP17 decision on REL and/or RL

11. *Acknowledges that subnational forest reference emission levels and/or forest reference levels may be elaborated as an interim measure, while transitioning to a national forest reference emission level and/or forest reference level….*

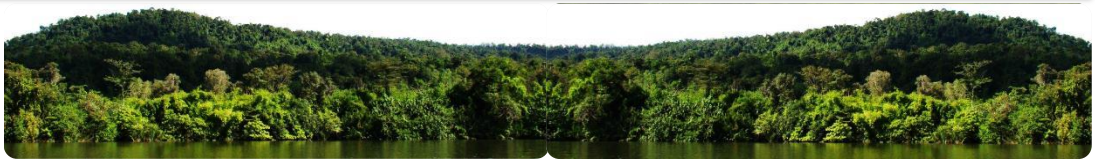


Forest emission reference level and/or forest reference level (REL and/or RL)

No clear definition on REL and RL but we can understand forest emission reference level as the situation where we have **emissions** (REDD)

and

forest reference level as the situation where we have **removals** (plus)

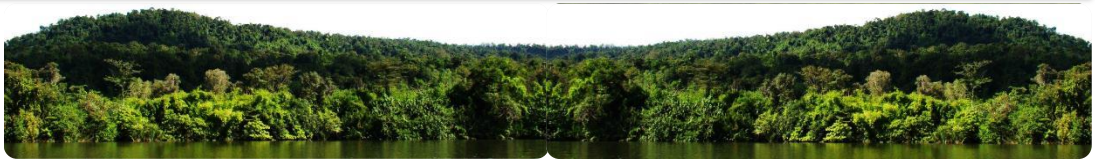


Forest emission reference level and/or forest reference level (REL and/or RL)

COP19 decision on review of REL and/or RL

RL/REL submissions are also subject to a technical assessment by a UNFCCC roster of technical experts.

Assessment sessions will be organized once a year



Thank You!

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