

GOFC-GOLD



Global Observation of Forest and Land Cover Dynamics

Guidance on Reporting

HOW TO PROVIDE CREDIBLE REDD ESTIMATES STARTING FROM UNCERTAIN DATA?

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United Nations Climate Change Conference
Bali, 3 - 14 December 2007

Outline of chapter “Guidance on Reporting”

- Issues and challenges in reporting
- Overview of reporting principles and procedures
- What are the major challenges for developing countries?
- The conservativeness principle



Outline of the presentation

- Analysis of REDD context
- Basic statistics for REDD
- How to address the uncertainty in REDD estimates?
- Implementation of the “conservativeness principle”
- Take-home messages

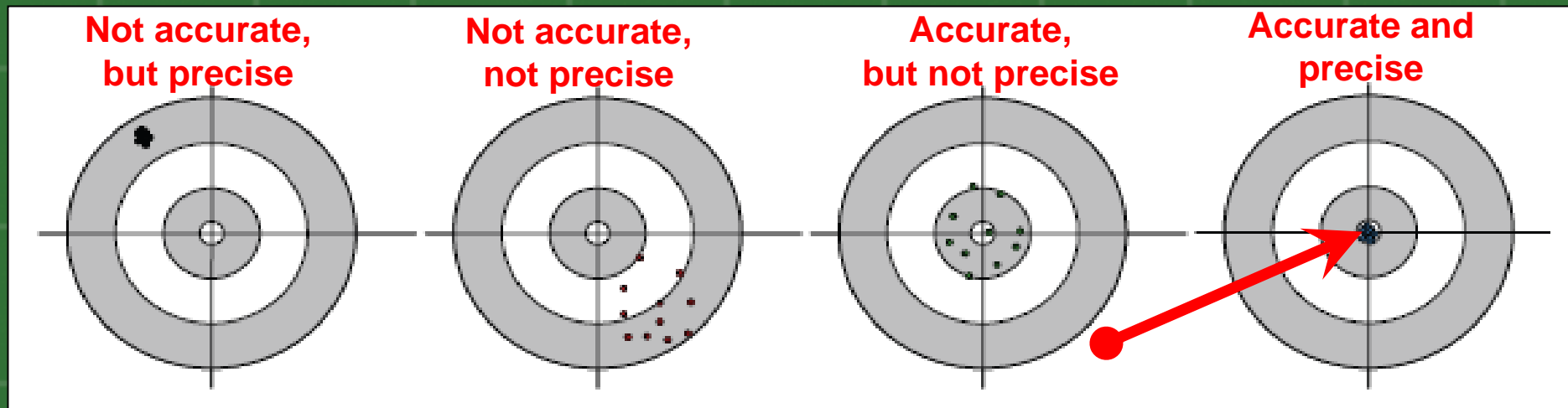
Analysis of REDD context

- The link to positive incentives requires scientifically robust estimates of REDD, i.e., real, transparent, demonstrable and verifiable.
- Analysis of scientific literature and of data submitted to UNFCCC/FAO indicates that the uncertainty in current estimates of emissions from deforestation is high.

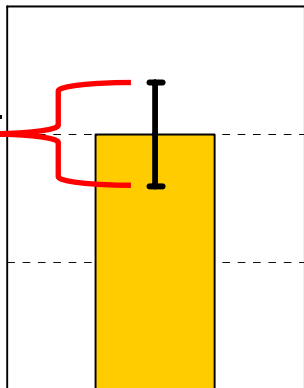
In this context, is it possible to set up practicable, robust and credible reporting mechanism?

Basic statistics for REDD

The overall uncertainty on a variable – i.e. the lack of knowledge of its true value - may be caused by both *random errors*, which affect precision, and *systematic errors* (or biases), which affect accuracy.



The quantifiable uncertainty assesses random errors



IPCC/UNFCCC requires that estimates are: “**accurate** in the sense that they are neither over- nor underestimated as far as can be judged, and **precise** in the sense that (quantifiable) uncertainties are reduced as far as possible”

How to address the uncertainty in REDD?

...with the principle of **conservativeness** :

when accuracy and precision cannot be achieved, the estimates of REDD should be underestimated

- Conservativeness is already in the Kyoto Protocol (Art 5.2).
- A large consensus is emerging on its use in REDD context: several proposals foresee “discount (conservative) factors” to address the uncertainty, and several Parties have included conservativeness in their submissions.

What conservativeness means in practice for REDD?

How to implement conservativeness ?

Conservativeness can be applied to both precision and accuracy, i.e. to both random errors and systematic errors.

...but remaining problems could be addressed later...

Should be maximized during the **estimating phase**...

Precision
(random errors)

Reporting phase

Accuracy
(systematic errors)

Accounting phase

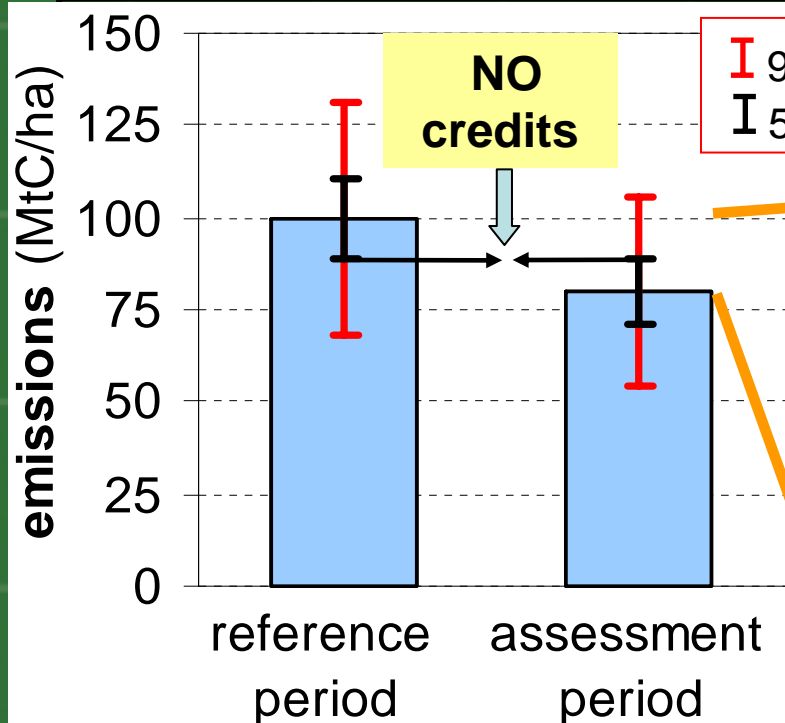
RANDOM ERRORS

ACTIVITY DATA

EMISSION FACTOR

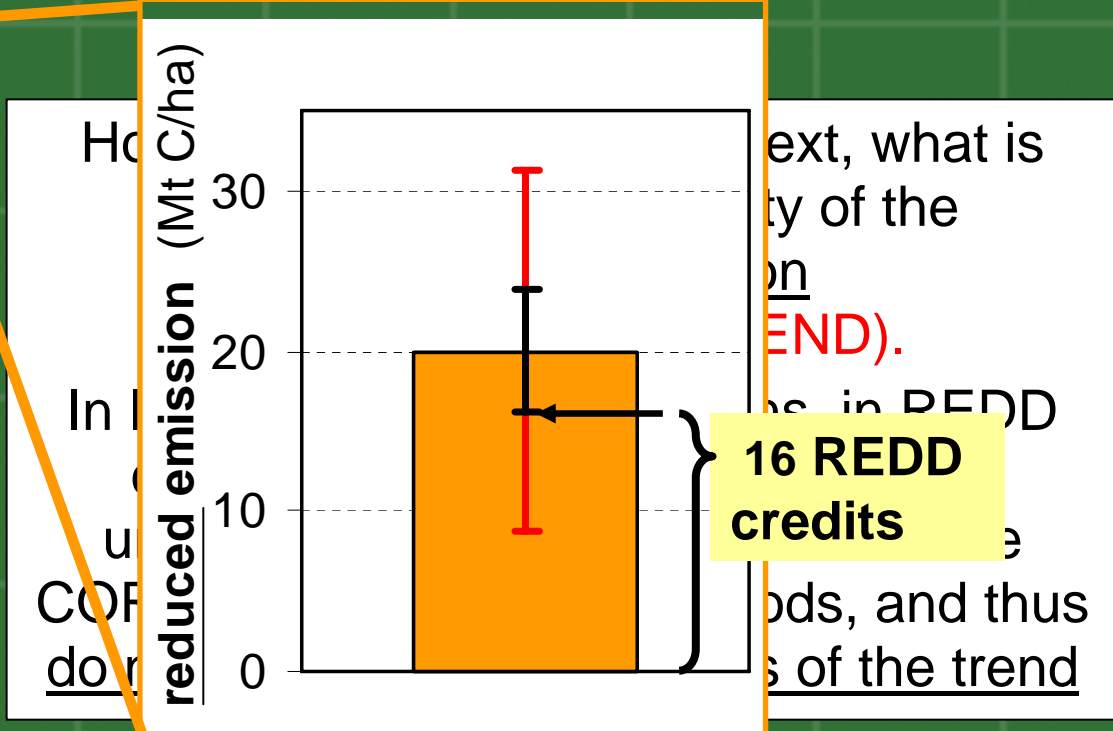
$$\text{Emissions} = \text{area deforested} \times \text{C stock change}$$

	Refer. period	Assess. period	Uncertainty (95% CI)
Activity data (Mha/yr)	1.0	0.8	10
Emission factor (t C/ha)	100	100	30
Emissions (M t C/yr)	100	80	



I 95% confidence interval
I 50% confidence interval

probabilities that the true value is in the interval shown



Applying conservativeness on the uncertainty of the trend has relevant consequences:



1. Uncertainty of Activity Data is very important. There is a clear incentive to decrease it.
2. Uncertainty of Emission Factor is irrelevant for the trend. This, however, does not undermine the importance of collecting accurate Emission Factor: a systematic error will affect the trend irrespective of its uncertainty !

SYSTEMATIC ERRORS

The review should address any problem that could arise from systematic errors in both Activity Data and Emission factors

Two examples:

1. Incomplete estimate (e.g. soil C emissions not estimated)

	Area deforest. (ha x 10 ³)	Carbon stock change (t C/ha)		Emissions (area deforested x C stock change, t C x 10 ³)	
		Biomass	Soil	 Biomass + SOIL	 only Biomass NO SOIL
Reference level	10	100	50	1500	1000
Assessment period	5	100	50	750	500
Reduction of emissions (reference level – assess. period, t C x 10 ³)					
				750	500

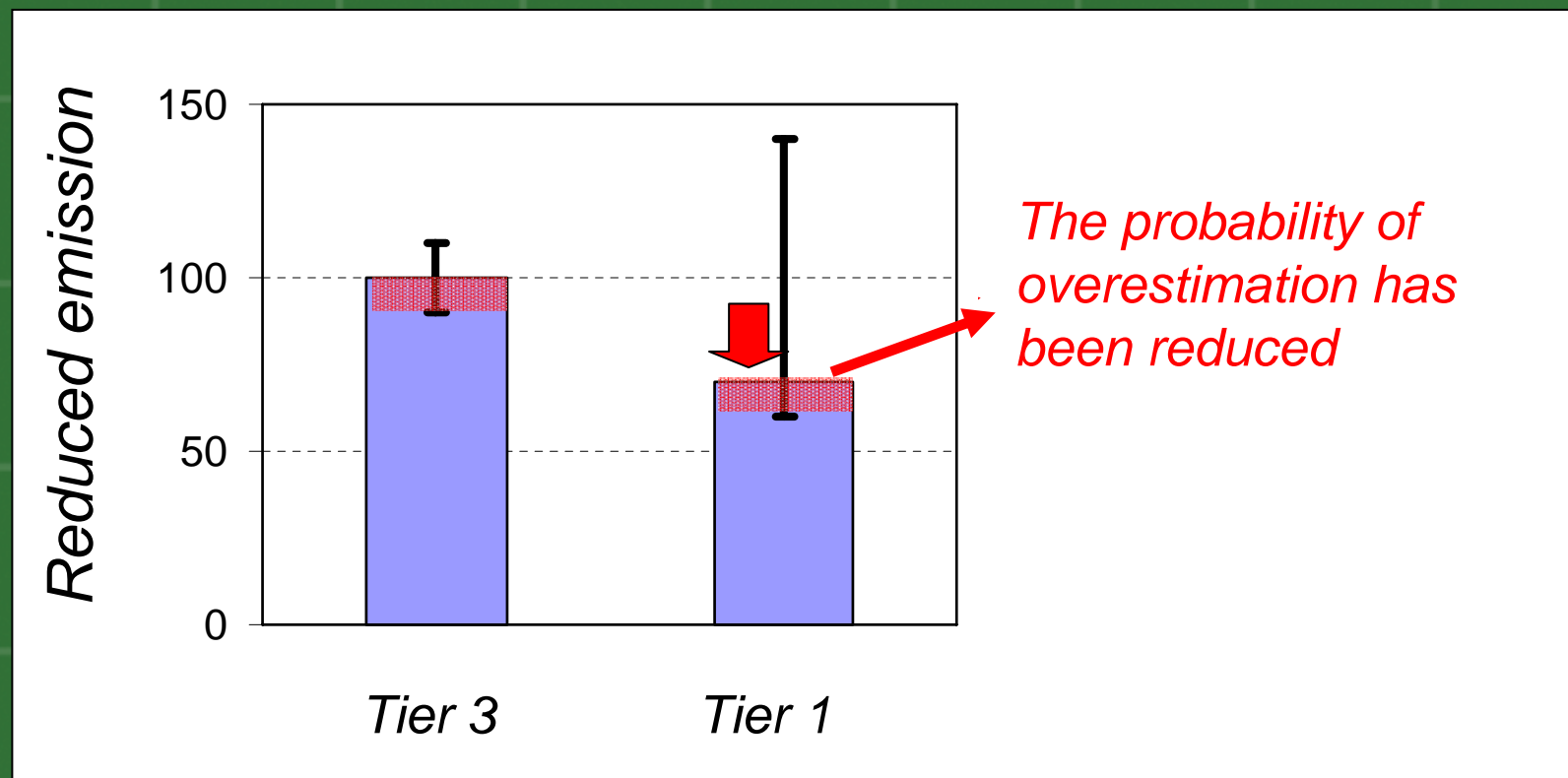
estimate accurate

estimate not accurate, but conservative

2. An estimate is not consistent with IPCC Guidelines

Likely, it will be treated as an AI Country.

E.g. a very high value of biomass is given, and no transparent / complete documentation is provided. This is NOT CONSERVATIVE. The reviewer may substitute this with a Tier 1 (default) value. However, a default value has a high random error, which is corrected with a “*conservativeness factor*”.



Take-home messages:

- REDD estimates should be accurate and precise
- If you can't be accurate and precise, **be conservative**
- **Imprecise estimates can be corrected** easily and conservatively based on **uncertainty of the trend**: slightly lower REDD credits but **higher credibility** !
- **Inaccurate estimates may be acceptable IF conservative** (e.g., soil ignored). If NOT conservative, they will be addresses in the review phase .
- Conservativeness allows to obtain scientifically robust estimates of REDD even with large uncertainties in the data. **It's win-win: no money to "hot air", broader participation.**
- The more accurate and precise are the estimates, the more credits could be potentially claimed.