Summary

Parallel Discussion Forums 1

Exploring reference levels and monitoring for REDD+: early country pilot activities
Forest Day 5

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Durban, South Africa, 4 December 2011
Exploring reference levels and monitoring for REDD+: early country pilot activities

Problem statement: The three main problems relating to reference levels include defining national interest, resolving issues and defining the reference level.

Moderator and introduction – Ken Andrasko, World Bank and Forest Carbon Partnership Facility

There are three major applications regarding reference levels (RLs):

- Statistical application: including all dates collected and analysed
- Spatial application: including key variables and land change patterns
- A third general application: an economic model

Three major trends regarding RLs:

- Countries using national reference levels
- Countries using sub-national levels – from states and regions
- The majority of countries are using the nesting approach

The main idea of a reference point is the ability to use historical trend analysis to predict future deforestation and degradation patterns.

How to develop a suitable reference level:

- Review, analyse and record data
- Develop deforestation and forest maps
- Review forest degradation

An example of how to find an RL for a country:

In the Democratic Republic of Congo, both historic and current data is very scarce. Because of this, the following steps have been taken to find a usable and accurate RL:

- The forested areas were divided into two zones
- Data was collected
- A reference level was developed
- The level was used to compare both bottom-up and top-down trends

This example of how deforestation and degradation are being approached in the Congo is not the perfect answer, but it is a good start.

A second example is that of Indonesia, where an allocation exercise was executed. A baseline reference was allocated to each province.

The problem here, and with many other countries, is that they cannot reconcile their forest definitions. In addition, they either do not know how to, or do not have the capacity for handling natural occurrences like El Nino and fires.

There are, at least, risk maps highlighting areas in levels of urgency. There are also good geospatial resolutions underway.
Something all countries need to remember, when working towards a usable RL, is that this RL should not only reflect internal causes of deforestation and degradation, but external causes (political, economic and social) too.

It should be noted that in Indonesia, while regional cooperation about finding an RL has been discussed, it is not yet underway.

Ultimately, the nesting approach for discovering a country's RL is not really something that is, or will become a policy decision. Rather it is a good point of departure for countries.

**Keynote Speaker – Sandra Brown, Winrock International**

Difference between Reference Levels and Reference Emission Levels:

Reference Levels (RLs) include the omissions and removals for all of REDD+.

Reference Emission Levels refer to the gross emission in a given time period from deforestation and degradation.

It is vitally important to get a correct RL as a starting point because we need to know where we are coming from before we can know where we are going and what we can do about it.

**Why RLs matter:**

RLs give us an idea of the historic emissions in any given area/country. If we have a good understanding of this, then we can understand where and how we should invest our money and resources in order to have the greatest positive impact.

In addition, it is important to be able to contribute to formulating Low Emission Development Strategies (LEDs) by providing improved knowledge on the relevant and positive role that our forests play.

We need to compare apples with apples. In learning by doing, we can establish effective ways of finding RLs and then move onto implementing a calculated REDD+ plan.

In order to start with historical emissions, as a measurement and comparative tool, four things are needed:
- A definition
- A specified scope
- A reference
- A scale

Once the above have been obtained, it is possible to compile accurate and meaningful data using the International Plant Protection Convention (IPPC) framework. This leads to the RL answer that is needed.

**Forest definition**

A forest definition includes crown cover, the height of the forest and the area it covers. Activities that affect a forest definition include:
- Deforestation
- Degradation
- Enhancement

Ways to get data regarding forest definition:
Remote sensing information

Geo mapping

A main driver of deforestation is stratification.

**Case study - Guyana**

It was an 18-month process from assessment to data analysis.

There was nothing to start with, no data to use. A company was hired for remote sensing data analysis. This has been kept current, since its inception, with the annual monitoring of deforestation and degradation. Overall, this has helped make key decisions in defining forests.

Currently, the implementation of the first carbon monitoring processes is happening in Guyana.

What has been learnt from Guyana is that a country has to have its own internal capacity for forest definition and RL research. External experts are not enough. The capabilities and capital have to be grown and sustained in order for any kind of assessment or analysis to be effective and continual.

Guyana has now established standards and quality control concerning mining, infrastructure and logging.

**Stratifying for potential change**

This works when people go into the area that most needs attention – a high threat zone.

First, a practical decision needs to be made: Will single plots or cluster plots be more viable in the situation?

Once this has been decided, land is stratified to reduce the number of strata. Then a sampling plan is designed for high threat forests. This high threat area is then divided into accessible and less accessible areas.

The accessible high threat areas then become the focus. They are assessed, plots are designed and implementation of a plan occurs. Once the high threat areas have been addressed, the focus then moves onto the medium threat areas, and finally, the low threat areas.

**The bottom line**

- RLs are useful for more than REDD+.
- RLs can be established at any scale. An idea of sub-national scales is needed in order to have basic standards in place before the national scale is measured.
- RLs are useful in harmonising any existing data that comes from a variety of sources. With regards such information, one should always first design a system and then see where that information fits into it.
- RLs are also useful to help estimate historic emissions, especially when it comes to natural vs. anthropogenic sources.

**Q&A**

Q: If there are natural disturbances causing deforestation and degradation, will they not continue regardless of what we do?

A: Yes, but we need to know what they are and what their effects are in order to better understand what we can change and what we need to learn to manage. In addition, it helps us predict what to expect in the future, which aids in proper planning.
Q: The classic building component is not the most effective way of capacity building. Are there not better ways?
A: You are right, but it is certainly a start. We do need to find another, more effective, method in the long term, though.

**Speaker 1 – Jean-Paul Kibambe, Earth and Life Institute/Environmental Sciences, Université Catholique de Louvain, DRC**

**DRC case study**
RED+ is a results-based mechanism and a decision-making tool at a national level.

With a place like the DRC, which has a trajectory of high forest LD, the RL needs to be adjusted, depending on the needs of the country.

There are two factors that are important for the RL: The definition of forests (which needs to be revised), and carbon stocks data (which needs to be compiled).

The four REDD+ activities include:
- Deforestation – essential and technically doable
- Degradation – no historical data in the Congo
- Consecration and sustainability
- Stock enhancement – Terra Congo

These are both high priority but it will take time to implement the necessary action.

The current focus is to deliver preliminary RLs for the Congo, and to improve them over time. There is also a strong need for capacity building.

If this is to work, the approach and data need to be consistent. In addition, a pragmatic approach needs to take place in phase two, where private sector involvement is encouraged. Finally, a national RL will need to be achieved.

The nested approach ensures cohesion and integrity.

Data source wise, there are two tools available on the Congo: the carbon FACET, and a socioeconomic survey.

Analysis and data-management wise, Terra Congo has historical, useable data and there is the national REDD+ registry.

With further regard to historical data, we can use the following:

The FACET data offers wall-to-wall information.
The Joint Research Centre (JRC) data offers sampling.

What we have found is that this medium resolution is okay for addressing deforestation but not degradation. Because of this, efforts are being made to identify the drivers of deforestation and degradation.

Quantitative surveys include United Nations Environmental Programme (UNEP), FAQ and those done by civil society.
Problems facing the DRC about implementing REDD+ and finding an RL:
• Currently there is no road network.
• There are a high number of mining and land exploitation permits.

Up-and-coming solutions:
• Proxy indicators for phase one
• Incentives for High Forest Cover and Low Deforestation (HFLD)/LDCs
• Produce maps of high risk areas

Ultimately, the Congo needs a system that pushes for action and quality. There have been complaints of an overlap between deforestation and degradation – because of things like this we need to keep our methods simple and clear.

Reconciliation with land-based accounting is needed. All this said, we cannot predict what the future will bring us.

Q&A
Q: Isn’t it true that deforestation is easily measured, but degradation is harder to measure?
A. Yes, there is a huge challenge ahead to measure degradation, but we are working on it.

Q: How do you adjust to national needs and circumstances in a third-world country?
A. This is a big question; I will discuss it with you later.

Speaker 2 – Eliam Zahabu, Ministry of Natural Resources and Tourism, FAO and UN-REDD, Tanzania

How to establish REL for Tanzania
Emission factor × Activity data = emission estimate in terms of CO2.

NFL × RSS = REL

Tanzania has a national forest inventory (Naforina). It has 3400 field inventory clusters. This forms part of the cluster sampling design, of which 850 of the 3400 are permanent monitoring sites.

The plan is to study forest use and learn about the drivers of deforestation and degradation. Included in this analysis are socioeconomic drivers. So far, 85 biophysical variables have been measured and recorded in the field. This plan is 65% complete.

This multi-source national forest inventory results in the following:

Field data + remote sensing + map data lead to processing.

Processing = statistics and thematic maps

Forest resource analysis
Forest resource analysis (FRA) is assisted by previous Landsat images, which allow access to historical deforestation. There is also assistance by the JRC of the EU, who set up the FAQ.

The FRA system is underway and is seeking consistency with the global system.
Historical factors dating back to the 1980s will be assessed because there have been lots of policy changes and the movement from socialism to capitalism. This has all affected land policies and land usage.

Due to the above, what is needed is an emission-factor model to use to predict what will happen up to 2020. We have most of the data needed already.

**Challenges facing Tanzania concerning RLs and REDD+**
- It is an expensive process (REL + MRV) - it takes a toll on human and financial resources.
- There is limited technological capacity and therefore high dependency on external assistance.
- It is a struggle to meet the high standards with such limited capacity.
- The institutionalising of MRV is needed.

**Speaker 3 – Lucio Pedroni, Carbon Decisions International**

**Peru and Guatemala**
Both Peru and Guatemala are adopting the nesting approach to implementing REDD+. This approach speaks to creating capacity, generating data and quickening the pace of progress.

This approach is being implemented first at the regional level, where regional references can be established and then, based on these levels, it is taken national and a national reference level is established.

**Guatemala**
There are five sub-national regions based on different drivers and agendas. In Guatemala, most of the deforestation occurs in its northern region. Three projects are collaborating to develop a baseline RL.

First off, a good historical RL is needed, so maps have been developed to show the deforestation of the past ten years. Then stratification is necessary in order to model rates differently.

In most cases, it is difficult to project rates because of limited data, so historical RLs are used. This way, carbon density maps can be generated to show emission factors.

**Peru**
The status in Peru:
- There is ongoing decentralisation.
- RLs have been established at a sub-national level.
- RL and REDD+ focused work is taking place across approximately 3.6 million hectares of land.
- About 40% of forested areas are being covered.
- Governments and NGOs are working together.

**San Martin**
The status in San Martin:
- There is collaboration with regional governments for common regional RLs to be established.
- A Historical Reference still needs to be developed.
- Stratification needs to occur to model the historical rate.
- A projected reference for 2010-2020 needs to be developed.
- Currently carbon stocks are being estimated using 433 plots.
- A work in progress, currently being implemented in four regions.
Lessons learned
- Nesting is a viable approach for where a consistent framework is needed.
- It is critical to have a standardised method.
- Creating historical references is very time-consuming, especially in climates where there are a lot of clouds/cloudy days.
- Models are only as good as their data. Because of this, validation is very important. Scientific validation is primary and social validation is secondary.
- Sub-national initiatives that are well coordinated can really help with the national problem.

Q&A
Q: Are there not more economical ways to adjust RLs?
A: What we need is to be transparent. Yes, it is difficult, but we are going to try to use transparent hypotheses. We are also trying to bring in economically viable models to adjust to REDD+.

Q: How do we overcome bias against approaches to implementing REDD+?
A: We have to take cost factors and inaccessible methods into account. However, I do not believe there is bias.

Q: The RL should be what is going to happen if there is no REDD+ implemented. So, how are you factoring it in if REDD+ has already been implemented?
A: If this modelling approach is being applied then the application will factor into your baseline level of deforestation and degradation.
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