REDD+ FOR THE GUIANA SHIELD

First Regional Working Group Meeting
December 5-6th, 2013 – Georgetown, Guyana

Report prepared by Sabá Loftus and Sara Svensson.
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First Working Group Meeting

Context

The Guiana Shield is one of the largest blocks of primary tropical forest worldwide as well as a region with very high biodiversity. With ninety percent covered with intact rainforest, the Guiana Shield plays a critical role in mitigating climate change. The Region’s rainforest also plays a key role, *inter alia*, water regulation of the Amazon and Orinoco basins and is home to high levels of endemic species and cultural diversity. Until a decade ago, the Guiana Shield forests were under little threat in comparison with other tropical forests. However, countries are burgeoning economically and demographically, leading to increasing pressures on natural ecosystems. The Region’s governments are keen to drive their development in a sustainable manner and to this end, they have shown strong interest in Reducing Emissions from Deforestation and Degradation, plus conservation, sustainable forest management, and enhancement of forest carbon stocks (REDD+) as a mechanism that would enable them to incentivize maintenance and security of forests.

The project “REDD+ for the Guiana Shield” was initiated, at first by Guyana, Suriname and France, and shortly after joined by the Amapá state of Brazil, at the occasion of the UNFCCC’s fourteenth Conference of Parties, held in 2008 in Poznan. The project aims at providing information and tools to be used by countries to establish sound science-based policies and measures to tackle deforestation and forest degradation, in the framework of the REDD+ mechanism. The project is funded by the Regional Development European Fund (FEDER) through the Interreg IV Caraïbes program (1.26 M€), the French Global Environmental Facility (FFEM – 1 M€), the French Guiana Region (90 k€), as well as by the project partners’ own contributions. Financing Agreements with donors were signed in late 2012 and the project officially commenced in January 2013.

Cooperation and capacity-building are key strategic components of the project. While they exist within the same eco-region, Guiana Shield countries have different historic contexts and have developed their own country priorities. There are therefore considerable opportunities for learning lesson in the region starting with information sharing and sharing of good practices. The project facilitates cooperation between neighboring countries on REDD+ through a technical and regional platform that will focus on creation of an inventory of resources (carbon stocks and forest surfaces), improvement of the quantified understanding of drivers of deforestation and forest degradation, as well as on modeling of forest cover evolution. The platform includes four channels for capacity building: (1) training and technology transfer, (2) country/state-level support, (3) regional discussions in the framework of Steering Committee meetings, as well as (4) regional Working Group meetings.

This document contains the report of the first Working Group meeting held in Georgetown, Guyana on 5-6 December 2013. In the interest of creating synergies and avoiding duplication in the region, the event was co-hosted by ONF/ONF International (as part of the REDD+ for the Guiana Shield project funded by FFEM, European Commission and Région Guyane) and Conservation International (as part of their KfW project named Avoided deforestation through consolidation and creation of protected areas and carbon financing mechanisms in the Guiana Region). The two planned technical exchange activities under these respective projects were combined under the "Regional workshop on REDD+ MRV implementation and drivers of deforestation".

Objectives

The aim of the Working Group Meeting was to build the national and regional capacity for REDD+ implementation through the sharing of technical expertise (in assessment and monitoring of forest cover, carbon stocks and drivers of deforestation, modeling future emissions due to deforestation and forest degradation, and REDD+ and Land-Use planning impacts on socio-economic development in the Guiana shield), experiences and lessons and to identify next steps for the working groups.
Specific objectives include:

- Initiating regional dialogue to identifying gaps (data and methodologies) at national and regional level (i.e. in the perspective of a common view of REDD+ MRV);
- Build capacity (through lessons learnt and sharing of good practices);
- Discuss the development of a Regional cooperation platform (including data sharing through a dedicated web-platform);
- Prepare technical inputs and feed into Steering Committee decision making.

This meeting was the first opportunity for technicians from the partner organizations to brainstorm on next steps as well as review the Terms of Reference of the Working Group to build ownership. The three components of the REDD+ for the Guiana Shield project were discussed from a technical perspective: inventorying and monitoring forest resources (surfaces and stocks), understanding drivers of deforestation, and modelling future deforestation. The forestry services also provided lessons learnt on the topics of estimation of forest cover, carbon stocks and their changes in the region as well as in analysis of direct and underlying causes of deforestation/degradation.

The outcomes of the Workshop were positive and will be fed into the Steering Committee meeting scheduled for 11 December 2013 in Macapá, Brazil. The objective to achieve the aim was to encourage the sharing of experiences within the ecoregion.
Agenda

REGIONAL WORKSHOP ON REDD+ MRV IMPLEMENTATION AND DRIVERS OF DEFORESTATION

4th December 2013: Welcome Reception
19:00 - 22:00   Cocktails and Dinner

5th December 2013: Workshop at Roraima Duke Lodge
9:00 – 9:20   Welcome & opening remarks:   David Singh & Marie Calmel
9:20 – 10:00   Introductory session:
Working Groups Overview (*Scope, Objectives, Structure, Roles*)   Sabá Loftus
Open discussion: Expectations, requirements and needs   All
(Moderated by Sabá Loftus)
10:00 – 11:00   Session 1 - Forest cover monitoring
Forest Cover Monitoring Unit (SBB)   Cindyrella Kasanpawiro
Open discussion
11:00 – 11:15   Tea & Coffee Break
11:15 – 12:30   Session 2 - Carbon stock assessment
Suriname’s National Forest Inventory Pilot Project (SBB)   Charlene Sanches
Forest Carbon Inventory in context of Kyoto Protocol   French Guiana
Open discussion
12:30 – 14:00   Group photo & Lunch
14:00 – 15:30   Session 3 - MRV systems and performance
Introduction to MRV systems and performance   Sara Svensson
Establishing and implementing GFC’s MRVS agreement   Jagdesh Singh
Practical Outcomes Warsaw Conference of Parties   Marie Calmel
Open Discussion (Moderated by Sara Svensson)   All
15:30 – 15:45   Coffee Break
15:45 – 16:30   Practical Discussion: How to develop MRV systems and other activities
(Moderated by Sara Svensson)   All
Public forest concessions registry (IEF)¹   Thiago Zampiva
16:30 – 17:30   Working Group Brainstorming on topics, needs & structure
Guided Discussion (Moderated by Marie Calmel)   All

20:00 – 22:30   Dinner at Duke Lodge

6th December 2013: Workshop at Roraima Duke Lodge
8:30 – 10:15   Session 4: Drivers of deforestation
Guided Discussion on modelling future deforestation (Moderated by Priscilla Miranda)   All
Scenario modelling of drivers of deforestation in the Guiana Shield   Priscilla Miranda
10:15 – 10:50   Session 5 – Forest Reference Levels / Reference Emission Levels (RL/REL)
Amapá’s experience with the development of a state REL²   Claudia Funi, SEMA

¹ Presentation in Portuguese with consecutive interpretation in English
² Presentation in Portuguese
Open discussion *(Moderated by Marie Calmel)*

10:50 – 11:00  **Next Steps for the Working Group, identifying missing actors**
11:00 – 11:10  **End of Working Group meeting - Concluding remarks**

11:00 – 11:20  **Tea & Coffee Break & Goodbyes**
Shuttle bus to Ogle Airport for those leaving (IEF, CIRAD, ONFI, SEMA)

**For remaining participants from the GFC and SBB**

11:20 – 13:30  **Open discussion between Guyana and Suriname organized by Conservation International in the context of the KfW project, Avoided deforestation through consolidation and creation of protected areas and carbon financing mechanisms in the Guiana Region.**

13:30 – 15:00  Lunch
15:00 – 15:45  **Open discussion (continued)**
19:30 – 21:30  Dinner at New Thriving Chinese Restaurant

**Participants**

**Participants from the Guiana Shield Forestry Services**

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<thead>
<tr>
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<th>Position</th>
<th>Organization</th>
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<td>Claudia FUNI</td>
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2 *Presentation in Portuguese with consecutive interpretation in English*
Other Participants

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<td>David SINGH</td>
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Organizing Team

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Access to Working Group materials

All presentations that were made during the Working Group meeting, as well as other relevant materials, can be downloaded from [http://reddguianashield.com/working-groups/working-group-1/](http://reddguianashield.com/working-groups/working-group-1/)
Sessions Summary and Outcomes

Welcoming remarks

As an introduction to the Working Group meeting, welcoming remarks were shared by David Singh on behalf of Conservation International and Marie Calmel on behalf of the French National Forest Office (ONF) and ONF International.

Introduction to Working Groups and Next steps

Sabá Loftus presented the background and rationale for establishing Working Groups within the REDD+ for the Guiana Shield project.

Working Groups are central to the project. They will:

- Serve as a platform for regional technical exchanges on forest cover monitoring, carbon stocks assessment and drivers of deforestation in the Guiana Shield,
- Build the capacity of countries through good practices and lessons learnt sharing, as well as through the support from external experts,
- Enable the identification of needs in terms of capacity building and technology transfer, including the development a joined view and position on REDD+ and Land-Use Planning (creation of regional tools).

The mandate suggested for Working Groups is the establishment of a regional technical dialogue on the various components of the project and that feeds into the Steering Committee decision-making process with technical inputs and summary of discussions, including on capacity building and technology transfer plans, as well as on of the development and use of regional tools.

Working groups will be developed in accordance with the project guiding principles:

- Transparency
- Regional cooperation
- Respect of national policies and sovereignty
- Synergies with other REDD+ regional initiatives.

Participants received a printed handout with the draft Terms of Reference for the Working Groups and were invited to provide reactions and to suggest changes orally or in writing. The intention was that a revised draft would be presented to the Steering Committee in Amapá on 11 December and that a final Terms of Reference would be adopted there.

Two sessions were dedicated to Working Groups organization. Generally, participants expressed willingness to learn from each other since they are in different stages of REDD+ readiness/implementation and using different methodologies. The Working Group should enable specialized exchange between technicians who collectively agree on relevant topics. They should provide technical input to the Steering Committee while also receiving direction from the Steering Committee.

The sessions culminated with the following suggestions to be made to the Steering Committee:

- Technical exchange would be more efficient if some very specific technical topics are discussed, providing those topics are clearly announced in advance, giving countries the opportunity to send the appropriate technicians, practionners and/or experts.
Forest cover Monitoring and Forest Carbon Stocks Assessment should be discussed separately during dedicated Working Group meetings, but time should also be dedicated to the issue of merging those two steps within fair MRV systems.

Working groups’ topics should be kept flexible and be based on countries’ demands and needs. Working Group meetings could discuss specific topics each time related to forest cover monitoring, and/or carbon stocks assessment, and/or drivers of deforestation. Depending on the topics addressed in each specific meeting, different experts and practitioners could be invited.

Some Working Group meetings could be dedicated to Drivers of Deforestation with the possibility kept opened (depending on specific country/state experience) for national meetings instead of regional ones.

Participants agreed on the principle of opening Working Group meetings to external experts based on country/state requests depending on the topic of the meeting in order to expand the experience and expertise around the table.

The feasibility of virtual meetings (such as webinars) are welcomed as long as they can facilitate the process and as long as virtual meetings are kept short and made efficient, targeting very specific topics to be discussed within 2 hours or so.

Working Group meetings and related virtual meetings should be well announced in advance so that the partners can decide who to send based on the discussions that will be held.

To ensure consistency and prevent duplication of efforts, at least 1 fixed person per partner country/state would attend all the Working Group meetings.

Working Group meetings can focus on specific topics related to Forest Carbon Monitoring and/or Carbon Stock Assessment and/or Drivers of Deforestation. Perhaps one day could be dedicated to Forest Carbon Monitoring and the next to Carbon Stock Assessment, followed by a joint discussion all together.

On the question of expectations from the Working Groups and topics that could be addressed, the following feedback was provided:

- Pradeepa Bholanath (GFC), suggested several topics for future Working Group meetings: how to assess and monitor forest degradation; how to discriminate and monitor shifting cultivation; applied context of Reference Levels; how to move from monitoring to reporting; how to develop fair Reference Levels appropriate for each country and well informed by MRV; technical lessons learnt.
- Jagdeesh Singh (GFC) expressed that technical contribution is one area that Working Groups can help with by introducing tools that are available in one project partner country to the others. Brazil, for example, is advanced in mostly automated or semi-automated mapping of forest, which could be beneficial for Guyana and Suriname.
- Thiago Zampiva (IEF) suggested that the Working Groups should prepare something concrete that can be implemented in the state/countries as a final outcome. He would like to leave the project not only seeing how monitoring could happen technically, but also to have legislation in place for this monitoring. A task for the Working Groups could be to show, through demonstration of successful examples, that it is possible to survive in a self-sustained way without deforestation.
- David Singh of Conservation International (CI) stressed the substantial value of focusing on technical issues while recognizing that each institution involved has its own link with national policy.

On the question of whether to have separate Working Groups on different project components or to merge them into one Working Group, it has been decided to keep discussions separated when appropriate (i.e. when very technical aspects are discussed) but also to allot dedicated time to the issue of merging those different topics within a fair MRV system. This decision has been made based on the following opinions that were expressed:

- Pradeepa Bholanath explained that in Guyana’s experience, the topics of Forest Cover Monitoring versus Carbon Stocks Assessments were kept separate for the past three years since they are very different in terms what needs to be undertaken and what data and methodology to use. After these years of keeping the topics apart, Guyana has now reached a point when there is need to bring them together. Domestically in Guyana there will now be a single working group that undertakes both topics. On the regional level it may be better to first have them separate, but to include a paragraph in the Terms of Reference for each Working Group expressing the intention to merge them into one Group at some
appropriate point in time. With that approach, the Working Groups could be developed separately but in a related manner and eventually be brought together

- The issue of people working on the topics may be an argument either for merging or for keeping the groups separate depending on the level of discussion envisioned. In the forestry services it is often the same person in charge of supervising both Forest Cover Monitoring and Carbon Stocks Assessment activities on the project management level, but the technical and operational staffs are two different groups. Establishing field plots and collecting field data requires a separate skillset compared to remote sensing and reporting. In order to ensure that the topics will eventually come together, it would be desirable to involve the project managers with oversight over both topics in the Working Group. At the same time the more operational staff would benefit from being part of the Working Groups related to their specialization.

It has been clarified that the number of people per Working Group will depend on how many Working Groups there are, the meeting options (physical meetings or online), and what is feasible within the framework of the budget. If the Working Groups are merged, there can be more people per meeting. It will be important to clearly define the goals and objectives of each Working Group meeting to make it easier for partner countries to decide who should attend.

Participants agreed that focusing on specific technical topics in depth is useful. For that purpose, a program of Working Group meetings should be developed and presented to the Steering Committee for validation. The list below summarizes the suggestions of this first Working Group on topics that could be discussed in future Working Group meetings. The list will be presented to the Steering Committee that meets 10-11 December 2013 in Amapá and is as follows:

- How to monitor degradation?
- Shifting cultivation: how to identify it and how to classify it?
- Mangrove forests: remote sensing analysis, integration of natural changes within global deforestation statistics and RL/REL, assessment of emission factor.
- Remote sensing analysis methodologies and software to automatically and semi-automatically analyze land-use, land-cover and changes.
- QA/QC: how to validate land-use and land-cover changes maps?
- Drivers of deforestation: how to monitor drivers of deforestation/degradation and how to use the information in MRV systems and for REL/RFL establishment?
- How to create and manage GIS databases?
- Addressing the interrelationship between NFI and MRV.
- How to capitalize on existing data and monitoring tools to feed into the MRV system and the REL/RFL?
- Linking data within the MRV system.
- Reporting exercises.
- How to ensure long term consistency and comparability while changing methodologies, source information?

Using this list for inspiration, each Forestry Service agency was asked to suggest priority topics for forthcoming Working Group meetings. Priority lists should be shared with their respective REDD+ for the Guiana Shield focal point by mid-January 2014.

The next Working Group meeting would be held in the last week of February with an invitation to be sent in mid-January.

See the presentation ‘Working Group Overview’ on [http://reddguianashield.com/working-groups/working-group-1/](http://reddguianashield.com/working-groups/working-group-1/)
Session 1 – Forest Cover Monitoring

The objective of this session was to share what is already going on in terms of forest cover monitoring in the different project partner countries or sub-national areas. The session started with a presentation on the case of Suriname, followed by a discussion that revealed perspectives and experiences from Guyana, Amapá and French Guiana.

Key discussion points:
- Forest definitions and reporting forest change
- Defining shifting cultivation
- Technology

A presentation was given by Cindyrella Kasanpawiro from SBB’s Forest Cover Monitoring Unit (FCMU). She explained that the FCMU was established with support from the Amazon Cooperation Treaty Organization (ACTO) through the project Monitoring deforestation, land use and land use change in the pan-Amazonian forests. The unit has been operational in SBB since December 2012 and was officially launched through a ceremony on 12 November 2013. The PowerPoint presentation detailed the hardware, software and human resources for forest cover monitoring that have been made available to Suriname through the ACTO project. It also explained the methodology used by the FCMU in developing the forest cover basemap 2000 and deforestation map 2000-2009 that have been produced so far. Future plans of the FCMU include the annual production of an updated wall-to-wall deforestation map, involvement of and capacity-building for more part-time students and staff, creation of a stronger link with academic research, the drafting of a National Plan to Monitor Forest Cover (for the ACTO project) and the development of a National Forest Monitoring System for REDD+.

Reactions to the presentation included questions, comments and experience sharing as follows:

- Pradeepa Bholanath thanked the presenter for the update on Suriname’s progress and found it interesting to learn more about the impact of the ACTO project that Guyana is also involved in. Regarding the definition of forest, she found it interesting to compare the minimum mapping unit, which in Suriname and Guyana is 1 ha but for Brazil 6.25 ha. Early in their MRV process, Guyana became conscious of the importance and consequences of the forest definition when reporting forest changes. Deforestation rates are often misunderstood as something consistent and uniform for all countries while, depending on the Minimum Mapping Unit (MMU), different countries refer to different sizes of what can be discriminated as changes (including deforestation). It is important to always clarify the parameters when reporting on the rate of change and to keep in mind that depending on the MMU, different countries might talk about different things.

- Shifting agriculture was a topic from the presentation that generated notable discussion. Guyana and Suriname share an interest in discriminating how areas of shifting cultivation change over time, the carbon fluxes through the cycle, as well as the consideration of shifting cultivation with regard to forest definition. Guyana defines shifting cultivation as a forest degradation driver. Suriname has been able to discriminate a separate class for shifting cultivation, but when reporting on forest versus non-forest this class is merged with the forest class, considering that it as a sustainable practice (based on discussions with indigenous people). Whether this is desirable is a topic for deeper discussion that the two countries have interest in. There is need for a clear definition in the MRV. In Guyana it will be based on a discussion held a few weeks ago on the definition of forest degradation, namely "consistent decline that continues in the long-term". Guyana and Suriname also highlighted how complicated it is to map shifting cultivation annually when by its very nature it is a longer term cycle.

- Participants were also interested in Suriname’s experience with Landsat, and wanted to know whether this imagery resolution is considered sufficient for mapping small areas of change, e.g. to map small-scale gold mining and all stages of shifting agriculture. Guyana has explored medium resolution imagery and halfway through the process they found that they could not map 1 ha areas correctly if relying only on 30m resolution images. That is why they moved to Rapid Eye with 5m resolution. This was a big decision that required careful consideration before the step was taken, because once you have moved to high
resolution imagery it is hard to revert to a lower standard. The GFC is happy with the decision and considers it a valuable investment.

See the presentation Session 1: Suriname Forest Cover Monitoring Unit on http://reddguianashield.com/working-groups/working-group-1/.

Session 2 – Carbon Stocks Assessment

The aim of this session was to share different approaches to Carbon Stocks Assessment and facilitate discussion between the different forestry services about how they are dealing with this component. The session started with a presentation on the National Forest Inventory pilot project being undertaken in Suriname. French Guiana’s Forest Carbon Inventory in the context of the Kyoto Protocol was then presented.

To begin, Charlene Sanches, Senior Manager Research & Development (SBB) introduced Suriname’s National Forest Inventory Pilot Project. This included insight into what has been achieved so far, an in depth look at the collection of aerial imagery, design of the sampling unit, determination of the exact location in the field as well as aerial image interpretation.

Reactions to the presentation included questions, comments and experience sharing as follows:

- Jagdesh Singh shared that in Guyana’s context, emission factors are calculated using IPCC default values based on forest types and established plots. At the same time, GFC explores options and feasibility for conducting a National Forest Inventory (NFI). Mr Singh explained that Guyana has a vegetation map with very high diversity in forest cover that should be complemented with field plots in order to provide more detailed and reliable information. He asked about the scale of the map being used in Suriname, if the plot distribution was random or not, and was interested in how Suriname dealt with limited accessibility to their forest for inventorying it.

- Ms Sanches responded that in Suriname the NFI teams use vegetation maps as auxiliary data for getting a better idea of the field locations they are visiting. The distribution of field plots in different forest types is based on forest cover map and photos. Ms Sanches explained that there is seldom only one forest type in a sampling unit (SU). She mentioned that the whole country is covered by a grid of 20 km x20 km and that six flight lines from north to south provide aerial photos for 120 of those locations. Out of those, 30 were chosen for field measurements within the pilot project based on accessibility, forest type diversity, and geographic distribution. Ten of the field locations are easily accessible by car and/or by boat, 13 are somewhat harder to access but still possible with ground transportation, and 7 can be reached only by plane.

Marie Calmel on behalf of ONF presented the French Guiana situation as a non-annex I party in the context of the Kyoto Protocol. The presentation included land use changes, reporting, and results. The results of reporting showed that deforestation in French Guiana is higher than reforestation and highly impacts the country net balance of emissions due to Article 3.3 activities (i.e. afforestation/reforestation and deforestation). The French government wants to improve the understanding of the situation and will soon start a new step of the NFI to do it.

Reactions to the presentation included an open discussion on how the different forestry services are dealing with carbon stock assessment:

- Amapá: Information on carbon stocks assessment is already available and undergoing inventory but there is very little data. IEF recently did a study and have 110 tonnes of carbon stocks.

- Suriname: Before embarking on the NFI pilot project, SBB completed a carbon assessment in 2011-2012. The report of this project is available in English on their website: http://sbbsur.org/files/2013/FINAL%20Carbonreport.pdf
French Guiana: In addition to the UNFCCC reporting, a lot of other activities are taking place in a smaller scale from a research perspective. With the idea of improving the understanding of carbon emissions in French Guiana, a project will start early 2014 named Observatoire du carbone. It should enable the collection of existing information on carbon stocks and emissions in the region.

Access the presentations for this session at: [http://reddguianashield.com/working-groups/working-group-1/](http://reddguianashield.com/working-groups/working-group-1/)

**Session 2a: Suriname National Forest Inventory**

**Session 2b: French Guiana Forest Carbon Inventory**

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**Session 3 – MRV Systems and Performance**

This session was about the establishment and implementation of MRV systems for tracking performance. The aim was to provide participants with a strong understanding and overview of what is required to develop and operate such MRV systems, based on existing experience and on international requirements and good practices guides.

**Key discussion points:**

- Activities and tools to feed into/support MRV systems
  - Data generation/management infrastructure
  - Policies and procedures

MRV Systems were introduced by Sara Svensson, and included elaboration of the concept itself, information on existing international requirements, obligations and guidances, including factors to be incorporated when planning or developing an MRV system, as well as options for national choices.

Guyana’s experience in establishing and implementing an MRVS agreement was shared by Jadhesh Singh. The presentation provided a background to the development of the MRV System and introduced the design of an MRV System (MRV Roadmap). The presentation provided details of Guyana’s Forest Area Change Assessment (FACA), Forest Carbon Monitoring System (FCMS) and Reference Levels (RL/REL). The presentation ended by sharing the key challenges and lessons learned as well as the next steps in Guyana’s MRVS.

Recent outcomes of the Warsaw Conference of Parties were summarised by Marie Calmel. This included an overview of the seven new decisions concerning National Forest Monitoring Systems, Information on safeguards, Drivers of deforestation, REL/FRL, MRV, Results-based finance, and Coordination of support for forest mitigation actions.

Thiago Zampiva of IEF presented Amapá’s experience of implementing a public forest concessions registry as a transparent reporting tool that could possibly be included in a future MRV system. Amapá’s experience began by compiling georeference data which raised the issue of land entitlement. The registry was created as a management tool to administer the forest concessions as well as a planning instrument used for an increasing population. It includes maps, images, plans, review of laws, review of public rural settlements and policy to distribute areas for agrarian reform. It is published online using national software.

Reactions to the presentation included questions, comments and experience sharing as follows:

- Participants were asked to share existing tools/activities that may feed into the MRV system.
- Ms Sances shared SBB’s log tracking procedures, an activity that may feed into the MRV system.
- Mr Singh explained that inter-institutional collaboration and information-sharing is crucial to Guyana’s MRV system, given that the system covers the entire country, including titled Amerindian lands for which there is a process that may affect reporting.
- Ms. Cort shared that the GFC has been developing national spatial data infrastructure to manage the large amounts of data for the MRV system. The GFC also shared its evolving work to develop a GIS policy to set
in place standards and protocols for data generation across agencies and its work to explore the use of online portals (e.g. the World Bank’s online portal system).

See the four presentations for this session on [http://reddguianashield.com/working-groups/working-group-1/](http://reddguianashield.com/working-groups/working-group-1/)

**Session 3a: Introduction to MRV systems**
**Session 3b: Guyana’s MRV System**
**Session 3c: REDD+ outcomes COP19**
**Session 3d: Amapá Public Forest Concession Registry**

**Session 4 – Drivers of Deforestation**

The aim of this session was to provide an introduction to the drivers of deforestation/degradation, discuss National and Regional drivers, explore the Extractive Industry Sector’s role as a key driver, and explore scenario modelling of drivers of deforestation in the Guiana Shield.

David Singh highlighted that a realistic future must be built on both renewable and non-renewable resources. Non-renewable resources must decline through the use to fuel of growing economies. To avoid countries/states becoming poorer when non-renewable capital declines, it is important to link development directly to improving human and social capital. For example, in Linden, Guyana the sustained focus on the bauxite industry led to the failure to incorporate sustainability into post-mining community plans the building of capacities for economic diversification. The result was a declining bauxite industry, failed recovery programmes, and a town in economic downturn and poverty.

In Guyana’s context, the Low Carbon Development Strategy (LCDS) is built on 3 simple platforms:
- Economic development
- National REDD+ plan
- MRVS for demonstrating performance.

The messages from the Year 3 MRV assessment in Guyana show that the MRV system is working. The system has identified mining as the primary driver of deforestation. As a critically important sector to gross domestic product, mining must contribute to the total wealth of a country, and there is need to think holistically on how this may be done. The key question that must be considered is “How does the mining sector contribute to the produced capital, natural capital and intangible capital of a given country?” Fundamental principles or points of convergence need to be identified. For Guyana, it allows for consideration of further questions such as:
- How does the extractivw industry fit into Guyana’s green development strategy?
- Where does mining fit in the economy of the country?

A key recommendation from this presentation was the suggestion to examine policies to ensure that they are aligned with the goal of growing a healthy sustainable society. This includes policy incentives to find alternatives as well as disincentives for mining. There is also need to empower miners to voluntarily implement safe and responsible working practices.

Dianne Balraj (CI) provided an introduction on the direct and underlying drivers of deforestation. The case was made for the importance of ensuring a focus on regional drivers, which is necessary for discussing regional efforts to address issues of deforestation that transcend borders (e.g. leakage).

Priscilla Miranda (CI) presented on a draft Guiana Shield scenario modelling study, conducted in collaboration with Imazon and Clark labs. At Conservation International's request, neither the material nor the PowerPoint will be available in the Working Group report at this time.
The presentations were followed by a guided discussion of specific questions by Priscilla Miranda:

1. What can we do - as a technical group - to understand the spatial aspect and rate of deforestation due to drivers? What are the main drivers of deforestation of each country?
   - Amapá State in Brazil: Mining is the biggest driver. The second is cattle herding and the third is agriculture. The dynamics are different in Amapá compared to the rest of Brazil. Destruction due to mining is much smaller but is taking place within the forest. Savannah vegetation is becoming substituted by agriculture, with the excuse that the population in the area requires greater food security. There are thus two different areas with two different drivers in Amapá.
   - Guyana: Five main drivers have been identified and the primary driver is mining (including mining infrastructure). Others identified include infrastructure, forestry (and forestry infrastructure), agriculture, and anthropogenic fire if it leads to deforestation.
   - French Guiana: Mining is one of the main drivers along with agriculture. Infrastructure and roads contribute to deforestation, and there is an issue with mangrove dynamics in the coastal area that tend to bias the results.
   - Suriname: Mining is the primary driver. The industry is mainly constituted by small-scale illegal gold mining, large-scale legal gold/bauxite mining, and crude oil. Agriculture may become a more significant driver in the future. Road construction, infrastructure development and energy production are other examples.

2. Looking at the different types of mining, what is the link between the location of mining and the rate of deforestation?
   Accessibility and infrastructure.
   - When roads are built into the interior, perhaps for forestry, there is an increase in illegal mining, hunting of wildlife, etc. Thus, deforestation/degradation activities tend to grow with growing infrastructure. Roads to neighbouring countries lead to more housing in the areas as well. Accessibility is probably more important than the actual proof of reserves to be mined, since access to the area enables prospecting. That needs to be addressed.
   - Claudia Funi (SEMA) noted that, in Amapá, identification of drivers is ongoing. So far, they have mailed across data that they have for various variables. Seventy-three percent of deforestation in Amapá takes place along roads and 30 percent in rural living areas.
   - In Suriname, there are differences between legal and illegal mining. Such that much small scale mining is illegal and has more impact in total than large scale mining (e.g. for iron or bauxite), which is more controlled and tends to be conducted by specific regulated companies. There is a lot of illegal mining, and flows of people, coming especially from Brazil, to mine in other parts of the Guiana Shield. Trying to tackle this leakage is a major issue. It was also noted that with high international gold prices, there will always be interest in mining.

3. What are the regional linkages and what are possible regional interventions that can lead to better outcomes?
   Leakage.
   - Participants agreed on the risk that if one country tries to tackle their deforestation, it can increase deforestation in neighbour countries. This is where the regional perspective is important.
   - Suggestions included to perhaps developing common tools or maps and/or common plans and initiatives related to addressing drivers. This would be in addition to national tools, but there is clearly need for a discussion and dialogue on linkages and leakages between countries. Perhaps this could be done by the development of baselines or future deforestation scenarios for the Guiana Shield.

Session 4a: Addressing Extracting Industry Sector
Session 4b: Guiana Shield drivers of deforestation

Session 5 – Forest Reference Levels/Reference Emission Levels

The purpose of this session was to present different existing tools to model future of deforestation and to explore how it can be linked to developing RELs.

Amapá’s experience with the development of a state REL was presented by Claudia Funi. The Brazilian Federal government has a plan to reduce deforestation in the Amazon region. Each state has a plan and Amapá is in the process of redoing theirs. Mato Grosso and Pará had the most deforestation - Amapá has only 11 km², the best figure and below the goal of 15 km². Amapá and Tocantins were the only 2 states keeping below the reduction goal level but a major part of the Amazon was not mapped due to cloud coverage. Ms Funi highlighted cloud coverage and resolution issues which complicate the assessment and monitoring of land-use changes in Amapá state, especially using Landsta imageries such as the one used by PRODES. As an alternative, RapidEye or Radar imageries have been considered, which raises the issue of cost. From 2011 to 2012, thanks to regional funding, RapidEye imageries have been purchased for the entire state, reducing the cloud coverage to 20 percent. Those RapidEye data over a consecutive 3-year period will enable assessment of the percentage deforestation and then enable recalculation of the baseline.

At this time of the process, two main questions are raised by SEMA as an obstacle to develop a sound REL:

- The availability of medium to high resolution imageries with fewer clouds;
- The accessibility and expertise on remote sensing programs that would enable use of those other imageries (considering that the current program PRODES is using Landsat imageries).

The GUYASIM tool for French Guiana was presented by Camille Dezecache, a PHD student from the French Agricultural Research Centre for International Development (CIRAD). The project recognizes that local management decisions need to be connected with global policy issues and attempts to facilitate this with the GUYASIM tool. GUYASIM is a software that has been developed for French Guiana and can be used for several purposes, including the carbon emissions impact of land-use changes or land management decisions. Other possibilities are still under development. Camille Dezecache demonstrated the software during the presentation to show its current possibilities.

Marie Calmel highlighted the fact that Component 3 of the REDD+ for the Guiana Shield project aims to develop a similar tool for the Guiana Shield region (including Amapá, Suriname, Guyana and French Guiana) and importantly, to explore how this kind of tool can be used to feed into decision-making. She highlighted the importance of creating tools that are easy to manipulate and understandable by decisionmakers. The objective is not to replace the decision making process, but to support it with one source of precautioned information. It requires specific information to calibrate and could be useful for other countries/states providing that the data for their contexts are available.

The fact that users cannot change the biomass map that is programmed in was highlighted as a limitation of Guyasim. Camille Dezecache explained that the code might be changed to enable this and reminded participants that the tool is still being developed and that there is still work to be done before it can be expanded to the regional level. For example, maps must take into consideration the data from all countries and calibration work needs to be renewed once those data will be available.

See the two presentations for this session on: http://reddguianashield.com/working-groups/working-group-1/
Session 5a: Amapá Development of State REL
Session 5b: Guyasim Modelling Tool
Conclusion and Next Steps

As a conclusion to the launching of the Working Group meeting, the organizers thanked all participants for the fruitful discussions. The results of those discussions will be shared with Steering Committee members during their second meeting in Macapá 11 December 2013, during and following which decisions will be made. Based on those decisions, an invitation will be sent in January for the next Working Group meeting to be organized for the end of February or early March 2014.