REDD+ Measuring, Reporting and Verification – Science solutions to policy challenges

Workshop Report

Zeist, The Netherlands

10- 12 June, 2013

Contents

Acronym List

CCB	The Climate, Community and Biodiversity standards
COP	Conference of the Parties
GHG	Greenhouse Gases
GOFC GOLD	Global Observation of Forest and Land Cover Dynamics
IPCC	Intergovernmental Panel on Climate Change
MRV	Measurement, Reporting, and Verification
NFI	National Forest Inventories
NFMS	National Forest Monitoring System
REDD	Reduction of Emission from Deforestation and forest Degradation
REDD+	Reduction of Emission from Deforestation and Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (+)
REL	Reference Emission Levels
RL	Reference Levels
SBSTA	Subsidiary Body for Scientific and Technological Advice
SFM	Sustainable Forest Management
UNFCCC	United Nation Framework Convention on Climate Change
VCS	Voluntary Carbon Standards
WUR	Wageningen University
WWF	World Wide Fund for Nature

1. Introduction

Continuous deforestation of tropical forests is one of the major causes of greenhouse gas emissions, which threatens the world's biodiversity and the livelihoods of the indigenous and the forest dependent communities (Schwartzman, Nepstad et al. 2007). Given the importance of tropical forests, several initiatives are being taken to address tropical deforestation and forest degradation. At the international level, the United Nations Frameworks Convention on Climate Change (UNFCCC) has since 2005, been negotiating a mechanisms to reduced deforestation and forest degradation in tropical countries (commonly referred to as REDD).

From the initial idea of just reducing deforestation and forest degradation (UNFCCC 2009), the scope of REDD has since expanded to include role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (UNFCCC 2010); which are generally referred to as REDD-plus. In addition, the UNFCCC introduced non carbon benefits that must be met when designing and implementing REDD+ activities. These include requirements that (REDD+) actions should be consistent with the objective of national forest programs and international conventions, have a transparent and effective national forest governance structure, respect the knowledge and rights of indigenous peoples as well as members of local communities and ensure full and effective participation of relevant stakeholders, and in particular indigenous peoples and local communities (UNFCCC 2010). Additionally, REDD+ actions must also be consistent with the conservation of natural forests and biological diversity, address risk of reversals, and reduces displacement of emissions (leakage). Thus, an establishment of a cost effective, reliable, robust, and compatible national monitoring and Measurement, Reporting, and Verification (MRV) system is one of the key requirements to guarantee a successful implementation of REDD+ activities.

However, the expanding scope of REDD+ and the methodological and technological challenges of monitoring and estimating forest carbon changes poses several challenges for the development of REDD+ MRV systems (Visseren-Hamakers, McDermott et al. 2012). Key concerns include whether MRV should focus only on carbon or include other non-carbon benefits, the scale (i.e. local vs. national), and the accuracy and integrity of the MRV process. These issues remain topics of discussion among interested Parties, relevant multilateral and donor organizations, scientists, Non-Governmental Organizations (NGOs) and other stakeholders. Studies indicate that the concept of REDD+ has been evolving through time and is getting more complex. REDD+ mechanism includes now multiple benefits, engagement of large number of actor, funding, and specific issues related to the carbon market (Angelsen, Brockhaus et al. 2012). Visseren-Hamakers et al. (2012) also informs that the varying priorities from the different actor involved requires a complex MRV system.

The objective of this report is two-fold. First, it gives a status-of-the-art on REDD+ MRV requirements of the multiple Parties involved in the REDD+ process. It is assumed that with the on-going political discussions, agreements and implementation of REDD+ pilot programs, the stakeholders involved are coming forth with their requirements and expectations for REDD+ MRV. Thus, the latest literature (scientific publications, reports) related to current forest monitoring capacities, technical challenges, safeguards, non-carbon benefits, and financing of REDD+ as well as carbon market are reviewed to identify the current status of REDD+ MRV activities. Thus chapter two of this report will provide a review of the evolving requirements from the perspective of international policy makers, national implementers, critics of REDD+ MRV, NGOs, and the private sector.

Second, it reports on the proceedings of a REDD+ MRV multi-stakeholder workshop organized by the World Wide Fund for Nature (WWF) and Wageningen University (WUR) to identify and address the emerging challenges and requirements in REDD+ MRV by providing science solutions to policy challenges.

2. Literature review

2.1 Current REDD+ MRV and IPCC requirements

During COP 15 in Copenhagen, the UNFCCC requested developing country Parties to use the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines for establishing a robust and transparent National Forest Monitoring System (NFMS) (UNFCCC 2009). The IPCC revised Guidelines (GL) 1996[1], and 'Good Practice Guidance for Land Use, Land Use Change and Forestry' (GPG-LULUCF)[2] provide international standards for monitoring and measuring emissions from deforestation and forest degradation (Schwartzman, Nepstad et al. 2007; Verchot, Anitha et al. 2012). In addition, it presents frameworks for compiling national estimates of emissions and removals of carbon from different sectors, and offers guidance for national greenhouse gas (GHG) inventories.

Establishment of a robust national MRV system is required for REDD+ host countries to quantify the emission reduction and removals. The MRV system is expected to provide data on area change (Activity Data) and forest carbon stock changes (Emission Factors) (Angelsen and Wertz-Kanounnikoff 2008). The GHG inventory is computed using standard UNFCCC templates to assess the national mitigation performance through the combined use of remote sensing and ground-based forest inventory (UNFCCC 2009). The role of remote sensing in the carbon accounting process consists of providing data on forest area change (De Sy, Herold et al. 2012). Whereas, carbon stocks, emission factors and biomass are quantified through national forest inventories (NFI) (Wertz-Kanounnikoff, Verchot et al. 2008). The reporting of these measurements show the performance of REDD+ at a national level which can be further verified by an external body to check on the accuracy, reliability of information provided, and the suitability of methods used to acquire the information. The results are then used to claim a performance based payment (UNFCCC 2009).

The decision of COP 16 in Cancun not only requested countries to create a robust national carbon monitoring system, but also required countries to provide information on how safeguards are being addressed and respected through REDD+ implementation (UNFCCC 2010). This includes forest governance structure, rights and participation of indigenous people and local communities, conservation of natural forests and biological diversity, as well as measures to address reversals and leakages. Even though the IPCC guidelines are considered as methodological sources for estimating GHG inventories (Estrada 2011), numerous voluntary forest and carbon certification schemes have emerged through the years to assist in the MRV of impacts of REDD+ activities. These standards include social and environmental impact assessment criteria along carbon accounting and have objectives of promoting Sustainable Forest Management (SFM), poverty alleviation, and biodiversity conservation (Merger, Dutschke et al. 2011). The recent COP 18 meeting in Doha had put an emphasis on the need of addressing issues of drivers and non-carbon benefits, requesting the Subsidiary Body for Scientific and Technological Advice (SBSTA) to provide more guidance and information on this issues (Sanz-Sanchez, Herold et al. 2013).

[1] http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html

[2] http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html

2.2 Evolving requirements

2.2.1 International policies

International efforts are being taken to mitigate GHG emissions and their impacts on the climate. The UNFCCC COP meetings facilitate these efforts by following up on the implementation of adopted decisions and resolutions, and concrete actions on the ground. The COP mobilizes resources for the implementation of REDD+ and assists developing countries with methodological guidance through SBSTA and IPCC (UNFCCC 2013). In addition, the report from Global Canopy Programme (2012) demonstrates the support of international agreements towards domestically measured, reported, and verified REDD+ activities. Yet, these measurements are expected to be in accordance with the internationally developed latest IPCC guidelines and requirements (IPCC 2006) or with IPCC complementary guidance such as GOFC–GOLD REDD sourcebook (GOFC-GOLD 2012). Thus, Countries are expected to design a stepwise MRV approach that aligns with the IPCC tiers for carbon stock and emission estimations; where advancing through the three tiers requires more detailed data, complex analysis, and higher accuracy (Bernard and Minang 2011).

Debates still exists on identifying the right scale of REDD+ (Angelsen, Streck et al. 2008), and regarding the integration of project-level activities in sub-national and national frameworks (Swickard and Carnahan 2010). In addition, recent studies (Corbera and Schroeder 2011; Larrazábal, McCall et al. 2012) present the challenges of aligning the locally estimated forest carbon stocks, and co-benefit monitoring outcomes to the international MRV standards and requirements.

Other evolving requirements also exist concerning the establishment of good performance indicators in each phase of REDD+ activities (Wertz-Kanounnikoff and McNeill 2012), the accuracy and precision of measuring and assessing carbon stock changes (Petrokofsky, Kanamaru et al. 2012), and about technical and research capacity gap in REDD+ MRV (Koakutsu K., Usui K. et al. 2013).

2.2.2 National Implementation

The UNFCCC requires countries to specify their national drivers of deforestation and forest degradation so as to design policies and MRV systems that address country specific drivers. Proximate or direct drivers of deforestation and forest degradation exist due to human activities and actions such as agriculture, timber extraction, and logging activities. Other identified drivers are related to social, economic, political, and cultural context, in addition to technological issues (Kissinger, Herold et al. 2012).

Gibbs et al. (2010) identified agricultural expansion as a key driver of deforestation in the tropics. The risks posed on forests due to agricultural expansion has been a topic of debate on many climate change discussions. Hosonuma et al. (2012) and Olander et al. (2013), argue that since agriculture is presented as one of the key drivers of deforestation, there is a needs to make accurate measurements and continuous report on this driver. Yet, Pirard (2012), argued that the type of agricultural activities practiced and advancement in agricultural technologies have their own part in determining the weight of impact towards deforestation and forest degradation. Based on this, Olander et al. (2013), argued that the agricultural impacts can be mitigated to a level where the sector can become carbon neutral; thus underlining the need for new ideas, methods and uses of technology in addressing agricultural GHG quantification. Sanz-sanchez et al. (2013) conference report on the COP 18 meeting in Doha, also elaborated on the emerging issue towards addressing the drivers of deforestation and degradation; where emphasis was given on addressing impacts due to agricultural expansion.

Acquiring of national information on the drivers of deforestation and forest degradation is not an easy task. Such activities require an upgraded technological resources and research capacity to identify proximate or direct drivers and underlying or indirect causes (Hosonuma, Herold et al. 2012). Since this is a rather complicated process, support and guidance of the international community is required for countries to improve their data quality and estimation methods (Böttcher, Eisbrenner et al. 2009).

Kissinger et al. (2012), stated that the monitoring of drivers can be linked with activity data and resulting GHG emissions. However, availability of data on drivers appears to be low and uncertain in developing countries. Yet, these data gaps are expected to be filled with other sources such as remote sensing based estimates, that are linked with forest inventories (Hosonuma, Herold et al. 2012).

Furthermore, another issue remains with setting of a reference level at subnational or national scale, where countries will be awarded based on additional efforts made to reduce emissions in comparison to the results of business-as-usual (Angelsen 2008). Venter and Koh (2012), emphasize on the drawbacks of methods proposed for developing reference levels suggesting that it should be formed by combining the incentives of reducing high levels of deforestation with incentives for maintaining low rates of forest loss.

2.2.3 Critique on MRV: safeguards & non-carbon benefits

Vast volumes of literature exist regarding the social safeguards and non-carbon benefits of REDD+ mechanism, where most argue towards the necessity of compensating, involving and empowering the local communities during the process (Skutsch, Vickers et al. 2011; PwC 2012), as well as considering the biodiversity impacts of such activities (Pandey 2012; Struebig, Harrison et al. 2012). This arena embraces safeguards such as land tenure rights, and bringing alternative livelihood for forest resource dependent communities (Visseren-Hamakers, McDermott et al. 2012).

The issues raised from scholars stresses on the importance of establishing a participatory carbon and safeguard monitoring system (Gupta, Lövbrand et al. 2012). In addition, Hall (2012) informs that the non-carbon benefits are neglected or downplayed in the MRV process. Visseren-Hamakers et al. (2012) tells that agreements are still lacking on UNFCCC COP meetings and beyond, regarding the implementation and monitoring of REDD+ related safeguards; where it has been debated on how, why and to what extent the safeguards should be specified in the different tiers of REDD+ implementation. As a result, Dickson et al. (2012) argues that the monitoring of co-benefits appear to be less structured compared to forest cover and carbon stock monitoring. In addition, Hoang et al. (2013) discussed the issue of performance based reward and benefit distribution system for environmental services, where it stressed that discouragement in commitment might occur due to delayed payments.

A study by Merger et al. (2011) shows that based on a comparison made among certification standards used for REDD+ MRV, out of the 10 standards used for the study, none had a comprehensive coverage of criteria that corresponds to safeguard concerns specified in the Cancun decision. Besides, the existence of numerous safeguard standards with varying principles, criteria, indicators and rules bring confusion for developing countries to navigate through and integrate into their national implementation and reporting process (Roe, Streck et al. 2013).Thus, Olander et al. (2012) stresses the need to harmonize the SBSTA guidance on MRV and safeguards with evolving tools and on the ground experiences that are moving rapidly. As a result, the COP 18 meeting in Doha responded to this growing demand by requesting the SBSTA to work on methodological issues on monitoring non-carbon benefits resulting from REDD+ activities, and report on them at the 19th COP session (UNFCCC 2012).

2.2.4 REDD+ Finance and the private Market

Several bilateral and multilateral agreements are channelling funds to support the on-going REDD+ activities, though there are still on-going debates on the financing of REDD+ (Angelsen and Wertz-Kanounnikoff 2008). Streck (2012) informs that there had been pledges from developed countries to kick off REDD+, however, there are still significant differences in what has been promised and what has been received so far. Thus, it is estimated that the private sector might become a new source of finance for REDD+ projects through the carbon markets (Streck 2012).

The Munden project (2011) informs that REDD+'s success depends up on the engagement of the private sector as it is believed to provide the required financial resources in combating deforestation. However, the report from Market places and trends (2011) states that the overall transaction volume of REDD+ in the Voluntary Carbon Market (VCM) dropped 59% from 2010 as a result of political and technical complexities as well as due to interests towards lower-priced credits. It is therefore warned that though REDD+ is currently on an evolving stage, once carbon trading reaches international markets, prices and demands will be determined by the accuracy and creditability of the MRV system employed (Venter and Koh 2012).

Other potential issues discouraging the involvement of the private sectors are related with challenges of estimating carbon leakage and reference level. The issue of avoiding and controlling leakage is considered essential in analysing the outcomes of REDD+ projects, since depending on the actions taken, the magnitude of leakage impacts might entirely offset, or even worse exceed the mitigation efforts (Wunder 2008).

2.3 Synthesis

The literature shows that there are growing demands from various stakeholders for an effective, integrated and holistic MRV system. The existing gap between policies and on-the-ground implementation had been regarded as major problem, where as there are still demands from actors that needs to be acknowledged and addressed by policy makers.

The issue of integrating MRV practices from project to national, and from national to international level remains as the root of the challenges. Whereas, issues of data availability and accuracy, lack of technical capacity, and difficulties in setting of reference levels are among the list of requirements that are forwarded from involved actors. Debates still exists on specifying country specific drivers of deforestation and forest degradation, and on the MRV of non-carbon benefits. In addition the critiques from social scientists (Gupta, Lövbrand et al. 2012; Visseren-Hamakers, Gupta et al. 2012) on the need of acknowledging and integrating non-carbon related issues, and integration of the knowledge of the indigenous people and local community during the MRV process can be seen as a critical point. In addition, these uncertainties, as well as the lack of robust and reliable MRV system seems to affect the private market interest on REDD+ carbon credits.

Luckily COP calls on parties, relevant organizations and stakeholders to support the on-going REDD+ activities and provides platforms for discussion and sharing of information on the outcomes with the SBSTA. Thus, these challenges and growing requirements can be forwarded to international policy makers where solutions can be found, so that REDD+ can be operationalized to its optimal potential.

The next chapter presents a report of a REDD+ MRV workshop, organized by World Wide Fund for Nature (WWF) and Wageningen University (WUR). This workshop was organized holding a similar

intention of identifying the growing demands on the MRV system from multiple actors involved in REDD+ and aimed to provide a roadmap for addressing this issues.

3 WWF/WUR workshop: REDD+ measuring, reporting and verification-science solutions to policy challenges

3.1 Introduction

A multi stakeholder participatory workshop on 'REDD+ MRV- science solutions to policy challenges' organized by WUR[3] and WWF[4] was carried out from June 10th -12th 2013 in Zeist, The Netherlands. This workshop aimed to assess the status and development of MRV processes compared with the evolving needs from policy makers, local implementers, donors and the private sector.. The workshop can be considered as an effort taken by these institutions to address gaps, and indicate solutions to meet the evolving issue by bringing together experts that represent actors involved in REDD+ MRV process. Issues such as avenues for engagement in the REDD+ process, existing monitoring capacities, challenges with respect to REDD+ monitoring, and benefit sharing are examples of capacity gaps that exist in many forest rich countries. Thus, the workshop aims to revisit situations based on the different circumstances and current MRV capacities to further draw key conclusions and recommendations for the design and planning of a REDD+ forest monitoring system and REDD+ capacity development investments; advancing the REDD+ research agenda and integrating WWF/WUR capacity.

3.2 Workshop Objectives

The workshop was organized with the aim to meet the following objectives:

- Create a dialogue between the scientific community, practitioners, and other stakeholders to share experiences and best practices on REDD+ MRV process
- Identify emerging issues, needs and tools
- Deliver a roadmap that can assist policy makers on indicating the next steps for maintaining an effective MRV

3.3 Organizing Committee

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[3] http://www.wageningenur.nl/

[4] http://www.wwf.org/

3.4 Sponsors

- Forest and Climate Initiative
- World Wide Fund for Nature, WWF Netherlands
- Wageningen University Research
- GOFC-GOLD Land Cover Project Office

3.5 Access to workshop materials

The presentations made, and other relevant materials used during the workshop can be accessed on: http://www.gofcgold.wur.nl/sites/wwf-workshop2013.php

3.6 Summary of the workshop's sessions

3.6.1 Summary of REDD+ experience, requirements and challenges session

Monday, June 10,2013		
Time	Presentations	Lead / Speakers
12.00-13.00 Lunch		
13.00-13.15	Welcome hosted by WWF-NL	Kristen Schuyt
13.15-13.30	Welcome: Why are we here? Overview of the meeting objectives Introductions & Expectations House rules and logistics	 Harko Koster Martin Herold
Session 1: Requirements for MRV to support REDD+ activities: different perspectives		
13.30-13.40	*What are evolving requirements for MRV on the international policy level?*	Danae Maniatis (FAO/UN-REDD)
13.40-13.50	*Evolving requirements from private sector?*	Edith Kiss (ENECO)
13.50-14.00	*Evolving requirements from local practioneers?*	Thomas Barano (WWF Indonesia)
14.10-14.20	*Links between MRV and benefit sharing?*	Margaret Skutsch (Univ. Twente)
14.20-14.30	*Social issues and MRV*	Vanessa Retana (Consultant)
14.30-15.00	Short discussion *Q&A evolving requirements for MRV*	Chaired by: Derek Thompson
15.00-15.15 Break		
Session 2: Break out groups: Synthesizing challenges and emerging requirements		
15.15-16.30	*Dialogue among different actor asking for MRV?* *Working groups discussing requirements from different REDD+ actor* *Presentation of results + d*iscussion *Document and summarize requirements for MRV from multiple actor's international/ national policy, local implementers, benefit sharing and private sector?*	
Summary & Day 1 Close		
16.30-17.00	Overview of the agenda for the next 2 days. Missing points for the agenda?	Moderator: Derek Thompson
18.00-20.00 Cooking Workshop for All participants		

In this session, participants representing the different stakeholders (policy makers, private sector, local practitioners, and social scientists) shared their experience, identified essential characteristics as well as components of an effective MRV approach, discussed on requirements, and recognized challenges existing in the MRV process. The presentations made, and discussions carried out on these topics had allowed the participants to identify the state of the art and moreover, to state evolving requirements on the MRV process.

The *policy makers'* regarded the current MRV system as a process that incorporates National Forest Monitoring System (NFMS) with monitoring and MRV functions, following a step wise phase approach, where it is expected to be executed in line with the IPCC standards. The challenges specified in this process were related with:

- capacity building issues at national level
- difficulty in identifying suitably integrated MRV tool kits for countries
- issue of synchronizing national and sub-national level MRV

Accordingly, priorities were given to:

- making an assessment of what seems to be working for countries in their MRV process
- addressing the availability of integrated toolkits for countries
- bridging the gap between science, policy and implementation to arrive to tangible solutions
- addressing language barriers on the preparation of MRV guidance materials

The *private sector* recognized the need for an accurate, transparent, cost effective measurement, and a robust monitoring system. The essential characteristics and requirement of MRV from this section included the usage of Voluntary Carbon Standards (VCS) for carbon accounting, the Climate, community and Biodiversity (CCB) standards for integrating non carbon benefits, and the assessment of long term viability of projects. In addition, the establishment of national baselines, additionality, leakage strategies, and adaptation of nested approach in the measurement of REDD+ activities were also considered essential. The challenges presented from this section include:

- technical complexity in accounting of carbon cycles
- challenges in addressing benefit sharing issues and community rights
- further quantification and synergies with biodiversity offset requirements

Priorities were given to

- bridging gaps between top-down and bottom-up MRV process
- building up on the field experiences to speed up the MRV process
- speeding up of the MRV process despite seeking for perfection

From the perspective of *local practitioners*, the confusion in the MRV process was described to arise from the essential definition and classification of forest and non-forest vegetation. The challenges in the MRV process were recognized to be related with:

- issue of data availability
- lack of transparency in organizations
- the uncertainty of ensuring safeguards to the local community

Therefore, Priorities were given to:

- providing simple approach that allows every party to easily understand the MRV process
- ensuring the benefits of local communities
- linking the MRV process to development framework

The *social scientists'* view on *links between the MRV process and benefit sharing* proposes measurement of forest enhancement, and reduced deforestation for crediting the local community; stressing that the local community itself should be integrated in the measurement and monitoring process.

However, challenges still remain at the national and sub-national level regarding:

- lack of adequate baselines for degradation (no historical data on its rate to make comparisons)
- difficulty in justifying avoided degradation
- who to pay and how to distribute the payment among the local communities

Priorities were given to:

- promoting forest enhancement and result based payment
- building degradation data for the future using community monitoring and available technology

The consultants view on *social issues and MRV* had put an emphasis on the monitoring of non-carbon benefits, through the identification and measurement of performance indicators. Improved forest governance was therefore regarded as a main requirement in the monitoring of REDD+ activities. The challenges specified under this category include:

- multiple mechanisms and instruments put to measure social and governance issues
- complexity of performance measurements
- identifying country specific indicators for monitoring REDD+ activities

Priorities were given to:

- developing indicators that provides space for performance based assessment
- Independent collection of performance data along with independent verification procedures

Further discussion on the component, characteristics, and requirement of the MRV system was carried out among the participants. A break out group discussion was held by 5 groups where the following elements were identified.

Components:	Under this theme the fundamental components of MRV process were specified to be: • acknowledgment of peoples role in the MRV process • providing of long term technical support for countries/projects • the need for a clear governing body for maintaining homogeneity of the MRV process. In addition, the following elements were also mentioned as essential part of an effective MRV: • the integration of remote sensing and field data • setting reference levels for emissions as well as non-carbon benefits • measurement of co-benefits • and establishment of a robust local benefit distribution system
Characteristics:	The participants specified that an ideal MRV system should be: • Transparent • Participatory • Simple • Accurate • and reliable.

Requirements:	The participants indicated that the MRV system should incorporate: • quality assessment • follow a holistic approach • provide good governance • incorporate standards and indicators for measurement • and provide benchmark for performances. Furthermore, the following elements were also raised as a necessity: • the need to find balance between complexity vs. simplicity • integration of bottom up and top down approaches • and linking of the MRV process with millennium development goals.

3.6.2 Summary of session on identifying gaps and priorities

Tuesday, June 11,2013		
Time	Presentations	Lead / Speakers
09.00-09.15	Recap of Results of Day 1, Agenda for Day 2	
09.15-09.23	*Local MRV practitioner*	Arif Budiman (WWF Indonesia)
09.23-09.31	*National MRV expert*	Peter Schlesinger (Consultant)
09.31-09.39	*Private sector* MRV	Moriz Vohrer (GCS)
09.39-09.47	*MRV scientist: forest inventory*	Rosa Goodman (Univ. Leeds)
09.47-09.55	*Biodiversity monitoring on MRV*	Jan Willem den Beesten (IUCN NL)
09.55-10.03	*Social science perspectives on MRV*	Esther Turnhout (WUR)
10.03-10.11	*Requirements from national implementers*	Bryan Allicok (Guyana)
10.11-10.21	*Synthesis of WWF experiences*	Naikoa Aguilar-Amuchastegui (WWF FCI)
10.21-10.30	*MRV scientist: remote sensing*	Martin Herold (WUR)
10.30-10.40	*SBSTA Summation*	Peter Schiesinger (Consultant)
10.40-11.15	*Q&A Discussion*	
11.15-11-30	Break	
Session 3 Working groups: 3-5 hands on break out groups working on specific requirements and assess current gaps!		
11.30-12.30	*What is the progress being made? Identify key gaps and set basis for research priorities*	
12.30-14.00	Lunch Break	
14.00-14.30	Report back: conclusions on gaps, dilemmas, next steps	Moderator: Derek Thompson
15.30-15.00	Discussion	
15.00-15.15	Break	

Session 4 Working groups: 3-5 hands on break out groups working on setting specific priorities to fill key gaps		
15.15-16.15	*Set up research agenda and priorities and actions to fill them*	
16.15-17.00	Report back: conclusions, dilemmas, next steps	
17.00	Close of Day 2, Parking lot issues	

This session of the workshop involved breakout group discussions, creating space for dialogue among different actors regarding identification of gaps and specific priorities under foci themes of REDD+ MRV. These discussions were made in the context of:

- getting back to the basic MRV requirements
- Clarifying: science-policy-politics
- addressing the needs of countries
- Identifying the map to future work
- taking advice to, and thinking of advices to SBSTA
- Providing useful inputs to all levels (country, government, private) at local, national, and international

The themes put for discussion were namely:

- Monitoring and Measurement
- Reporting and verification
- Safeguards
- Reference levels
- Benefit sharing

In addition, each group kept the issue of communication and capacity building as part of the discussion as well. These process of identifying gaps and setting priorities were estimated to help focus resources and efforts on specific tasks that needs to be addressed.

The gaps identified and priorities made under the selected themes of REDD+ MRV are:

Themes	Gaps	Priorities
Monitoring and Measurement	- Lack of commitment from national government to implement REDD+ - Lack of data availability at sub national and local levels	- Stimulating governments commitment
Reporting and Verification	Reporting schemes depends on administrative requirements, raising issues of : - Proper scale of information? - What is the minimum that needs to be reported? To whom? - What is the minimum that needs to be verified? By whom? - What guidance is available? - What capacity building requirement is necessary at sub-national level	- Recognize differences among countries in administrative layouts and REDD+ administration levels - Conduct gap assessment between provided guidance, requirement, and capability of countries
Safeguards	- Usage of different safeguard standards at different levels (local to national) - Forest and carbon mapping impacts on rights	- Addressing different land tenure regimes - Does complying to one standard

	of the indigenous people - Issues of acknowledging traditional conservation systems	mean the safeguards are met?
Reference levels	- Non matching approaches of baseline establishment from Project level to sub national, and from sub national to national levels - Usage of different baseline setting methods, tools, and approaches according to purposes - Coping with competing baseline approaches? Which ones to use?	- Looking in to existing tools, guidelines, and examples - Share and compile experiences on REL with government, private sector, and other actor - Conduct research on the discrepancy between voluntary market and national REL - Writing an opinion paper involving all stakeholders
Benefit Sharing	- Difficulty of linking evidences with incentives made - Need for flexibility in performance based incentives (from national to local level): on what to credit, what to measure and where to spend the funds - How to split benefits among communities (opportunity costs vs. benefits) - Timing: when does the money 'arrive'?	- Establishing input and effort based performance monitoring

3.6.3 Summary of roadmap: short term and long term actions session

Wednesday, June 12,2013		
Time	Presentations	Lead / Speakers
09.00-09.30	Recap of results of Day 2, Agenda for Day 3	Moderated by: Derek Thompson
Session 5: Developing a road map		
09.30-10.30	Breakout working groups on answering key issues raised from day 2	
10.30-10.45	Break	
10.40-11.15	Report back: conclusions, dilemmas, next steps	Moderated by: Derek Thompson
11.15-12.00	Plenary discussion:	
12.00-12.30	Workshop Closure and agreement Next Steps on the Road Map	Harko Koster Martin Herold
12:30-14:00	Lunch	

On day 3, following on the gap assessment and identification of main concerns, the stakeholders had presented a roadmap that is believed to assist in addressing the evolving requirements. The roadmap proposed by the working group aims to solve the key requirements specified under the five main themes. Recommendations were made on what to address, how to approach the issues, when to execute actions, and who to involve in the process.

Theme 1: Monitoring and Measurement

What	How	When	Who
Push national governments to make clear commitment to being in REDD+ (Goal: to facilitate sub-national projects by providing cohesive guidelines to keep consistency and higher-quality results with lowest costs)	- Interpret IPCC report to facilitate sub-national projects - Make data available (emissions factors, equations) - Portal in each country to share data among stakeholders (national to local level) and report to IPCC - Technical human resource capacity building	Short term	National Government Multi stakeholders (private, NGO, university, public, etc) IPCC
Measurement	- Categorize forest type relevant to C stocks and potential changes (not too complex) - Map forest types across the landscape - Set up inventory and database protocol for consistency between organizations and inventories (minimum = dbh measurements and species ID) - Evaluate existing plot data - Research and make protocol to determine which forest components to include (bamboo, herbaceous, lianas, small trees, necromass, fine litter, roots, soil) and national values for each - Document/mark inventories in field for verification - Balance data quality and plot size vs. quantity of plots and spatial coverage	Long term	National REDD office
Monitoring	- Needed to detect changes: deforestation and forest degradation - What rate, extent, and at what resolution? - Government REDD+ office organises, processes data, striking deals to obtain remotely-sensed data - Cost-benefit analysis for different remote-sensing techniques (trade-off between cost and accuracy)	Short term	Government REDD office
Financial mechanisms encouraging country commitment	- Development of a national database of emissions factors (research in emission factors at sub-national projects)	Long term	
Commencement of annual national monitoring programme		In advance of Phase 3 in order to develop skills	
Recommendation: WWF role	- Lobby large conservation organization to get on board with this proposal for stronger	Publishing data should occur six months after	WWF

	country commitment - Lobby SBSTA to push for this country commitment - Lobby different C validation standards (eg, VCS, CDM) to require projects proponents to publish emissions factors, satellite imagery and other data used by projects - Begin sharing data/information of WWF projects and others - Cost-benefit analysis for different remote-sensing techniques	validation and listing on the VCS project inventory	

Theme 2: Reporting and Verification

What	**How**	**When**	**Who**
- Applicability per level,(national, sub national/jurisdictional, and/or project level) - frequency of reporting, - to whom to report, - who has to do verification, - minimum reporting (for safeguards), - minimum verification, - transparency	Review for (main) 'REDD+ countries': Consult IPCC requirements, national laws, VCS reporting requirements, and any other that has a sub national component	Short term	Cooperating scientists (independent experts) and politicians at the verification stage
Safeguards, RELs, benefit sharing	Review of international & country-specific laws to identify to whom must report go, who has access to the information, especially that of Indigenous Peoples > Country specific report	Short term	Environmental legal aides with country specific information
Interactive database that permits all of us to add our knowledge and expertise for MRV, in monitoring / measuring, reporting, and verification. A wiki perhaps.	Sharing (un) successful examples, including protocols, cookbooks, with frequent update and accessibility to external sources	Short term	Cooperating scientists, REDD+ activists, project proponents, government
Capacity building	Using the country –specific report, international requirements, and short term results	Long term: a group of interested folks could begin to draft international requirements, & add in region or country specific details as these becomes available	International to local level
Information desk	iDesk RV -- this was envisioned as a cost-saving measure in that perhaps one desk team could replace the need for many .	Long term	Knowledgeable people who understand or can be made to understand the entire process

Room for corrective actions, so that projects won't stop due to mitigation failure		Commentary	

Theme 3: Safeguards

What	How	When	Who
Conduct a study on "MRV for Safeguards" – for public (governments, project developers, private sector), including a comparative study on project level and national level standards	- Describe project level and national level safeguards - Show the interactions and possible interactions between the standards/safeguards at the different levels - Add boxes with practical examples (best practices / lessons learned) - Based on the existing WWF comparison e.g "Forest Carbon Standards" from 2010 - Distribute on what level these safeguards are applicable	Next 6 months	WWF
Internal studies in WWF Network on best learn practices	- on-ground technical know-how (carbon+safeguards) - evaluate market mechanism (bilateral, REDD credits)	2 years	WWF

Theme 4: Reference levels

What	How	When	Who
Inventory of existing REL at project, subnational and national level	Desk work, internet research, VCS website, Forest Trend, communication papers on subnational initiatives, FCPF website, etc.	1 Month (July)	Intern supervised by WUR (and WWF and ONFI?)
Technical Analysis of REL focusing on areas where nested REDD+ programs are under development (at national or subnational level); DRC, San Martin and Madre de Dios in Peru, Acre in Brazil, Costa-Rica...)	Research project, technical review	3 Months (August to October)	WUR, WWF, ONFI
Peer review in order to collect stakeholders opinion on this issue of articulation of RELs and their expectations (private sector, civil society, governments,	Questionnaires sent by email or during calls	1 Month (November)	WUR, WWF, ONFI (same than task 2)

etc.)			
Presentation of results and recommendations	Workshop, Side-event during next COP	1 Week (before December)	TBD
Incorporating Guyana/ Norway experience	Webinar	1 Week (before December)	WWF

Theme 5: Benefit sharing

What	How	When	Who
Options for a national framework for benefit distribution integrated with REDD+ monitoring	Publication (2 pager) (Intro, Basic conditions, focus on stimulating and paying for activities, integrated with monitoring, non-carbon benefits, examples)	June	Margaret Skutsch
Scientific paper on safeguards		Short term	Esther & Martin et al. to take the first steps
Implementation and testing cases	focusing on Mexico, Indonesia, Guyana	Short term	

3.7 General summary and next steps

The recommendations made mainly emphasized on the need of linking local and national REDD+ MRV activities and deliverables. Thus, conducting studies, preparing country specific guidance, and data standardization of activities were recommended to bring integrity in the local-national MRV process. The importance of government commitment was recognized for fully operating REDD+. Furthermore, increasing data availability and data sharing via portals, as well as sharing of experiences via interactive databases were considered crucial for ensuring a robust MRV process.

The three day workshop that focused on discussing political, scientific, and technical solutions to challenges of REDD+ MRV was finalised in accomplishing its target. By the end of the workshop, experiences were shared among participants, challenges were identified, priorities were set, and most importantly the roadmap for addressing the evolving MRV requirements was designed.

The recommendations made by the participants are considered straight forward, addressing recent issues towards the MRV practises, and inviting interested actors to take part in the process of operationalizing REDD+. Accordingly, the participants of the workshop took the commitment to take on the most critical tasks under the leadership of a WWF – WU partnership.

The outcomes of this workshop are aimed to be further communicated to international policy makers following the invitation of UNFCCC to contribute to the process sharing the outcomes of this workshop to the SBSTA. This is expected to lead to concrete solutions which can be useful to all stakeholders involved in the MRV process that are at all levels of REDD+ implementation.

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