MINISTRY OF WATER AND ENVIRONMENT

RECORD AND REPORT OF THE TECHNICAL WORKSHOP ON REDD+ NATIONAL BASELINE SCENARIO AND NATIONAL FOREST MONITORING SYSTEM

Convened by the Ministry of Water and Environment (Forestry Sector Support Department) at the Imperial Botanical Beach Hotel, Entebbe, 14th – 15th April 2015

Workshop Program

Day One: Tuesday, April 14, 2015

1. Welcoming remarks
2. Opening Remarks and Key Note Speech
3. Objectives of the workshop/Overview of the Workshop Agenda
4. REDD+ Overview (the four elements)
    a. *Question & discussion session*
5. An introduction to Forest Reference Emissions Levels/ Forest Reference
    a. *Questions & discussion session*
6. NFMS as a tool to provide data on FREL/FRLs
    a. *Questions & discussion session*
7. Key data providers for NFMS in Uganda
8. GIS Mapping
9. National Forest Inventory
10. Wood fuel and timber extraction
11. Interactive Session (Identifying gaps)
    a. Types of information and data and other data providers
    b. Types of Capacity Gaps

Day Two: Wednesday, April 15, 2015

1. Recap on Reference levels and NFMS
2. Key elements of the FRELs/FRLs; Lessons learnt
    a. *Questions & discussion session*
3. Current (Existing) thoughts on definition of trees
4. International Expectations for REDD+ FRELs/FRLs
    a. *Questions and Discussions*
5. Determining the SCOPE of Forest Reference Emission Levels or Forest Reference Levels
    a. Questions and discussion
6. UGANDA's Forest Definition (UNFCC / REDD+)
    a. *Questions and discussion*
7. Discussion of Scope: Pools and gases : Carbon Pools and gases included in previous studies and assessments (NFA NFI); Uganda GHG inventory and UNFCCC consistency requirements
    a. *Questions and discussion*
8. Discussion on outstanding issues/questions related to NFMS

Number of persons attending   - 53

Workshop Chairpersons
1. Mr. Chebet Maikut
2. Ms. Margaret A. Mwebesa

Workshop Facilitator
1. Mr. Steve Nsita   - Havilla

Workshop Presenters
1. Ms. Donna Lee   - FAO Consultant
2. Mr. John Begumana   - National MRV Consultant
3. Mr. Xavier N. Mugumya   - Climate Change Coordinator/Alternate REDD+ National Focal
                                 Point - NFA
4. Mr. Innocente Sergio   - FAO, Technical Advisor Climate Change/REDD+
5. Mr. Bob Kazungu   - Senior Forest Officer, FSSD
6. Mr. David Elungat   - NFI Officer; National Forest Authority
7. Mr. Edward Senyonjo   - GIS Officer; National Forest Officer

Workshop Rapporteurs
1. Ms. Olive Kyampaire   - National REDD+ Communications / Project Officer

Workshop Registration and Secretarial Services
1. Ms. Maria Nabukenya   - Secretary, FSSD

General context and objectives

As part of Uganda's Readiness toward implementation of actions that contribute to the mitigation of climate change in the forest sector, a Readiness Preparation Proposal (R-PP) on reducing emissions from deforestation and forest degradation; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+) was prepared as Uganda's roadmap to developing the following elements: (a) A national strategy or action plan; (b) A national forest baseline scenario (reference emission level and/or forest reference level) (FREL/FRLs); (c) a national forest monitoring system (NFMS); and (d) a system for providing information on how the safeguards are being addressed and respected throughout the implementation of REDD+ activities.

Uganda is expected to follow the most recent methodological guidance as a basis for, inter alia, estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes,

The workshop considered development of (a) a national strategy or action plan; (b) a national forest baseline scenario (reference emission level and/or forest reference level) (FREL/FRLs); and (c) a national forest monitoring system (NFMS). Like all parties to the UNFCCC, while developing a national forest baseline scenario (reference emission level and/or forest reference level) (FREL/FRLs); and a national forest monitoring system (NFMS), *Uganda is expected to follow the most recent methodological guidance as a basis for, inter alia, estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes* (i.e., UNFCCC decision 4/CP.15, paragraph 1c).

Workshop components

The programme included presentations from experts especially on the experiences and lessons learned from other REDD+ participating countries. The experts included the Food and Agricultural Organization (FAO) Consultant from the USA; FAO MRV Consultant from Uganda; FAO Technical Advisor to the REDD+ process from Italy (based in Uganda), National REDD+ Alternate Focal Point, the Forest Sector Support Department, and the GIS and Forest experts from the Biomass Unit of the Uganda National Forest Authority. The presentations were followed by question and answer sessions; interactive discussions between participants on how best to cover the topics. The participants included the REDD+ Multi-stakeholder National Technical Committee and members of the National REDD+ Secretariat, Annex I.

1.   Welcome Remarks

In her welcome remarks, the Assistant Commissioner, Forestry Sector Support Department/REDD+ National Focal Point, Ms. Margaret A. Mwebesa thanked all the participants who created time to attend the workshop. She particularly thanked the FAO for the technical support to the Uganda REDD+ process. She also appreciated the financial support from FCPF/World Bank, Austrian Development Corporation and the UN-REDD to the Uganda REDD+ process. She in a special way welcomed the FAO representative Ms. Donna Lee who came from the USA, to support the process. Ms. Mwebesa recognized the support from the Uganda based FAO

Ms. Margaret A. Mwebesa
Assistant Commissioner
FSSD/REDD+ National Focal
Point

Technical advisor, Mr. Innocente Sergio; the FCPF/World Bank Technical Advisor Mr. Alex Muhweezi and the technical team from the National Forestry Authority (NFA). She underscored the importance of team work among the stakeholders in the forestry sector, and particularly the role of the National Technical Committee (NTC) in contributing to the reduction of emissions, and ultimately to the mitigation of climate change effects. She then invited the Acting Commissioner, Climate Change Department, Mr. Chebet Maikut, who was also representing the Director Environmental Affairs in the Ministry of Water and Environment, to officially open the workshop.

2a.   Opening Remarks

In his own capacity as the Acting Commissioner for the Climate Change Department (CCD), Mr. Maikut informed the workshop participants that the REDD+ process was approved by the Cabinet of Uganda due

Mr. Chebet Maikut
Acting Commissioner
Climate Change

to its significance to the Country and to the United Nations Framework Convention on Climate Change (UNFCCC). He noted that the Climate Change Policy (CCP) provides the overall framework for all stakeholders and institutions in the REDD+ process that is overseen by the Cabinet level Policy Committee on Environment (PCE); chaired by the Prime Minister of Uganda.

He reflected on the role of the Climate Change Policy Committee (CCPC) as that of overseeing the institutional arrangements that address the issues of climate change. He stated that the institutional arrangements are at grass roots level, local government and parliamentary level. He noted that at operational level, the CCPC which was initially comprised of 14 government institutions was to be expanded to about 70 institutions and the Chair would shift to the Minister from the Permanent Secretary. At decentralized level, they will be merged to form a committee

while Ministry Focal Point Officers will be regularized. REDD+ will then become part and parcel of the NCC Advisory Committee with several sub-committees.

2b. Keynote Speech by the Director Environmental Affairs

The Acting Commissioner of the CCD, Mr. Chebet Maikut, represented the Director Environmental Affairs (DEA) at the meeting. In his keynote speech, the DEA reiterated the role of REDD+ toward contributing to the mitigation of climate change. He informed participants that for REDD+ to achieve its climate change mitigation objective, there are requirements and standards which must be met including defining UGANDA'S FOREST BASELINE SCENARIO called Forest Reference Emission Levels/Forest Reference Levels (FREL/FRLs). These reference levels form a basis for Uganda to receive performance based incentives under the UNFCCC. The FRELs and FRLs will serve as a benchmark to assess Uganda's performance in implementing REDD+ activities.

The DEA stated that the purpose of the workshop was to build capacities of the National Technical Committee (NTC) and Task Force (TF) in order for them to support the development of the FRELS/FRLS and a National Forest Monitoring System (NFMS). *The forum provides a platform to share information on international guidance, discuss key elements, share experiences from elsewhere, identify data*

> *The forum provides a platform to share information on international guidance, discuss key elements, share experiences from elsewhere, identify data and capacity gaps and devise a strategy for the design and construction of the National Forest Monitoring System.*

and capacity gaps and devise a strategy for the design and construction of the National Forest Monitoring System, a tool that will be used to provide data needed for the establishment of Uganda's Baseline Scenario. He recognized all resource persons who would be making useful contributions to the workshop.

Whereas Uganda lacks up-to-date information in regard to the forest sector, the latest being of 2005, it is still one of the few countries' in the region that has been monitoring trends in deforestation through what is known as wall to wall mapping (i.e., mapping the entire country). Through this process, the DEA noted, it is estimated that Uganda's forest cover reduced from 4.9 million hectares in 1995 to 3.1 million hectares in 2005 (giving an average loss of over 100,000 hectares per year).

The DEA acknowledged the value addition that the REDD+ programme is bringing on board, through the establishment of a transparent and verifiable NFMS and strengthening the already ongoing processes by means of capacity building and technology transfer. For example, Uganda's capacity to carry out a wall to

> *"So my request to you is to bear with us in the times to come as we convene such meetings to ensure that we catch up and remain relevant in the REDD+ process and ultimately the Climate Change Agenda".*

wall mapping which currently takes about 5 to 10 years may be improved to only two years. *"If we are able to upload this information into a web-GIS portal, we shall be promoting transparency and facilitating involvement of all relevant stakeholders".* Under the REDD+ programme, the NFMS will also support other programmes like provision of detailed up-to-date data needed for the National Green House Gases (GHG) inventory for National Communication, a

requirement for parties to UNFCCC".

The Director Environmental Affairs was concerned that the programme is behind schedule, which may cost Uganda an opportunity to contribute to our local climate and economies and also to the global climate agenda, if we do not put in extra effort. "**So my request to you is to bear with us in the times to come as we convene such meetings to ensure that we catch up and remain relevant in the REDD+ and Climate Change Agenda".**

3.   Workshop Objectives and Overview of the Agenda

Mr. Innocente Sergio led the session on objectives and took the participants through the Workshop agenda hereunder:

1. To share information on international guidance that has been provided on designing and constructing both a REDD+ national forest baseline scenario (reference emission level and/or forest reference level) (FREL/FRLs) and a functional national forest monitoring system (NFMS) (including from the UNFCCC);
2. To discuss key elements critical to the development of REDD+ FREL/FRLs, and begin to consider what may be appropriate for design of FREL/FRLs for Uganda, including:
    2.1. Data analysis (assessment of historic forest cover and change; capacity to assess current and future emissions);
    2.2. Scope (activities, pools and gases to include in a FREL/FRL);
    2.3. Structure (options for FREL/FRL methodologies)
    2.4. Scale (national, sub-national and/or nested)
3. To provide examples of how other countries are designing both a national forest baseline scenario FREL/FRLs;
4. To begin identifying data and capacity gaps that are needed in order to establish both a national forest baseline scenario (FREL/FRLs);
5. Agree on a preliminary road-map for FREL/FRL construction in Uganda.

**Mr. Innocente Sergio
FAO Technical
Advisor for REDD+**

Related to the above, participants discussed modalities of establishing a functional NFMS and its support function in the establishment of FREL/FRLs. The discussions also included other monitoring and reporting activities of REDD+ as well as provision of information required for effective management of the forest sector. The discussions centered on three pillars of the NFMs namely:

Pillar 1: A Satellite Land Monitoring System (SLMS) to collect and assess, over time, the Activity Data (AD) related to forest land.

Pillar 2: National Forest Inventory (NFI) to collect information on forest carbon stocks and changes, relevant for estimating emissions and removals and to provide emissions factors;

Pillar 3: A national GHG Inventory as a tool for reporting on anthropogenic forest-related GHG emissions by sources and removals by sinks to the UNFCCC Secretariat.

4. Overview of the REDD+ Programme

Mr. Xavier Mugumya REDD+ Alternate Focal Point

In his presentation, Mr. Mugumya highlighted one fundamental element of the REDD+ process that "REDD+ is about policy approaches and creation of positive incentives on issues relating to mitigation actions in the forest sector." These actions included activities that involve: *(a) reducing emissions from deforestation; (b)reducing emissions from forest degradation; (c) conservation of forest carbon stocks; (d) sustainable management of forests; and (e) enhancement of forest carbon stocks.* He explained that at country level, the forest sector has not been receiving the attention it deserves. However, if a country has chosen to undertake a REDD+ programme, it must deliver on four elements which are: **(1) a national strategy or action plan; (b) a national forest reference emission level and/or forest; (3); a robust and transparent National Forest Monitoring; and a system for providing information on how the safeguards are being addressed and respected throughout the implementation of the activities.** Supporting the national strategy will be the numbers of carbon dioxide emission equivalents showing Uganda's intention for changing behavior.

Mr. Mugumya noted that REDD+ programme is a three-phased approach as agreed to, during CoP 16 in Cancun, Mexico in 2009 whereby the details of the first phase of REDD+ will go into the second phase and depending on the behavior of the country, it will then qualify for the third phase. During these phases, the country will be

> *...the forest sector has not been receiving the attention it deserves and if a country has chosen to undertake a REDD+ programme...;*
>
> *...thus this is the time for Uganda to consider the forest sector among its top priorities.*

adequately provided with financial resources as well as technical and technological support, in accordance with national circumstances and respective capabilities (Box 1).

Box 1: Phases of the REDD+ Programme

Phase 1 includes "the development of national strategies or action plans, policies and measures, and capacity-building"

Phase 2 denotes implementation of the REDD+ strategy, including any further capacity building. Phase 2 includes development and testing of the emissions measurement (or MRV) system,4 and could include initial payments for "results-based demonstration activities," but is not a full pay-for-performance system.

Phase 3 REDD+ signifies a fully implemented program with a pay-for-performance system. This includes accurate and detailed accounting of emissions reductions, with payment only for "results-based actions that should be fully measured, reported and verified." If REDD+ is allowed as an offset, it is likely only phase 3 would allow sufficient quality to play in carbon markets.

Source: Cancun Agreements (4/CP.16), paragraph 73

He shared with the participants the REDD+ phase 1 components and subcomponents as shown in table 1.

Table 1: Components and subcomponents of REDD+ Phase 1.

Components	Subcomponents
1. Readiness Organization and Consultation	1a. National REDD+ Management Arrangements
	1b. Consultation, Participation, and Outreach
2. REDD+ Strategy Preparation	2a. Assessment of Land Use, Land Use Change, Drivers, Forest Law, Policy and Governance
	2b. REDD+ Strategy Options
	2c. Implementation Framework
	2d. Social and Environmental Impacts
3. Reference Emissions Level/Reference Levels	
4. Monitoring Systems for Forests and Safeguards	4a. National Forest Monitoring System
	4b. Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

Component 1 involves putting together national management arrangements such as the necessary infrastructure, committees and task forces; it also involves wide stakeholder consultations and participation on issues pertaining to the REDD+ programme as well as outreach programmes. **Component 2** is a broad consideration of all the drivers of deforestation and forest degradation, underlying factors as well as finding solutions and converting them into options. **Component 3** refers to the minimum requirements of the past performance and interpreting them against future performance of the REDD+ activities and then sharing them globally.

Presenting on the Forest Reference Scenario, he noted that whereas it is a standalone component, it nevertheless has extensive dependency on, and complimentary features with, other components. The outcome of the FREL/FRL exercise includes:

a) Estimation of historical data on emissions from deforestation and/or forest degradation and other relevant land uses and estimations of future emissions and removals, to produce a Uganda-specific baseline scenario of greenhouse gas (GHG) emissions without additional REDD+ incentives;

b) Reviewed "national circumstances; and

c) Established reference levels.

It was noted that once the Country completes the preparation of the Forest Reference Scenario, it can submit it as a standalone. The Country must however have an idea of options, based on reviewed

national circumstances. He clarified that country support depends on the submission of the Reference scenario.

Component 4 relates to a Robust National Forest Monitoring System (NFMS). Uganda is expected to have a functional and robust NFMS for the REDD+ Program. The NFMS must meet all its monitoring functions of the NFMS under national, regional, and international requirements and obligations, as well as meet all its Measurement, Reporting and Verification (MRV) functions. There should therefore be supportive and strengthened institutional arrangements in place for NFMS development and for ensuring sustained continuity, robustness and functionality.

5. Introduction to Forest Reference Emission Levels and Forest Reference Levels

Setting the scene, Ms. Donna Lee explained that most of her work experience has been in a developed country than in developing countries that she thought she might have different perspectives and asked to be guided just in case she talked out of context. As it turned out, she was spot on with her experiences from other countries.

In her presentation, she defined "Forest Reference Emission Levels" or "Forest Reference Levels" (FREL/FRLs) as "**benchmarks for assessing each country's performance in implementing REDD+ activities.**" Using graphic

**Ms. Donna Lee
FAO Technical Expert,
REDD+ FREL/FRL**

presentations (Figure 1), Ms. Lee explained that measurement of historical emission data is done over a period time e.g., for 5 - 15 years (blue dots) and an average measurement is obtained as the benchmark against which future emission performance measurements are determined after implementation of REDD+ activities (green dots). She clarified the difference between FREL and FRL according to UN-REDD description where FRELs refer to activities that reduce emissions levels e.g., (1) reducing emissions from deforestation, (2) reducing emissions from forest degradation and (3) sustainable management of forests (emissions); while FRLs include activities from the "+" that enhance forest carbon stocks, e.g., (1) afforestation/reforestation and (2) sustainable management of forests (removals).
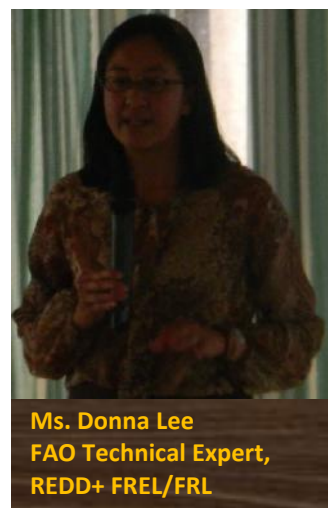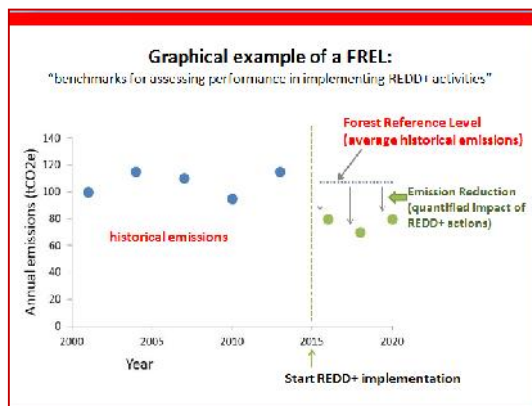
Figure 1: Example of a FREL

The relationship between NMFS and FRELs is that the NFMS (data) is strongly tied with and feed into the FREL; and according to the UNFCCC, the NFMS data and information should be suitable for measurement, reporting and verification (MRV). Therefore, the MRV should maintain consistency with FRELs/FRLs as well as with the GHG inventory. She emphasized that the same system of measuring emissions for construction of the FREL should be

the same one used to measure performance and GHG inventory for National Communication.

Importance of a reference levels for a country and how they are created

Ms. Lee elaborated on the potential purposes of a reference level to a country as three-fold. (1) For **Domestic use** to help in the assessment of policies and measures taken and or meet a national objective so as to measure how an intervention is doing or whether the national goal is being meet; (2) As a **Global responsibility** where a country intends to contribute to the slowing of global warming by reducing national emissions below a stated level (e.g., under the UNFCCC). She noted that several developing countries made commitments to reduce emissions below a "Business As Usual (BAU)" baseline under the Copenhagen accord of 2009. More recently, some countries have stated a domestic commitment, but that they will do more if facilitated by international support. (3) A reference level also can help a country to access **Potential finance** if they reduce emissions below a certain level.

The benefits and risks among the three FREL/FRL purposes (domestic, global and potential finance) were noted as follows:

Importance of FREL/FRL	Benefits	Risks
Domestic	- "No regrets" option - Can inform policy - Nationally defined - Flexible	- May not be compatible with some financing mechanisms
Global	- Enables global contribution and potential finance - Technical assessment provides feedback from experts	- A country should be prepared to perform against such an FREL/FRL
Potential Finance	- Access to potential finance	- Existing rules (e.g. FCPF Carbon Fund, etc.) may not fit a country's national circumstances - Performance against such an REL/RL

Ms. Donna Lee noted that a country should be prepared and endeavor to perform well against the FRELS /FRLS because it is a public record. It is important that a reference level is submitted with clear actions.

Among the REDD+ participants, she reported that six reference levels have been submitted to the UNFCCC and 10 to the carbon fund. The countries that have submitted FRELs as early proposals have done so in the context of results based payments, to access carbon finance for operational results.

As an example, Brazil developed three reference levels for different purposes: *a BAU projected baseline* (set by national law and used for NAMAs), *the Amazon fund baseline* (used to access finance and considered a "demonstration activity") and more recently has submitted *another baseline to the UNFCCC* (in the context of results-based payments); a fourth base line may be underway (related to a Nationally Determined Contribution, or NDC).

Ms. Donna Lee advised that a step wise approach can be used in measuring and monitoring the emissions with more and more improved capacities, and that FRELs can be updated alongside such improvements.

In addition to the above issues, the Commissioner, Climate Change Department (CCD) said that it is important for the country to submit the Forest Reference Scenario before next year, 2016, for Results Based Performance (RBP). He also advised that as a country, we should use CO_2 as a measure and then translate it to monetary terms. The commissioner also brought out the concerns of the policy makers who may find it much easier to relate to emissions levels. The land area would be more suitable at the local level. He said that the country is looking at REDD+ to spearhead efforts in obtaining climate financing.

In her conclusion, Ms. Donna Lee provided guiding questions (Box 2) for preparing national FRELs/FRLs.

Box 2: Guiding questions for preparing National FRELs/FRLs.

- For what purpose does your country wish to develop FREL/FRL?
- Does your country intend to submit a FREL/FRL to the UNFCCC?
- If your country wishes to access REDD+ results based finance, from where does it expect to access such funds?

6. NFMS as a tool to provide data on FRELs/FRLs

Mr. John Begumana highlighted guiding principles of the NFMS strategy as follows:

Mr. John Begumana MRV Consultant

1. The country should have full control and ownership over the NFMS development process; this will be achieved by full participation of key stakeholders especially institutions that are custodians of critical datasets or mandated to provide the required data. All Ugandans have a role to play since all are affected by the impacts of climate change that result from human actions especially in regard to deforestation and forest degradation.

2. The NFMS development process should build on the existing systems and capacities in the country and at international level. A lot has already been done and therefore there is a platform/foundation on which to build.

3. There must be consistency with the UNFCCC process. We are committed to deliver by the UNFCCC guidelines which are part and parcel of the National Policy and Legislation.

All REDD+ participating countries are encouraged to set up a robust and transparent NFMS, that shall be used to ensure that REDD+ activities, policies and measures are results-based; that is able to measure sources and removals of Green House Gas (GHG) emissions in the forest sector based on changes in forest carbon stocks, and changes in forest area as monitored using the national forest inventories and Satellite Land Monitoring System (SLMS). The system must enable generation of reports on the development of the GHG emissions related to REDD+ and GHG emissions and through National Communication, enable Expert Peer Review as well as verification of the developments and processes by the UNFCCC. In addition, Parties in the REDD+ programme are encouraged to minimize uncertainty by providing transparent, coherent, comparable, consistent and accurate estimates of GHG emissions and

removals associated with REDD+ activities; maximize transparency by making the results of these measurements available for international appraisal as agreed by the Conference of Parties (CoP); and they must also follow the most recent methodological recommendations provided by the Intergovernmental Panel on Climate Change as adopted and encouraged by the CoP.

The NFMS has two major functions: (1) the **Monitoring function** that allows assessment of a broad range of forest information including REDD+ activities such as tracking policies, benefits and safeguards, through use of remote sensing; sharing information through web interfaces, and community monitoring as well as other monitoring systems related to forest activities and (2) the **Measuring, Reporting and Verification (MRV)** function (that includes use of satellite land monitoring system, national forest inventories as well GHG inventories). The NFMS is described as a framework for collection, documentation, quality assurance and quality control, archiving, analysis, reporting and dissemination of information and data. ; establishing Forest Reference Emissions Levels and/or Forest Reference Levels (FRELs/FRLs), reporting on GHG related to REDD+ and reports on GHG through National Communication and BUR, Benefits and Safeguards as well as Strategy and or action plan.

7a.   GIS and Land Cover Mapping

Mr. Edward Senyonjo gave a history of land cover mapping in the forest sector and noted that the first land cover map took about 5-6 years to complete (2004 to 2009). It was majorly manually done and as a result had a lot of bias and inconsistencies; and could not even be published due to lack of publishing facilities. He noted that there has been progress following various trainings supported by FAO in Forestry Resource Assessments (FRA) and

Mr. Edward Senyonjo GIS Officer/NFA

(WHRC) trainings in 2013. The current land cover map cycle (2010) is digitized, with fewer issues of bias.

He was optimistic that with advanced and or better technology, more time will be saved and the GIS Unit could produce land cover maps in a period of two years. The sector will have harmonized methodology with the UNFCCC standards. There will be regular publication of papers and reports and hence regular peer reviews of methodologies and results. In addition, there will be improved meta data and use of interactive web based portals, and enhanced computer power and storage for sharing of results and data.

As a result of the improvements in the mapping technology, at 2010 status, 100% of the country is classified, and 97% of the country is validated and has statistical data available. Mapping for the forest sector for 2015 has been embarked on. Figure 2 shows a trend of forest cover from 1990 to current and a projection for 2015.

Trend of Forest cover 1990-2015

%age Forest Cover	1990	2000	2005	2010	2015
	20%	16%	14%	11%	9%
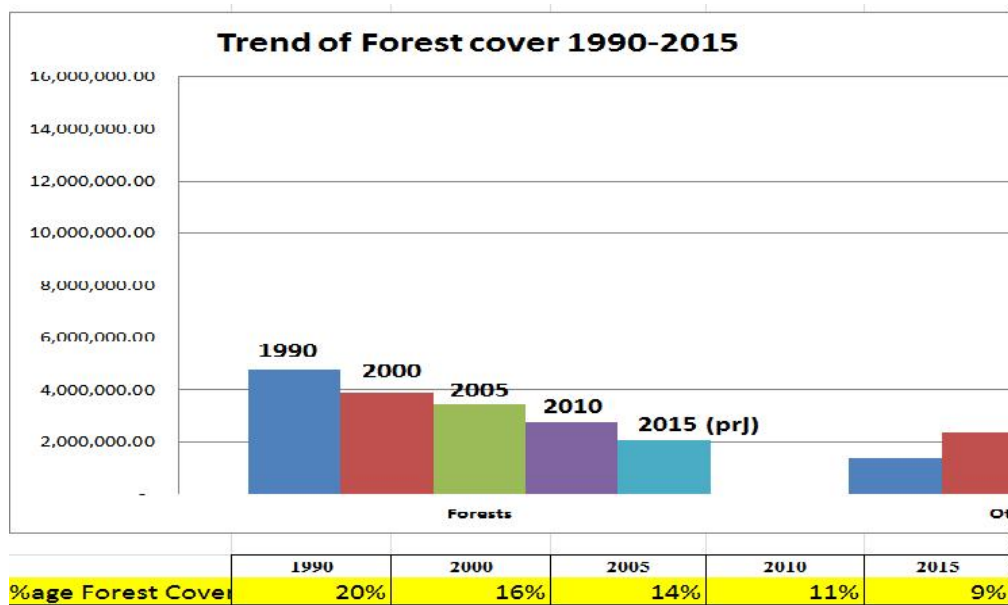
In mapping activities, a number of **challenges** were observed as follows:

- Steep Learning curve
- Cloud cover
- Difficulty in comparison of 2010 land cover data sets with previous land cover datasets due to the generalization of earlier datasets.
- Computerised versus human digitising and interpretation
- Internet connectivity limitations

He noted the need for improved tools, software maintenance fees, hardware for both field work and desk work (inventory and mapping tools), facilitation to sustain field biomass inventories whose results are used to calculate the spatial and temporal distribution of biomass/ carbon in the country, increased manpower as well as transport for fieldwork.

7b.   National Forest Inventory

**Mr. David Elungat
NFI Officer/NFA**

The National Forest Inventory (NFI) status was presented by Mr. David Elungati. The NFI is a legal mandate and a very critical element of the NFMS. The NFI provides information and data about the status of forests, and this information is used to plan for sustainable forest resource use through drawing of management plans detailing prescriptions/interventions. The NFI information is also used for national policy formulation, analysis and monitoring for the forest sector e.g., in determining contribution of forestry resources to the GDP, social, environmental and forest resource management and development of policies, as well as for development and negotiation of policies that are used to manage national forestry resources. He highlighted the different types of NFIs and the purposes as shown in Table 2.

Table 2: Different types of National Forest Inventories and their purposes

| Types of National Forest Inventories	Purpose
Exploratory Inventory (EI) (a low-intensity sampling)	This inventory is intended to provide an overview of the timber stocks and distribution at the compartment level in terms of species, stem quality and size classes for preliminary planning. .
Integrated Stock Survey and Mapping Inventory (ISSMI)- applied as part of a concerted and consistent effort to manage compartments for harvesting	Intended identify appropriate species for harvesting, determine blocks to be felled, and perform control on the ground in a consistent manner
Yield Monitoring and Growth Modeling. (Permanent Sample Plots-PSPs)	Estimate allowable cut and sustainable yield, and assessment of forest response to different diameter limits, felling cycles, and silvicultural treatments depends critically on growth, mortality and recruitment rates
Biomass/Carbon Monitoring	To provide data on overall wood stocks and primary net production of various woody formation as source of wood fuel and a variety of other forest products.*.*
Management Plantation Inventory	Point sampling mainly in mature plantations for harvesting planning..
Biodiversity Inventory	An Inventory of fauna and Flora of key forest reserves throughout the country has been in the past and thereby a Master Plan was drawn that integrates the conservation of biodiversity and other environmental protection measures.

Mr. Elungat elucidated on some of the challenges that affect NFIs. They included limited or no funding for activities to update/generate new information, lack of equipment or better tools and lack of access to new technologies.

7c.   Wood fuel and timber extraction

Forestry provides a wide range of tradable products, both wood and non wood. The non wood include products like honey and the wood products include timber and non- timber (e.g., Rattan). Among the wood products, the timber and non timber products such as charcoal and fuel wood have been found to create most impact on the forestry resource.

Mr. Kazungu noted that while the country is undertaking the process of developing the NFMS, relevant national guiding policies and modalities of implementing the policies should be noted; specifically the Constitution of the Republic of Uganda (1995) and amended at 2005, the National Forestry Policy (2001), the National Forestry and Tree Planting Act (2003), the Ministerial

Mr. Bob Kazungu Senior Forest Officer/FSSD

Statement of November 12, 2004), the National Forest Plan (2012), and the Forestry and Tree Planting Regulations (2015) and related Statutory Instruments e.g., SI No. 16 of 2000.

He submitted that some of the information that will enhance the NFMS and therefore which should be collected and compiled include: Forest Product licensees, Licensee ID and License approval ID by
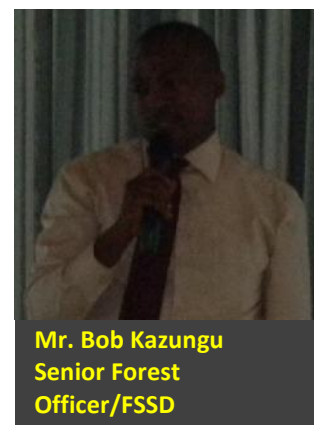
Commissioner forestry, and evidence of endorsements by the relevant authorities such as CAO/DFS (Ref: template Forest Products Form). The Forest Products Form entails information relating to source of forest product e.g., private lands and Local Forest Reserves (LFR). In case of NFA, bid documents and approval of the Executive Director and endorsement of relevant manager, the template Forest Products Form, buyer / seller agreement form, endorsement of relevant authorities such as LC 1 – LC V; and the technical persons are other sources of relevant information and data. In addition, the GPS positions of the trees to be harvested which can be got from the DFOs database are also an important piece of information that would enrich the NFMS.

In Uganda, monitoring of the forest product trade happens at three levels: Forest Sector Support Department (FSSD), National Forest Authority (NFA) and at the District Local Government (DLG). At FSSD, a dedicated team including economists, foresters and environment personnel are involved. At NFA, the Law Enforcement Unit (LEU) is responsible for tracking trade in timber and NFA is supposed to regularly update land cover and forestry statistics (Forest Inventories and GIS & Mapping). The Environmental Police Protection Force (EPPF) works together with the LEU in the monitoring process. At the local level, communities are also key in monitoring forest products both at trade and stock levels. For example, some communities in the Rwenzori and Albertine regions have been engaged in monitoring the forest product trade.

A number of **challenges** impacting monitoring the trade of the forest products were highlighted. Among others, they include institutional challenges and non-compliance to the relevant legislative framework. The institutions mandated with the forest product monitoring task are understaffed, have poor coordination among them; as well as limited information sharing among the relevant key institutions.

Compliance to the relevant legislative framework is very weak, e.g., WWF in 2012 noted that 80% of timber on the market is illegal. A lot of bribery along the value chain including the charging of non uniform fees and levies at the district level has been observed; for example, he noted that out of the 112 districts in Uganda, only 10 have been consistently getting licenses. While income is generated in the sectors especially at DLG level, there is very low plough back and this affects monitoring of both product harvesting and trade. As a result, there is poor quality products, including improper dimensions, being traded in the market due to poor conversion methods. Some of the policy guidelines are outdated e.g., the Statutory Instrument 16 (2000) and the Ministerial Statement (2004). In addition, limited funding of the sector to undertake comprehensive assessments and therefore champion monitoring are another challenge which should be addressed to enhance the information for the NFMS.

In concluding his presentation, Mr. Kazungu shared a number of recommendations and indicated that if they are adopted, would lead to a robust NFMS .
1. Increased support to the biomass monitoring team in order to carry out a comprehensive assessment of tree biomass for the forestry sector.
2. A fully fledged one stop centre for data capture and management which should include a mix of web based tools.
3. Introduction of forge proof licenses alongside the FPDFs and FPMP.
4. Improved coordination and governance amongst the responsible bodies.

5. Enhanced transparency among key players.
6. Promotion of market based approaches to forest management and trade.

8. Interactive Session (Identifying gaps)

Participants organized into two groups. **Group 1** discussed the type of information and data that should be monitored and the sources of such information and data; while **Group 2** deliberated on the different types of capacity gaps that need to be addressed in order to get the NFMS going. The output of the interactions is given below.

Group 1 suggested that in order to get the NFMS going, information and data in the listed areas below should be monitored.

- spatial distribution of biomass plots (data) within Uganda should be captured, and in particular in northern and north eastern parts of Uganda where data has not been previously captured due to insurgency and low population.
- In areas where plots had been laid due to lack of funding.
- Protected areas since these are areas that were previously inaccessible for usage and thus data had not been collected.

- The amount of fuel used in brick making should be determined. The amount of fuel per brick is known. Information now required are the sizes of houses and the number of bricks per house and this would help in determining all the total biomass used in brick making. The group suggested that UBOS should follow this up.
- All industries that use biomass energy should be documented including stone quarries, bakeries, lime production, Hotels, barracks, juggleries and tea industries, among others. The group requested that the Ministry of Energy and Mineral Development undertakes this process.
- Commercial Agriculture Expansion
- Commercial Tree Planting in Forestry
- Local Government
- Leakage in wetlands

In terms of data to monitor, it was emphasized that the country has to set its priorities in terms of key datasets that will help calculated emission levels; project data sets (previous and current) and ensure that monitoring is done with Local governments on these data sets.

In addition to FFSD and NFA as data sources, the group identified other data providers for the NFMS as follows.

Institution	Acronym	Type of data
Wildlife Conservation Society	WCS	Biodiversity
Petroleum and Gas Companies		High Res

Uganda Wildlife Authority	UWA	Biodiversity & Biomass
Wetlands Inspectorate Department	WID	Biomass?
Ministry of Housing, Lands and Surveys	MoHLG	Tenure system
Ministry of Agriculture, Animal Industries and Fisheries	MAAIF	Statistics on paddy rice cultivation, organic & non organic fertilizer application
Uganda Revenue Authority	URA	
Uganda National Roads Authority	UNRA	
Uganda Bureau of Statistics	UBOS	Population, Wood fuel usage, Agricultural
NAFORRI		
Private Sector (SPGS and UTGA)		Plantation data
Ministry of Energy and Mineral Department	MEMD	
Makerere University		
IUCN		Endangered spp
National Planning Authority	NPA	
Uganda National Meteorology Authority	UNMA	

The group recommended that prior to collecting more information, the available data should be systematically collected, organized and centrally shared so as to identify the gaps; which would then be filled. Further, the group recommended that there should be a deliberate effort to create carbon registry for all projects involved in emission related activities should be initiated preferably through Climate Change Department.

In their submission on the **different types of capacity gaps** that need to be addressed in order to get the NFMS going, **Group 2** members indicated that the human resource in terms of numbers as well as

technical skills should be enhanced to tackle the NFMS and associated needs. It was suggested that FSSD should take the lead role and NFA undertakes its responsibilities as defined in the MoU FSSD has with NFA. It was further proposed that since NFMS is still new and is not described in any institutional mandate, it should be defined so as to identify which institutions it falls under and if they have the mandates to deliver on it.

Capacity gaps were reported to exist in the institutional structure in as far as technical matters are concerned. The absence of formal protocols was identified as one of the practical hindrances to data access and therefore needs streamlining to ease access to such data sets.

The group also observed that land cover and land use that happens in wetlands may lead to leakage. However, once the NFMS is clear, sources of leakage will be identified including those in the wetlands. It was noted that the wetlands department is addressing issues of wetland leakage and efforts will be made to establish coordination with the Wetlands department.

9. Recap of Reference levels and NFMS

The second day of the workshop started with a review of the previous day's deliberations presented by Mr. John Begumana. The following were the key highlights:

- Uganda has some good and or enough existing data to start building the NFMS. This data is held by different stakeholders or data providers.
- Institutional mandates must be recognised while developing the NFMS. Among others, the following were mentioned:
    - o FSSD oversees the whole Forestry sector and hence are the key players or key stakeholders in managing the NFMS in as far as REDD+ is concerned.
    - o The Climate Change Department oversees the GHG inventories and so they are the GHG data holders;
    - o NFA's mandate is to collect and compile forest data through land cover mapping, biomass measurement. This role can be done in collaboration with other agencies. NFA is responsible for providing the government of Uganda with statistics on all forestry issues.
    - o FAO compiles annual statistics globally on forestry, fuel wood consumption.
    - o MEMD normally carries out studies on energy levels in fuel wood systems;
    - o MAAIF undertakes studies on practices that affect soil carbon.
    - o SPGS has information on commercial forests as well as forest fires.
    - o NPA is the convergence of all data. He informed participants that NPA has expressed interest in the different players who have geographic information systems and how it is being used and how these players can pull synergies from all these systems.
    - o Others noted to be vital in building the NFMS were WCS, IUCN
- Challenges exist that create data gaps; e.g., the DFS has been focusing on collecting revenue on forest products and they have not been focusing on collecting data to manage that resource; Capacity challenges
- In relation to FRELs and FRLs, the key data sets needed are the historical and current emissions; which data sets that are used to project and monitor future emissions.
- It was also noted that only a few of the data holding institutions were mentioned but list is not conclusive and there is room to add more institutions.

10. Key Elements of FREL/FRLs

The session was led by Ms. Donna Lee who presented an overview of key elements for creating a Forest Reference Emission Level/Forest Reference Level. She explained that a Reference Level may be constructed as an average of historical data collected over a specified period of time. The purpose of the Reference level is to determine or measure performance after implementation of activities. She described a Reference Level as the expected future projection of what the emissions will be if there are no actions taken and then after beginning implementing actions, emissions are measured against the reference level, which then demonstrates the performance of the activities.

The five key elements or building blocks for creating a FREL/FRLs are (1) **Scope** that denotes activities which are included in the Reference Level; (2)**Forest definition**; forest definition is specified by each country which decides the thresholds of the key parameters (3) **Data** indicates the type of information that is needed; (4) **Scale** represents the geographical area that will be covered for the reference level and this must be defined clearly; and (5) **Construction methodology** is when all the decisions taken on the indicated four blocks are connected or associated to create a reference level. Every country decides its own methodology to use.

1. Forest Definition

There are three thresholds that a country had to choose in terms of defining a forest: *minimum crown cover, minimum land area,* and *minimum tree height*. It was noted that these thresholds are country specific. The *minimum crown* cover determines a forest or non forest area for that country (e.g., one country may choose 10% and another country may choose 30% crown cover to define a forest). Ms. Donna Lee explained that the extent of changes in a crown cover as a result of different activities will change a forest to a non forest status over a period of time (Figure3) shows such a scenario).

Figure 3: Changes from a forest to a non forest
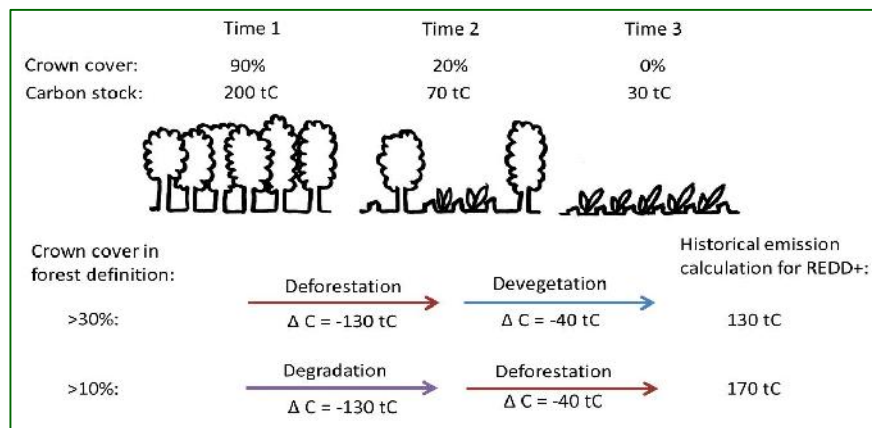
A forest is also defined by the *minimum area of land that is covered by the forest* and this will determine whether deforestation is happening or not. The third definition is the *minimum tree height* of a forest. In relation to the three thresholds, other factors may be considered while trying to define a forest. These include predominant forest types, socio-economic or environmental importance or value of certain trees, access the country has to historical data, and the cost of measurement.

Two examples of predominant forest types in a country are; a forest with more open crown cover and one with a high density of trees. A country with an open crown cover forest will likely consider a low percentage of crown cover (e.g., a 10% crown cover); and a forest with a high density of trees such as those that occur in tropical countries is likely to consider a higher percentage of crown cover (e.g., a 30% crown cover). Uganda has a mix and range of ecosystems and thus presents different forest types.

Access to historical data may also be a factor when deciding how to define a forest. For example, remote sensing satellite images have certain resolution which can show changes that have taken place over time. The cost of different types of images may influence the choice of thresholds, e.g., a very low area or minimum height may results in remote sensing that may not be affordable by a country. She noted that while some of the expensive images can provide the required information, it is important to consider the opportunity costs of the levels of the carbon stock available and the costs of undertaking the

measurements. In determining Reference Levels, existing/previous national forest definitions that were used should also be considered.

2. Data

Data comprises of two parts, activity data and emission factors. Activity data is the geographical extent of activities while emission factors are the emissions or removals per activity. Emission factors help to turn the activity data into emission estimates by quantifying emissions or removals per unit activity. An example of activity data can be that "a million ha of forest was lost from 2000 to 2010; and an emission factor is that "for every ha that is lost, 150 tons of carbon dioxide were emitted" and the product of the two gives an emission estimate.

Activity data (AD) can be acquired through Remote sensing imagery. The Intergovernmental Panel on Climate Change (IPCC) is a body mandated by the UNFCCC to come up with a methodology to help countries estimate their emissions. The IPCC decided on **three different approaches,** also referred to as the different levels of data: (1) Approach 1: A country knows how much forest it has lost (e.g., 100ha) but does not know where it happened (2) Approach 2: A country knows certain amounts of land have converted to other land uses (e.g., 100ha of forest have turned into 50ha of grassland and 50ha of agriculture but the country does not know where this happened and (3) Approach 3: Spatially explicit data. This is the highest level when a country knows exactly how much forest loss occurred and where it occurred.

Historical period and the number of land cover assessments are two key issues to consider when considering activity data. Historical period depends on data availability (e.g., timber records and or firewood collection data e.g. started data collecting in 2005) and the relevance of the data in predicting the future. For example, it is highly unlikely that data from the 1970's will predict the future if there are economic changes; how far back to go is therefore very relevant in predicting the future (2) the number of land cover assessments that have been done should be good enough to project forward, but this also depends on how much data that has been collected as well. In some countries, land cover assessments are done annually (Brazil); other countries may undertake assessments every five years because of limited resources. The type of reference level that a country decides to construct determines the number of land cover assessments to be done. For a more complex reference level such as for projecting a BAU forward looking from a historical perspective, then there is need to do more land cover assessment.

Emission factors are often derived from national forest inventories (NFIs) by measuring the trees and carbon. Most emission factors come from NFIs, but a country can also use the IPCC emission factor database as well as literature. The IPCC describes three levels of emission factors that are referred to as **three tiers** while activity data has three approaches.
1. Tier 1 is the use of default factors, e.g. drawing from the IPCC emission factor database
2. Tier 2 is Country specific emission factors; and
3. Tier 3 employs higher order methods such as models or NFI measurements over time.

Two issues related to determining emission factors are *stratification* and *what remains after the forest is gone.* In terms of stratification, a country can choose how to stratify forests to determine emission

factors. For example, by forest type (which have different emission factors. e.g., an evergreen forest and a deciduous forest have different emission factors); structure of the forest (primary forest versus degraded forest); natural forest versus planted forests and also different forests with different threat levels. For example, Ecuador used 9 different natural forest types as derived from their NFIs and 1 IPCC default factor for plantations. Guyana stratified its forest types and found out that the carbon content in the forests was similar and so they decided to stratify by threat level by mapping out forested areas near the cities and roads as compared to the forests in the interior and they called it "potential for change" which represents deforestation risk. They stratified by accessibility and sampled more plots for observation where they expected changes to happen (near to cities, where people would go for firewood and other forest products) and they had fewer plots in the interior of the forests.

The second issue is what remains after the forest is gone and here there are two choices:
- Calculating the net carbon uptake following land use change from forest to other land use systems such as to grassland or urban settlement.
- Assume instant oxidation, or that, e.g. above ground carbon stocks to go zero at the time of deforestation. While this may not be quite correct, it is still acceptable in a stepwise approach (as a first approximation). Brazil and Ecuador used this approach for their FREL.

3. Scale

There are two different ways to decide what geographic areas to cover. The national level FREL/FRL and the sub national reference levels (Figure 4). The national level considers only one reference level and one methodology to create a reference level. The second one is to create sub national reference levels and then add them up to create a national reference level. Both have benefits and issues.
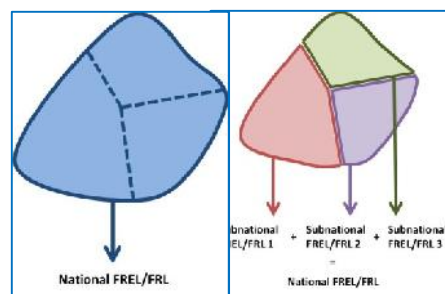

Figure 4: National and sub-national reference levels

Benefits of using a national level scale. It is simple and transparent and consistent across the entire country. It may be easier and cheaper compared to developing multiple FRELs. It can measure the effects of national policies while undertaking a national strategy or national action. However, it is challenging for many countries to implement at the national scale. For example, rolling out a national programme and undertaking collective action and providing incentives may not be easy to implement.

Benefits of using a sub national FREL/FRL level scale. Allows a closer link to drivers e.g., per ecological zone or region; authorities for land use may be at sub national levels. Certain regions may have specific drivers which if a national program is used will not make sense if one region is very different from another. In terms of risks, there is a possibility of leakage arising from activity shifting and potential challenges related to consistency if differences regions undertake different approaches—this may cause inconsistencies when you add them up to get a national FREL.

The specific *benefits* and *risks* that are associated with **REDD+ projects** were explained as follows:

Benefits
- A stronger linkage exists between benefits and actors (directly rewards performance) because activities are in a very confined area involving people and therefore easy to measure performance in activities; this also allows testing and innovation during implementation.
- REDD+ projects are easy to implement because they are done at smaller scales which allows day-to-day management and working with local communities;
- They allow interaction with other organizations which may be operating in the area. These will likely support the day to day management of community work. Further, this allows synergies in cases where resources may be limited.
- There is a stronger interest from the private sector with the REDD+ projects.

Risks
- There is potential inconsistency with national Reference Levels and therefore there may be need to develop regulations and ways to manage such inconsistencies over time;
- The risk of double counting may arise and if a project has created so many carbon credits in a market, then at a national scale, there might be need to subtract some of those credits off from the performance;
- Lack of equity across projects may also arise. Ms, Donna Lee cited the example of Indonesia where there are over 50 projects. She noted that it might be difficult to achieve equity among many projects.

In concluding the section, Ms. Donna shared some considerations which Uganda might want to use in undertaking the FRELs/FRLs. These are location, scale and nature of drivers; authority for land management; capacity to implement activities; availability and applicability of data; potential for success and scalability, i.e., whether the jurisdiction can offer lessons learned for the country more generally. She shared an example of Brazil whose largest emissions come from the Amazon where the country selected an eco-region to start with, while DRC uses a multiple land-use strata approach.

4. Construction Method: Historical Average or Adjustment

While there are a number of possible options that may strongly impact future measured results or performance against a reference level (simple historical averages, linear projection of historical data, modeled "Business As Usual" (BAU) approach), the presentation focused on two basic options: **(1)** simple historical average where the past is used to predict the future. In this case, deforestation rates occur at particular levels over time and emission measurements are taken over a period of time. An average of the historical emissions is determined and used as the Reference Level in the future (Figure 5); but an analysis of national circumstances may be done to determine if the historical averages are a good predictor and **(2)** where the historical averages are not a good predictor, upward adjustments on the calculated historical averages may be done to determine a new Reference level. For example, a country may know that their emissions are going to increase even faster; or where
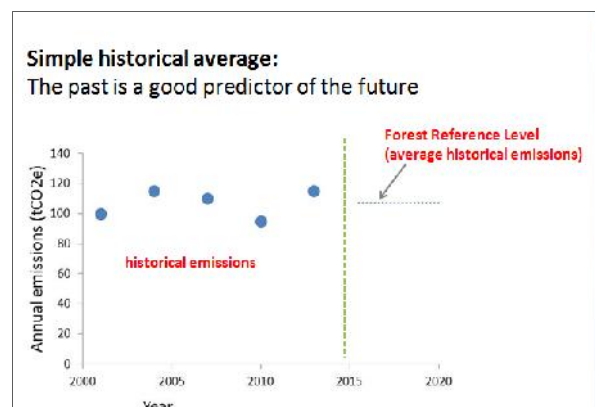

Figure 5: Simple historical average

population growth is expected, or other circumstances changing that will increase deforestation rates, then upward adjustments beyond historical averages may be done based on such national circumstances.

Brazil uses 10 years of data and they predict 5 years forward. Costa Rica projects carbon sequestration from their Payment Ecosystems Services (PES) Program as their proposed FRL, and requests new carbon funds for sequestration beyond this baseline.

11.   Current or existing thoughts on the definition of forests

Among several sources of definitions of forest, Mr. Mugumya quoted a few of them. In the National Forestry and Tree Planting Act, 8/2003, a **"forest"** means an area of land containing a vegetation association that is predominantly composed of trees of any size, and includes:

     (a) A forest classified under this Act;

     (b) Natural forest, woodland or plantation;

     (c) The forest produce in a forest; and

     (d) The forest ecosystem;

The Act further defines a "forest ecosystem" as any natural or semi-natural formation of vegetation whose dominant element is trees, with closed or partially closed canopy, together with the biotic and biotic environment.

He further highlighted a series of definitions as described under a Biomass Study of 2009 and explained that these will constitute part of the definitions that REDD+ intends to prepare; and shared some descriptions and example to strengthen the definitions.

He also shared the forest definition that was submitted under the Kyoto Protocol Uganda Clean Development Mechanism (CDM) by the Uganda Climate Change Secretariat (DNA) to be as land which has:

- Minimum area of 1 hectare
- Minimum tree crown cover of 30 %
- Considering trees that potentially reach a height of > 5 m.

He noted that under REDD+, a "forest" will be defined guided by the existing definitions and the UNFCCC guidance.

12.   International Expectations for FRELS/FRLS and Key Considerations for REDD+ countries

A number of existing guidance on FRELs/FRLs that were highlighted included: the UNFCCC decisions by the CoP, the Green Climate Fund (GCF) (which gets its direction from the UNFCCC), the Verified Carbon Standard (VCS) (which is not a fund), the FCPF Carbon Fund (Methodological Framework), the BioCarbon Fund, the BMZ (Federal Ministry for Economic Cooperation and Development) and the Germany's REDD Early Movers (REM) programme.

The presentation focused on guidance provided by the UNFCCC, which is the internationally agreed guidance. She noted that the UNFCCC provides guidance to the GCF which is the official financial entity for the UNFCCC. The VCS is not a financial mechanism but just a standard; the VCS has a much higher level of requirements because it is built for the carbon market. BioCarbon Fund not only looks at forestry but also at agriculture. The FCPF Carbon Fund is a good indicator of what donors expect.

1. **Guidance on Forest Definition**

In terms of guidance, the UNFCCC only indicates that countries have to provide a forest definition but does not state what this definition has to be like. UNFCCC states that a definition should be consistent with the one used in the country's national GHG inventory. For example, Uganda would use the same definition as that used in its second National Communication (NC). However, if a country chooses to use a definition that is different from that of the national GHG inventory, a justification must be provided.

The definition should be consistent over time which implies that the historic emissions and the current nd future emissions being measured should use the same definition. There are Kyoto protocol thresholds that have been provided in the CDM which give an indication of how to define forests but this does not apply to REDD+. The Kyoto protocol thresholds are that a minimum tree crown cover should be between 10% to 30%; a minimum land area of between 0.05 and 1 hectare; and minimum tree height between 2 and 5metres.

Figure 6 shows thresholds that are used by other countries. In the Vietnam case, variations in the minimum height are employed; this may complicate technical monitoring and requires additional effort.

Examples: Forest definition

	Min area	Min height	Min cover
Brazil	0.5 ha	5m	10%
Colombia	1 ha	5m	30%
Costa Rica	1 ha	5m	30%
DRC	0.5 ha	3m	30%
Ecuador	1 ha	5m	30%
Ghana	1 ha	5m	15%
Guyana	1 ha	5m	30%
Republic of Congo	0.5 ha	3m	30%
Vietnam	0.5 ha	5m (natural forest) 1.5m (slow growing plantations) 3m (fast growing plantations)	10%

Figure 6: Country Forest definition thresholds

Some of the questions a country may ask itself in terms of trying to decide on the definition of a forest

- What forest definition is used in your national GHG inventory?
- What other definitions are in use, either domestically or in reporting to other international organizations?
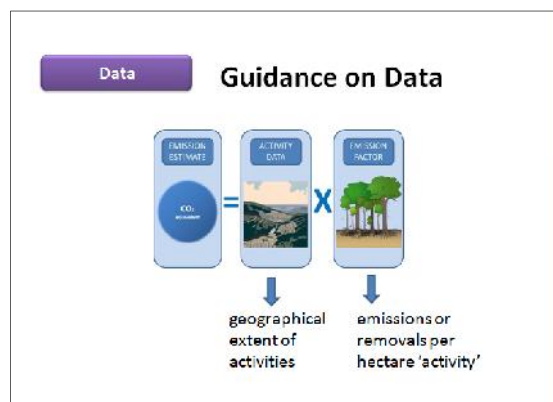- Which definition is the most appropriate for your country's FREL/FRL in the context of REDD+?
- Does the forest definition match data availability, cost and processing capacity for your country?

Figure 7: Illustration of Emission estimate

2. **Guidance on Data**

Simply put, emission estimate is a product of activity data and emission factor. Figure 7 is a simple diagrammatic illustration for the emission estimate.

Different organizations give their guidance on which approach to use to determine activity data. An analysis of ten different countries[1] on activity data revealed the following about activity data:

- Almost all countries use Approach 3 for deforestation.
- Many countries do <u>not</u> have spatially explicit data for degradation. Countries use e.g., timber harvest data for degradation.
- Almost all countries use Landsat data, a few may use higher resolution data (e.g. RapidEye, etc.).
- Historical reference periods vary, but generally around 10 years.
- The number of change assessments varies country by country. But a country needs to decide how many change assessments are appropriate.

Figure 8: Guidance on Activity data

Some of the questions a country may ask itself in terms of trying to decide on the nature of activity data it needs to have

- What activity data is available in your country and which IPCC approach is used?
- Which REDD+ activities does the available activity data capture?
- How many data points are available and are they sufficient?
- What period is covered by the activity data? Is it sufficient and can the period be considered representative of future emissions in the FREL/FRL period?
- Is there a need to collect additional activity data? If so, what improvements or additional data is needed?

Guidance on Emission Factors

Like in the AD, UNFCCC is not specific on any guidance but it indicates that the country should adhere to IPCC guidance and guidelines. FCPF however is specific and indicates that IPCC Tier 2 or higher methods should be employed. They are clear they want country specific emission factors. They are also specific on spatial data on EFs and that uncertainty for each should be documented. Again VCS is also more specific as indicated in Figure 9.

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[1] Brazil, Chile, Costa Rica, DRC, Ghana, Guyana, Mexico, Nepal, Republic of Congo and Vietnam

Country examples of Tier and stratification of emission factors used are shown in presentation slides provided in a separate file.

Some of the questions a country may ask itself in terms of trying to decide on the emission factors
- What emission factor data is available in your country (at what tier level)?
- Is there a need to develop more (country-specific) EFs?
- What stratification would be most meaningful to your national circumstances?
- Are AD available per stratum in the proposed EF stratification (e.g. if the stratification is per forest type, is the area forest loss available per forest type)?

3. Guidance on Scale

UNFCCC states that countries should develop national level FREL/FRLs, but may also develop sub national FREL/FRLs as an interim measure but does not define what exactly is "sub national". FCPF Carbon Fund is more specific and suggests what an Emission Reduction program should be:

- Be a government designated area (e.g. jurisdiction or eco-region) that is of significant scale
- Addresses a significant portion of forest-related emissions and removals.

Examples: Scale of REDD+ FREL/FRLs

	Country	Jurisdiction	FREL area (ha)	% of country
UNFCCC submission	Brazil	Amazon biome	420 M	50 %
	Colombia	Amazon biome	45 M	39%
	Ecuador	National	25 M	100%
	Guyana	National	22 M	100 %
	Mexico	National	190 M	100%
ER Program	Mexico	5 states	29 M	15%
	DRC	Mai Ndombe Region	13 M	5.5 %
	Ghana	Eco zone	6 M	25 %
	Nepal	Terai Arc Landscape	2.3 M	15 %

Uganda = 24M ha
Western region: 2.1M ha   Central region: 2.3M ha

If for example a protected area (PA) has no emissions historically, it must be proved that it is under critical threat. However, what is generally preferred are programs that demonstrate the multiple activities in the national strategy and not a program with only one type of intervention. Figure 10 shows an example of scale in other countries.

Figure 10: Scale of REDD+ FRELS/FRLS

Guiding questions on scale
- What scales best suit your country for FREL/FRL development?
- Is a top-down or bottom-up system more attractive? Why?
- Does the government intend to recognize projects or sub national programs with operating FREL/FRL(s)?
- If so, how can consistency be enhanced among multiple operational FREL/FRLs within your country?

4. Guidance on Construction methodology

The following are guiding questions in the selection of a construction methodology.

1. **Does your country have enough data to decide on a construction methodology?** If not, what additional data do you need?
2. **Do you think past forest-related emissions, or a historical average, is a good predictor of future emissions in your country?** If so, what time period might be the best choice? Or what additional data/information do you need to decide?
3. **Would you propose an adjustment or projection?** How do you expect the drivers of deforestation/degradation in your country to change (in type or scale)? Do you have adequate data to make an adjustment? If not, what kind of additional data does your country need?

13.   Determining the SCOPE of Forest Reference Emission Level or Forest Reference Levels

Scope considers the type of activities, pools and gases in determining reference levels.

1. Type of activities

According to the UNFCCC, there are **five activities** for REDD+ and these include **deforestation, forest degradation** which occurs, for example, during timber harvesting and fuel wood collection or when fires occur. **Sustainable management of forests that leads to** reduced emissions or increased removals after proper management of forest such as reduced impact logging or increased rotation periods. **Enhancement of forest carbon stocks** through tree planting, reforestation and regeneration of forest. **Conservation of forest carbon stocks** *in this case, a country needs to demonstrate that areas are under threat and that if action is not taken, such areas would in fact be degraded or deforested and to quantify the amount of emissions that would occur if action is not taken.*

While the **UNFCCC** is not specific on any guidance regarding activities to include in the reference level, it states that the country should include significant activities in terms of level of emissions but the UNFCCC is silent on a definition of "significance"; it states further that should a country choose to leave out an activity, then a justification must be provided. On the other hand, the **FCPF Carbon Fund** is clearer on the activities that must be included, i.e. if an activity contributes to more that 10% of the total forest-related emissions, then it must be included in the accounting.

There are different issues to consider while deciding on which activities a country could include in the reference level. **(1)** a country should be clear on its **REDD+ Strategy or Action plan**; what policies and measures it will pursue and since FREL/FRLs are intended to measure performance of actions, there is need to know what those actions are and what will they impact? For example, will they impact deforestation in the country or will they impact forest degradation? Will they improve reforestation? What actions are implemented on the ground and what exactly will be done on the ground so that a reference level is built around that? A reference level should therefore be defined by the actions **(2) Mitigation potential** is about which of the five activities can best reduce emissions or increase removals so that it can receive more attention; and **(3) Technical capacity;** determines what can be measured with reasonable accuracy and at an acceptable cost for a country.

Table 3 shows some example of actions in the REDD+ strategy and which related REDD+ activities to include in the FREL/FRL.

Table 3: Mapping REDD+ Strategy or Actions to REDD+ Activities to include in the FREL/FRL

Actions in the REDD+ Strategy to be implemented	REDD+ Activities to include in the FREL/FRL
• **Agricultural intensification, conservation farming** • **Alternatives to charcoal production**	• Reducing emissions from deforestation
• **Improving infrastructure; improved cook stoves** • **Enforcement against illegal extraction from forests**	• Reducing emissions from degradation
• **Tree planting program**	• Enhancement of forest carbon stock

An example from 11 other countries regarding the type of activities other countries are putting in their reference levels was presented (see presentations provided in a separate file). In the example, Ms. Donna Lee noted that all the countries have included deforestation[2], a few countries[3] are putting degradation and a few others[4] are putting enhancement. All the countries indicate they have technical capacity to monitor deforestation but more countries do not have capacity to monitor degradation. This is a stepwise approach where other activities which are also recognized to contribute to emissions will be considered when countries have the capacity to do so. Programmes therefore may start with only deforestation. For example, Brazil started with deforestation only and will add degradation once they are sure they can measure it with acceptable accuracy. Guyana and Malaysia are measuring degradation from timber harvesting; DRC is using information based on concessions from annual allowable cuts; Nepal is measuring degradation based on crown cover and using remote sensing imagery and data; Vietnam, considers forest cover classification and associated change; while Chile is measuring degradation based on consumption of logs, firewood, and fire data.

2. Pools

There are five carbon pools which include Above Ground Biomass (AGB), Below Ground Biomass (BGB), Soil organic matter, Litter and Dead wood. In terms of gases, they are as they are shown in the figure below but not all of them are forest related. This discussion dwelt on forest related pools.

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[2] Brazil, Chile, Colombia, Costa Rica, DRC, Ecuador, Ghana, Guyana, Mexico, Nepal, Vietnam
[3] Chile, DRC, Guyana, Nepal, Vietnam, Malaysia
[4] Chile, Costa Rica, Nepal, Vietnam
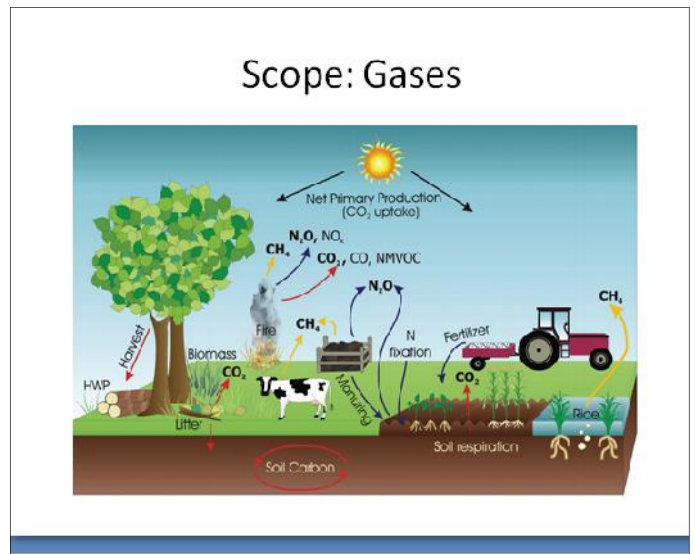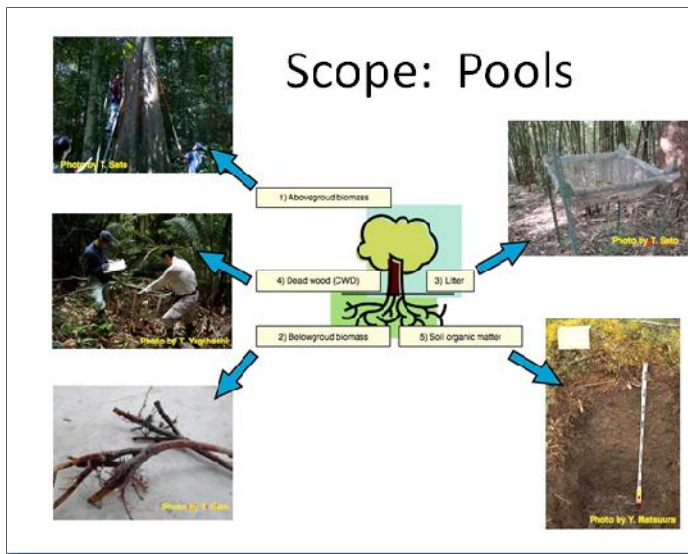
In terms of pools and gases, the **UNFCCC** is not specific on which pools and gases a country should choose, but states that significant pools and gases should not be excluded and reasons for omitting a significant pool or gas must be provided. The **FCPF Carbon Fund** however is more specific indicating that significant pools and gases that contribute more that 10% of the threshold must be included. Nearly all countries considered (see presentation provided in a separate file) have included ABG and BGB pools and in terms of gases all have included CO_2. Guyana and Mexico have also included methane and nitrous oxide for fire as a source of degradation.

She noted that since 1996, Brazil has been measuring deforestation in the Amazon with Landsat imagery; and they have annual data; they are beginning to measure degradation but do not yet have confidence and accuracy at this time but they are trying to improve. Deforestation is their most significant source and their approach is accepted, simple stepwise approach and indicating where they will improve over time. In DRC, the situation is a bit more complex; they stratified their area into a concession zone, one open area and one conservation area. They have included unplanned deforestation where deforestation is caused by communities cutting trees for fuel wood, doing shifting agriculture. They also have planned deforestation where they are cutting the area for palm oil, for expanding the roads. They have planned degradation which is in the logging area concessions and looking at annual allowable cuts that is for degradation.

These are some of the questions a country may ask itself in terms of trying to decide on the Scope it needs to have.
- What activities are significant contributors to forest emissions in your country?
- Are there other national objectives that favor the inclusion of certain activities that are not key contributors to emissions?
- Can emission estimates for the activities selected above be produced with reasonable accuracy? This is a technical issue whether you have to consider if for example as country you have capacity to take accurate measurements?
- What pools and gases are significant and should be included in your FREL/FRL?
- What future improvements could be made as part of a stepwise approach?

14.   Scope: Pools and Gases

Mr. John Begumana shared what Uganda has been able to report on during its second National Communication (NC). He noted that the NC will guide on what data the country has and where improvements are needed and see how it can be applicable to REDD+.

Carbon dioxide emission and removals and how they were calculated was reported on in the second Uganda NC. These were based on annual changes of carbon in the living biomass including both AGB and BGB. Annual changes or stock biomass in dead organic matter and litter were not included in emission factors for developing countries. An estimate was used to determine annual changes in soil especially where there was deforestation and where forests were converted into cropland. An estimate for fire was also done based on data from MODIS. Mr. Begumana said that information on fires from 2000 is now available on MODIS; but

Land category and land changes Naming Convention

a) Land remaining the same land	b) Land converted from other land categories
1. FF = forest land remaining forest land	1. LF = lands converted to forest land
2. GG = grassland remaining grassland	2. LG = lands converted to grassland
3. CC = cropland remaining cropland	3. LC = lands converted to cropland
4. WW = wetlands remaining wetlands	4. LW = lands converted to wetlands
5. SS = settlements remaining settlements	5. LS = lands converted to settlements
6. OO = other land remaining other land	6. LO = lands converted to other land

Table 4: Land category and Land naming convention

prior to MODIS, information was generated by LULUCF guided by the 1996 IPCC guidelines. He noted that LULUCF is not a flexible methodology especially when using own national forest definitions, and in this case, guidance was sought from the IPCC good practices and guidelines of 2003 and 2006.

Under LULUCF and currently under AFORU where agriculture is combined with forestry, six main landuse categories are recognized: Forest land, Cropland, Grassland, Wetlands, Settlements and Other land such as bare soil, rock, icecaps, and all unmanaged land areas. In all these GHG measurement systems, LULUCF is a complex methodology. One has to consider what land remained the same land and land that remain forestry in the year of inventory e.g., if comparing two years 1990 and 1995, you must also consider all other land that was converted from agriculture, from grassland to forestland (see example of land categories and land changes naming convention in table 4).

In the column, for the category "land remaining the same land" there is another equivalent; e.g., for each of land that remained cropland, must consider what other land types were converted into cropland which appears complex.

Data availability and data quality are key in choosing a methodology. Biomass assessments are very costly and time consuming, challenges such as data availability where we don't have historical data; and cloud cover and haze that also contribute to the quality of data. The default methodology for land use even what is provided in the 2006 software is called gain loss approach. Uganda however does not have data to base on to use the stock mass approach. Currently, as a country, Uganda relies on IPCC default values

to determine deforestation rates. The IPPCC default values for a tropical high forest or mountain forest indicate regional averages from some studies to estimate the possible carbon loss from the soil due to deforestation.

He noted that the advantage of using IPCC default values is that the country does not have to attach uncertainty estimates and that is agreeable to UNFCCC. However should Uganda choose to use country specific values on emissions, the error associated with accuracy levels of the estimates has to be stated which Uganda cannot do at the moment and therefore the reason to keep using the IPCC default values.

The current approaches Uganda is using are:
- Present country land unit categories (NFA) into IPPC land categories- Forest / non Forest
- Land Cover / Land Use Change matrix
- Biomass stock (carbon) changes

The data that was used was derived from national biomass study where they had measured plots in different vegetation types and this was the most appropriate available to use. The results indicated an increment in biomass in built up areas which can be explained by the abundance of ornamentals in towns which are rarely cut. Biomass on subsistence farmland was found to increase or decrease based on the region. There are some regions where subsistence farmland had stabilized e.g., coffee being grown under shade trees as well as bananas. Overall, the biomass in subsistence farmland and grassland was stable at national level. In regard to fires, MODIS reveals the situation at particular times in the years with differences being seen in the dry seasons especially in the December to January season. The calculations are based on area being burnt (ha), biomass available, combustion efficiency and emission factor. From the national biomass study, an estimate of the biomass can be derived but what is difficult to determine is the combustion efficiency in those areas and so default values provided by IPCC and how they relate to the Uganda situation are used.

Results show that there are a lot of emissions in areas that remain forest land and it is like a contradiction because the other biomass showed that there was a lot of change in tropical high forests. In tropical high forests, there is a high level of biomass and this combines intact THF and degraded THF, woodland (charcoal sources) and when the data was aggregated within a certain error margin, it showed that there is a very high level of emissions in land that was forest land. The forest land converted to crop land was the second emitter and then there are emissions in areas with fires. It shows that there were fewer emissions in 1994 but there was no data on fires. The rate of emissions from Landuse shows a downward trend and this is logical because as the forests get smaller and smaller, there is less to degrade and so the emissions go down.

15. Group sessions (5 groups)

Group Theme	Group Questions	Group Chairperson
Scope	1. What activities are significant contributors to forest emissions in your country? 2. Are there other national objectives that favour the inclusion of certain activities that are not key contributors to emissions?	*Xavier Mugumya*

	3. Can emission estimates for the activities selected above be produced with reasonable accuracy? 4. What pools and gases are significant and should be included in your FREL/FRL? 5. What future improvements could be made as part of a stepwise approach?	
Forest definition	1. What forest definition is used in your national GHG inventory? 2. What other definitions are in use, either domestically or in reporting to other international organizations? 3. Which definition is the most appropriate for your country's FREL/FRL in the context of REDD+? 4. Does the forest definition match data availability, cost and processing capacity for your country?	*David Elungat*
Activity Data	1. What activity data is available in your country and which IPCC approach is used? 2. Which REDD+ activities does the available activity data capture? 3. How many data points are available and are they sufficient? 4. What period is covered by the activity data? Is it sufficient and can the period be considered representative of future emissions in the FREL/FRL period? 5. Is there a need to collect additional activity data? If so, what improvements or additional data is needed?	*Edward Senyonjo*
Scale	1. What scales best suit your country for FREL/FRL development? 2. Is a top-down or bottom-up system more attractive? Why? 3. Does the government intend to recognize projects or sub national programs with operating FREL/FRL(s)? 4. If so, how can consistency be enhanced among multiple operational FREL/FRLs within your country?	*John Diisi*
Construction methodology	1. **Does your country have enough data to decide on a construction methodology?** If not, what additional data do you need? 2. **Do you think past forest-related emissions, or a historical average, is a good predictor of future emissions in your country?** If so, what time period might be the best choice? Or what additional data/information do you need to decide? 3. **Would you propose an adjustment or projection?** How do you expect the drivers of deforestation/degradation in your country to change (in type or scale)? Do you have adequate data to make an adjustment? If not, what kind of additional data does your country need?	*John Begumana*

A. Scope Group - Xavier Mugumya

1. **What activities are significant contributors to forest emissions in your country?**
   a) Agriculture
   b) Charcoal/biomass energy
   c) Industrialization (e.g. Namanve)
   d) Infrastructure development (e.g. roads)
   e) Fires
   (Note: removals not considered)

2. **Are there other national objectives that favour the inclusion of certain activities that are not key contributors to emissions?**
   a) Commercialization of agriculture (e.g., Palm oil, sugar and tea)
   b) Oil and gas infrastructure
   c) Peace and security (Forest clearance for settlement of refugees/conflict areas)
   d) Improved health services (Population increase-pressure on forests)

3. **Can emission estimates for the activities selected above be produced with reasonable accuracy?**

3. Can emission estimates for the activities selected above be produced with reasonable accuracy?

ACTIVITY	Scope	Can we estimate emissions	accuracy
Agriculture	Deforestation	Yes	High
Charcoal/biomass energy	Degradation	Yes	Low
Industrialization (e.g. Namanve)	Deforestation & Degradation	yes	High
Infrastructure development (e.g. roads)	Deforestation	Yes	High
Fires	Deforestation & Degradation	Yes	Low
Commercialization of agriculture (e.g Palm oil, sugar and tea)	Deforestation	Yes	High
Oil and gas infrastructure	Deforestation & Degradation	Yes	Medium

4. **What pools and gases are significant and should be included in your FREL/FRL?**
   Significant Pools

   a) Above ground biomass
   b) Below ground biomass

   Significant gases

   a) Carbon dioxide
   b) Methane

5. **What future improvements could be made as part of a stepwise approach?**
   a) Increase the scope of activities e.g. conservation of forest carbon stocks in protected areas (removals should be considered)
   b) More pools and gases
   c) More accuracy (greater country coverage in sampling) and new technology and more skills & capacity

B.   Forest Definition - David Elungat

1. **What forest definition is used in your national GHG inventory?**
   As submitted to UNFCCC,
   a) Size 1ha,
   b) 30% crown cover,
   c) 5m high

2. **What other definitions are in use, either domestically or in reporting to other international organizations?**
   a) The National Forestry and Tree Planting Act, 2003 defines a forest as area of land containing a vegetation association that is predominantly composed of trees of any size, and includes
      i.   A forest classified under this act
      ii. A natural forest, woodland or plantation
      iii. The forest, wood land or plantation
      iv. The forest in a forest
      v.   The forest ecosystem
   b) FAO defines forest as**,**
      i.   Land spanning more than 0.5 hectares,
      ii. trees higher than 5 meters and
      iii. a canopy cover of more than 10 percept, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use
   c) Some tradition definition do not consider extent or cover but cultural attachment on them or social construct

3. **Which definition is the most appropriate for your country's FREL/FRL in the context of REDD+?**
   a) Size of 0.5ha to capture small forest holdings
   b) Woodlands considered as forest

    c) 10% consistent with UNFCCC definition

    d) At least 2m High

4. Does the forest definition match data availability, cost and processing capacity for your country?

    a) Forest definition matches data availability, cost and processing capacity for the country

C. Activity Data Group - Edward Senyonjo

1. What activity data is available in your country and which IPCC approach is used?

    a) Land use land cover (LULUCF) – IPCC 3

    b) Timber harvesting records by FSSD –IPCC 2

    c) Tree planting records; IPCC 2

        i. SPGS, FIEFOC, UTGA, NFA (CTP)

        ii. Protected areas (NFA, UWA and Local government

2. Which REDD+ activities does the available activity data capture?

    a) Deforestation –deforestation

    b) Agricultural expansion –deforestation

    c) Some types of natural forest degradation

    d) Conservation- conservation

    e) Timber harvesting -degradation

    f) Tree planting -enhancement

3. How many data points are available and are they sufficient?

    a) LULUCF three points 1990, 2005 and 2010 –not sure

    b) Timber harvesting records by FSSD –Annual since 2005 –Not sufficient

    c) Tree planting records –Not sufficient

    d) Protected areas –not sufficient

4. What period is covered by the activity data? Is it sufficient and can the period be considered representative of future emissions in the FREL/FRL period?

    a) Time periods as specified above

    b) Data is Not sufficient except the LULC datasets

5. Is there a need to collect additional activity data? If so, what improvements or additional data is needed?

    a) YES. A lot of data needs to be collected to improve the existing datasets as well as filling in the gaps.

    b) Data gap analysis e.g., with UNDP-CCD Low Emission Capacity Building Project (LECBP) and Sectoral training in May-June 2015

    c) Additional biomass data in forest especially the Tropical High Forests in CFR and NP.

    d) Biomass inventory in formerly skipped areas

    e) Northern and Karamoja regions

    f) GAP –inventory in Montane forests –Elgon, Mt Rwenzori, Mt Moroto

    g) Gap -Biomass data in wetland systems above, below and in peat.

    h) Gap -Soil carbon virtually unknown

i) Historical and future satellite imagery

1. **What scales best suit your country for FREL/FRL development?**
   a) Have both National and Sub national systems
   b) Sub National level system
   c) Criteria to designate sub-national
      i) Using a landscape approach (Criteria – Altitude, farming system, climatic conditions)

Forest Landscape Restoration Zonation for Uganda
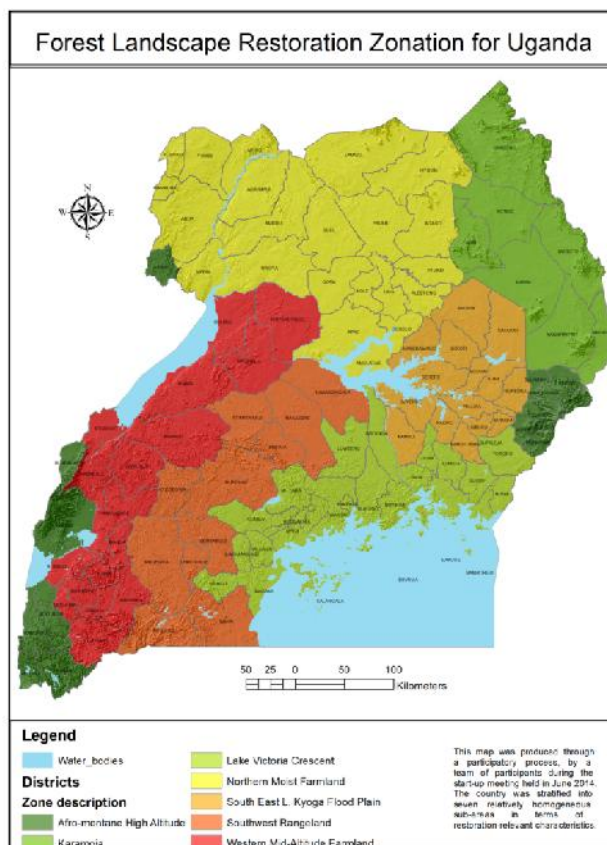
2. **Is a top-down or bottom-up system more attractive? Why?**
   a) Bottom-up system is more attractive
      i) Allows making necessary adjustments based on diversity in biophysical factors
      ii) Ownership by regions/stakeholders
3. **Does the government intend to recognize projects or sub national programs with operating FREL/FRL(s)?**
   a) Yes, there are already related initiatives/plans (Forest Landscape Restoration) at sub-national levels
   b) Government Policy frameworks are favourable for such an arrangement
4. **If so, how can consistency be enhanced among multiple operational FREL/FRLs within your country?**
   a) Methodology to be discussed centrally developed and adopted for implementation at regional level
   b) Capacity building at all levels
   c) There has to be centralized reporting to check on the consistency

1. **Does your country have enough data to decide on a construction methodology?** If not, what additional data do you need?

   a) LULUCF data
   b) Resolution viz-a-viz Mini mappable area (will improve with availability of better technology [computer aided digitizing])
   c) Datasets available 1995 – 2005, 2005 – 2010, 2010 – 2015
   d) With support from FAO we will be able produce bi-annual datasets
   e) Emission factor from NFI
   f) Available but require updating and gap filling
   g) Data on Key drivers

2. **Do you think past forest-related emissions, or a historical average, is a good predictor of future emissions in your country?** If so, what time period might be the best choice? Or what additional data/information do you need to decide?

   a) The high population growth, dependent on biomass and agricultural technological practices will influence the RLs
   b) Therefore historical averages or trends may need to consider the following
      i) Trends in income and affordability/alternative fuel
      ii) Trends in biomass resource e.g. resource getting depleting
      iii) Climate change issues and adaptation e.g., adoption of climate smart agriculture
   c) For the baseline we suggest use 30 years but use most recent 20 years to monitor our performance.

3. **Would you propose an adjustment or projection?** How do you expect the drivers of deforestation/degradation in your country to change (in type or scale)? Do you have adequate data to make an adjustment? If not, what kind of additional data does your country need?

   b) Yes, there is adequate data and more could be derived
      i) Population data
      ii) Agricultural statistics
      iii) Data on fuel consumption
      iv) 2040 vision

In conclusion, the facilitator Mr. Nsiita, gave an overview of the FREL/FRLs and observed that it is the heart of the matter for the methodology of the task force in this . He noted the availability of data and available sources and capacities such as the NFA, UBOS and others.

16. Concluding remarks from the Commissioner / National Focal Point

In her concluding remarks, Ms. Margaret A. Mwebesa, the Assistant Commissioner, FSSD and also serving as the REDD+ National Focal Point thanked the members for the efforts rendered. She added her voice to the workshop presenters and said that the forestry sector has for a long time been under funded but regardless, they have tried and have made progress so far although these investments may take time to be realized. She called upon for more funding for the District Support Services.

She thanked FAO for organizing the workshop and Ms. Donna Lee for facilitating and making it easier for the members to understand the FREL/FRLs. She called for harmonized reporting and coordination among the institutions for better development of the strategy.

17. Annex I: List of participants

TECHNICAL WORKSHOP ON REDD+ NATIONAL BASELINE SCENARIO AND NATIONAL FOREST MONITORING SYSTEM FOR UGANDA
14TH – 16TH APRIL 2015 AT BOTANICAL BEACH HOTEL ENTEBBE

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Annex II: Comments, Questions and Clarifications on Presentations

Set 1: Questions, Reactions , Comments and Clarifications on REDD+ Overview	
Questions/ Reactions /comments	*Responses/Clarifications*
Is there a tentative time frame that is expected to have delivered the NFMS	Yes, there are contractual obligations in regard to the elements of the NFMS that will be finalized at the end of next year(2016) with reasonable aspects of the Reference Scenario (RS) output. These elements are incremental in nature and we continuously plan for subsequent improvement of the RS. The functionality of the NFMS is continuous and there are milestones during the different phases.
A number of REDD+ initiatives exist, how are we prepared to pull these synergies beyond meetings so as to have proper usage of resources	REDD+ is to build on national plans and institutions. In doing this, the REDD+ Secretariat will be: – recognizing generation of institutional ownership – there will be enhanced /active coordination – meetings to discuss process of sharing

Set 2: Questions, Reactions , Comments and Clarifications on Introduction to FRELS/FRLS	
Questions/ comments/reactions	*Reactions/Responses/Clarifications*
A member was concerned that few countries have so far submitted FREL/FRLs, and wondered about the challenges that are hindering many countries from submitting their FREL/FRLs	She explained challenges faced by countries in developing FREL/FRLs, including coordination among the ministries and stakeholders, among others, as well as data collection. She also noted that the international community has put up a lot of conditions to fulfill, and there are multiple sets of requirements, which can make it difficult for developing countries.
Is there more room for the interpretation of these definitions provided by the UNFCCC?	She explained that UNFCCC has stated that FREL/FRLs are expressed in terms of tones of CO_2.

Can't FRELs/FRLs be measured according to land areas as opposed of tones of CO₂	But noted that Brazil first started by measuring hectares of gross forest cover loss and multiplied this by a single, conservative emissions factor, which simplified their work.
Is it possible for individuals or countries to access the carbon funding?	Requirements of the financing available (e.g. the FCPF carbon fund) do not favor individual entities, and instead look for programs that cover large landscape areas, and must be endorsed by the countries.
What should we include in a Reference level? **In developing FREL/FRLs, can we target to address the three purposes?**	Can do a step-wise approach; for a country getting started on the REDD+ process, it is important to start simple, but robust and credible that you can look at improving overtime. It is also useful to highlight challenges involved in developing the FREL/FRLs, if submitting to the UNFCCC. It is good if the FREL can fulfill all the three reasons (domestic, global responsibility and finance).
Can we access more than one funding source?	Yes, it is possible. Just look at the donor requirements and decide what is best for Uganda.
What trend is the world taking in developing the FREL/FRLs? What is more certain for Uganda?	Advised to use the UN requirements as they form the basis for financing entities (e.g. Carbon Fund, bilaterals, etc.).
Are we putting into consideration agroforestry?	Agroforestry is good because it is can be used as an incentive for farmers to reduce emissions or increase removals; example of Ghana's REDD program based on agroforestry and increasing trees on cocoa farms.

Set 3: Questions, Reactions , Comments and Clarifications on NFMS as a tool to provide data on FRELS/FRLS

Questions/ comments	*Reactions/Responses/Clarifications*
Do we have capacity or building plan in place for the stakeholders involved	Yes there is a plan to build capacity especially where it is lacking to enable sustained capacity.
Why have locally developed equations used instead of international ones which are well tested	Uganda is one of the few countries that have locally generated allometric equations. The plan is to review and where necessary improve on them because they take care of unique country circumstances
How have you considered potential leakage from wetlands	**There is possibility of REDD+ activities resulting in leakage (wetlands inclusive). The monitoring system will be as comprehensive as possible within the reasons and capacity available. However, key emphasis under REDD+ is on deforestation and forest degradation.**

Set 4: Questions, Reactions, Comments and Clarifications on Key elements of FRESL/FRLS

Questions / Reactions /Comments	Responses/Clarifications
What do you recommend as the most appropriate sub FREL/FRLs for Uganda given the diverse regional cultures and ecosystems .	There are no sets of rules on this. A country may present several Sub FREL/FRLS if it thinks this best caters for the varying regional circumstances but ultimately must combine them into one national FREL /FRLS. Uganda is free to use the proposed Forest Land Restoration zonation (see Map in section 15 D) or any approach if this is the most appropriate approach.
According to the illustration, areas that have been degraded below the threshold crown cover are considered to be deforest. However, under IPCC guidelines, an area is considered to be in transition (i.e. a forest) even if it is below the threshold value if it is within the default value of 20 years (or a country specified transition period) or it is believed that this area will revert to a forest through natural regeneration or the land use will remain forest e.g., forest plantation under harvest	There is need to separate/distinguish two things: reporting under UNFCC and reporting under REDD+ (1) reporting under the UNFCCC through GHG inventories (in National Communications + Biennial Update Reports), in which case a country uses IPCC guidance on lands in transition (and the 20-year default or some other country-specific length in time) and keeps such lands in the transition category e.g., forest to cropland category. The reason for considering land under transition is that even though the above ground biomass (AGB) may change other pools, such as soil, take longer to transition; (2) *accounting* under REDD+ has no specific guidance on this topic so a country may choose to account or not to account for what happens on that land once land is converted e.g., forest converted to cropland is immediately considered deforested.
Under construction methodology, is there an international criteria on the upward adjustment?	**Choice of adjustments is based on national circumstance.**
On Forest area/palm oil conversion case in Kalangala Islands, Uganda	Most organizations are not willing to fund activities convert natural forest to plantations
What are the implications of using long time averages like Brazil?	IPCC does not specify limits. Financing does. Whether the Brazil approach is fair or not is matter of debate. The financing mechanisms adopted ultimately dictated the approach. Or a country could present different FREL / FRL for different purposes like what Brazil has done.
On scale, Uganda has already initiated pilot REDD+ projects. How will project baselines be	It is important AD, EF, and FRELs of projects are aligned and are

aligned will the national baseline.	consistent with the nation REDD+ baseline. It is important that projects do not over estimate emission reduction projections as this would seriously erode the national program.

It is also important to note that very many projects cause inconsistencies
Integrity of large scale projects is that they can quickly be verified |
| **Most of the forests outside PAs have been cut. Why not focus on forest reserves and those areas outside reserves that are forested and hence have them be considered** | REDD+ is about where there is need for improvement --you have to show that PAs have been under pressure and deforestation has been happening and if we don't do anything, they will also be gone

There is need to provide proof for this. |

Set 4: Questions, Reactions, Comments and Clarifications on Scope

- **Do we assume that the allowable cut is indeed degradation**	- **We have to model the amount of degradation to try to understand what allowable cuts translate to degradation-- degradation is not equal to total allowable cuts**
- **Are there instances when forests are cleared because of Urbanisation or industrialisation**
- **Do you consider land use change in reference to forestry or in reference to agriculture**	- Yes the forest cleared for urbanisation was considered. Landuse use include urbanisation especially under the component of Other
- **The prolonged droughts have lead to increase in fires and this is a practice that has been taken on by the local peoples. Long droughts lead to continuous burning and that could explain the fires**
- **When I look at the map, I am looking at NPs, they look like all of them were burning completely -- in the parks we use fires to manage the parks as a control mechanism**	- Comment appreciated
- **Webpage? Please share**	
- **Aren't soft woods considered in the forest / biomass areas**	- We reported up to year 2000
- **Which algorithm was used in the determining the areas covered. The rate of emission is a constant (Miguel) etc etc**	- Used the National Biomass studies

Set 5: General Questions, Reactions, Comments and Clarifications

Questions	Responses/ Clarifications
- **Why does Uganda consider the minimum threshold of 2 metre high and 10% crown cover?** -	With a minimum height of 2m and a certain crown cover about 10, what are we trying to achieve? if all these what is the cost benefit of trying to protect one hectare versus the benefit we are getting---what is the cost of monitoring of all these issues?
- **Why do we insist on starting with deforestation when we can include degradation and get a a good deal?.**	A lot of countries choose deforestation because it is costly to measure and include degradation hence for a country starting with it. It is important to start simple, and show that deforestation is significant and then creating a narrative on that basis
- **Revising tree height to to 2m would necessitate revising the level at which diameter is measured which is 1.3 metres from the ground**	-
- **How will/does the forestry sector account for the activities that have been done in countering the level of deforestation. There is need to account for the funds already spent so that are able to see realistic outputs**	Xavier gave an account of the investments that have been made to answer the question of accountability. He mentioned that at least for the investments made so far, the forestry sector has managed to put up at least 10,000 ha of forest land; however these efforts have been frustrated due to the increased deforestation. One finds that for land afforested equivalent to a Mabira over ten years, 3 Mabiras are destroyed every year.