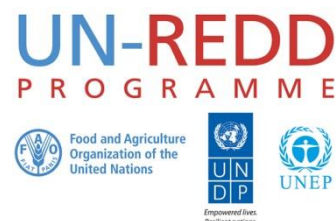


REDD+ Monitoring, and Measurement, Reporting and Verification workshop

“Training the Trainers”

Workshop report

First regional workshop
Bangkok, Thailand
Swissôtel Nai Lert Park
18-22 April 2016



General workshop information

Sponsors

World Bank Forest Carbon Partnership Facility (WB FCPF)

UN-REDD Programme of the Food and Agriculture Organization of the United Nations (FAO/UN-REDD)

REDD+ partnership

Global Forest Observations Initiative (GFOI)

Australian Government

United States SilvaCarbon Program

GOFC-GOLD Land Cover Office

Wageningen University (WU)

Boston University (BU)

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List of Acronyms

BU	Boston University
FAO	Food and Agriculture Organization of the United Nations
GFOI	Global Forest Observations Initiative
GHG	Greenhouse Gas(es)
GOFC-GOLD	Global Observation for Forest Cover and Land Dynamics
IPCC	Intergovernmental Panel on Climate Change
MGD	Methods and Guidance Document from GFOI
MRV	Measuring, Reporting and Verification (of forest related greenhouse gas emissions)
NFI	National Forest Inventory
NFMA	National Forest Monitoring and Assessment
R&D	Research and Development
REDD+	REDD+ refers to the UNFCCC decision (COP16, 2010) on: “Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forest and enhancement of forest carbon stocks in developing countries.”
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
WB FCPF	World Bank Forest Carbon Partnership Facility
WU	Wageningen University

1. Background

The performance-based climate mitigation framework REDD+¹ encourages the reduction of emissions related to deforestation and forest degradation, and removals through enhanced forest carbon stocks and improved forest management. These activities should be measured and reported to the United Nations Framework Convention on Climate Change (UNFCCC); including a process of verification. This requires methodologies for estimating actual emissions and removals and for establishing the reference level. UNFCCC requests countries to build robust and transparent national forest monitoring systems to facilitate the measurement and reporting of forest related greenhouse gas (GHG) emissions, following the guidelines and guidance from the Intergovernmental Panel on Climate Change (IPCC).

Various training materials and tools, such as those from the Global Observation for Forest Cover and Land Dynamics (GOF-C-GOLD) (http://www.gofcgold.wur.nl/redd/Training_materials.php) and World Bank Forest Carbon Partnership Facility (WB FCPF) (<https://www.forestcarbonpartnership.org/redd-training-material-forest-monitoring>), from the Global Forest Observations Initiative (GFOI) (<http://www.gfoi.org/methods-guidance>), from the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) (<http://www.un-redd.org>) and <http://www.fao.org/forestry/fma/openforis/en>, from Silvacarbon (<http://egsc.usgs.gov/silvacarbon/node/30/index.html>) and R&D partners (such as Boston University and Wageningen University) are available. They aim to support and facilitate country processes with the development of capacities for implementing a national system for monitoring forest area and area changes, the associated carbon stocks and changes; and for measuring, reporting and verification (MRV) of REDD+ activities.

To make these materials more accessible for countries and REDD+ / forest monitoring professionals, four (4) regional one week workshops are planned in three different continents: one in South-East Asia (in English), one in Latin America (in Spanish) and two in Africa (in French and English). The basic concept of these workshop is to “train the trainers”. A selected group of around 35 participants from countries in each region (2-3 per country) will attend with the aim of further disseminating the gained knowledge and insights and train other relevant people who are involved in REDD+ monitoring and reporting in their country, in order to further build their capacities.

The workshops will be jointly organized in close collaboration with the different training and capacity building initiatives from World Bank FCPF, GFOI, Silvacarbon, FAO/UN-REDD, Wageningen University, GOF-C-GOLD, and Boston University. Organization of the workshops will be under the coordinating leadership of Wageningen University.

¹ REDD+ refers to the UNFCCC decision (COP16, 2010) on: “Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forest and enhancement of forest carbon stocks in developing countries.”

2. Workshop objectives

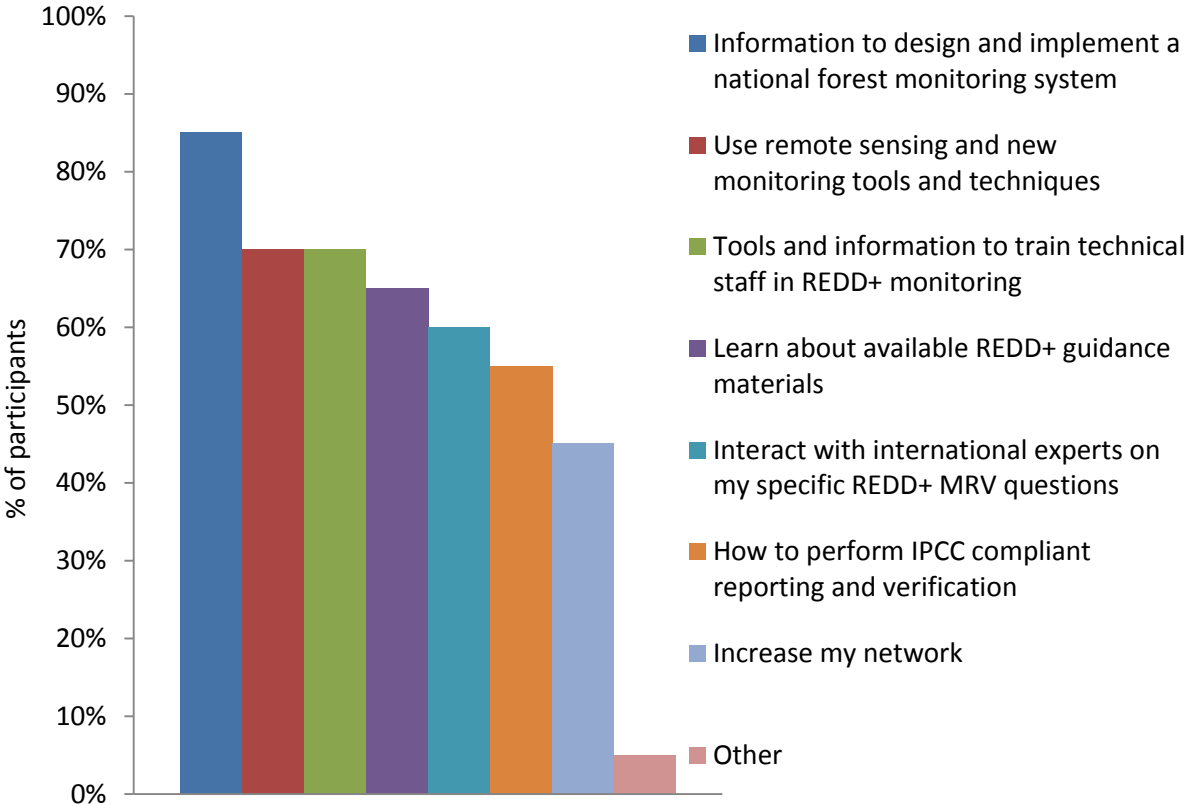
This workshop from 18-22 April in Bangkok, Thailand, was the first of the series of four regional workshops. The workshop was held in English. The aim of the workshop was to build upon existing expertise and experiences and to use available training materials and tools in a broad capacity development context to help build a countries’ capacities and to spread the use and increase the impact of available knowledge and tools.

After the successful completion of the workshop, participants should be able to become ‘multipliers’ by further disseminating the knowledge and experience gained and train other relevant people who are involved in REDD+ monitoring and reporting in their country. In the workshops, participants learn about the different training materials and tools that are available and how these different materials all fit together in the “bigger picture” of REDD+ MRV capacity building. Participants will also know how and where to make request for further appropriate training and make use of available tools for implementation. A direct interaction with leading international experts present at the workshop will be facilitated so specific issues can be discussed face to face.

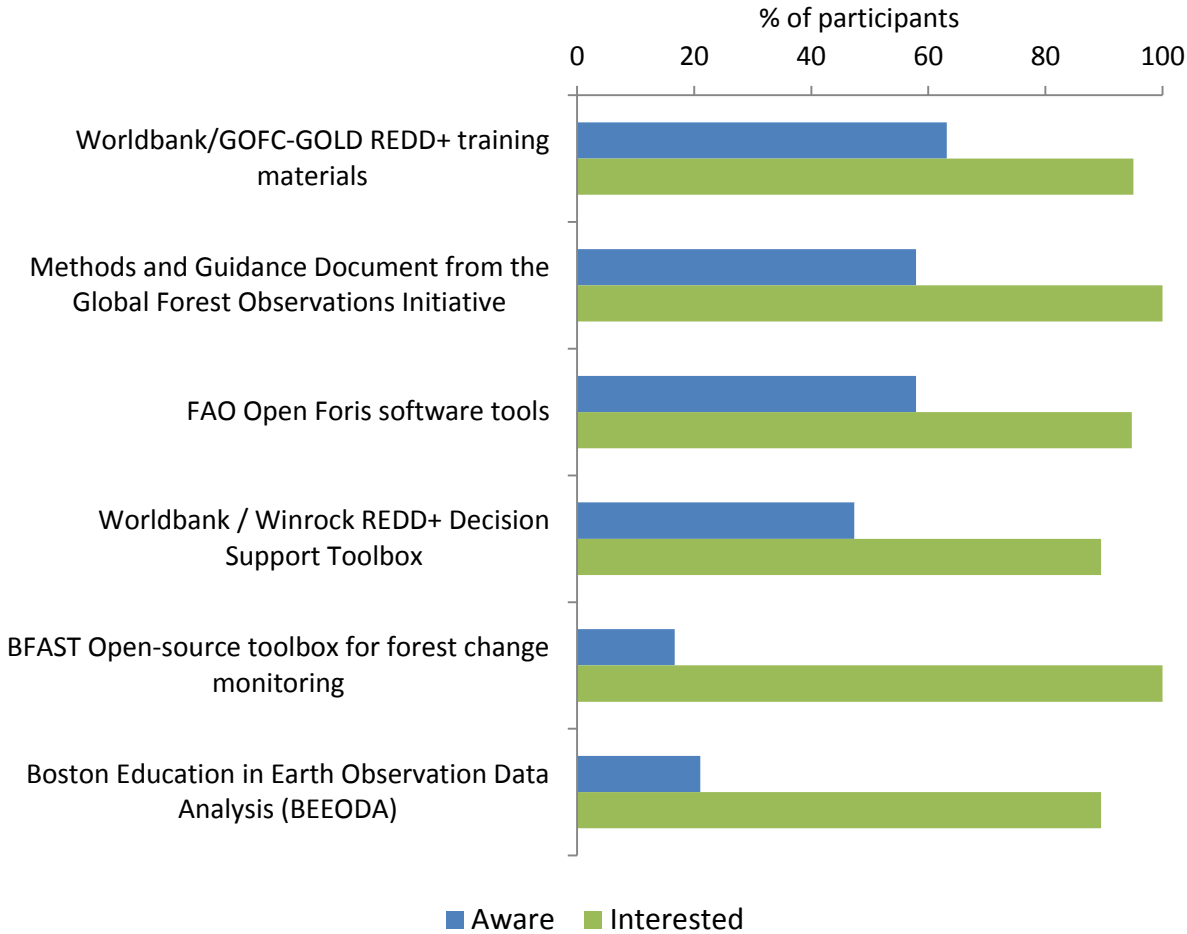
Through these regional workshops the materials will become more accessible for a wider public. Interactive settings, such as the workshops, allow course participants to ask specific questions and to better comprehend the topics and apply the knowledge to their own country context. Workshop participants bring back the knowledge to their own country and can spread the newly acquired knowledge and insights within their home institutions and networks.

Before the workshop an online survey was held among participants to gauge their interests and knowledge level:

What are you most interested in to get out of the workshop?



Which training materials and tools are you aware of and/or interested in?



3. Training materials presented during the workshop

WB/GOFC-GOLD training materials

The WB/GOFC-GOLD training materials consist of lecture presentations, practical examples of implementation under different country circumstances, and exercises and tutorials. The training materials provide a strong basis for use in comprehensive educational and pedagogical approaches, thereby using the GOFC-GOLD Sourcebook, GFOI MGD and other guidance material as background documents. They consist of fourteen modules under three main components: REDD+ Background and Design, REDD+ Measuring and Monitoring and REDD+ Assessment and Reporting. They are freely available at: http://www.gofcgold.wur.nl/redd/Training_materials.php and <https://www.forestcarbonpartnership.org/redd-training-material-forest-monitoring>

GFOI MGD

The purpose of the Methods and Guidance Document (MGD) from the Global Forest Observations Initiative (GFOI) is to provide methodological advice on the use of remotely sensed data together with ground-based observations to estimate and report greenhouse gas emissions and removals associated with REDD+ activities in a manner consistent with guidance from Intergovernmental Panel on Climate Change (IPCC), as required by decisions by the United Nations Framework. Available

at: <http://www.gfoi.org/methods-guidance/>. The workshop will include a demonstration of the new online MGD web application, REDDcompass available at www.gfoi.org/reddcompass. REDDcompass provides ready access to the GFOI's Methods and Guidance Documentation (MGD) which provides a systematic workflow approach to guide countries through the process of developing forest monitoring and MRV systems. It is intended to serve as buddy to accompany countries all the way through their system design and development phases.

FAO Open Foris software tools

Open Foris is an FAO-led initiative to develop, share and support specialized software tools required by countries and institutions to implement multi-purpose forest inventories. It is a set of free and open-source software tools that facilitates flexible and efficient data collection, analysis and reporting. Available at: <http://www.fao.org/forestry/fma/openforis/en/>

WB FCPF / Winrock REDD+ Decision Support Toolbox

The REDD+ Decision Support Toolbox by Winrock International in partnership with the World Bank FCPF provides a methodological framework for countries to enhance their near term capacity for producing REDD+ FRLs/FREs. The framework outlines the decisions and steps needed to develop a FRL/FREL, the capacity, data, and technical steps needed to carry out each component. Available at: <https://redd-dst.ags.io/accounts/login/>

BFAST Open-source toolbox for forest change monitoring

BFAST training materials and open-source toolkit enables countries to monitor changes in forests (e.g. deforestation and near real-time alerts) using satellite images (e.g. Landsat). Training materials and software are available here: <http://changemonitor-wur.github.io/>

BEEODA/ MGD

The Boston Education in Earth Observation Data Analysis (BEEODA) is a suite of open source software and education materials designed to provide practitioners with the software tools necessary for securing activity data. The software and materials have been designed to allow practitioners to make use of novel and often required methods such as time series analysis, object based image analysis and statistical inference, and have been developed to support implementation of the guidance outlined in the MGD. The education material is centered around modules which provide detailed instructions for completion of various image processing tasks. More information available here: <http://beeoda.org> and <http://github.com/beeoda>.

MobIFM

For REDD+ MRV, it is important to engage local communities in monitoring and validating information provided by remote sensing. To this aim, there is a need for a systematically designed tool that can work, in an integrated nature, with remote sensing and community-based monitoring. MobIFM is an interactive, mobile-based forest monitoring tool. The tool incorporates a user-friendly design; has the potential to facilitate near-real-time forest change alerts based on remote sensing analysis; and can provide data collection, storage, and processing in partnership with local communities. MobIFM is being developed by the Laboratory of Geo-Information Science and Remote Sensing at Wageningen University, and has been tested in Peru, Ethiopia, and other areas. More

information available here: <https://github.com/pratihast/Interactive-forest-monitoring-system> and <https://github.com/pratihast/MobIFM>.

4. Workshop outcomes

The workshop outcome for a specific country and partners is a “way forward” plan based on the knowledge and understanding of various open-source training materials and tools available and presented during the workshop. Workshop participants are now aware of how to access and use materials and tools and how to develop a plan for further training for their country and regional circumstances and activities. The follow up idea of the workshop is to also build a user community of these materials and tools. Participants got to know the experts that are developing and making these tools available so they can also be contacted for questions and feedback afterwards.

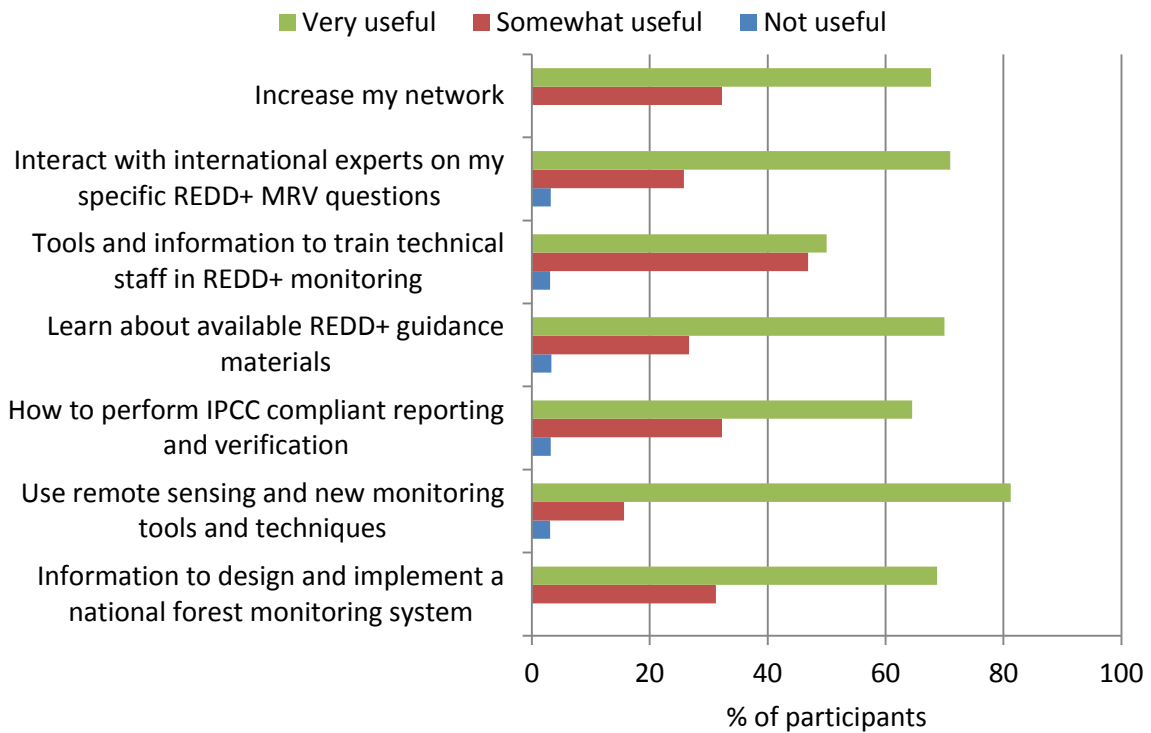
So specific workshop outcomes are:

- The establishment of a network / community of practice for building capacities for REDD+ national forest monitoring systems and MRV in South-East Asia using the tools available
- The establishment of partnerships with all workshop organizations and participants. Workshop participants are aware of all the guidance and training materials, portals and tools that are available, and their relationships. They will make connections across the different organizations and contact points for seeking further information and training.
- Workshop participants are expected to perform practical training afterward the workshop and to deliver at least 1 module at one occasion in the next 6 months after the workshop.
- A survey will be sent around approximately 6 months after the completion of the workshop to assess the impact and usefulness of the workshop.
- A series of Webinars are planned and will be recorded over the course of the next year after the workshop. If workshop participants are interested, they have the opportunity to collaborate on this and use this opportunity to continue to engage in this network while having the experts ready to respond to their specific needs and requests.

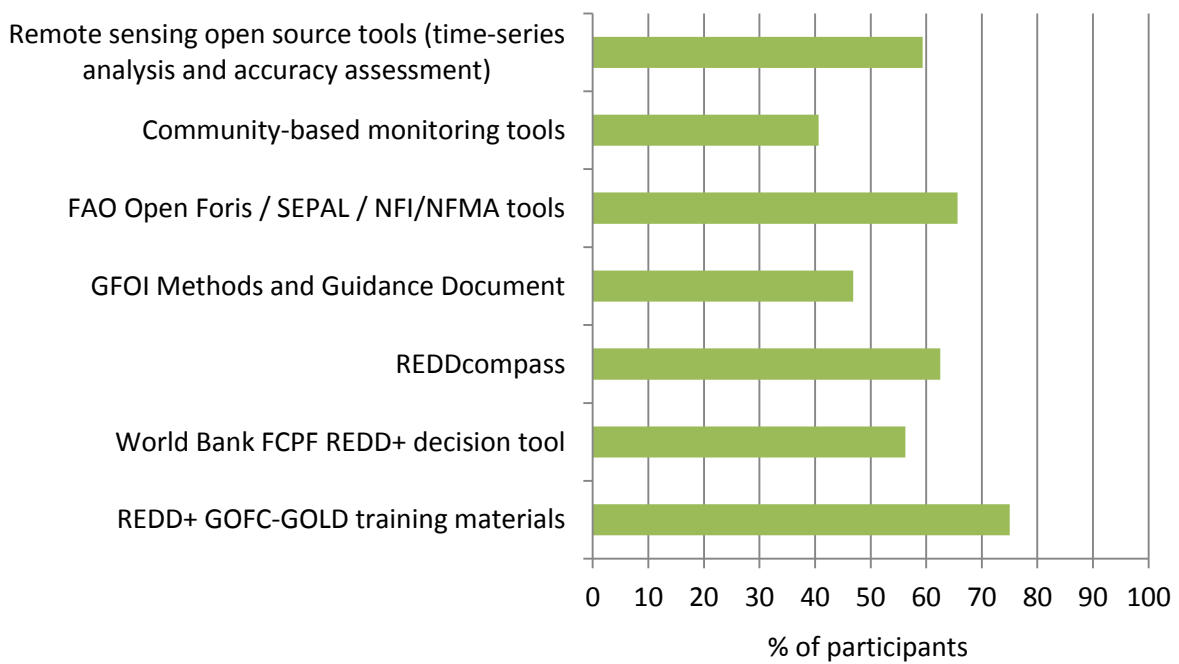


On the last day of the workshop, participants were asked to fill in a survey regarding the objectives, tools and quality of the workshop:

Was this workshop useful for you regarding the following topics?

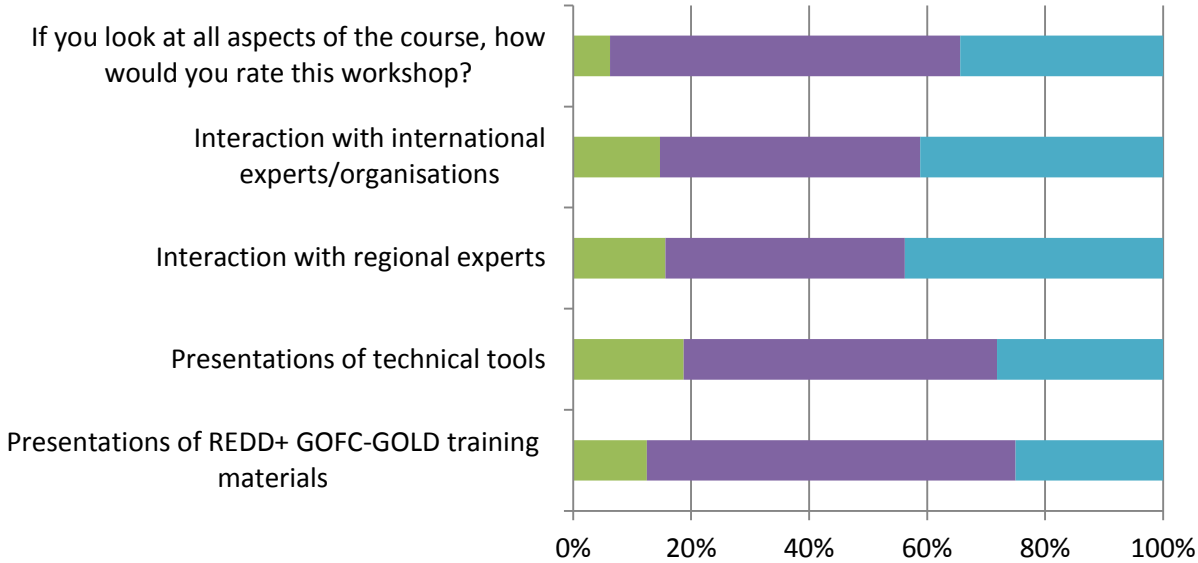


Which of the tools, if any, do you plan to use for your further work?



How do you rate (time allocated and quality):

Very poor Poor Medium Good Excellent



5. Workshop agenda

In the first 2 days, all of the 14 modules of the GOFC-GOLD REDD+ training materials were introduced under the three main components of the materials: REDD+ Background and Design, REDD+ Measuring and Monitoring and REDD+ Assessment and Reporting. There was a mix of regional experts, GOFC-GOLD, GFOI experts and workshop participants who presented the modules. Participants were encouraged to put forward specific questions, issues and ideas on the modules in interactive discussion sessions. The aim was to learn from each other experiences, and to provide feedback to improve the training materials. The following 3 days available open source tools, and a capacity building plan for trainers was introduced to use as a basis for developing an MRV roadmap in their country/region. A new web application developed under the Global Forest Observations Initiative (GFOI) called REDDcompass was also presented at the workshop. There were also interactive discussions planned where participants could interact with each other and with the presenters (plenary or in break out groups). This provided the opportunity to put forward for example country-specific needs and national circumstances.

Day 1, 18 April - Opening, Introductions and Training WB/GOFC-GOLD training materials: Presentation of (selection and/or combination) of GOFC-GOLD training materials, including discussion

Time	Activity	Moderator/speaker
8:45 – 9:15	Registration	Niki De Sy & Marija Kono
9:15 – 9:45	Opening: <ul style="list-style-type: none"> Welcome word from organising team and sponsors General introduction to capacity building programmes and tools 	Martin Herold
9:45 – 10:00	Tour de table	Workshop participants
<i>10:00 – 10:30 Coffee break</i>		
10:30 – 10:45	World Bank FCPF / Winrock REDD+ decision support tool	Alexander Lotsch
10:45 – 11:00	Checklist of country-specific needs in REDDcompass	Carly Green
11:00 – 12:30	Interactive discussion on country-specific issues and needs, based on the checklist of REDDcompass	Martin Herold Workshop participants
<i>12:30 – 2:00 Lunch</i>		
2:00 – 3:30	Session 1: Presentation of GOFC-GOLD training materials, including discussion <i>REDD+ Background and Design</i> <ul style="list-style-type: none"> M1.1: Martin Herold M1.2: Martin Herold M1.3: Niki De Sy 	Niki De Sy & Martin Herold
<i>3:30 – 4:00 Coffee break</i>		
4:00 – 5:30	Session 2: Presentation of GOFC-GOLD training materials, including discussion <i>REDD+ Measuring and Monitoring</i> <ul style="list-style-type: none"> M2.1: Inge Jonckheere M2.2: Alexander Lotsch 	Niki De Sy & Martin Herold

Day 2, 19 April - Training WB/GOFC-GOLD training materials: Presentation of (selection and/or combination) of GOFC-GOLD training materials, including discussion

9:00 – 10:30	Session 3: Presentation of GOFC-GOLD training materials, including discussion <i>REDD+ Measuring and Monitoring</i>	Thomas Harvey
	<ul style="list-style-type: none"> • M2.3: Haruni Krisnawati • M2.4: Arun Pratihast 	
<i>10:30 – 11:00 Coffee break</i>		
11:00 – 12:30	Session 4: Presentation of GOFC-GOLD training materials, including discussion <i>REDD+ Measuring and Monitoring</i>	Sylvia Wilson
	<ul style="list-style-type: none"> • M2.5: Gabriel Eickhoff • M2.6: Delon Marthinus • M2.7: Pontus Olofsson • M2.8: Hammad Gilani 	
<i>12:30 – 2:00 Lunch</i>		
2:00 – 3:30	Session 5: Presentation of GOFC-GOLD training materials, including discussion <i>REDD+ Assessment and reporting</i>	Pontus Olofsson
	<ul style="list-style-type: none"> • M3.1: Inge Jonckheere • M3.2: Inge Jonckheere • M3.3: Carly Green 	
<i>3:30 – 4:00 Coffee break</i>		
6:00	Bus charter, pick up at Hotel Lobby	
7:30-9:30	Evening social activity: boat trip in Bangkok center and dinner (dinner cruise)	All workshop participants
Around 9:45	Bus charter, pick up at the pier	
Day 3, 20 April - Introduction of available tools, and further opportunities		
<i>10:30 – 11:00 Coffee break</i>		
11:00 – 12:30	FAO UN-REDD capacity building programme	Inge Jonckheere
<i>12:30 – 2:00 pm Lunch</i>		
2:00 – 3:30	FAO Open Foris / SEPAL / NFI/NFMA tools, etc.	Inge Jonckheere
<i>3:30 – 4:00 Coffee break</i>		
4:00 – 5:30	Parallel interactive discussion sessions: <ul style="list-style-type: none"> • Forest definitions (Carly) • Reference emissions levels (Inge) 	Carly Green Inge Jonckheere
Day 4, 21 April - Developing a capacity building plan for trainers		
9:00 – 9:30	Introduction to developing a capacity building plan for trainers	Martin Herold
9:30 – 10:30	Silvacarbon capacity building guidance	Sylvia Wilson
<i>10:30 – 11:00 Coffee break</i>		
11:00 – 12:00	GOFC-GOLD examples of MRV roadmaps (Guyana, Ethiopia, Liberia cases) and interactive discussion	Martin Herold

12:00 – 1:30 pm Lunch

1:30 – 3:30	Group work/discussions and hands on exercise on WB Decision support tool and GFOI REDD-Compass	Carly Green / Rajesh Koirala
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3:30-4:00 Coffee break

4:00 –5:30	Group work/discussions and hands on exercise on WB Decision support tool and GFOI REDD-Compass	Carly Green / Rajesh Koirala
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Day 5, 22 April - Introduction of available tools, and further opportunities

9:00 – 9:30	Introduction on using different available tools	Martin Herold
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9:30 – 10:30	Community-based monitoring tools	Arun Pratihast
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10:30 – 11:00 Coffee break

11:00 – 12:00	Remote Sensing open source tools on time series analysis	Pontus Olofsson
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12:00 – 1:30 pm Lunch

1:30 – 3:30	Accuracy assessment procedures	Pontus Olofsson
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3:30 – 4:00 Coffee break

4:00 – 5:00	Workshop closing	Martin Herold
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6. Participant list

Name	Affiliation	Country
Hammad Gilani	ICIMOD	Nepal
Mohan Poudel	REDD Implementation Center	Nepal
Vũ Tiến Điển	Forest Inventory and Planning Institute, Forest Resources and Environment Center	Vietnam
Anh Nguyen	Ministry of Agric. and Rural Development, FCPF Project Management Unit	Vietnam
Khamsene Ounekham	Department of Forestry	LAO DPR
Younten Phuntsho	Forest Resources Management Division	Bhutan
Arun Rai	Forest Resources Management Division	Bhutan
Raushan Kumar	Sri Lanka UN-REDD Programme	Sri Lanka
Delon Marthinus	The Nature Conservancy	Indonesia
Sebastian Persch	University of Gottingen/CIFOR	Indonesia
Khan Inam Ullah	National REDD+ Project Coordinator	Pakistan
Muhammad Ibrahim Khan	WWF Pakistan	Pakistan
Vilame Tupua	REDD+ Unit, Ministry of Fisheries and forests	Fiji
Haruni Krisnawati	INCAS Team, Ministry of Environment and Forestry	Indonesia
Shiva Khanal	Department of Forest Research and Survey, Ministry of Forests and Soil Conservation	Nepal
Billy Ne Win	Forest Research Institute, Forest Department	Myanmar
Khine Zaw Wynn	Planning and Statistics Division, Forest Department	Myanmar
Phann Phearum	Forestry Management Office, Department of Forestry and Community Forestry of the Forestry Administration	Cambodia
Mariam Akhter	FAO	Bangladesh
Abdus Salam	SPARRSO	Bangladesh
Vinnia Precylia	Ministry of Environment and Forestry	Indonesia
Chonlanet Preechacharornsricani	International Forestry Cooperation Office, Royal Forestry Department - MONRE	Thailand
Rijaldia Day Santos	Resource Data Analysis Branch - NAMRIA	Philippines
Nelissa Maria Rocas	Forest Management Bureau - DENR	Philippines

Peter Cutter	Servir - Mekong	Thailand
Prasit Wangpakapattanawong	Chang Mai University	Thailand
Somyot Saengnin	Geoinformatics Division, Department of National Park Wildlife and Conservation	Thailand
Regan Suzuki Pairojmahakij	RECOFTC, People, Forests and Climate Change	Thailand
Tomi Haryadi	RECOFTC, ASEAN-Swiss Partnership on Social Forestry and Climate Change	Thailand
Sophyra Sar	Forestry Administration	Cambodia
Sebastian Koch	GIZ	Germany
Kai Windhorst	GIZ	Germany
Santosh Katwal	Forest Resources Development Division	Bhutan
Rajan Bajracharya	ICIMOD	Nepal
Kei Suzuki	JICA	Japan
Nguyen Ngoc Thang	WWF Vietnam	Vietnam
Gabriel Eickhoff	Forest Carbon	Lao PDR
Jeremy Ferrand	Forest Carbon	Lao PDR
Bjoern Hecht	REDD+ Unit, Ministry of Fisheries and forests	Fiji
Adam Gerrand	FAO	Thailand
Ben Vickers	FAO	Thailand
Susilo Kuncoro	Forest and climate team, Royal Norwegian embassy of Indonesia	Indonesia
Soudalath Silaphet	World Bank	Lao PDR
Martin Herold	Wageningen University / GOFC-GOLD	Netherlands
Veronique De Sy	Wageningen University / GOFC-GOLD	Netherlands
Arun Pratihast	Wageningen University	Netherlands
Alexander Lotsch	World Bank FCPF	USA
Rajesh Koirala	World Bank FCPF	USA
Rama Chandra Reddy	World Bank FCPF	USA
Inge Jonckheere	FAO	Italy

Thomas Harvey	GFOI	Italy
Sylvia Wilson	SilvaCarbon	USA
Marija Kono	SilvaCarbon	Thailand
Pontus Oloffson	Boston University	USA
Moses Jackson	US Forest Service	USA
Carly Green	Australian Government / GFOI	Australia
Nikki Fitzgerald	Australian Government	Australia