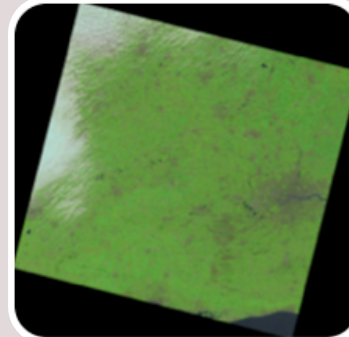


Methods and Guidance Document and the REDDCompass

Jim Penman (UCL) GFOI MGD Advisory Committee Chair
Carly Green (EAS) MGD Component Manager



GFOI Components



Space Data

- GFOI works with space agencies through CEOS to ensure the long-term, global acquisition of core satellite data
- helps countries meet their individual data needs

Capacity Building

- GFOI provides capacity building in coordination with others such as UN-REDD. It supports the use of satellite and ground data to monitor forests, and estimate GHG emissions.

Methods and Guidance

- Guidance on integrating remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests.

Research and Development

- Identifying and promoting R&D needed for improved practical, global implementation of National Forest Monitoring

GFOI Office at FAO, Rome

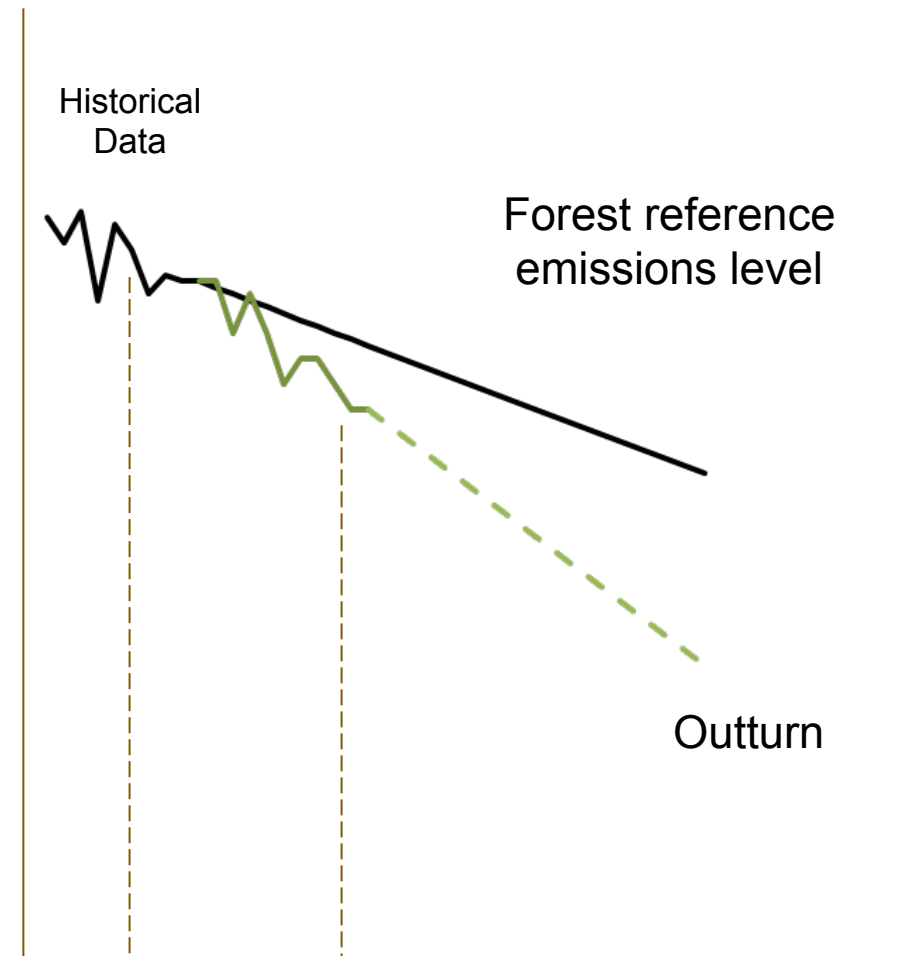
- Coordination and Management

GFOI is an initiative established under GEO to:

- 1) Develop methods and guidance, focussing on REDD+
- 2) Work with space agencies to coordinate data supply
- 3) Build capacity – agency and country engagement
- 4) Coordinate R&D

REDD+ is a UNFCCC agreement about:

- (a) Reducing emissions from deforestation;
- (b) Reducing emissions from forest degradation;
- (c) Conservation of forest carbon stocks;
- (d) Sustainable management of forests;
- (e) Enhancement of forest carbon

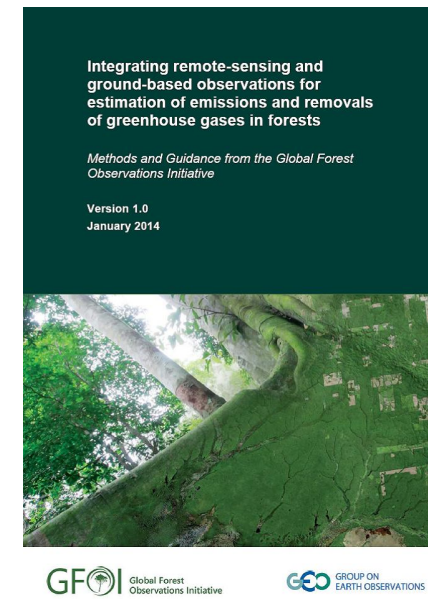


IPCC Guidance - methodological framework for quantification of land use emissions and removals

- *Neither over nor under estimates so far as can be judged and uncertainties reduced as far as practicable*
- Not specific to REDD+

Link between IPCC methods and REDD+ activities

- GFOI Methods and Guidance Document published in 2013
- Consistent with UNFCCC Warsaw Framework on REDD+
- Coordinated UN-REDD, World Bank, IPCC and GOFC-GOLD



MGD strategy – science in the policy context

Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD strategy – science in the policy context

Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD strategy – science in the policy context

Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD strategy – science in the policy context

Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD strategy – science in the policy context

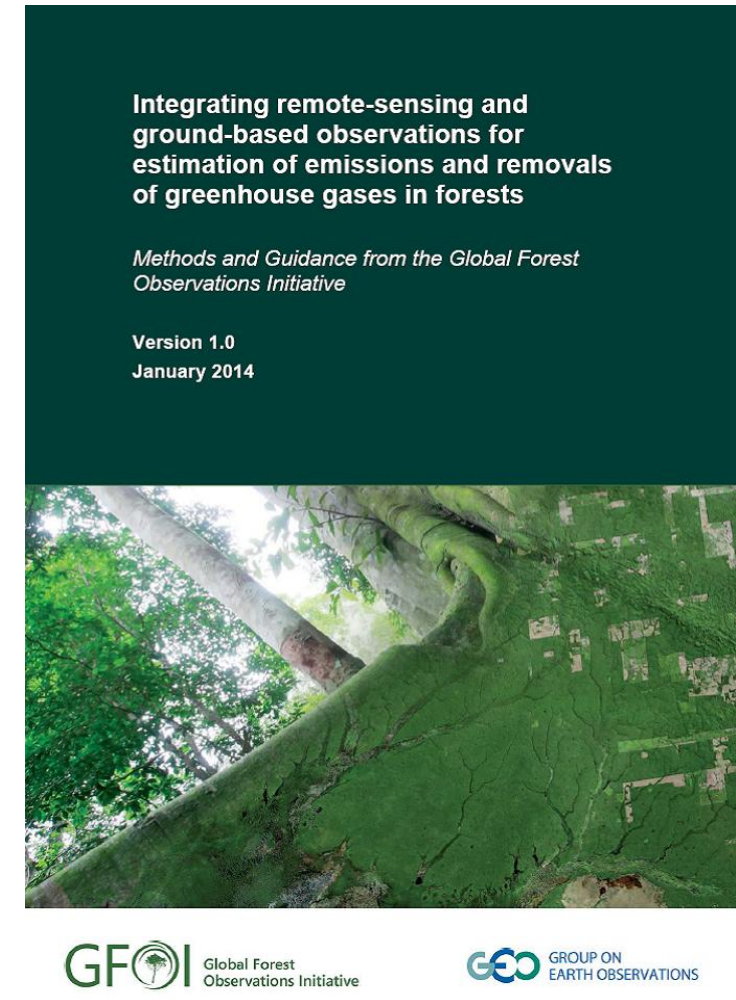
Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD strategy – science in the policy context

Issue	Solution
Science background	Initial assessment by FCT – GOFC-GOLD annual update, GFOI R&D component
Understand policy context	UNFCCC decisions (Warsaw Framework – seven COP decisions covering finance, support, NFMS, safeguards, reference levels, MRV, drivers of deforestation and degradation, Paris decisions (safeguards, non C benefits, joint adaptation and mitigation)
Methodological framework	IPCC Good Practice Guidance (GPG)
Methodological need	Link between IPCC GPG and REDD+ activities; consistency with <i>good practice</i> definition
Access to RS data	Liaison with Space Agencies
Country engagement	Multilateral and bilateral programmes
Updating	Successive MGD versions plus modules as rapid response products

MGD Version 1

- Published January 2014
- Available in English, French, Spanish
- Kept updated by Modules – so far on the relationship with GOFC-GOLD, use of global datasets, and Forest Reference Levels
- Referred to by multilateral programmes (NICFI, SilvaCarbon, UN-REDD, World Bank...) and countries (Brazil, Cambodia, Colombia, Ghana, Indonesia, Kenya, Fiji...)
- Source document for the REDDCompass



Executive Summary	Outline, intended audience, relationship to negotiations
1 – Design Decisions	Introductory concepts, NFMS, use of existing data, Tier choices, cost effectiveness
2 – Estimating Emissions and removals	Stock change and gain-loss methods, focus on latter, REDD+ activities described with linked estimation methods
3 – Data Provision for Estimating Emissions and Removals	Activity data requirements; types RS data, pre-processing, map products, mapping, guiding principles, statistical inference , changes in pools
4 Overall uncertainties	Combined AD and EF uncertainties using IPCC method
5 Reporting	What can be said from UNFCCC
Technical Annexes	IPCC Guidance, RS data from CEOS/SDCG, Tier 3 methods, Sampling, Emission and removals factors, Direct biomass estimation by RS, Allometrics, Finance.

MGD Version 2

Incorporate experiences from country engagement and new developments (UNFCCC, science):

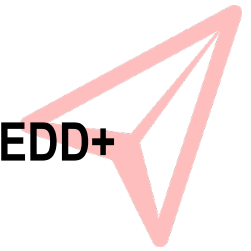
- More visual material (flow charts, decision trees)
- Structure to facilitate link to the REDDCompass – hence personalized profiles
- updates on institutional arrangements
- strengthen guidance on integrated methods
- more complete material on statistical inference (emission factors as well as area data) and uncertainties
- Include module material developed over the course of the year (global datasets, reference levels, CBD, statistical inference)
- Updates from UNFCCC (Paris, reference level submissions)
- Updated core data availability
- **Circulated for external review April 2016**
- **Scheduled for publication in June 2016**

Web-based tool to guide you through REDD+ decision making. Provides:

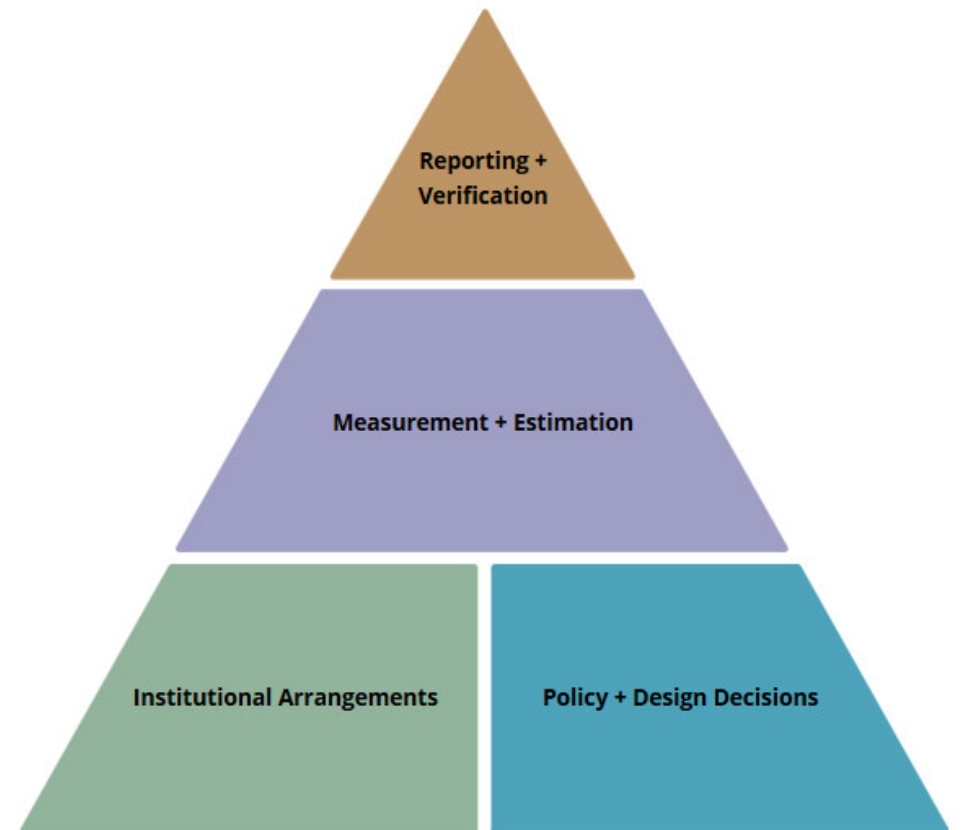
- Simple access to MGD and links to other key documents
- Intelligent searches by key word
- Structured by Themes, Concepts, Actions.
- 4 themes (Institutional Arrangements, Policy and Design Decisions, Measurement and Estimation, and Reporting and Verification)
- Can generate and store personal profile on line
- Use the pyramid to click down to the next level of detail

REDDcompass

Guiding you through REDD+



www.gfoi.org/reddcompass

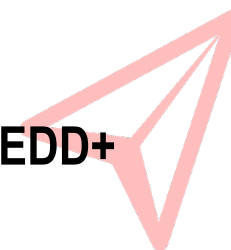


Web-based tool to guide you through REDD+ decision making. Provides:

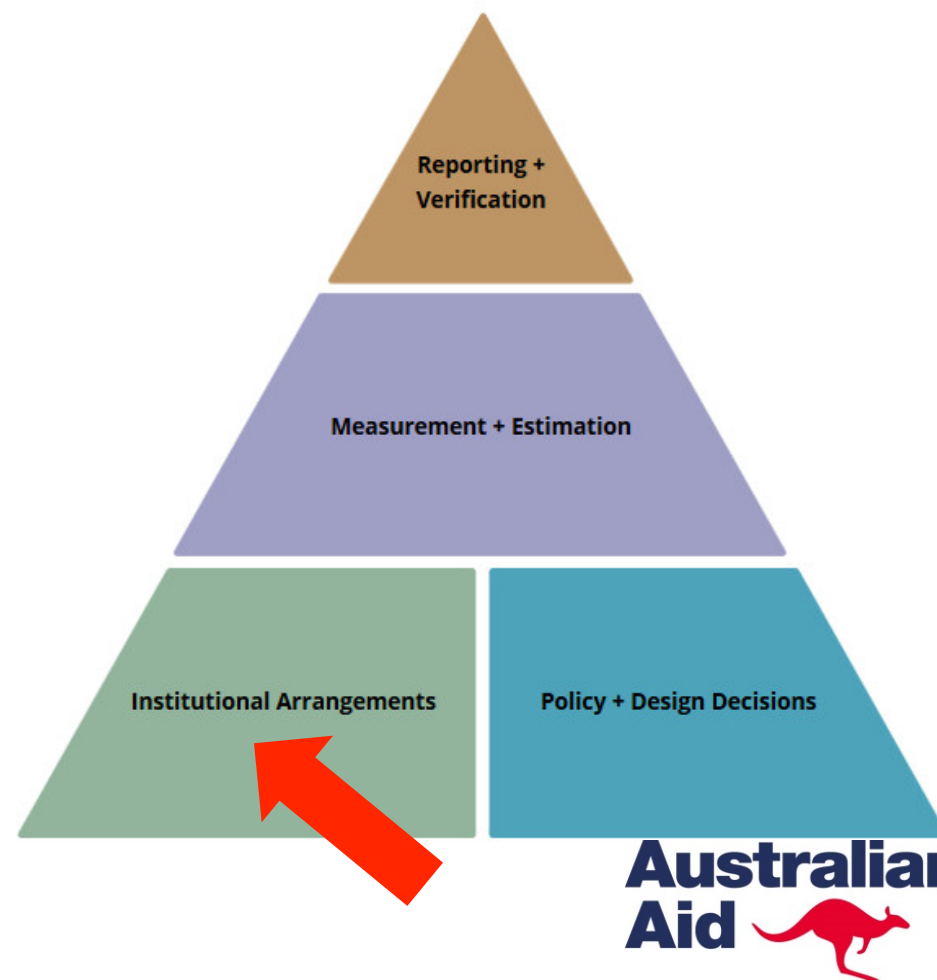
- Simple access to MGD and links to other key documents
- Intelligent searches by key word
- Structured by Themes, Concepts, Actions.
- 4 themes (Institutional Arrangements, Policy and Design Decisions, Measurement and Estimation, and Reporting and Verification)
- Can generate and store personal profile on line
- Use the pyramid to click down to the next level of detail

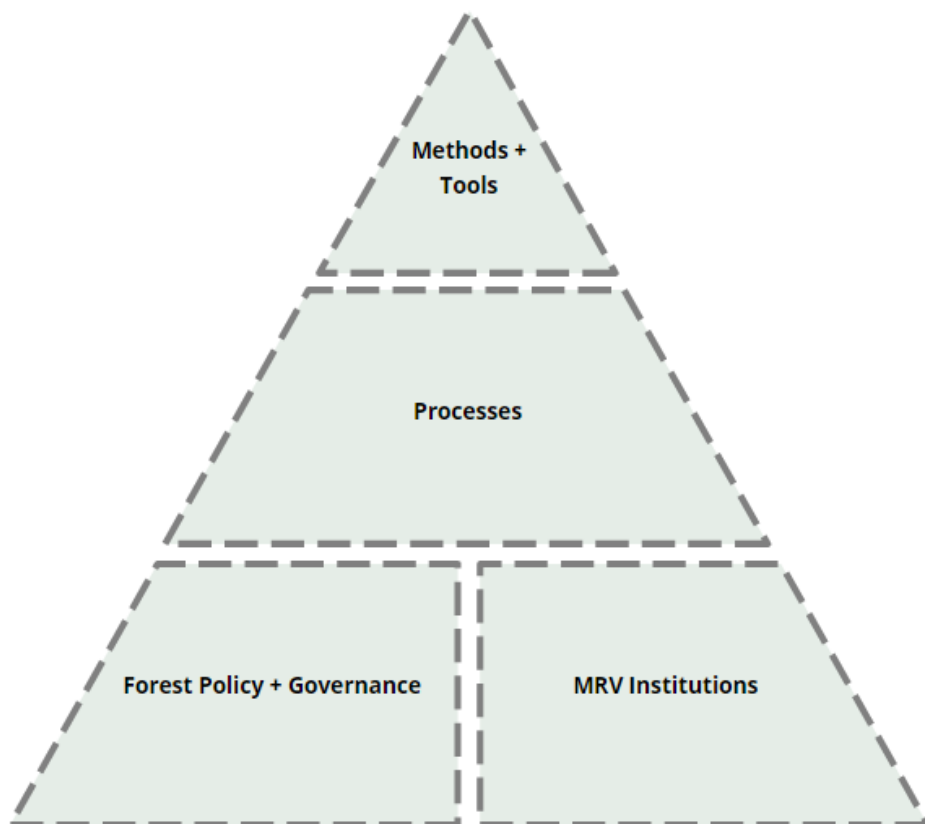
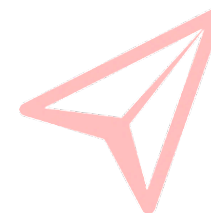
REDDcompass

Guiding you through REDD+

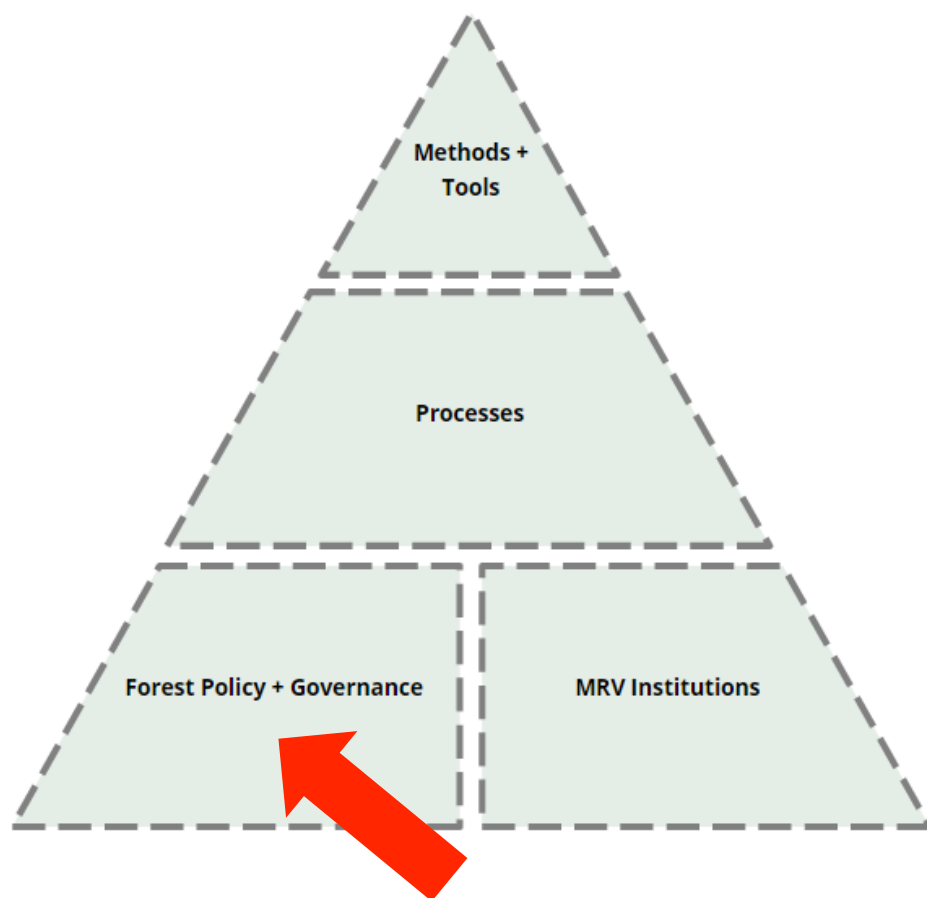
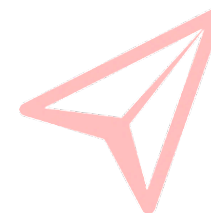


www.gfoi.org/reddcompass

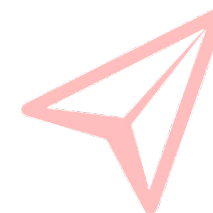




Processes [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Cost effectiveness Financial considerations
MRV Institutions [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Reporting Requirements
Methods + Tools [MGD Sections]
<ul style="list-style-type: none"> Definition of good practice IPCC greenhouse gas inventory methods Design considerations for national forest monitoring systems
Forest Policy + Governance [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Reference Levels Module #3: Forest Reference Emission Levels and Forest Reference Levels: Extended Methodological Advice



Processes [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Cost effectiveness Financial considerations
MRV Institutions [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Reporting Requirements
Methods + Tools [MGD Sections]
<ul style="list-style-type: none"> Definition of good practice IPCC greenhouse gas inventory methods Design considerations for national forest monitoring systems
Forest Policy + Governance [MGD Sections]
<ul style="list-style-type: none"> Design considerations for national forest monitoring systems Reference Levels Module #3: Forest Reference Emission Levels and Forest Reference Levels: Extended Methodological Advice



Actions

Identify key REDD+ activities (e.g. deforestation, forest degradation, sustainable forest management, afforestation) and if possible their spatial location within defined scope of reporting.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Conduct an assessment of drivers of deforestation/forest degradation and assess/document any motivation, means and opportunity.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Identify countermeasures; prevention, detection and suppression of sources of deforestation and forest degradation.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Align measures to address deforestation and forest degradation with other forestry programs, departments and land use planning policies.

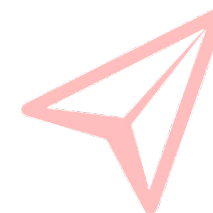
[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Conduct a capacity needs assessment for implementing forest governance measures and develop an institutional capacity building plan.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)



Actions

Identify key REDD+ activities (e.g. deforestation, forest degradation, sustainable forest management, afforestation) and if possible their spatial location within defined scope of reporting.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Conduct an assessment of drivers of deforestation/forest degradation and assess/document any motivation, means and opportunity.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Identify countermeasures; prevention, detection and suppression of sources of deforestation and forest degradation.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)

Align measures to address deforestation and forest degradation with other forestry programs, departments and land use planning policies.

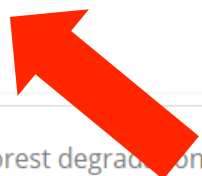
[+Show](#)

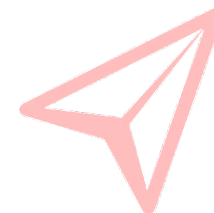
[Please sign in to add a MRV Profile Detail](#)

Conduct a capacity needs assessment for implementing forest governance measures and develop an institutional capacity building plan.

[+Show](#)

[Please sign in to add a MRV Profile Detail](#)







Actions


Identify key REDD+ activities (e.g. deforestation, forest degradation, sustainable forest management, afforestation) and if possible their spatial location within defined scope of reporting.

Related Links

Related Concepts

 [REDD+ Activities](#)

 [Spatial + Temporal Scope](#)

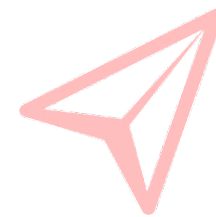
 [Forest Definition](#)

Related Resources/Tools

 [UNFCCC Decision 4/CP.15, paragraph 1](#)

 Hide

Please sign in to add a MRV Profile Detail



Actions

Identify key REDD+ activities (e.g. deforestation, forest degradation, sustainable forest management, afforestation) and if possible their spatial location within defined scope of reporting.

Related Links

Related Concepts

- [REDD+ Activities](#)
- [Spatial + Temporal Scope](#)
- [Forest Definition](#)

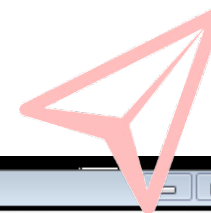
Related Resources/Tools

[UNFCCC Decision 4/CP.15, paragraph 1](#)

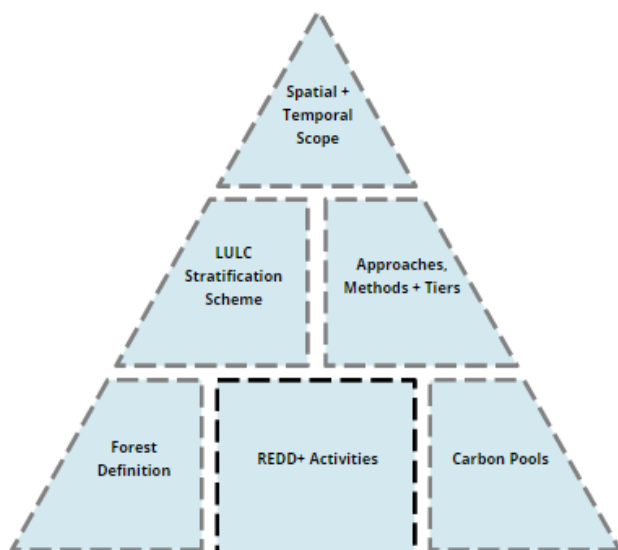
Hide

Please sign in to add a MRV Profile Detail










REDD+ Activities



MGD Sections

-  Key category analysis
-  Methods for selected forest activities
-  Definition of good practice
-  Design considerations for national forest monitoring system
-  Reporting requirements

3

Actions

Identify priority REDD+ activities from the national REDD+ strategy or action plan.

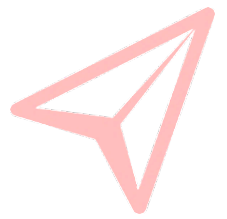
 Show

[Please sign in to add a MRV Profile Detail](#)

Document and justify (i.e. using key category analysis) selected REDD+ activities, explaining step-wise approach if necessary.

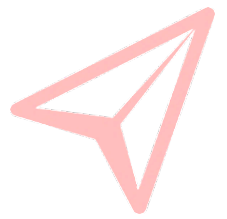
 Show

[Please sign in to add a MRV Profile Detail](#)



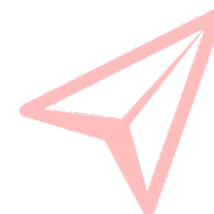
Numbers of actions by Concept and Theme (1)

- **Institutional Arrangements**
 - Forest Policy and Governance (7 Actions)
 - MRV Institutions (8 Actions)
 - Processes (7 Actions)
 - Methods and Tools (5 Actions)
- **Policy and Design Decisions**
 - Forest Definition
 - REDD+ Activities (2 Actions)
 - Carbon Pools (4 Actions)
 - LULC Stratification Scheme (3 Actions)
 - Approaches Methods and Tiers (7 Actions)
 - Spatial and Temporal Scope (2 Actions)



Number of Actions by Concept and Theme (2)

- **Remote Sensing Observations**
 - Remote Sensing Observations (5 Actions)
 - Ground Observations (5 Actions)
 - Uncertainty (6 Actions)
 - Integration and Estimation (4 Actions)
 - Record Keeping (5 Actions)
- **Reporting and Verification**
 - AFOLU GHG Inventory Reporting (1 Action)
 - Non-carbon Related Reporting (1 Action)
 - Reference Levels (1 Action)
 - REDD+ Reporting (1 Action)
 - Internal and External Analysis (6 Actions)



Reporting on Progress

MRV System: National

Date Report Created 17 Apr 2016 by user@enviroaccounts.com

Summary Theme Completion Details

Summary

.....



24

Actions Done



3

Training Identified



0

Themes Complete

Theme Completion

.....

Institutional Arrangements

Forest Policy + Governance	0/5
Methods + Tools	0/5
MRV Institutions	0/8
Processes	0/7

Policy + Design Decisions

Approaches, Methods + Tiers	0/7
Carbon Pools	0/4
Forest Definition	2/3
LULC Stratification Scheme	0/3
REDD+ Activities	0/2
Spatial + Temporal Scope	0/2

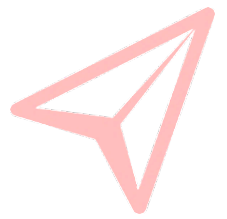
Measurement + Estimation

Record Keeping	0/4
Ground Based Observations	✓
Integration + Estimation	✓
Remote Sensing Observations	✓
Uncertainty	✓

Reporting + Verification

AFOLU GHG Inventory Reporting	0/1
Internal + External Analysis	0/6
Non-carbon Related Reporting	0/3
REDD+ Reporting	0/1
Reference Emission Levels	0/2

Action Details



Feedback from Users

“

Its user friendly and gives us access to the MGD even without internet.

 **SilvaCarbon**

South East Asia Regional Workshop (Philippines)

“

*I really like the way the information
was integrated. Its nicely done.*

 **SilvaCarbon**

South East Asia Regional Workshop (Indonesia)

“

*It gives me more a structured view on
the available data. Kind of refreshing
from the texts.*

 **SilvaCarbon**

South East Asia Regional Workshop (Philippines)

Acknowledgements

Thanks to:

- GFOI Leads Australia, Norway, the USA, the Food and Agriculture Organization of the United Nations (FAO), and the Committee on Earth Observation Satellites (CEOS)
- MGD Advisory Group and Authors and Reviewers listed in the front of MGD
- Governments, agencies and other organisations supporting participation

-----//-----