UN-REDD
PROGRAMME

A possible layout of

"Guide on National Carbon Monitoring System for REDD+"

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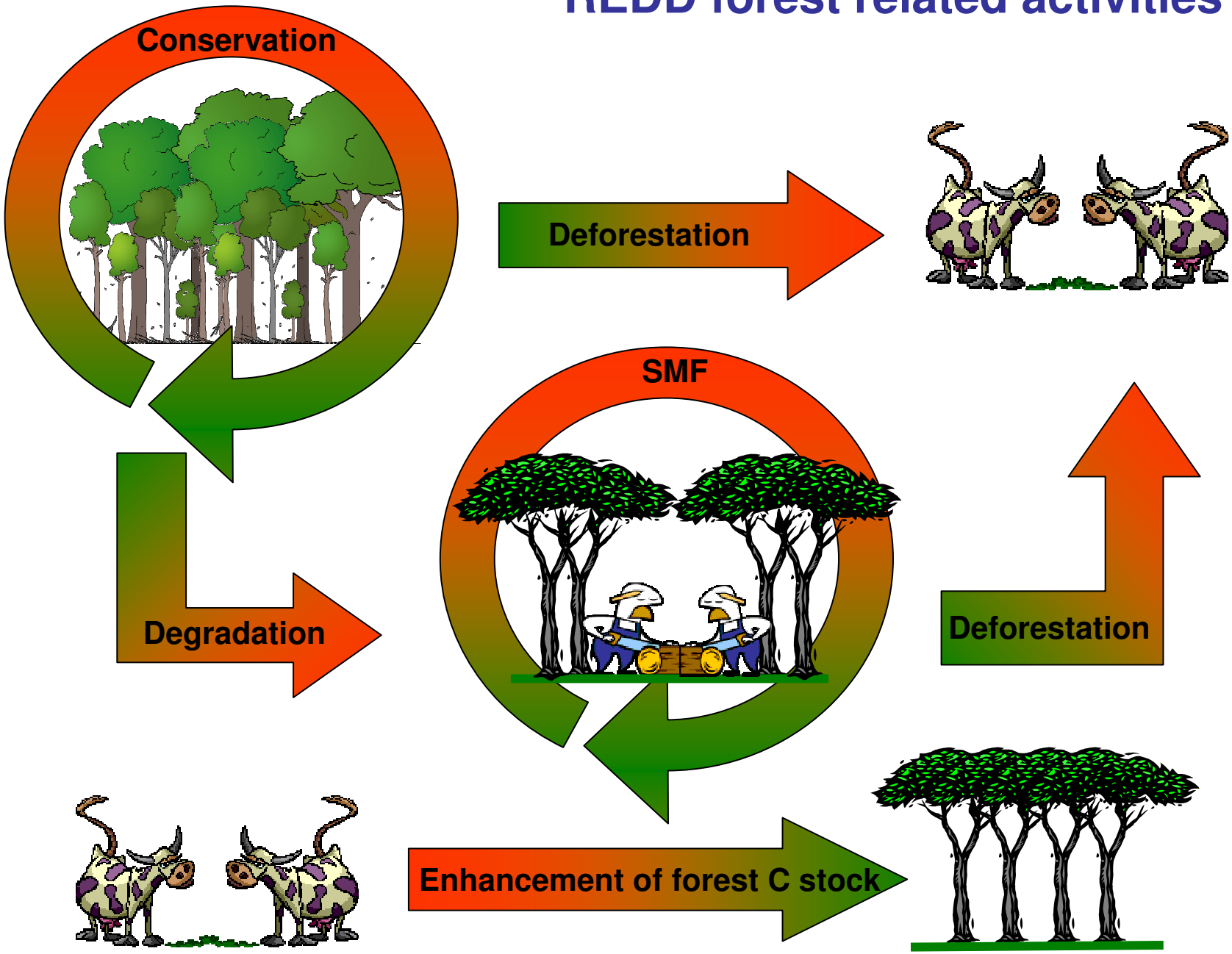
CONCEPTS

REDD forest related activities



ASSUMPTION

A non Annex I country that will be ready to submit a national GHGs inventory* following the reporting requirement fixed for Annex I Parties under the UNFCCC, will have the capability to assess and report anthropogenic emissions by sources and removals by sinks under the expected REDD+ mechanism

** The GHGs Inventory is a crucial instrument of the UNFCCC process since it measures anthropogenic emissions by sources and removals by sinks so giving the metric of the impact of human activities on greenhouse gases fluxes and concentrations in the atmosphere.*

Characteristics

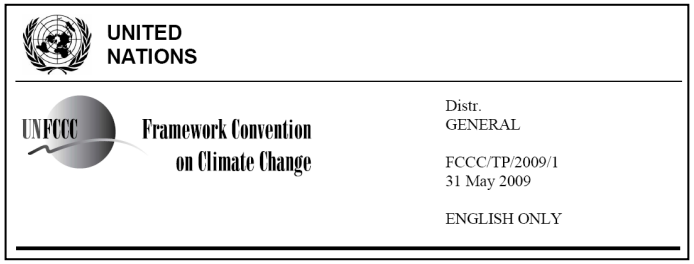
The document will be based on sequential but independent modules. The main scope is to support a country in the practical implementation of a monitoring and reporting system for carbon stock changes in forest land. It can be used to establish a new system but also in developing existing monitoring systems.

The end-users of this document are the national technical institutions and the experts that will have to design and manage the carbon monitoring system.

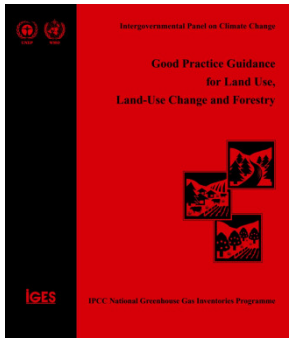
The document is a capacity development / capacity building tool that is focused mainly on practical-institutional needs (with only few area where methodological aspects will be fully addressed) for a carbon monitoring system that support the implementation and the access to REDD+.

Characteristics

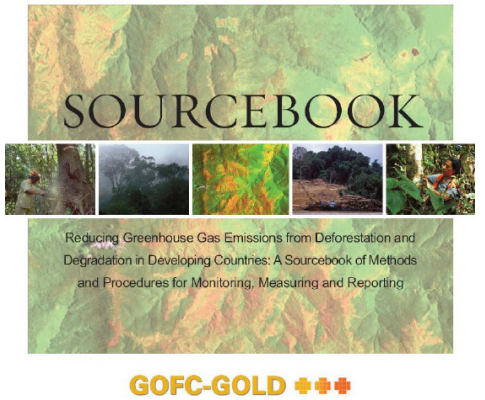
The document is intended to be complementary with all the other relevant UNFCCC technical related documents (e.g. IPCC Guidelines, Gofc-Gold REDD Sourcebook, etc.)



IPCC 2006 Guidelines



IPCC 2003 GPG for LULUCF



Guide on National Carbon Monitoring System for REDD+

MODULE 1: background issues

- UNFCCC reporting requirements
- Legal requirements,
- Definitions system under UNFCCC
- etc.

MODULE 2: Lessons learned

- Review of National GHGs inventories (Annex I countries and EU)
- Review of the evaluations* (* it is the review done by the experts on national reports)
- Production of summary tables for comparison and evaluation of the processes and their progress (i.e. are the countries moving forwards? Which are the main difficulties encountered in reporting? Which were or are the most difficult data to collect? Etc.)

MODULE: 3 Implementation support tool

Introduction on IPCC Methodologies:
- Approaches
- Tiers
- Key categories analysis

Guide on how to choose methodologies according to national circumstances and countries expectations

		What (actions)	How (methodology)	When (timeline, if any)
TIER 1	- institutional	.....	.....	.....
	- AD (activity data)	.....	.....	.....
	- EF (emission factors)	.....	.....	.....
	- QA/QC	.....	.....	.....
TIER 2	- institutional	.....	.....	.....
	- AD (activity data)	.....	.....	.....
	- EF (emission factors)	.....	.....	.....
	- QA/QC	.....	.....	.....
TIER 3	- institutional	.....	.....	.....
	- AD (activity data)	.....	.....	.....
	- EF (emission factors)	.....	.....	.....
	- QA/QC	.....	.....	.....

MODULE 4: systems for data input

- Guidelines on NFI (National Forest Inventory)
- Guidelines on RS land monitoring system to assess activity data

MODULE 1

MODULE 1: background issues

- **Introduction:**
  - Rationale
  - document guide
  - Suggestion on background documents (UNFCCC and GHGs inventories, IPCC Guidelines)
  - Summary tables (not exhaustive)
- **UNFCCC reporting requirements**
- **Legal requirements**
- **Definitions under UNFCCC**
- **etc.**

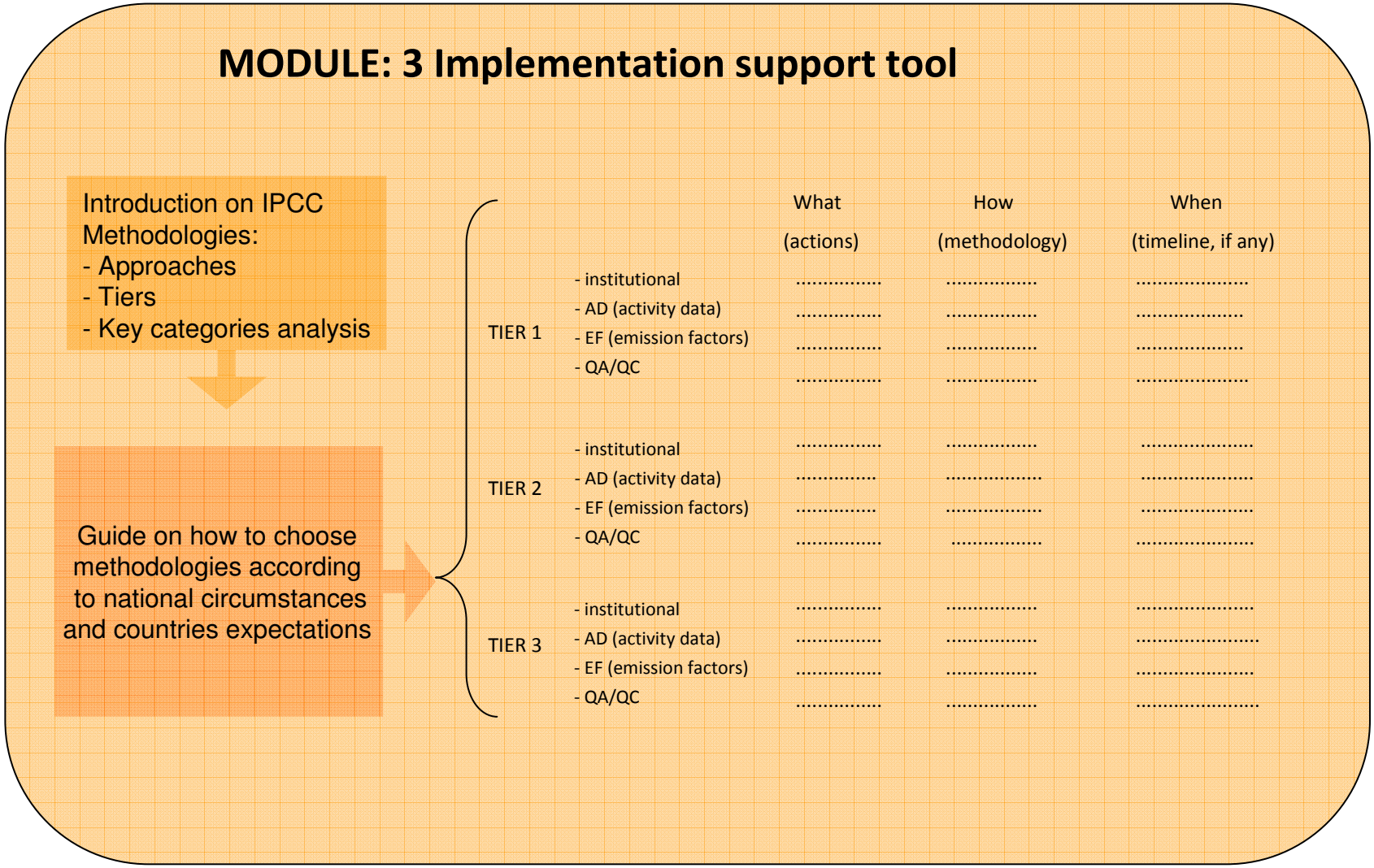
MODULE 2: Lessons learned

- **Review of National GHGs inventories (all Annex I countries)**
  - developing strategies
  - methodological strategies

- **Review process under UNFCCC**
  - Summary tables of evaluation of the processes

- **Main methodological approach**
  - specific examples of country GHGs inventory

MODULE 3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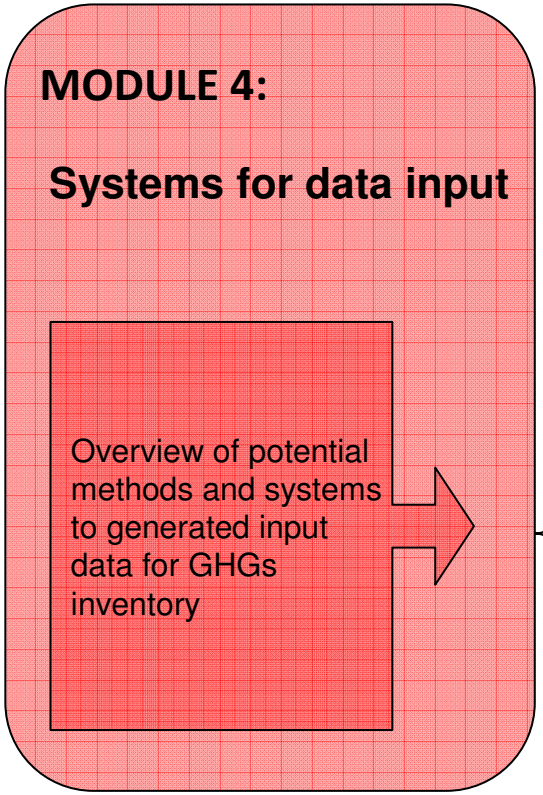
MODULE 4



NFI

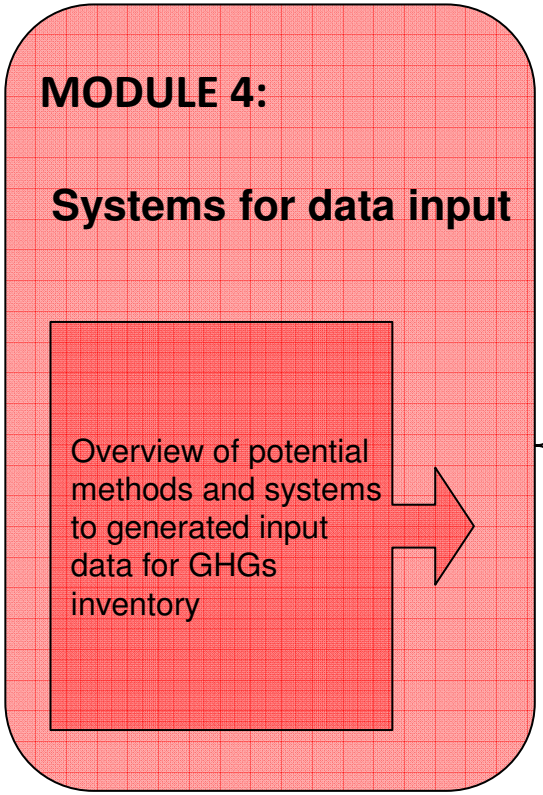
(Guidelines on National Forest Inventory as a tool to assess forest carbon content)

- **Objectives (T2 / T3 requirements)**
  - T2 = project based
  - T3 = operational
- **Framework**
  - Timeframe, frequency...
  - Target accuracy
  - Stratification (Ma……land use categories and subcategories)
  - Carbon stock/ Activity Data (target variables)
  - Practicability/ easiness
- **Institutional requirements**
  - Institutional set up (legal arrangements...)
  - Capacities (human and material resources, technical capacities, fundings) and capacity building
  - Linkages and partnerships
- **Sampling design (matrix: different sampling design vs)**
  - Sampling intensity
  - Plot design
- **Field measurement protocol (s):**
  - Forest carbon pools (*including soil?)*
  - for building C models (volume functions, allometric models and equations)
  - Plots re-sampling/ repeated measurements (changes)
  - *tracking some driving forces of deforestation / degradation – management practices, health, SFM*
- **Data analysis:**
  - -statistics incl. errors estimates
  - generate forest biomass and associated C-stock estimates
  - generate land use area estimates
  - managing and processing data**:** software/ database applications
- **QA/QC protocols**
- ***Documenting and reporting***

RS

Guidelines on RS Land monitoring system to assess activity data

MODULE 4



NFI

(Guidelines on National Forest Inventory as a tool to assess forest carbon content)

- Introduction
  - Why remote sensing?
  - Brief principles of monitoring through remotely sensed data
    - Operational
    - Spatial, temporal, spectral domains
    - Active v. passive sensors
- monitoring systems examples
  - Brazil, Australia, New Zealand, USA, others?
  - Emerging potential examples
- Country 'How-To' – Basic Requirements
  - Data – what and where to get
    - Review of Sourcebook recommendations
    - Historical data
    - Current and near-future RS platforms
- Support field data collection
- Physical requirements
  - Hardware - including operating systems
  - Software (Commercial v. Open Source solutions)
  - Personnel and space
  - Other considerations – power supply, integrity of storage, internet
- Expected results and timeframes
- Partnerships – capitalizing on all available knowledge and resources.

RS

Guidelines on RS Land monitoring system to assess activity data