

UN-REDD | REDD+ ACADEMY
PROGRAMME

5

National Forest Monitoring Systems

All 12 REDD+ Academy modules are online at <http://www.uncclearn.org/>

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Today I will just show part of
Module 5 but the course
has 12 modules:

1. Forest, Carbon Sequestration and Climate Change
2. Understanding REDD+ and the UNFCCC
3. Drivers of Deforestation and Forest Degradation
4. National Strategies and Action Plans
- 5. National Forest Monitoring Systems for REDD+**
6. Forest Reference Emission Levels for REDD+
7. Policies and Measures for REDD+ Implementation
8. REDD+ Safeguards under the UNFCCC
9. REDD+ Finance
10. Approaches for Allocation of Incentives
11. Introduction to Stakeholder Engagement
12. Good governance



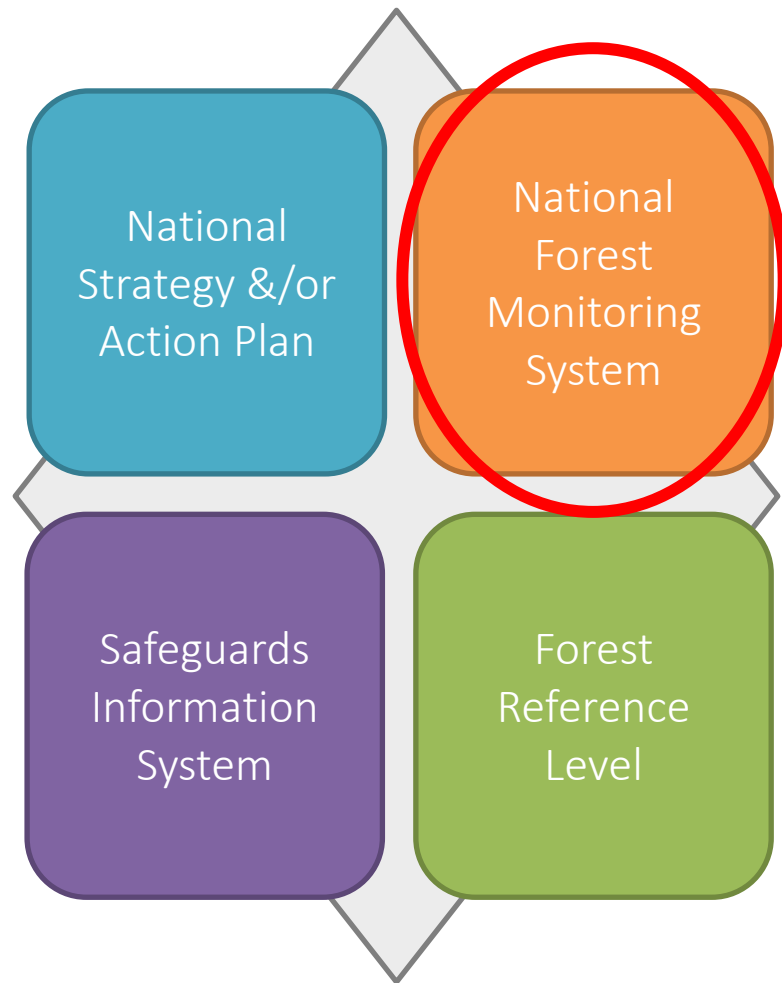
Learning objectives

By the end of this module, you should be able to:

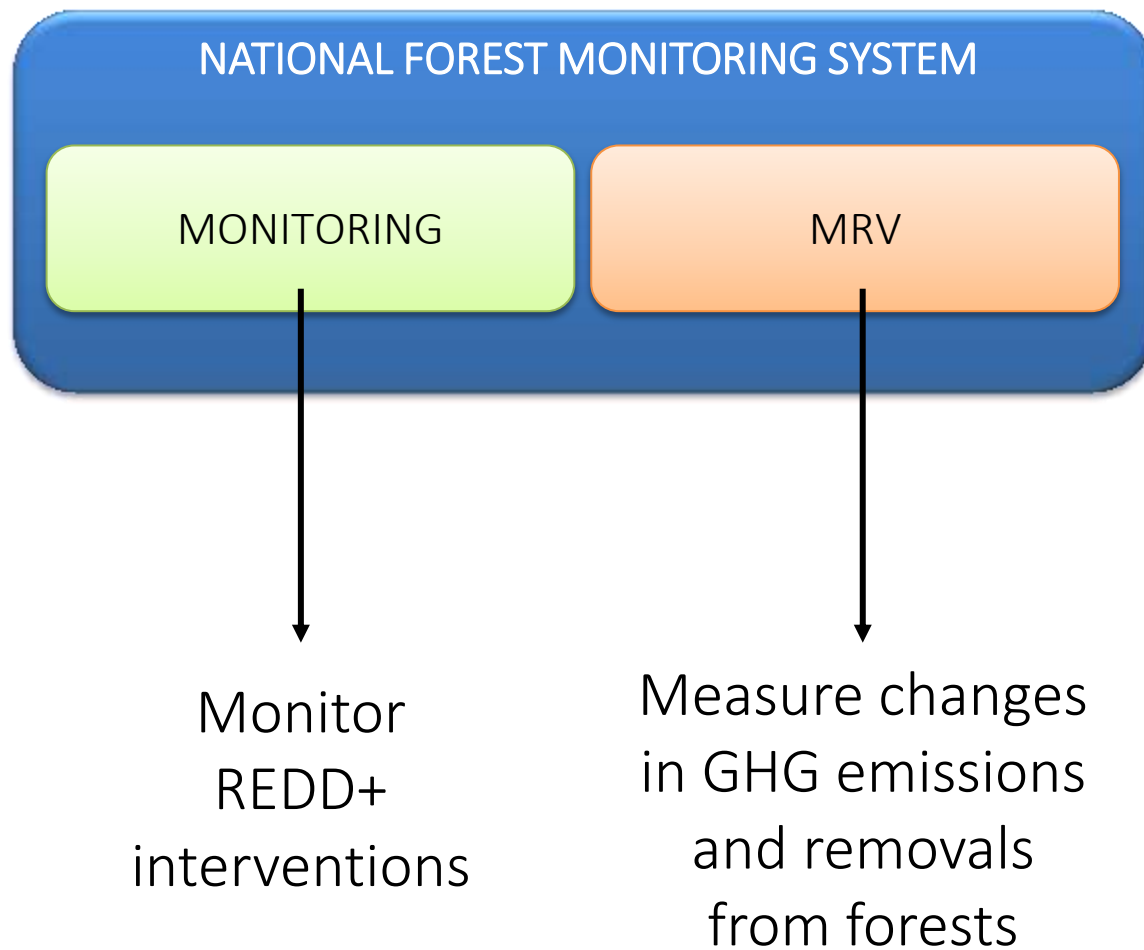
- Define what is a National Forest Monitoring System
- Describe the Monitoring and MRV functions of the NFMS
- Understand the concepts of Activity Data and Emission Factors

The NFMS...

- is 1 of the 4 elements required by the UNFCCC for REDD+
- Measures the **climate change mitigation impact** of REDD+ interventions
- Is closely related to the Forest Reference Emission Level(s)
- Can serve other purposes outside REDD+



What is an NFMS?



What is MRV?

- Measurement, Reporting and Verification
- A process to **estimate GHG (reduced) emissions and (enhanced) removals** resulting from the implementation of REDD+ activities

How does it work?

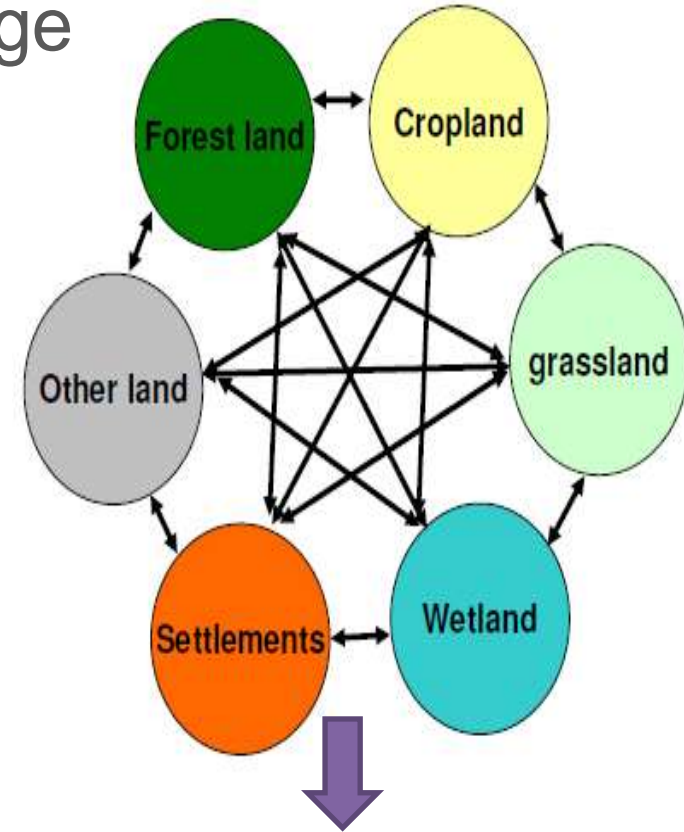
- There are international guidelines for estimating **human** GHG emissions and removals
 - Published by **Intergovernmental Panel on Climate Change** (IPCC)
- Separate guidelines for different sources and sinks across a country, e.g.: From transport, power stations, waste, agriculture and forestry

Activity Data: Area and Area Change

- Activity Data (AD) tells you:
 - How much land use change has taken place
 - What specific land use changes have happened

How does it work?

- All land falls into one of 6 land use categories
 - Forest land, Cropland, Grassland, Wetland, Settlement, Other Land
- Use remote sensing / GIS to classify land
- Do this at two periods in time to calculate changes, e.g. How much forest land in 2005 was still forest land in 2015?
 - How much forest land in 2005 was converted to cropland by 2015?



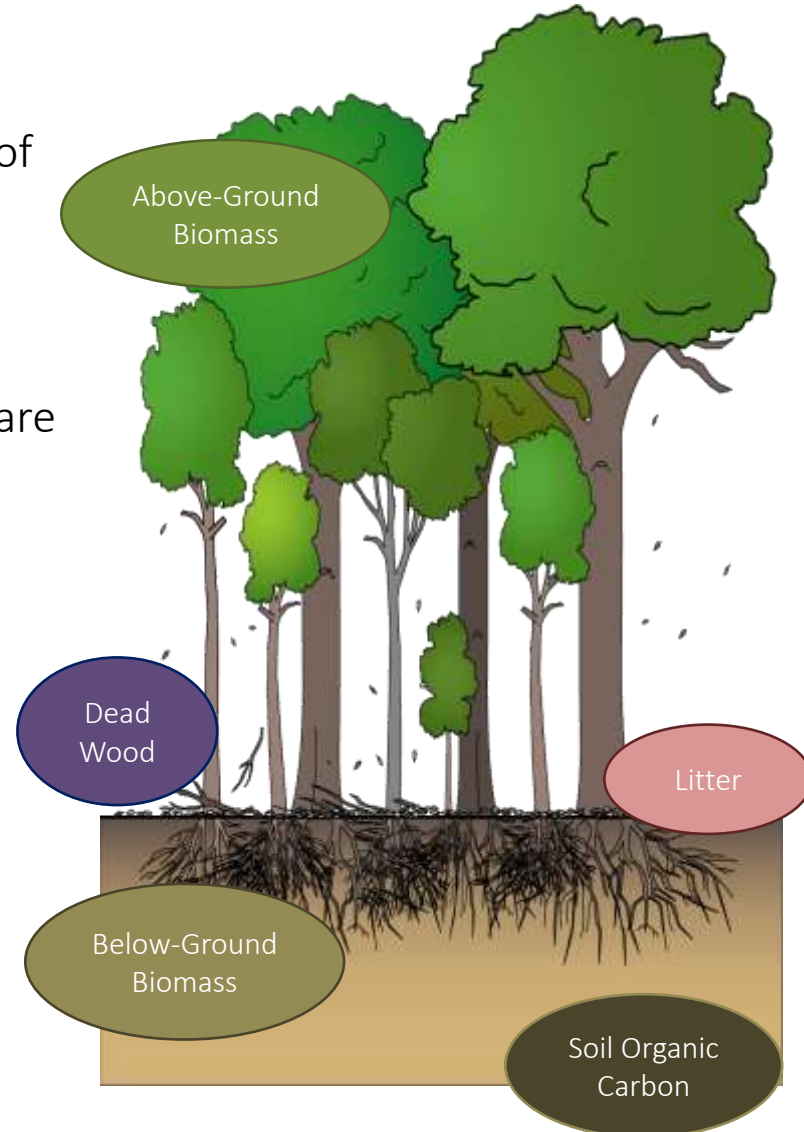
		Time 2					
		Crop	Grass	Wet	Settlen	Other	Forest
Time 1	Crop						
	Grass						
	Wet						
	Settlement						
	Other						
	Forest						

Emission Factors: Carbon Stocks & Changes

- Emission Factors (EF) tell you:
 - How much carbon was released from a hectare of human activity, e.g. forest land → cropland
- Removal Factors (RF) tell you:
 - How much carbon was sequestered from a hectare of human activity, e.g. cropland → forest land

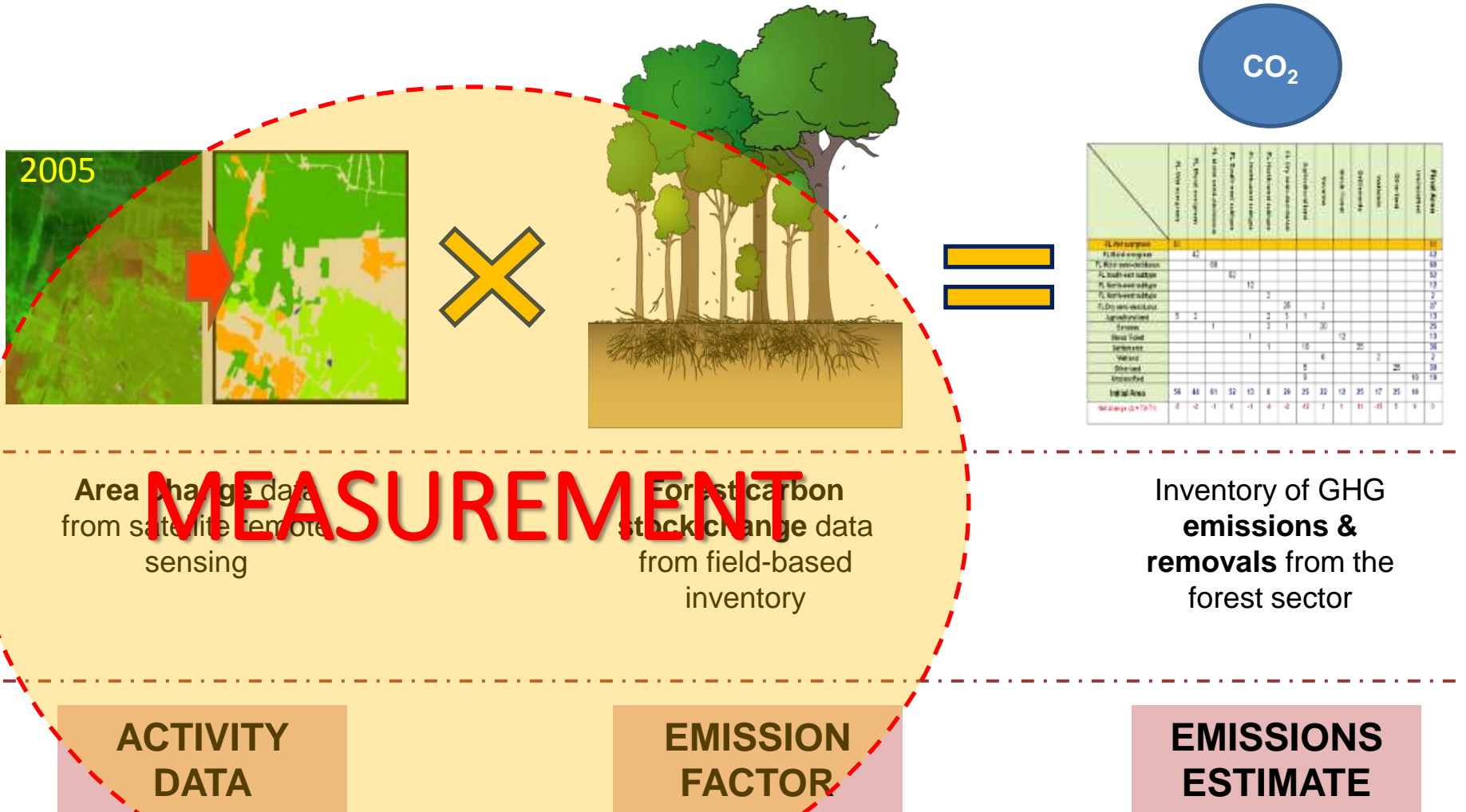
How does it work?

- Calculate the carbon stock in each land use category
 - Five carbon pools for forest land
 - Tools: ground-based inventories and research
- Apply appropriate EF or RF to each unit of AD
- IPCC provide “default” EFs and RFs



MRV for REDD+

IPCC Equation for Estimating Emissions & Removals



Reporting for REDD+

- Countries will report **REDD+ mitigation results** to access **REDD+ results-based finance**
- Two channels for countries to report to the **UNFCCC** on REDD+:
 - National Communications
 - **Biennial Update Reports (BUR)**
- REDD+ results will be reported in a **technical annex** to the BUR
- REDD+ information will be posted on the UNFCCC **REDD+ Web Platform**
- Bhutan should appoint an **official national REDD+ focal point** to the UNFCCC

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Verification for REDD+

2 LULUCF experts assess the technical annex of the BUR:
International Consultation and Analysis (ICA)

LULUCF experts write a technical report reflecting their assessment

Technical report includes analysis of the results in the annex and areas identified for improvement

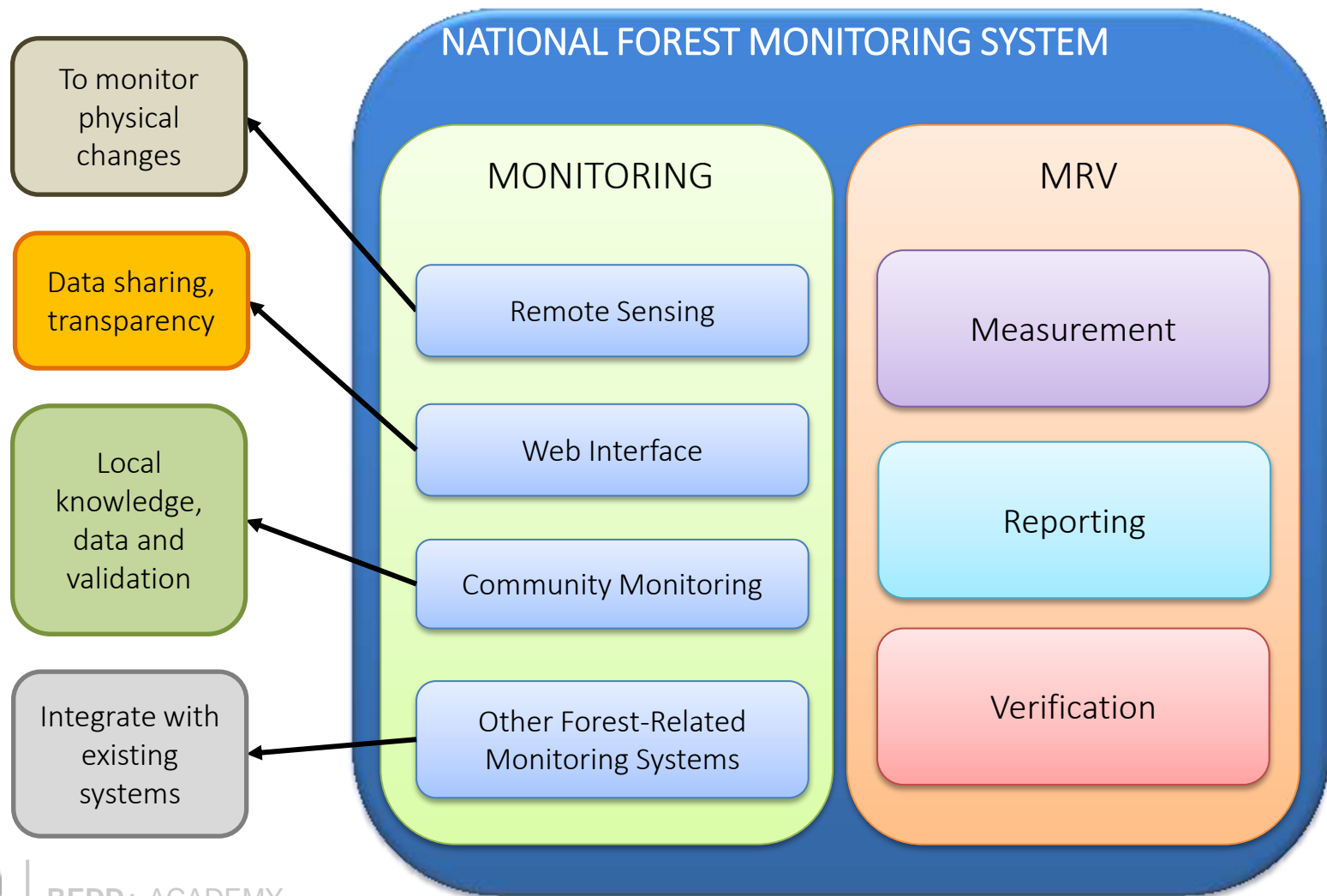
Technical assessment includes possibility of interaction with country for clarifications

Final report by the experts to be published on the UNFCCC REDD+ web platform, including comments from the country

MRV Overview



Forest Monitoring for REDD+



Key points

- National Forest Monitoring Systems have two functions
 - Measurement, Reporting and Verification (MRV)
 - Monitoring for REDD+
- MRV is a process to estimate GHG emissions and removals
- Activity Data and Emission Factors are key data for MRV
- Forest monitoring for REDD+ can help assess whether interventions are working