

National Forest Monitoring Systems (NFMS) in the context of REDD+

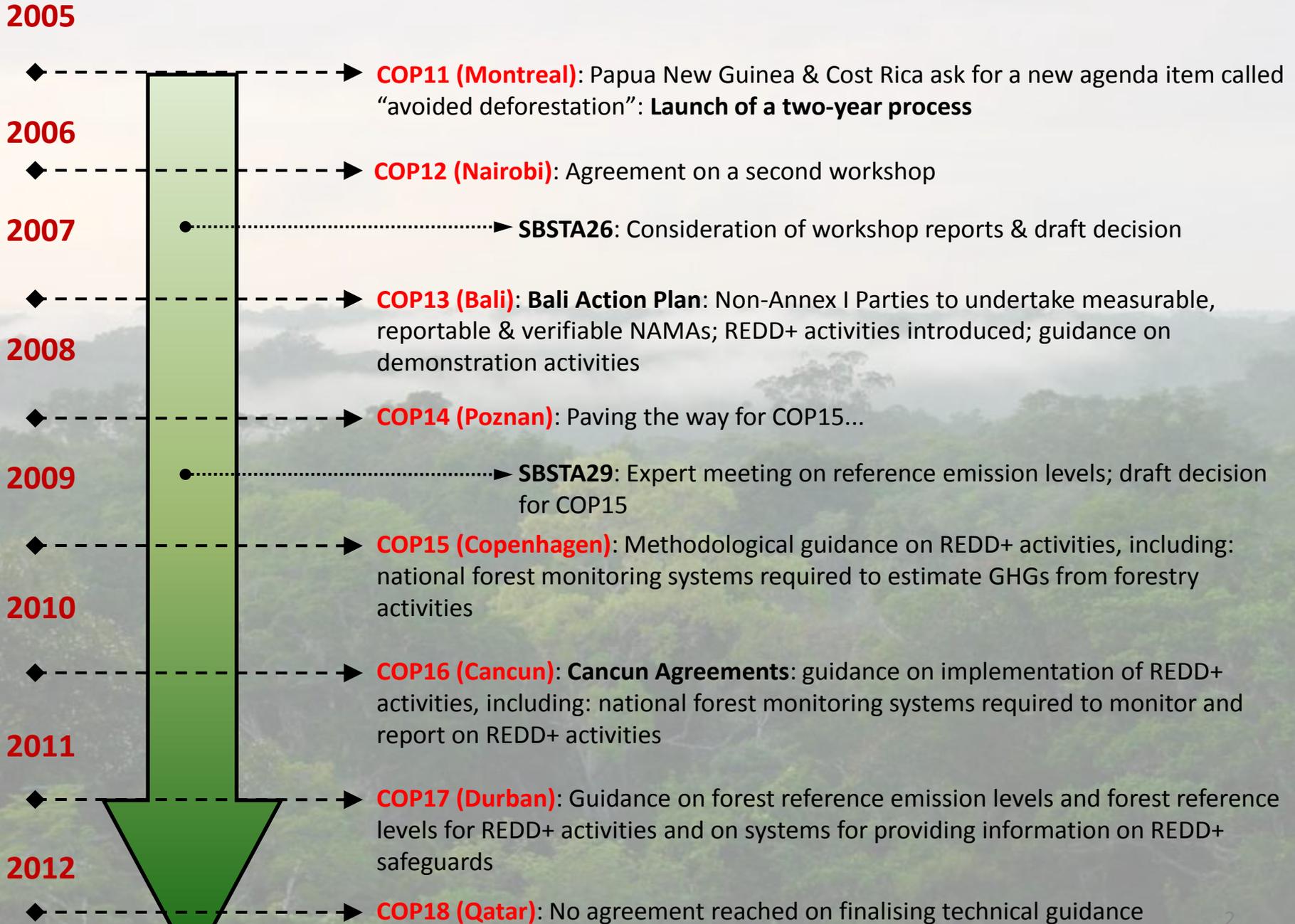
A brief introduction

**5th Asia-Pacific UN-REDD Lessons Learned Workshop
Hanoi**

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The Road to REDD+



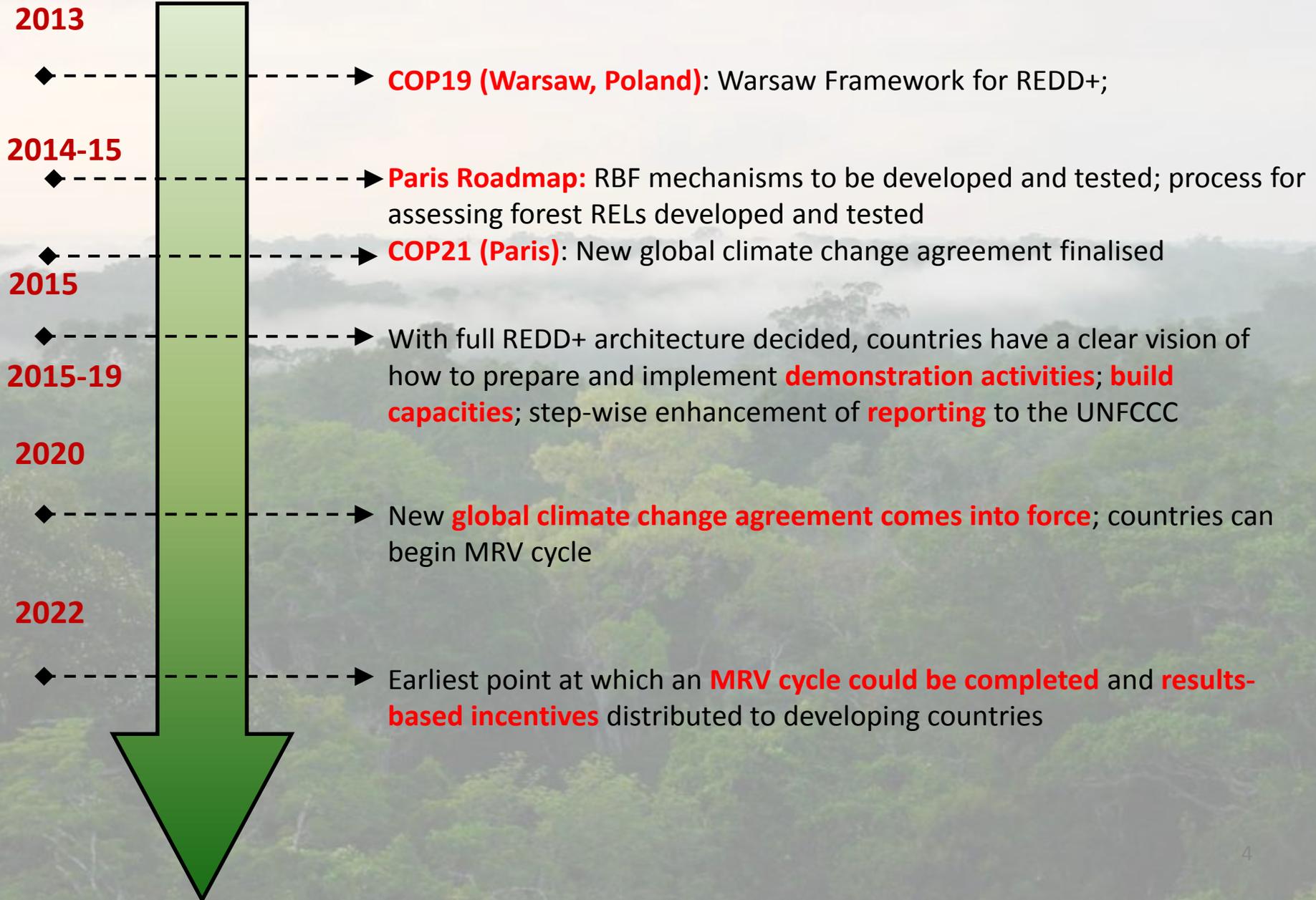
“Warsaw Framework on REDD+”

Seven decisions on REDD+, designed to provide a complete set of guidance for participating countries to move forward with REDD+ Readiness

1. Addressing the drivers of deforestation and forest degradation.
2. Work programme on results-based finance
3. Modalities for measuring, reporting and verifying.
4. Modalities for national forest monitoring systems.
5. Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements.
6. Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels.
7. The timing and the frequency of presentations of the summary of information on how all the safeguards...are being addressed and respected.



The Road to REDD+ ... looking forward



Concepts of Monitoring and MRV under the UNFCCC

- No specific definitions in the texts
- Monitoring: The need for periodic information on the results of policies and measures (Convention, article 4.2a)
- Measurement, Reporting and Verification (MRV): The means to address Parties' commitments to share information on emissions (article 4.1a)
 - For Annex 1, National Inventory Report, GHG Inventory
 - For non-Annex 1, no MRV requirements until Bali COP agreement on NAMAs (1/CP.13)
 - In Cancun Agreements, MRV for REDD+ must be consistent with MRV for NAMAs (1/CP.16)

REDD+ Activities



“Encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances:

- Reducing emissions from deforestation;*
- Reducing emissions from forest degradation;*
- Conservation of forest carbon stocks;*
- Sustainable management of forests;*
- Enhancement of forest carbon stocks.”*



The Cancun Agreements (Decision 1/CP.16)

Elements requested to be developed

“...requested developing country Parties aiming to undertake the REDD+ activities, in the context of the provision of adequate and predictable support, including financial resources and technical and technological support, in accordance with national circumstances and respective capabilities, to develop:

- A national strategy or action plan*
- Forest reference emission level and/or forest reference level*
- **A robust and transparent national forest monitoring system for the monitoring and reporting of REDD+ activities***
- A system for providing information on how the safeguards are being addressed and respected”*

MRV

SIS



Principles for NFMS



- National Ownership
 - Countries must have full control over the NFMS development process, assuming full responsibility for effective operation through to implementation in Phase 3. Partner organisations should be limited to a TA and capacity building role.
- Build on existing systems and capacities:
 - Use, wherever possible, existing programmes, initiatives, institutions and infrastructure
- Consistency with UNFCCC process:
 - Fully integrate REDD+ strategies and NFMS with UNFCCC commitments, including for NAMAs



In order to meet these principles, NFMS should be:

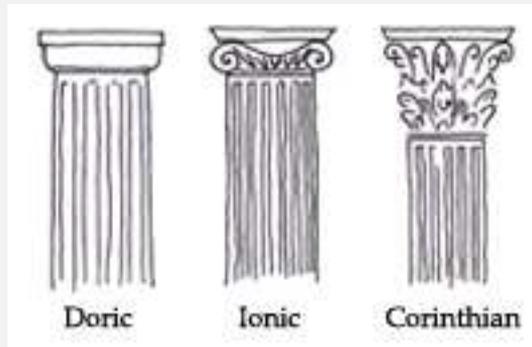
- Appropriate for national level implementation
- Robust and transparent
- In line with UNFCCC decisions on REDD+, including 1/CP.16, the Warsaw Framework and any future decisions
- Complementary to existing forest inventory methods
- Cost-effective (sustainable without REDD+ finance)
- Consistent with the phased approach to REDD+



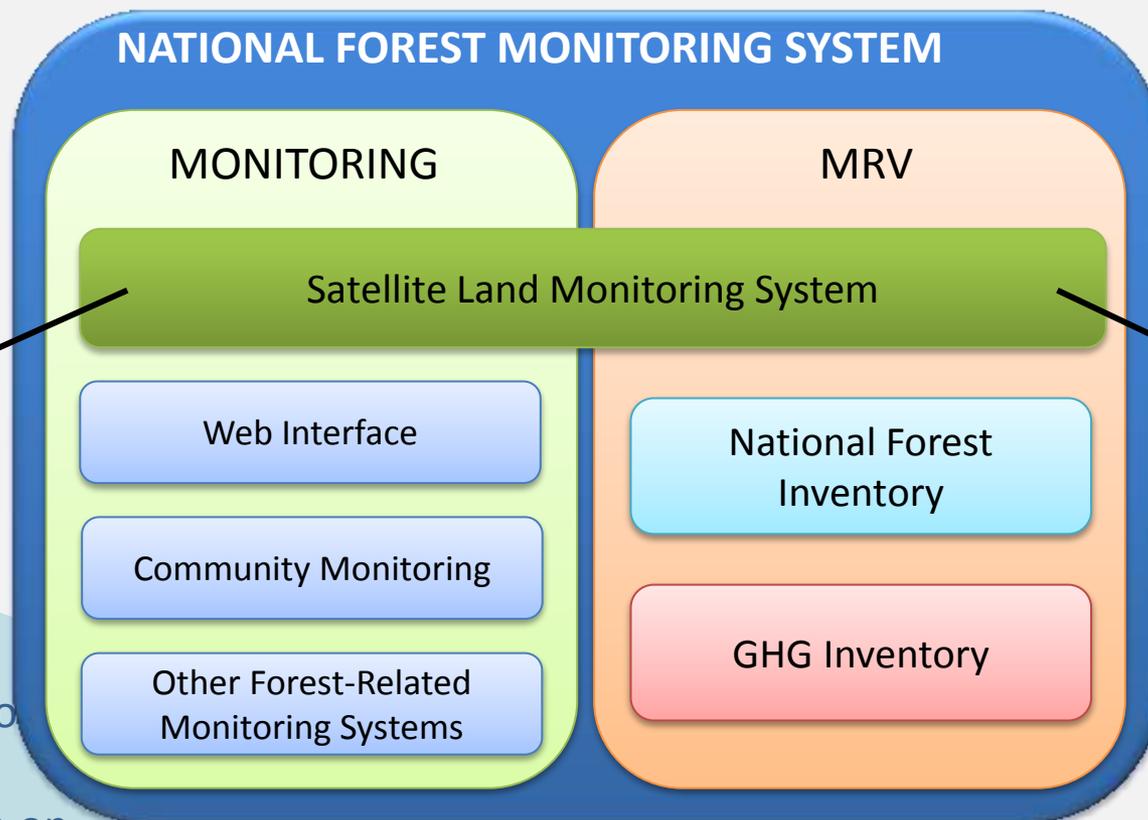
Breaking down the NFMS

Periodic Table of the Elements © www.elementaltable.com

<ul style="list-style-type: none"> hydrogen alkali metals alkali earth metals transition metals poor metals metals noble gases rare earth metals 																													
H	He																	He											
Li	Be	B	C	N	O	F	Ne												Ne										
Na	Mg	Al	Si	P	S	Cl	Ar												Ar										
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr												Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe												Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn												Rn
Fr	Ra	Ac	Unq												Unq														



Functions of the NFMS



For monitoring and reporting on **REDD+ activities**

For assessing national area change over time (**Activity Data**)

System to provide information on Safeguards (SIS)

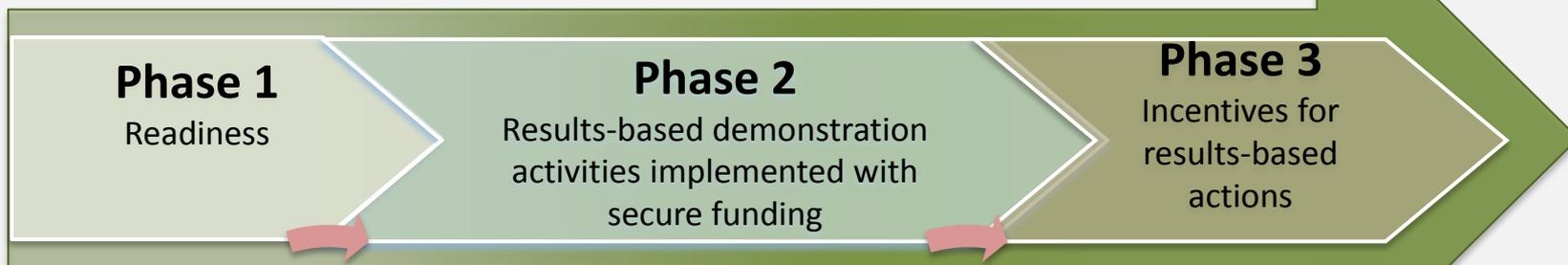
Why two functions?

- NFMS has two functions in REDD+ context:
 - Monitoring (M) of Policies and Measures (PAMs)
 - Measurement (the M of MRV) of emissions and removals
- Develop the NFMS in a stepwise approach through 3 Phases of REDD+
- Fully operational in Phase 3, to allow for positive incentives under an international mechanism

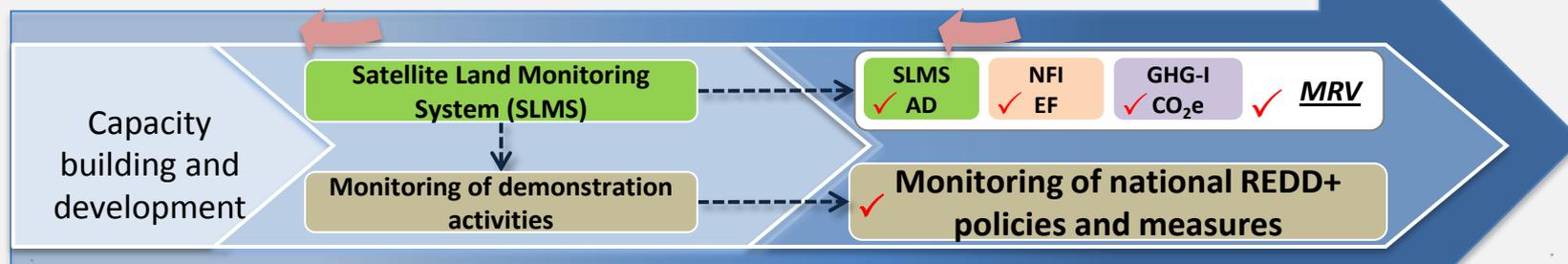


Phased implementation of the NFMS

REDD+ Phases



Technical activities throughout the phases



Monitoring and MRV Phases

*“...establish, according to national circumstances and capabilities, robust and transparent national forest monitoring systems and, if appropriate, sub-national systems as part of **national forest monitoring systems** that:*

- Use a combination of remote sensing and ground-based forest carbon inventory approaches for estimating, as appropriate, anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes;*
- Provide estimates that are transparent, consistent, as far as possible accurate, and that reduce uncertainties, taking into account national capabilities and capacities;*
- Are transparent and their results are available and suitable for review as agreed by the Conference of the Parties;”*

“Taking note of, if appropriate, the guidance on consistent representation of land in the Intergovernmental Panel on Climate Change Good Practice Guidance for Land Use, Land-Use Change and Forestry.”

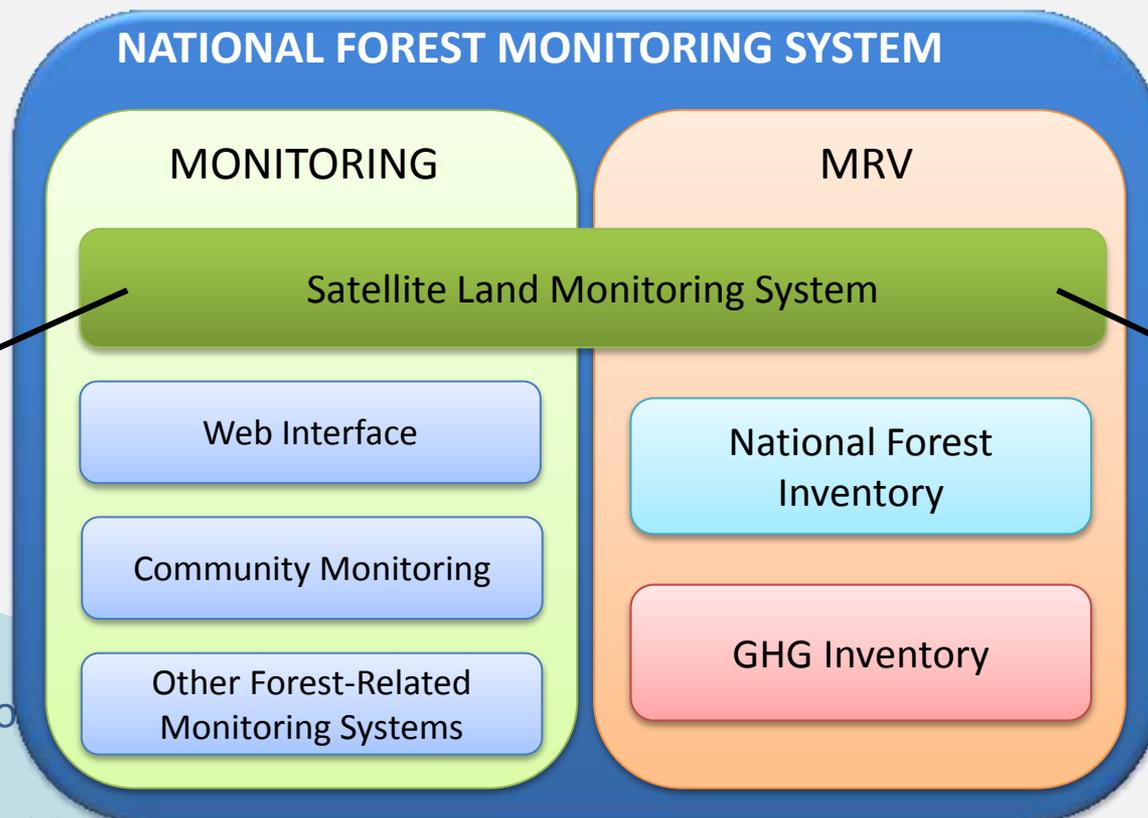


IPCC guidance and guidelines

- In the Convention, Parties requested IPCC to provide guidance for methods for Greenhouse Gas Inventory (GHG-I)
 - Good Practice Guidance for LULUCF (2003)
 - Guidelines for National GHG-I (2006)
- Countries are ***advised*** to take these into account
- Chiefly relevant for MRV function (compliance), but can also be applied to the monitoring function for consistency (if, for example, directly measuring the emission reductions from a REDD+ measure)



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System to provide information on Safeguards (SIS)



Pillars of MRV

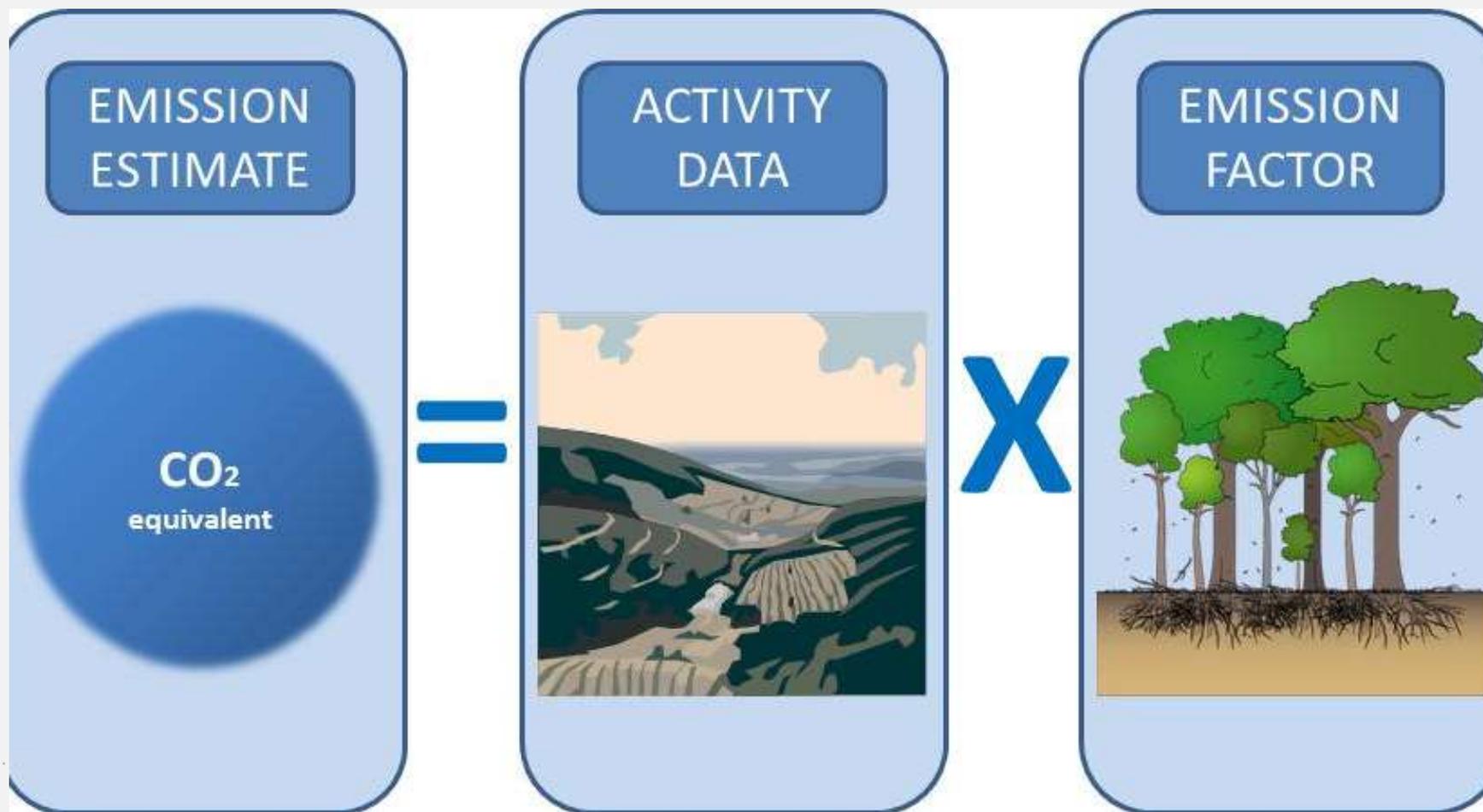
The monitoring function of NFMS can be defined only broadly. Its components will vary depending on national circumstances

The MRV function will always consist of three main components or ‘pillars’:

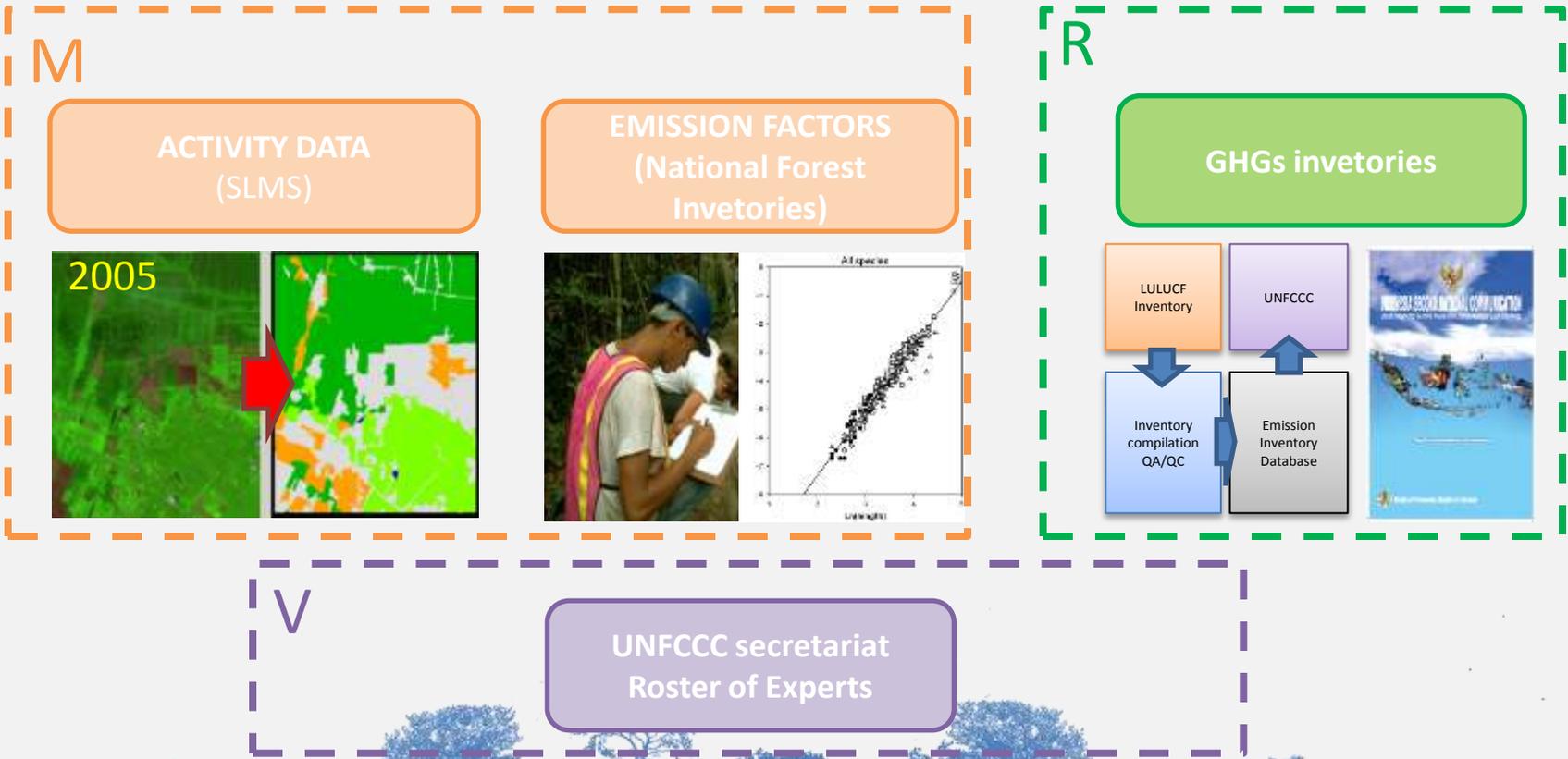
- The satellite land monitoring system (SLMS)
 - To collect Activity Data (AD)
- The national forest inventory (NFI)
 - To gather information for obtain emission factors (EFs)
- The national GHG inventory (GHG-I)
 - To provide emissions and removals estimates for a national report



MRV according to IPCC guidance



How the pillars combine for MRV



Activity Data (AD)

What happened?



- Data showing the extent and magnitude of a particular human-induced activity e.g.
 - Land area, Management systems, Materials used
- Three approaches to AD collection for land area, recommended by IPCC
 1. Net change in total areas of land categories within a defined spatial unit (e.g. a country)
 2. Tracks land use conversions between categories
 3. Tracks conversion between categories on a spatially-explicit basis



Activity Data (AD)

- No approach is necessarily better than the others – any of them can potentially deliver the information required to meet reporting requirements, as long as 5 principles are followed:
 - **Completeness:** All land areas must be covered
 - Different approaches can be used in different locations or categories, as long as **consistent** over time
 - Following IPCC guidance ensures that a country's AD are **comparable** with others
 - Approach must be **adequate** to allow estimates of GHG emissions, removals
 - **Transparency** of sources, methods

What was the impact on carbon?

- Coefficients that quantify emissions or removals of GHGs per unit of a specific human-induced activity e.g.
 - tCO₂e per ha of forest cleared, per kg of fertiliser used, per household using improved cookstove
- An average value, a proxy for direct measurement, giving an ***estimate***
- IPCC identifies 3 ‘tiers’ of methods to obtain estimates, with increasing accuracy
 1. Use IPCC default EF data (EF database)
 2. Apply country- or region-specific EFs which allow more disaggregated AD
 3. Regular, detailed inventories used to create very specific EFs and models



Monitoring function Objectives



- To deliver a comprehensive assessment of the outcome of REDD+ Policies and Measures (PAMs)/ REDD+ Actions
- To provide information required to track implementation and assess performance of PAMs/Actions, in terms of (a) effectiveness in reducing emissions, and (b) addressing and respecting safeguards (as defined under the Cancun Agreements)
- To support the development of efficient, equitable resource allocation mechanisms ('triggers' for results-based incentives)
- To provide information necessary for non-REDD+ purposes, for wider forestry and land use sector objectives



Monitoring function Practice



- REDD+ PAMs/Actions, implementation and performance
- Direct monitoring of forest carbon stocks, and stock changes, as a result of PAMs
- Indicators to track implementation of a specific policy or measure – proxy indicators for forest carbon e.g.
 - Monitor volume of timber harvested through an SMF measure, as a proxy for impact on carbon
- Primarily a **domestic** tool, to allow countries to assess and refine PAMs
- Use existing tools where possible (e.g. network of forest rangers or community forest users' groups) and new tools where necessary (e.g. satellite land monitoring system)
- Harmonize existing tools with new tools and with newly acquired capacities for MRV



The Monitoring function, in contrast with MRV...



- Is crucial to establishing what particular activities (policies/measures) are effective at addressing drivers of Deforestation and Degradation
- Draws on a wide range of potential elements:
 - Satellite Land Monitoring System
 - Forest inventory for community forests and commercial forest management units
 - Management activity records
 - Records of use/sale of forest products and services
 - Social, economic and biodiversity assessments



In contrast with MRV...

- Generates information that is useful for forest managers, regardless of REDD+. Well managed and regulated forest sectors already generate such information
- Information can be generated by forest rights-holders and managers, including Indigenous Peoples and Local Communities, where applicable



Open access database on forests and REDD+ activities

- National Forest Inventory plot data – generally fully or partially restricted. All NFI data should be made available for REDD+
- Land classification – maps showing land use, as interpreted from SLMS and ground truthing, must be readily accessible
- Forest management plans and activities, including those under a national REDD+ programme, or voluntary projects
- Open channels for feedback and correction
- Information technology makes transparency cheaper and easier (and makes restriction of information harder)



Monitoring implementation of REDD+ activities

- Voluntary REDD+ projects, REDD+ demonstration activities and, eventually, implementation of REDD+ PAMs/Actions under phase 3, are all based on plans available on the open-access database
- This does not guarantee that these plans are followed
- Potential causes for failure to implement: poor enforcement, insufficient resources, poorly designed plan, lack of consultation etc
- Continuous monitoring of implementation allows identification of problems, and delivery of solutions
- Maintenance of physical records, audits, site visits, SLMS

of REDD+ activities on biomass

- Some REDD+ PAMs/Actions are more efficient and more cost-effective at reducing emissions or enhancing removals than others.
- REDD+ strategy developers and forest owners/managers (including IPs/LCs) need this information to decide which PAMs/Actions to invest in
- An NFI does not produce such information – fixed plot systems are not designed to be aligned with the sites where REDD+ PAMs/Actions are implemented
- Other tools are required to assess the efficiency of REDD+ PAMs/Actions e.g. forest management inventories, SLMS.



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Thank You

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