UN-REDD
PROGRAMME

FAO Forestry Department

FAO in-country experiences
for capacity building

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Bangkok, Thailand

UN-REDD Programme

- Supports countries benefit from REDD+ (UNFCCC)
  - National REDD+ Strategies and Readiness
- Established in 2008 by FAO, UNDP & UNEP
  - Response to UN Framework Convention Climate Change (UNFCCC) Bali Action Plan 2007
- Offers UN Joint Program: Delivering as One UN
- Agreed delivery platform with Forest Carbon Partnership (FCPF) and Forest Investment Programme (FIP)
- Current contributions: US$ about 300 million (without pledges) from donors Norway, Denmark and Spain

6 UN-REDD Work Areas

REDD+ Strategies

- MRV and Monitoring
- REDD+ Governance
- Stakeholder Engagement
- Multiple Benefits of forests/REDD+
- Transparent Equitable Accountable Management of REDD+ Payments
- REDD+ as Catalyst of Green Economy

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Lead Implementation Role MRV in the NP: FAO

Monitoring (M) & Measurement, reporting, verification (MRV)

- Cornerstone for carbon monitoring
  - national communications to UNFCCC
  - one starting point for FR(E)L establishment
  - supports national / sub-national implementation of incentive systems
- Support to policy formulation and feedback
  - knowledge of drivers of change
  - information on multiple benefits

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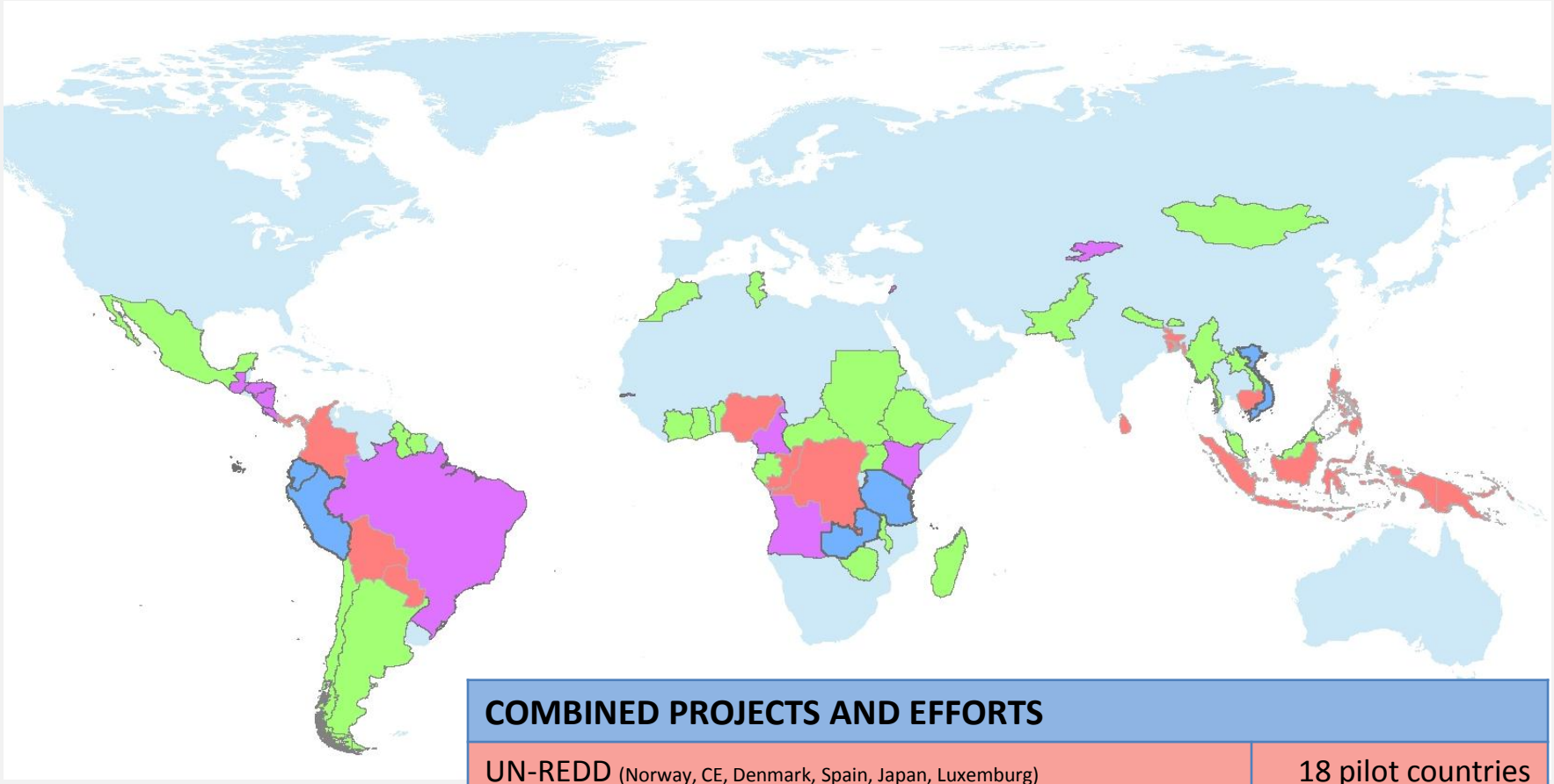
FAO'S RESPONSE- main outputs

Country support (64)



COMBINED PROJECTS AND EFFORTS	
UN-REDD (Norway, CE, Denmark, Spain, Japan, Luxemburg)	18 pilot countries
UN-REDD (Norway, CE, Denmark, Spain, Japan, Luxemburg)	32 countries
FAO-Finland (Finland)	5 countries
NFMA (Sweden, Finland, USA, Brazil, Angola, FAO TCP, GEF)	19 countries

* Several countries are supported by more than one programme (e.g. Vietnam)

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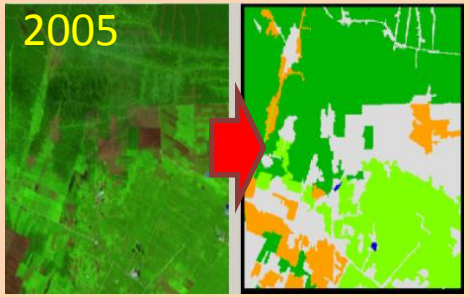
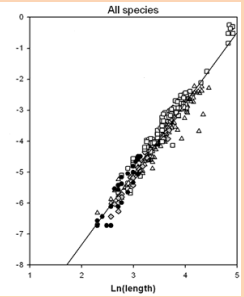
NFMS

M

Activity Data
Satellite Land Monitoring System



Emission Factors
National Forest Inventory



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GHGs Inventories

LULUCF Inventory

UNFCCC

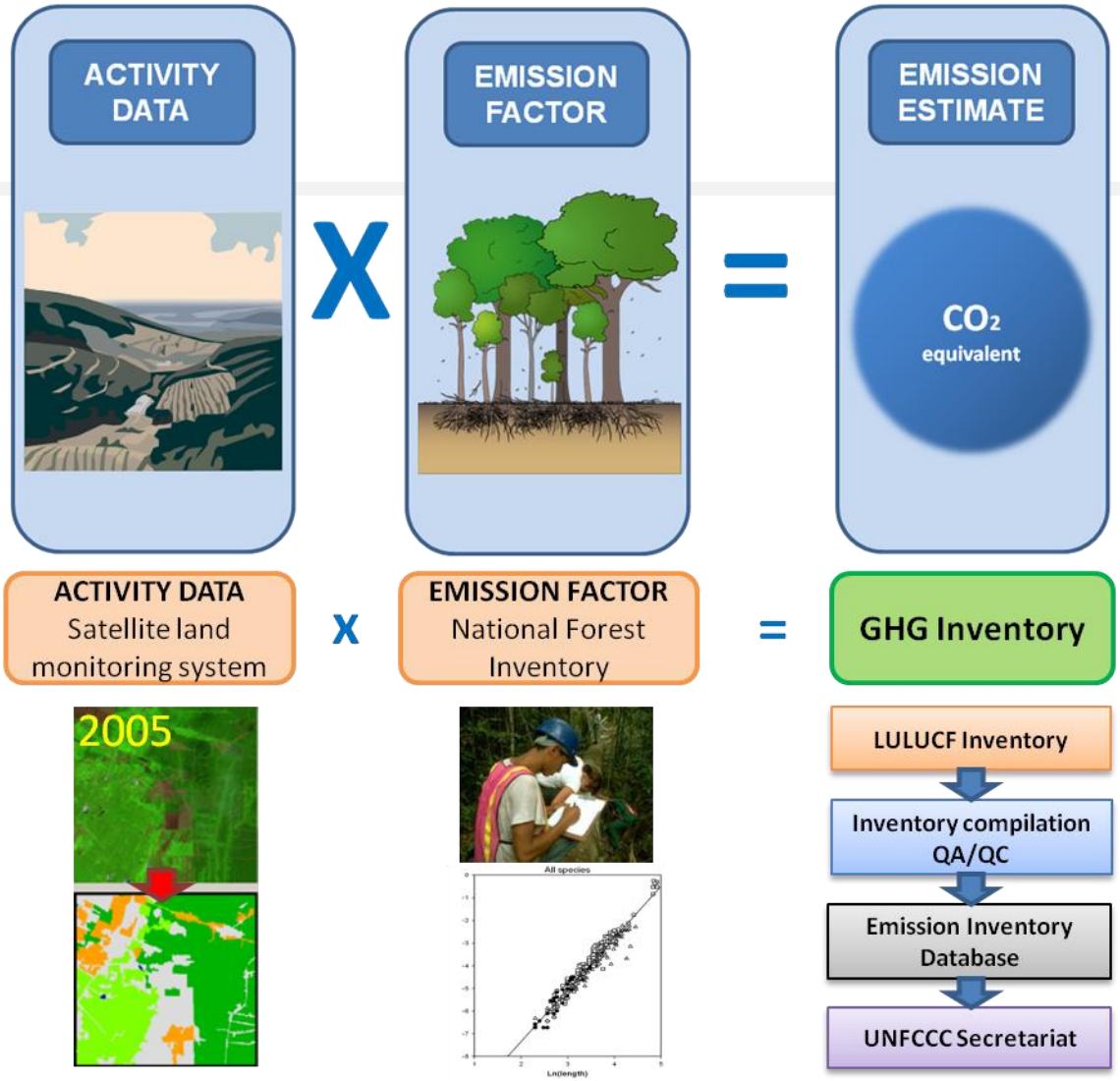
Inventory compilation QA/QC

Emission Inventory Database

V

UNFCCC Expert Reviews

MRV: Measurement

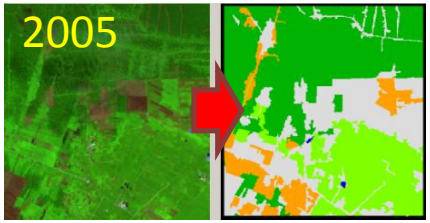


The IPCC's methodological approach to calculate anthropogenic GHG emissions by sources and removals by sinks related to forest land.

MRV: Measurement

- Measurements of area change (Activity Data) and forest carbon stock changes (Emission Factors)
- This information provides the basis to compile a GHG inventory
- Activity data
  - Area / forest cover change data (hectares per year)
  - Achieved using a satellite land representation system (SLMS)
- Emission factors
  - Forest carbon change
  - Assessment of biomass, carbon stocks and emission factors
  - Data are obtained from a national forest inventory (NFI)
- GHG Inventory
  - GHG assessment to determine national mitigation performance
  - Based on the data collected from the NFI and SLMS
  - UNFCCC templates available

ACTIVITY DATA
Satellite Land Representation System



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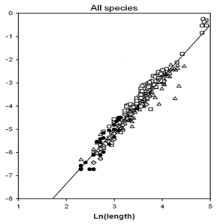
EMISSION FACTORS
National Forest Inventory



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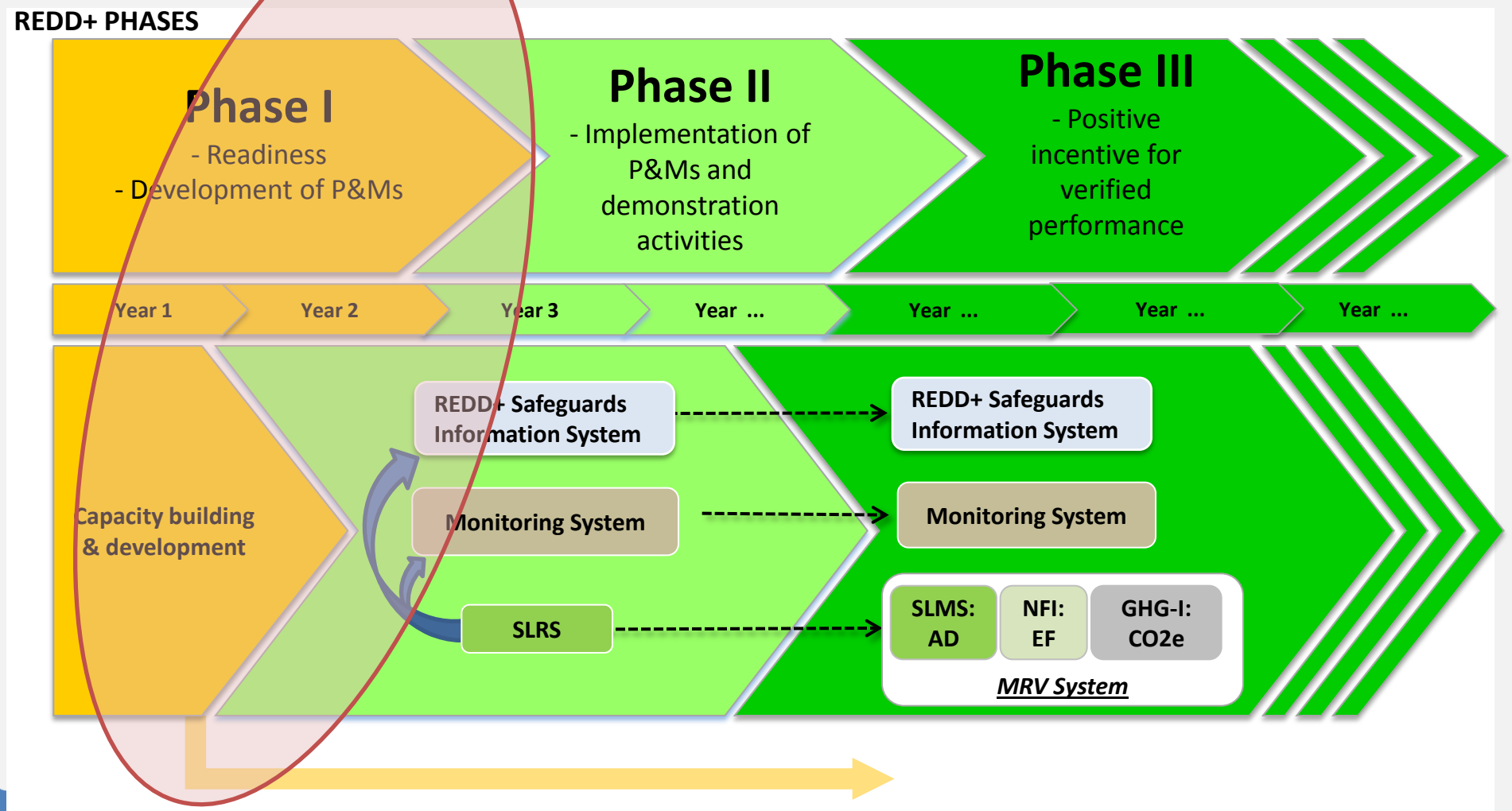
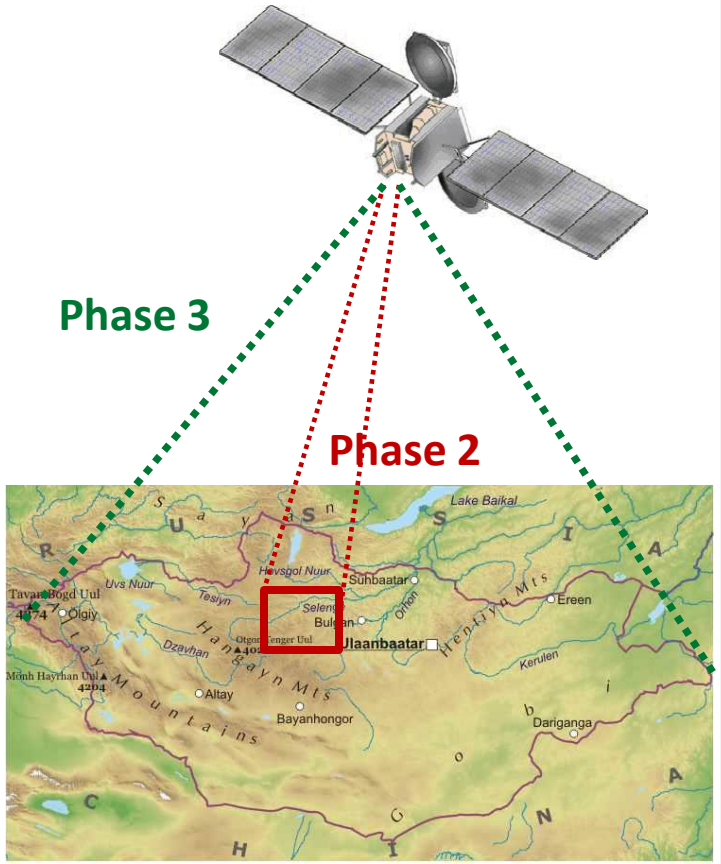
GHG Inventory

Information, Monitoring and MRV Development through the 3 REDD+ Phases

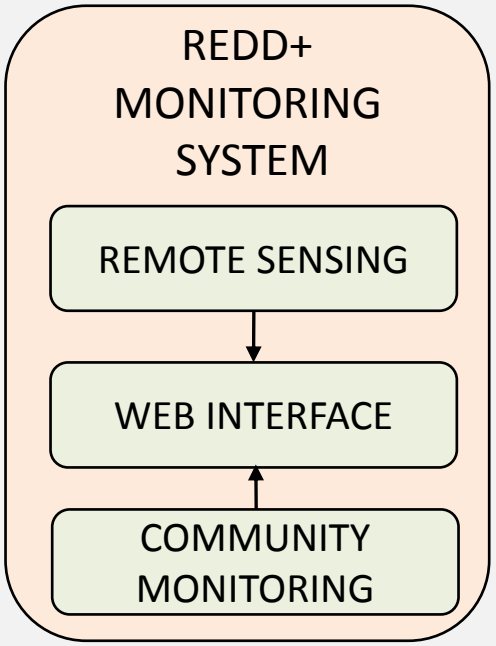


Monitoring Systems

- To assess whether REDD+ is resulting in net positive outcomes, i.e. <u>results-based</u>
- In Phase 2 of REDD+
  - To monitor the outcomes of demonstration activities
- In Phase 3 of REDD+
  - To monitor the outcomes of national policies and measures on all the national territory
- Technical requirements
  - Satellite Land Monitoring System (operational remote sensing)
  - Web-GIS interface (for transparency, open access)

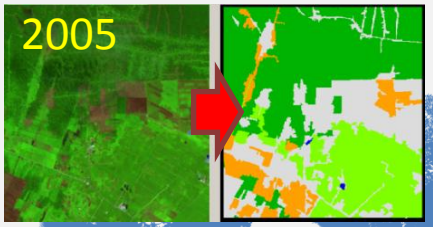


National forest monitoring systems

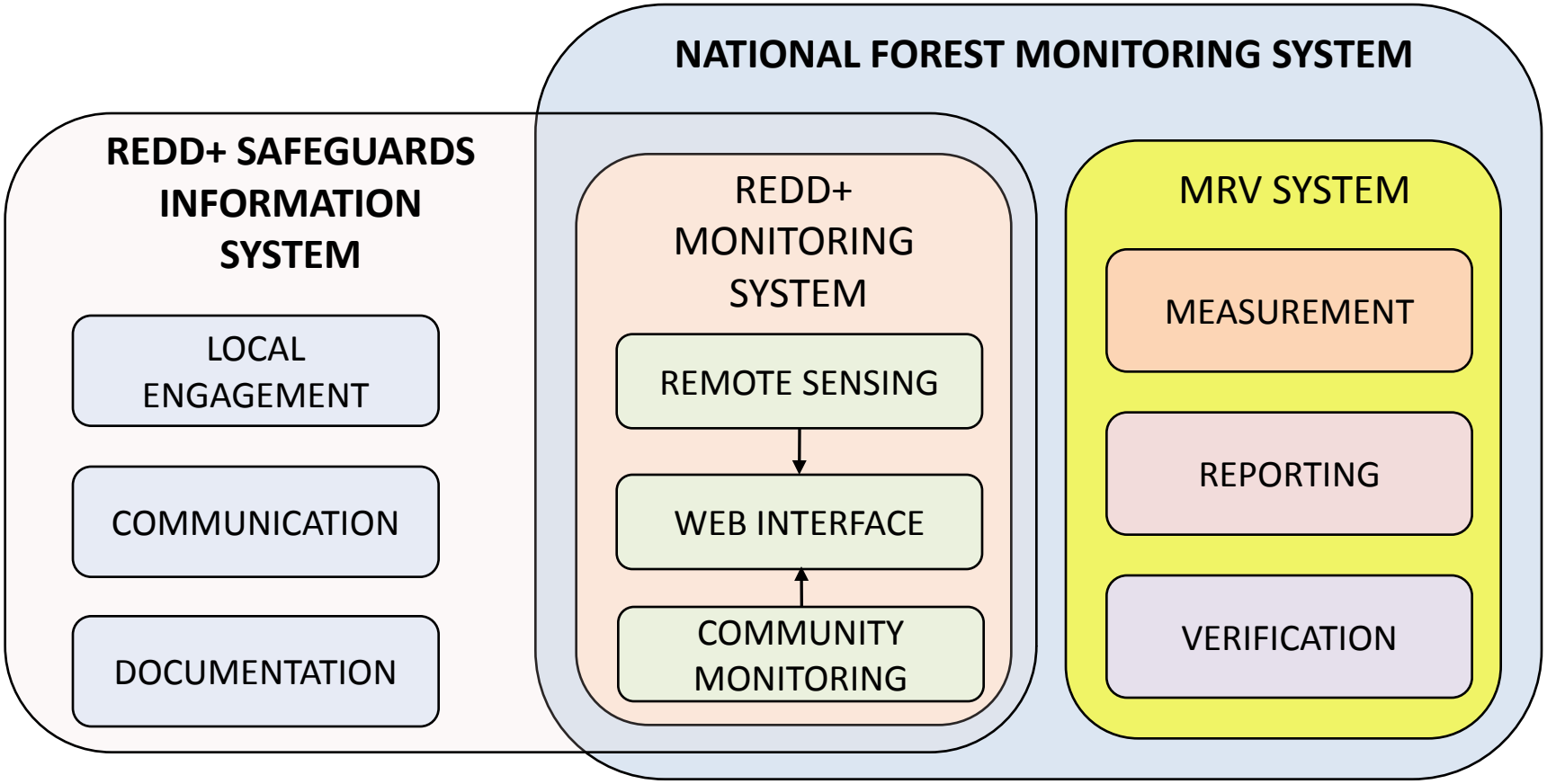


- Satellite data to monitor REDD+ activities at sub-national (demonstration) and national level
- Disseminated over internet through a web-GIS interface
- Measurements of area change (Activity Data)

ACTIVITY DATA
Satellite Land
Representation System



Fitting the Systems Together



Technical knowledge and capacities

Countries require strong technical skills in the field of forest monitoring and MRV to implement REDD+

Experience

- Capacities are highly variable, ranging from low to medium
- Donors, NGOs and investors may compete for skilled technicians
- Capacity is volatile: High turn around of skilled people in government institutions
- Short-term capacity building projects/activities yield limited impacts if basic capacities are low

Lessons learned

- National capacities are often over-evaluated
- Promoting learning-by-doing is essential
- Longer-term capacity building exercise, with daily support or regular follow up is necessary
- Long-term commitment is necessary to achieve durable results

Methodologies and technology for NFMS and MRV

Countries require easy and inexpensive access to technology and tools to develop their NFMS

Experience

- Access to technology is quite limited, particularly for remote-sensing technologies and data
- The basics are often missing (e.g. steady electricity, high-speed internet, performing computers, software packages)
- Certain technologies are costly (e.g. HR images, Lidar, commercial software packages), limiting large-scale deployment and sustainability

Lessons learned

- Not promote specific tools/data sets but provide overview of available options
- Help governments make informed decisions
- Support country decisions and tailor best available approaches while maintaining consistency and comparability of results
- Heavy reliance on complex & costly technology may not be in all developing countries' best interest
- Open source, free software and data set that meet REDD+ requirements are available. If not, new tools can be developed

Forest monitoring system : Brazil

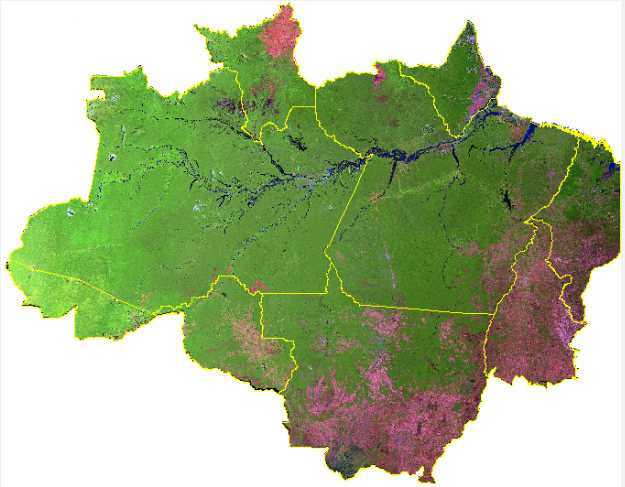
- **PRODES – Amazon Deforestation Monitoring Project**
  (Annual Deforestation Assessment)

- **DETER – Near real-time Deforestation Detection with MODIS**
  (Support for Law Enforcement for Deforestation Control)

- **DEGRAD – Amazon Degradation Monitoring Project**

- **DETEX - Selective logging activities**

- **TerraClass - Land use monitoring of deforested area (2008)**



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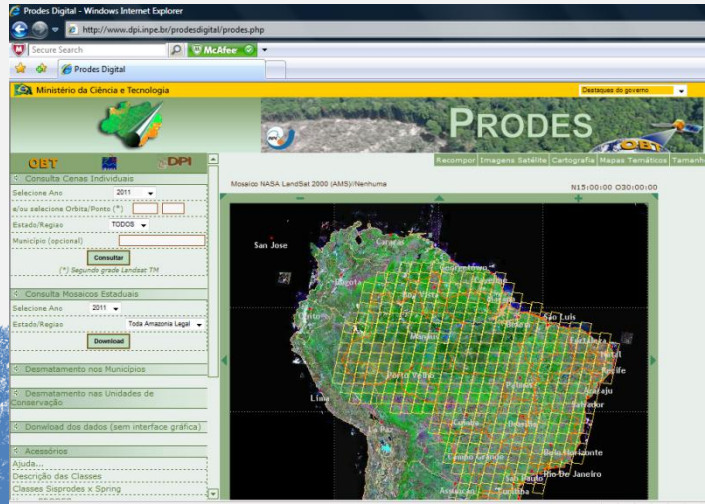

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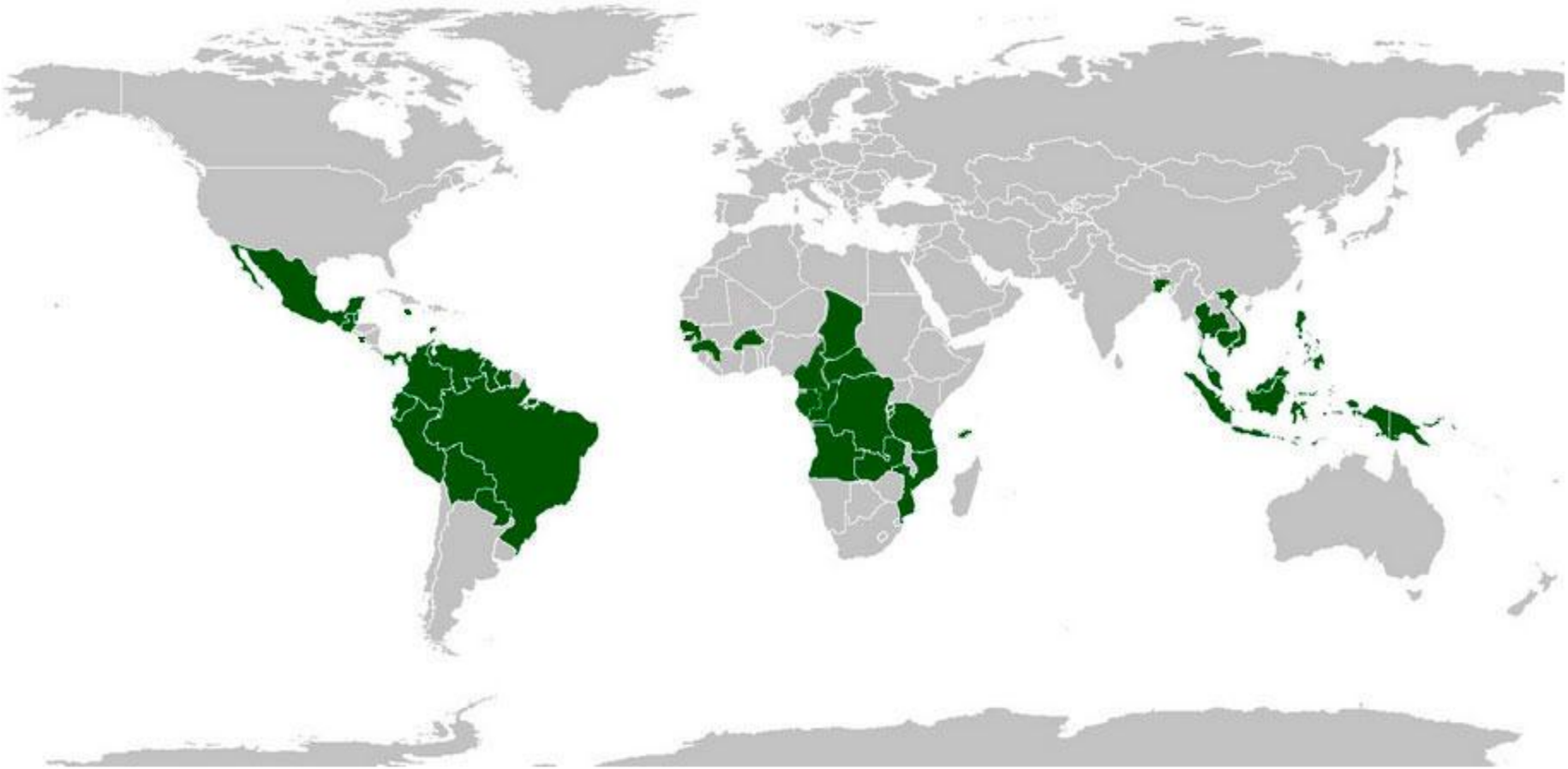
FAO-INPE collaboration



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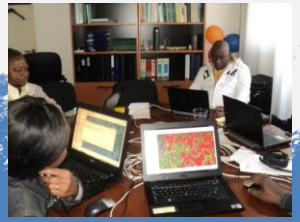
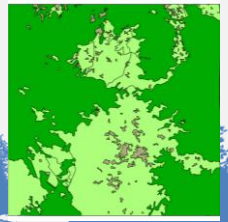
FAO-INPE collaboration

Implementation of TerraAmazon in developing countries:

- Free-of-charge and supported by analysis and programming teams in Brazil (Funcate) and FAO HQ
- Training on software utilities and Brazilian national forest monitoring techniques at INPE CRA Amazonia, Belem, Brazil
- Close collaboration BMU ICI, UN-REDD and INPE
  - 2015: Plug-ins in TerraAmazon
- Training material for radar training in development
- Follow-up and country implementation in FAO-HQ/country





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FAO/UN-REDD capacity development activities and support to REDD+ in Asia Pacific region

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Development of National Forest Monitoring System (NFMS) Action Plans

Through targeted support, in:

- Bangladesh, Bhutan, Mongolia, Myanmar and Pakistan

And through UN-REDD National Programmes in:

- Cambodia and Sri Lanka

These NFMS APs provide **'roadmaps'** for countries to develop institutions and capacities necessary for building a NFMS suitable for Monitoring and MRV of a national REDD+ Strategy, as well as fulfilling broader national monitoring needs of the forest sector.

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National-level NFMS training events

- Series of capacity building workshops on:
  - National Forest Inventory development;
  - Satellite Land Monitoring Systems and
  - Greenhouse Gas Inventory development
- provided through targeted support in:
  - Bangladesh, Bhutan, Mongolia, Myanmar, Pacific Islands, Pakistan, Philippines
- And through UN-REDD National Programmes in:
  - Cambodia, Indonesia, PNG, Sri Lanka and Vietnam

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Regional-level training events

- National Forest Monitoring Systems and Forest Reference Levels (FREL and FRLs):
  - Bangkok, 2013 and Hanoi, 2014
  - Representatives from 20 countries
  - In partnership with USAID, GIZ and other partners
- FREL experience sharing workshop:
  - Siem Reap, 2015
  - Cambodia, Indonesia, Malaysia, Nepal, Vietnam
- FREL training Pacific region
  - Suva, 2015
  - Fiji, PNG, Solomons, Vanuatu

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FRL development

- Supported Viet Nam FRL development process, 2015: FRL submitted January 2016; support to ongoing assessment process
- Supported Cambodia FRL development process, 2015: FRL complete but submission pending
- National FRL inception workshops and FRL roadmaps developed in:
  - Bhutan, Myanmar, Nepal, PNG, Sri Lanka (all except Myanmar aiming for submission by January 2017 with ongoing FAO support – Myanmar in 2018)

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NFI design

- NFI design completed: Cambodia, PNG
- NFI design ongoing: Myanmar, Sri Lanka (*in collaboration with Forest Survey of India*), Vietnam (*revision of NFI methodology, pending government endorsement*)
- NFI implementation and data interpretation supported: Bhutan

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Web portal development

For transparent, real-time access to forest data and information, satellite images and forest cover change, monitoring of the implementation and impact of REDD+ policies and measures

- Completed: PNG, Vietnam
- Under development: Cambodia, Sri Lanka

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REDD+ Strategy development

- National REDD+ Strategy development process: ongoing in Myanmar and Sri Lanka
- Sub-national planning processes:
  - Provincial REDD+ Action Plans in 5 provinces of Viet Nam
  - District REDD+ Action Plan in 1 district of Nepal
- Institutional, Policy, Legal and Regulatory analysis:
  - Nepal, Pakistan and Sri Lanka
- Forest and land tenure in the context of REDD+:
  - Lao PDR, Sri Lanka and Viet Nam

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"REDD+ Academy"

A package of 12 modules developed by all three UN-REDD agency partners , covering all aspects of REDD+ under the UNFCCC

- Regional pilot "REDD+ Academy" event: Yogyakarta, 2014
- National-level "REDD+ Academy" ToT events:
  - Bhutan, Myanmar, Viet Nam
  - Modules refined by UN-REDD regional team and adapted to national contexts
  - http://www.unredd.net/index.php?option=com_content&view=article&id=2080&Itemid=525

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What we've learned

- **A few dedicated individuals can make all the difference**
  - Use of international advisors hand-in-hand with national technicians
- **Need to see capacity building in broader terms**
  - Training of resilient national institutions and consultants
  - Mandate of institutions should be clear
- **Integration NFI and RS, as well as integration of global data and national (local) knowledge**
- **On-the-job training is key**
  - Trainings are geared towards producing results
  - Essential to get faster delivery
- **Sharing data and data access is crucial and key: data sharing agreements for national products**
- **Near-real time monitoring for early warning (e.g. Global Forest Watch), not for reporting of AD purposes in se**
- **Resilience is often at risk**
  - Easy to develop quickly elements of NFMS, but resilience will be lacking
  - Long-term commitment is required by government and partners in order to secure sustainability

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Thank you for your attention!

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