



SATUAN TUGAS PERSIAPAN KELEMBAGAAN

REDD+

MRV requirements for partner countries :
Current effort in Indonesia

Dialogue on Satellite data and monitoring systems for REDD+
BMZ, Bonn, 5 Oct, 2012

- **Main Concept**
- Current effort
- What is needed for REDD+ MRV?

REDD +

Reduction of
Deforestation

Reduction of
Forest
Degradation

Conservation
of Carbon
Stock
(FOREST &
PEAT LAND)

Sustainable
Forest
Management

Increasing of
Carbon Stock

Reduction of Emissions by
Reduce Deforestation and
Forest Degradation
(CARBON SOURCE)

Conservation and enhancement of carbon
sequestration
(CARBON SINK)

Emission Monitoring

= PERIODIC MEASUREMENT – INITIAL MEASUREMENT (RL/REL)

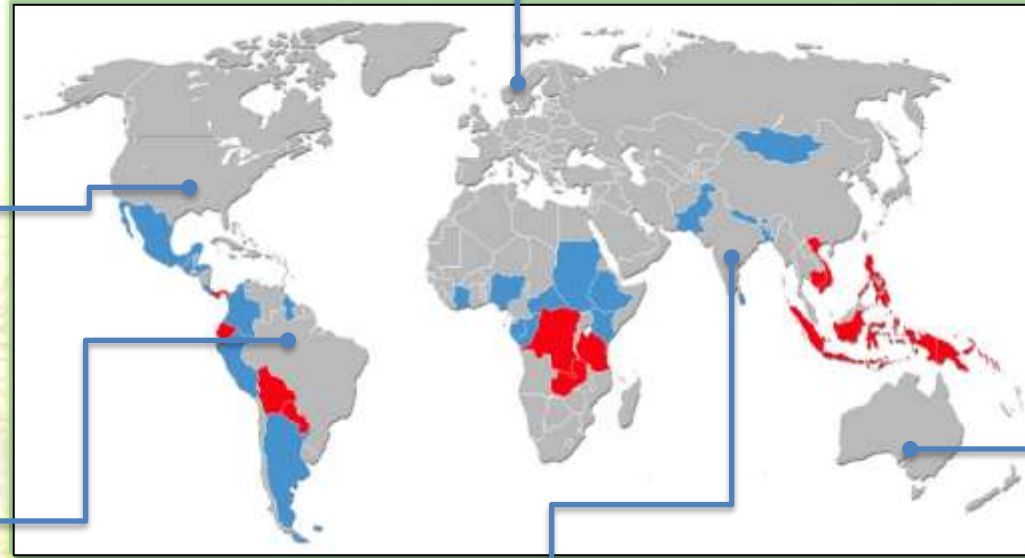
AMOUNT OF EMISSIONS REDUCTION



USA



- **Forest Inventory and Analysis (FIA)** : USDA-FS since 1952
- **Natural Resource Inventory (NRI)** : USDA-NRCS
- **National Land Cover Dataset (NLCD)** : USGS



NORWAY



- **National Forest Inventory (NFI)** : 11.000 permanent plots with 3x3 km intervals since 1952
- **Natinal Land Monitoring**: Landsat image, aerial photographs, InSAR and LiDAR

BRAZIL



- **Prodes** : Annual deforestation monitoring
- **DETER** : Near real-time deforestation monitoring
- **DEGRAD** : Forest degradation estimation

INDIA



- **Forest cover monitoring** : Landsat and IRS images
- **National Forest Inventory** : three classes of forest density
- **Forest Fire Early Detection**: Modis image

AUSTRALIA



- **National Carbon Accounting System (NCAS)**:
 - Ecosystem model **FullCAM** (satellite image, climate, soil type, land management database)

Key :
L = Low
H = High
F = Forest
D = Deforestation



Challenges

- Geo-biodiversity characteristics in three *Eco-regions* (*Sundaland, Wallacea, Sahul*)
- Persistent cloud cover especially in densely forested area
- Diversity of deforestation rates and degradation rates for forests in each sub-national region (e.g. the historical deforestation rate in Riau is different from that of Papua or West Kalimantan)

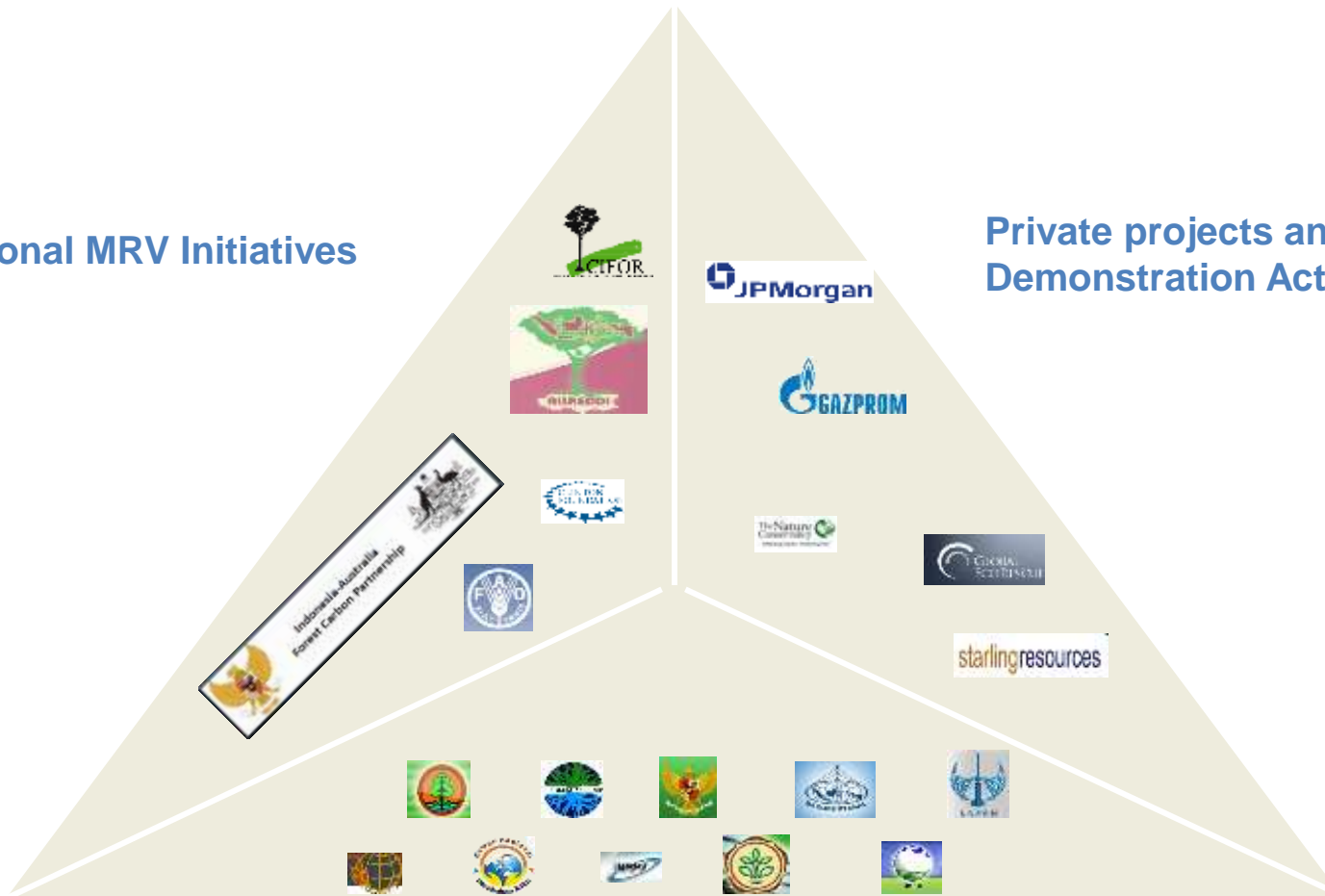
Potential solutions

- **National approach with sub-national implementation :**
 - *Nested Approach* (Open an preliminary initiative via sub-national activities and incrementally move towards a National approach)
 - *Scalable Approach* (Scaled measurements from the nasional to sub-nasional level using a standardized system)
- Data integration using administrative borders (e.g. regency and province borders) or natural borders (e.g. watershed borders, ecoregions, land systems, etc)

- Main Concept
- **Current effort**
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National MRV Initiatives

Private projects and Demonstration Activities



Government institutions

MRV capabilities are currently scattered between several ministries

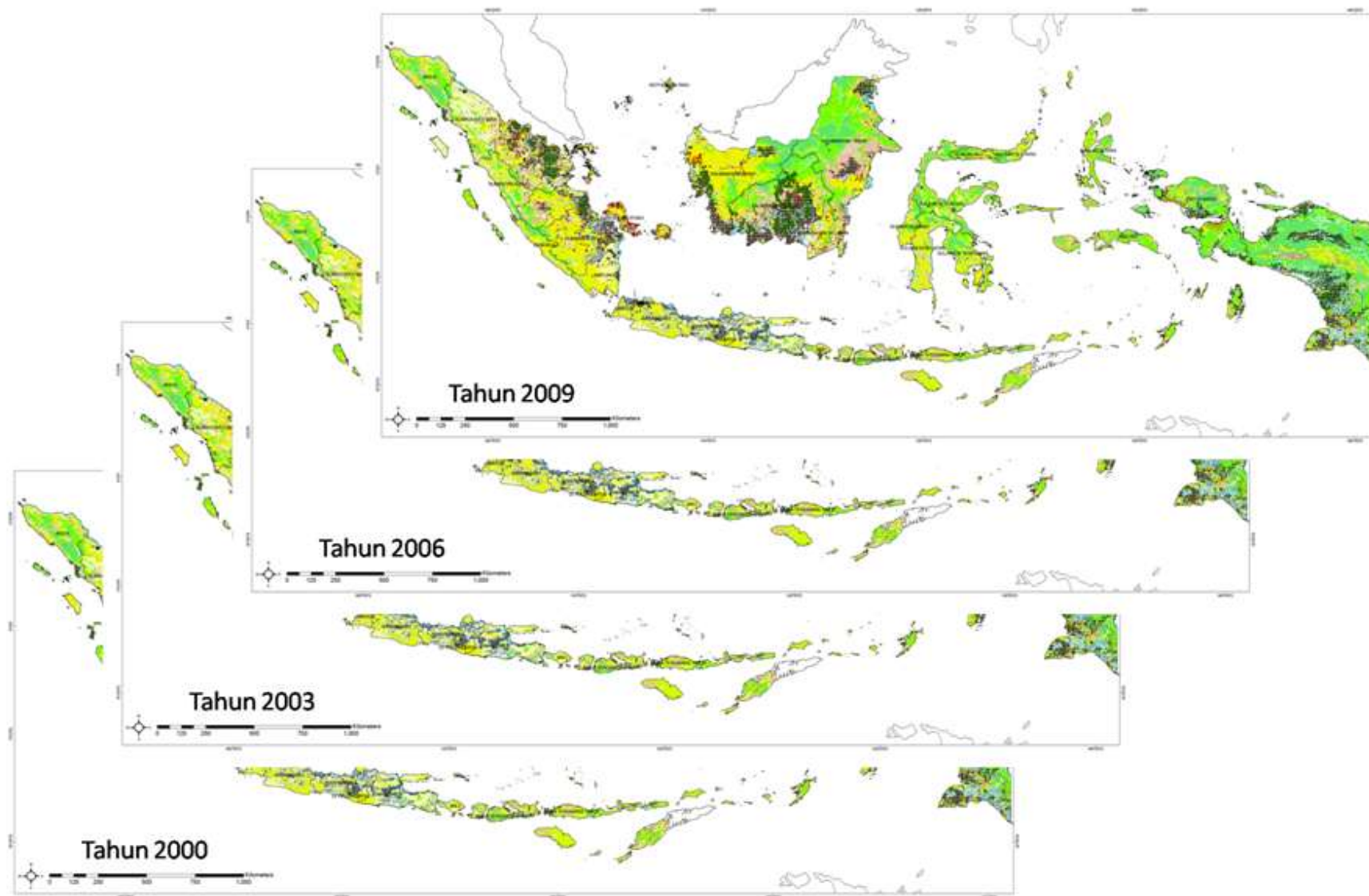
SATGAS PEMBENTUKAN KELEMBAGAAN REDD+

✓ Implementing capabilities

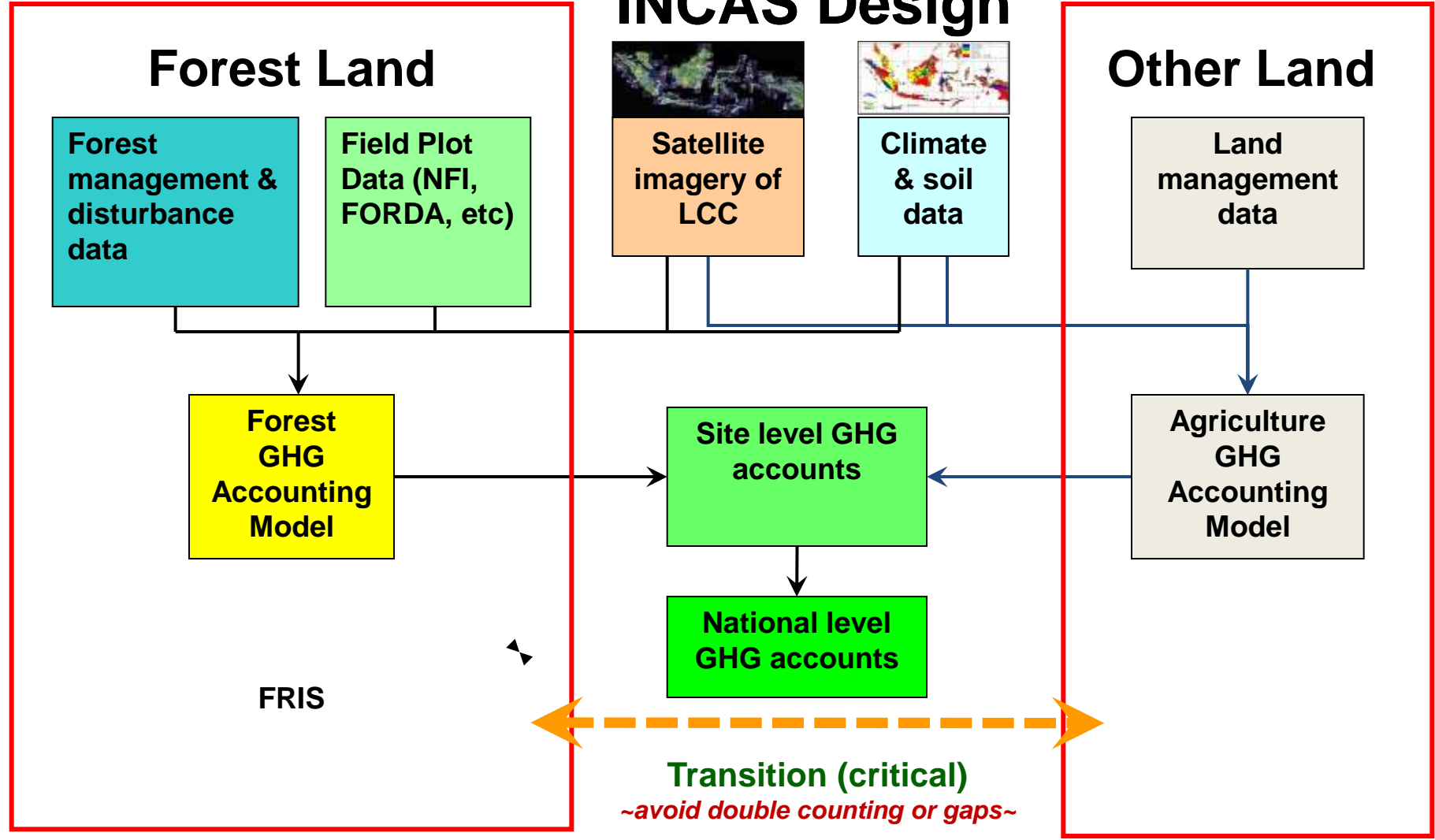
PRELIMINARY AND NON-EXHAUSTIVE

		Ministry of Forestry 					KLH 	Lapan 	MoA 	Bakos- urtanal 	DNPI 	BPN 	ESDM 	
Tasks/Department		International relationship	Forest production	Planologi	Forest protection and natural conservation	Land rehabilitation and social forestry degradation and climate change control	Degradatino and climate change control	International relations	Remote sensing	Soil research institute	All agencies (base-line services)	All agencies	All agencies	Badan Geology
M	▪ Land use/land use change			✓							✓		✓	
	▪ Land cover/land cover change			✓			✓		✓		✓			
	▪ Biomass above ground			✓										
	▪ Biomass below ground									✓				
	▪ Dead wood			✓						✓				
	▪ Litter			✓						✓				
	▪ Soil/peat						✓			✓				✓
	▪ Forest conservation				✓									
	▪ Carbon enhancement					✓								
	▪ SFM		✓											
	▪ Inventory compilation			✓			✓				✓			
	▪ REDD+ projects													
	R	▪ International	✓					✓	✓	✓	✓		✓	
▪ Domestic				✓					✓	✓		✓		
▪ Donor		✓					✓	✓				✓		

FRM at National and Regional Level (Landsat/30 m and MODIS/250 m)

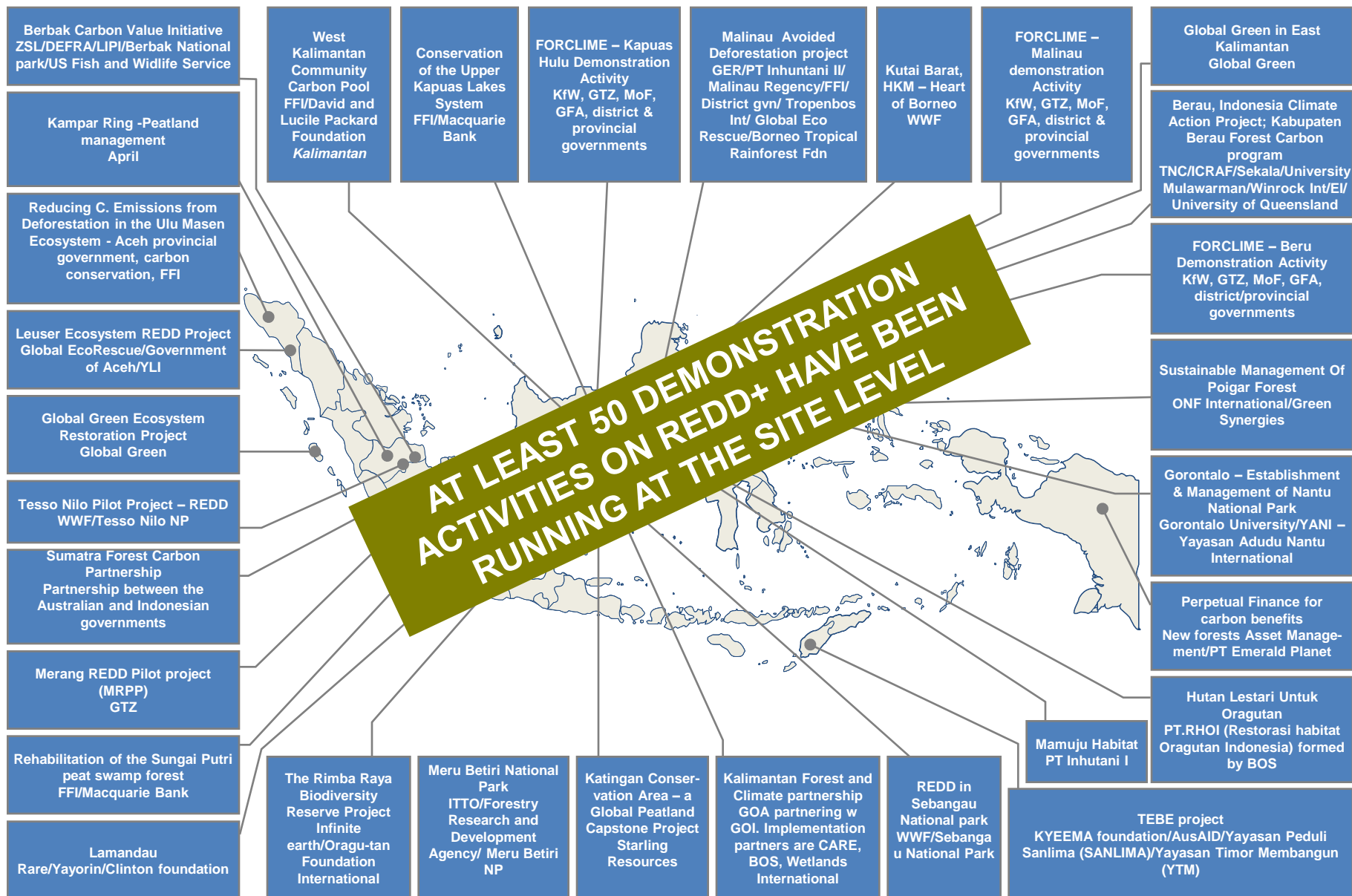


INCAS Design



Demostration Activities of REDD+: MRV initiative at site level

SATGAS PERSIAPAN KELEMBAGAAN REDD+



Note: This map was produced by CIFOR and North Carolina State University. Contributors – Stibniati Atmadja, Liwei Lin, Erin Myers, Daju Resosudarmo, Agus Salim, Ratih Septivita, Erin Sills. Contact person – Stibniati Atmadja, s.atmadja@cgiar.org. last updated – March 2010

2007

COP 13 in Bali

- Indonesia pushed forest as the priority agenda
- Paradigm shift: economic value of standing forest



2008

G20 summit, 26/41 targets

- Targets announced
 - Commitment to 26% emission reduction
 - Commitment to 41% reduction with international support



Jan 2010

Copenhagen Accord on REDD+

- Indonesia signs Accord
 - Prioritize deforestation
 - Elevate financing goals



May 2010

Indonesia-Norway Partnership

LOI signed

- Aligns with Indonesia policy and goals
- Supports infrastructure and implementation



National Climate Change Council (DNPI)

- Agency mandate
 - Generates policy
 - Coordinates climate change control efforts



Provincial REDD+ initiatives

- REDD+ working groups
 - Aceh
 - West Kalimantan
 - Central Kalimantan
 - East Kalimantan
 - Papua
 - West Papua
 - Riau
- Except Riau, all of above is part of global-level GCF



Provincial Low Carbon Growth Plans

- Low carbon growth plans have been developed at province level with DNPI, e.g.
 - Kalteng
 - Kaltim
 - Jambi



REDD+ Task Force established

- Presidential Decree signed to mandate the creation of a taskforce to prepare REDD+ infrastructure



Aceh: forest moratorium

- Aceh started implementing moratorium on its forest



Purpose

As a reference for Nationally Appropriate Mitigation Actions (NAMAs) which are connected with the land based sector (LULUCF)

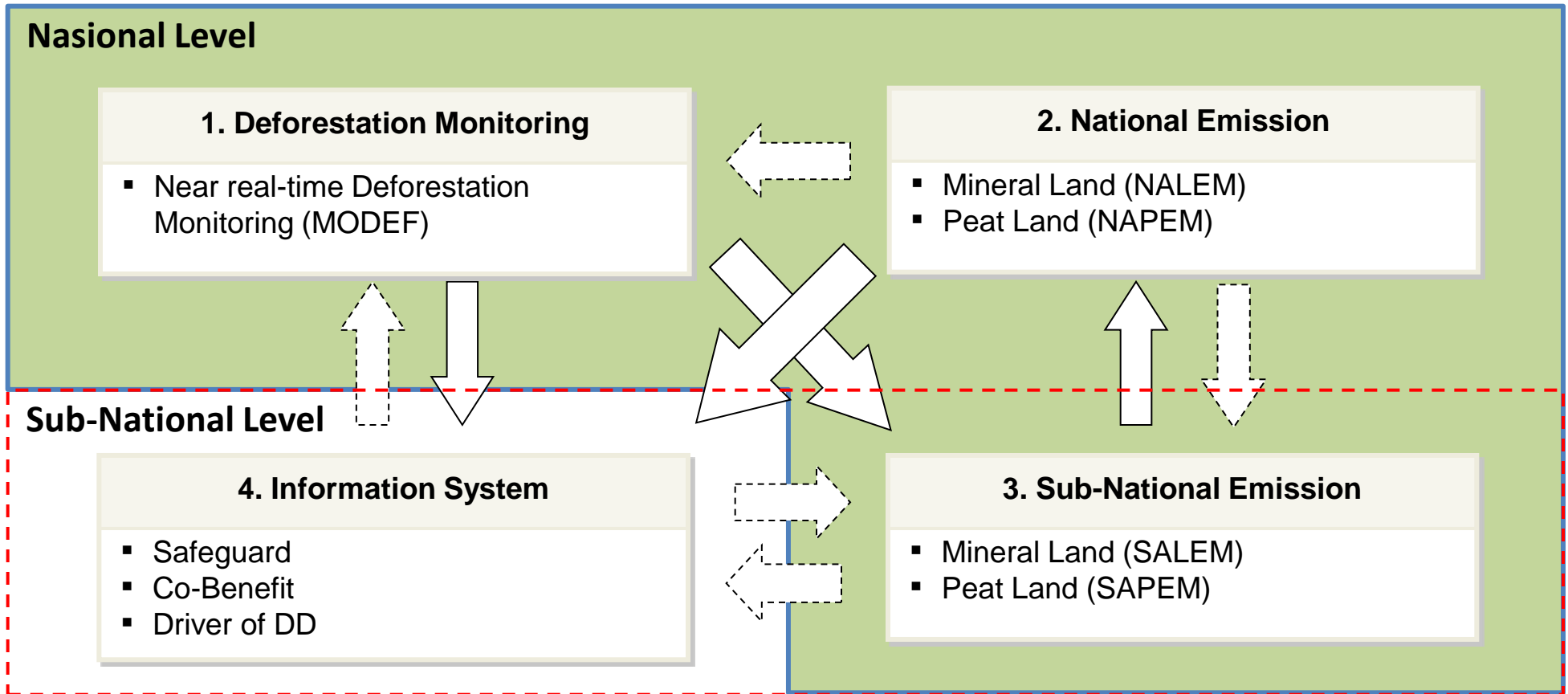
Scope

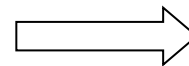
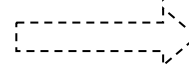
Measure, report and verify activities and emissions that are caused by the following:



1. Deforestation
2. Forest degradation
3. Carbon stock conservation
4. Sustainable forest management
5. Increasing carbon stock
6. Peat Land management

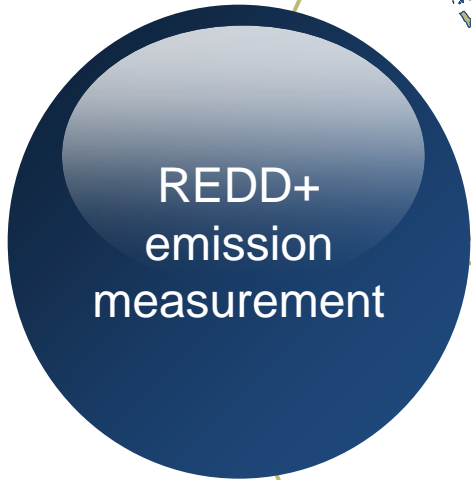
Concepts of the MRV system

- **National Deforestation Monitoring (MODEF)**
 - Conduct near real-time monitoring of deforestation in order to identify regions with high unplanned deforestation.
- **Monitoring of Land Based Emissions**
 - Measuring land based emissions comply to the IPCC standard
 - National level (NALEM)
 - Conducted every 2 years
 - Sub-national level (ILEM)
 - Using a higher level of precision
 - Conducted every 2 years
- **Monitoring of Peat Land Emissions**
 - Measurement of emissions from peat lands
 - National level (NAPEM)
 - Conducted every 2 years
 - Sub-national level (IPEM)
 - Using a higher level of precision
 - Conducted every 2 years
- **Safeguards Information System**
 - Designing an information system for information transparency regarding safeguards

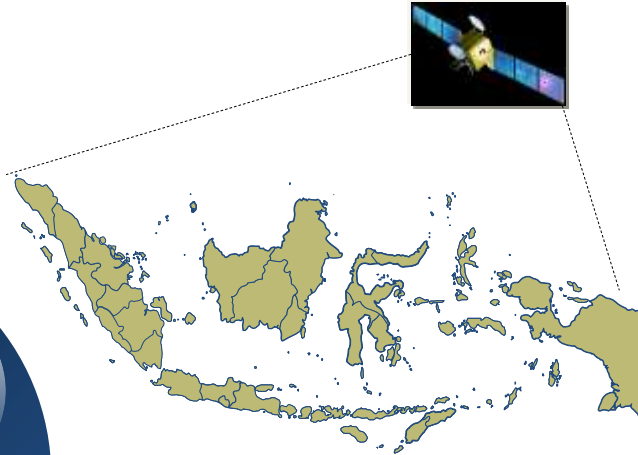


 Main information flow
 Information flow for *cross-checking/nesting*

 MR System MR
 Information System



National MRV



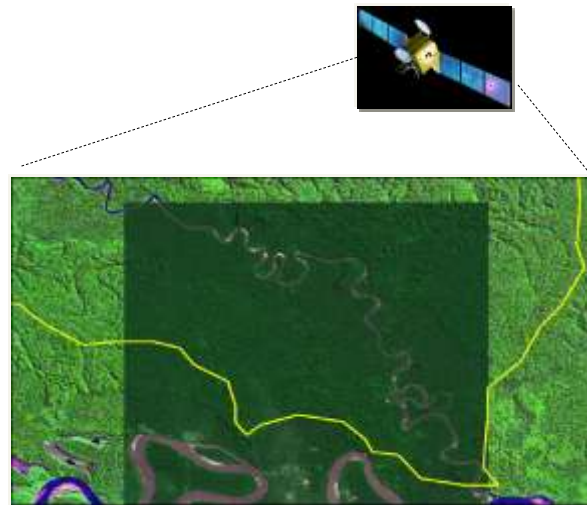
Goals

- Serving *public funding REDD+*

Characteristics

- National measurement
- National precision (*Tier 2* at minimum)
- National agreement/ Bilateral/multi-bilateral
- Not for carbon off-set
- High probability of underestimation

Sub-national MRV



Goals

- Serving *public funding REDD+*
- Serving private investment
- Serving REDD+ Carbon Market

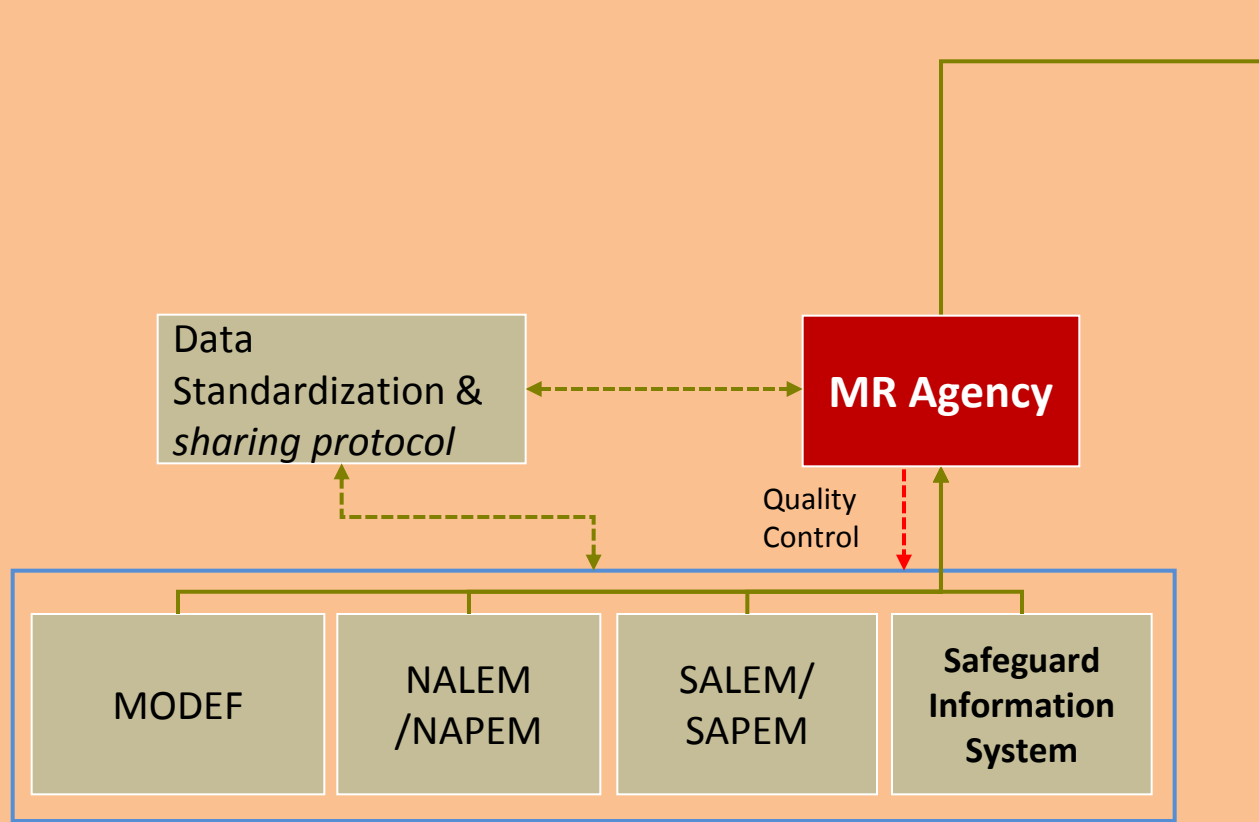
Characteristics

- Site implementation measurement
- High precision (*Tier 3*)
- Dedicated for carbon off-set mechanism (VER certified)
- Nested to the national MRV

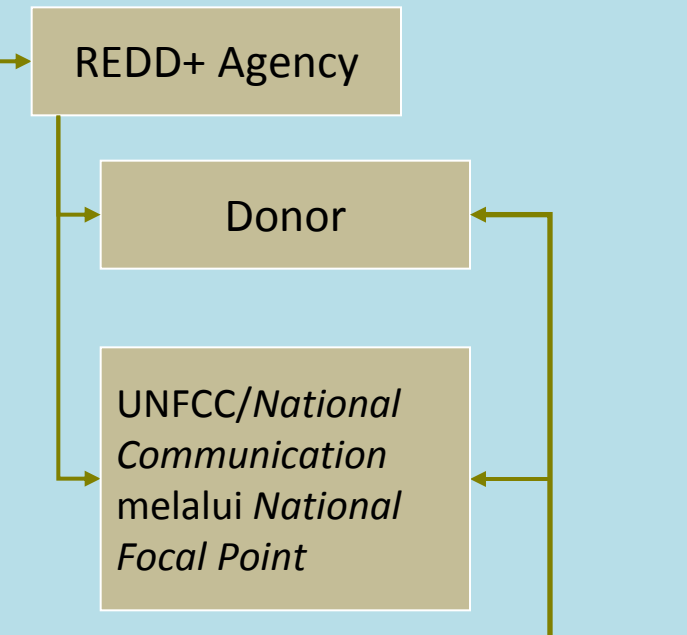
MRV REDD+ Mechanism

- Reporting
- ↔ Coordination
- Verification
- QC/QA

MEASUREMENT



REPORTING



VERIFICATION



- Main Concept
- Current effort
- **What is needed for REDD+ MRV?**

Data and methodology

- Tailored to national circumstances
 - Cost effective
 - Continuous improvement
 - Data Aggregation
-

MRV Mechanism

- Institutional arrangement at national and sub-national levels
- Policy and regulation
- Capacity building



SATUAN TUGAS PERSIAPAN KELEMBAGAAN

REDD+

Thank you !!! Danke !!!