

REFERENCE EMISSION LEVEL (REL)



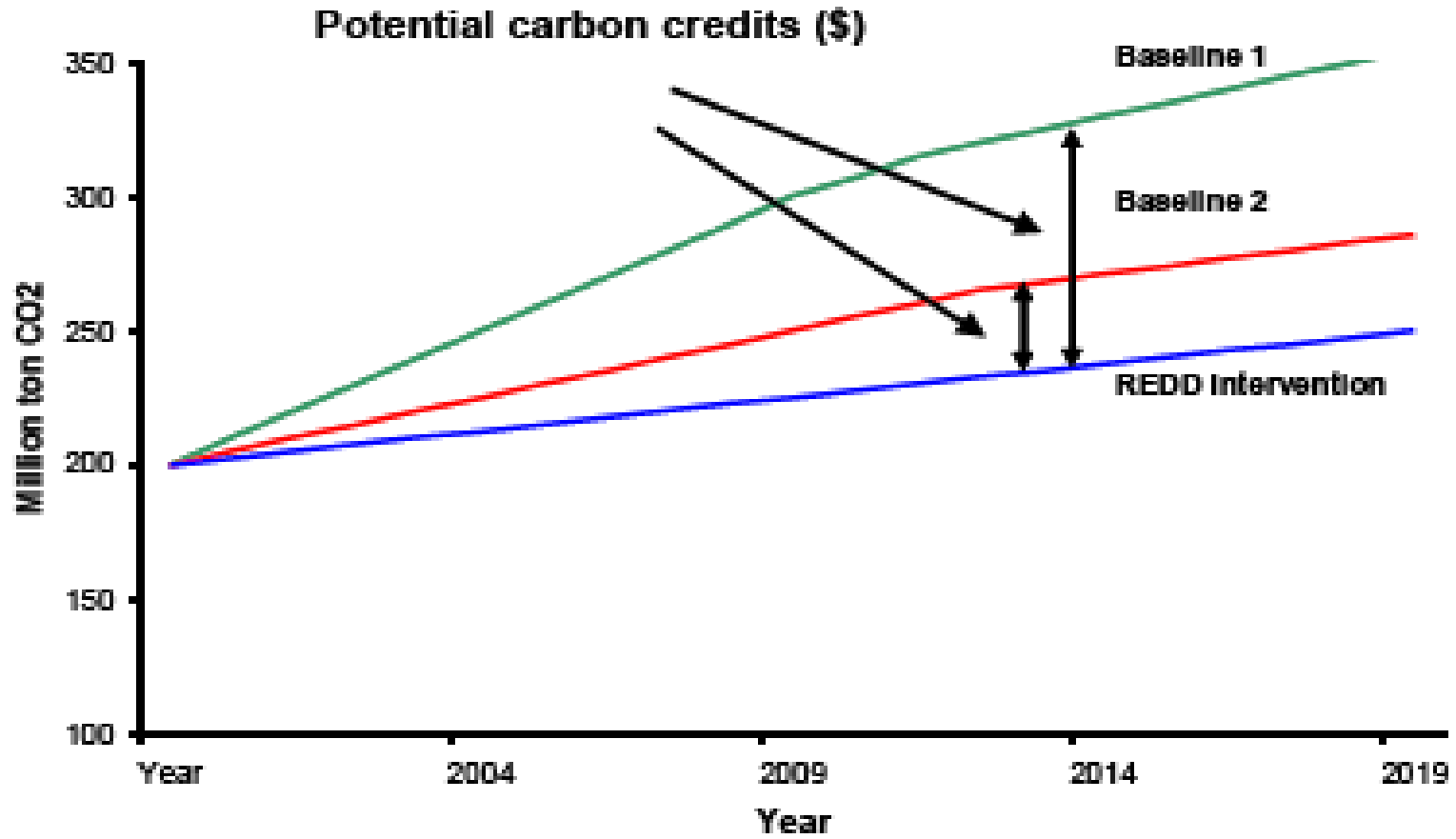
WARDOYO

DIT IPSDH - DITJEN PLANOLOGI KEHUTANAN

A REL/BASELINE (IFCA Study, 2008):

- **A projection of emissions from deforestation and forest degradation**
- **A reference for measuring reductions in emissions from deforestation and forest degradation**

REL vs EMISSION OF REDD





- **REL ESTABLISHMENT**

- **RESPONSIBILITY OF DITJENPLAN**
(Permenhut 30/2009 ps 15)

ACTIVITIES IN PROGRESS:

- **Developing National Carbon Accounting System (INCAS)**

- **Draft of Ministerial Decree (Permenhut) on REL**

Indonesia National Carbon Accounting System (INCAS)

Objectives:

- **To estimate GHG balance for all lands to enable national and international reporting**
- **To support implementation of REDD and other mechanisms**

Essential aspects of INCAS

- **National coverage:**
One system with complete coverage - all sectors, all tenures, internally consistent (avoiding double counting or gaps)
 - **Coordinated approach with input of multi disciplinary expertise from all relevant agencies**
 - **Enable fine scale GHG estimate that can be scaled up (bottom up approach)**
- **Transparency for auditing, international acceptance**
- **Continuity of data collection and system development (e.g. Australian model)**

INCAS will account:

- Biomass Carbon Changes (Trees, Roots, Dead organic matter)
- Soil carbon change
- Non- CO₂ GHG (Methane, Nitrous Oxide) emissions

Scope of Forest GHG accounting

- Forest management (harvest/regrowth)
- Disturbances (e.g. **Fire**)
- Conversion (natural forest → plantation)
- Deforestation and Forest degradation (transitions to new land use)
- Afforestation

Critical input to REDD

- Calculation of baseline (Reference Emission Level/REL) derived from fine scale estimates
- Leakage
- Tools for project GHG accounting

Major activities to commence INCAS

- **Remote sensing program**
(to provide a consistent complete fine scale time-series land cover change)
- **Development of models to enable GHG accounting & reporting.**
- **Data collection to drive the models**

INCAS Design

Forest Land

Forest management & disturbance data

Field Plot Data (NFI, FORDA, etc)

Forest GHG Accounting Model

FORECAS

Satellite imagery of LCC

Climate & soil data

Site level GHG accounts

National level GHG accounts

Other Land

Land management data

Agriculture GHG Accounting Model

Transition (critical)

Satellite Imagery of LCC

- Using satellite imagery to produce Land cover change (Forest/Non Forest)
- LCC is necessary to define spatial distribution of forest (carbon stock) and its changes over time (upscaling plot information)
- Mainly using Landsat (1990-2008)
- SPOT 4, Radar, MODIS, and other satellite imageries may be used to complement Landsat

GHG from Other land

- Multidisciplinary expertise is required especially from agriculture
- Transition from Forest into Non Forest or vice versa is critical and potentially overlooked
- MoAgr has capacity to account GHG from agricultural land
- Coordinated approach is essential

Progress to date

Remote Sensing Work

- ✓ Scene Selection (Landsat of 1990-2008)
- ✓ Pre-processing (Priority: 1997-2008)
- ✓ QA/QC (September 2009)
- ✓ Evaluating current LC for GHG purposes
- ✓ MODIS 250 m gap fill product

Biomass Work

- ✓ NFI data processing
- ✓ Searching and analyzing literature

Multidisciplinary coordination

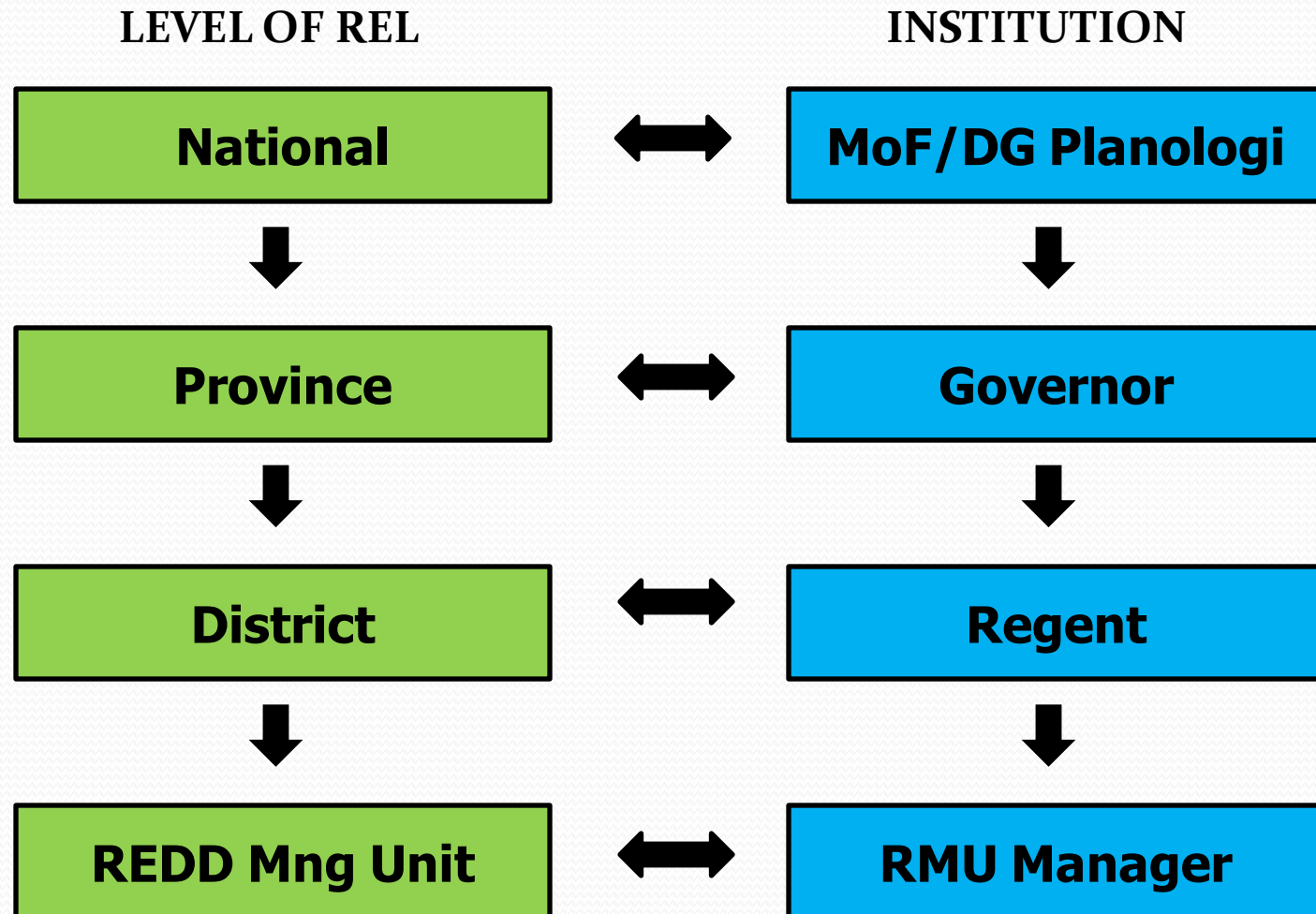
- ✓ Meetings: Lapan, Bakosurtanal, MoE, MoAgr, Universities, Research institutes etc

→ Draft of Ministerial Decree (Permenhut) on REL

1. How to translate REL?: national → sub national
2. Who set target of emission reduction?
3. Leakage
4. Monitoring & Reporting
5. Costs: Data, Equipment, Human resources

1. How to translate REL?: National → Sub national

LEVEL OF REL (Hierarchical Approach)

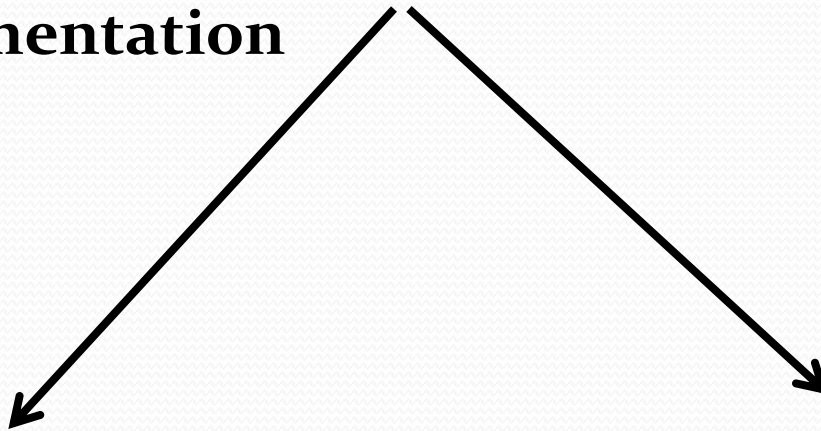


HOW TO TRANSLATE ??

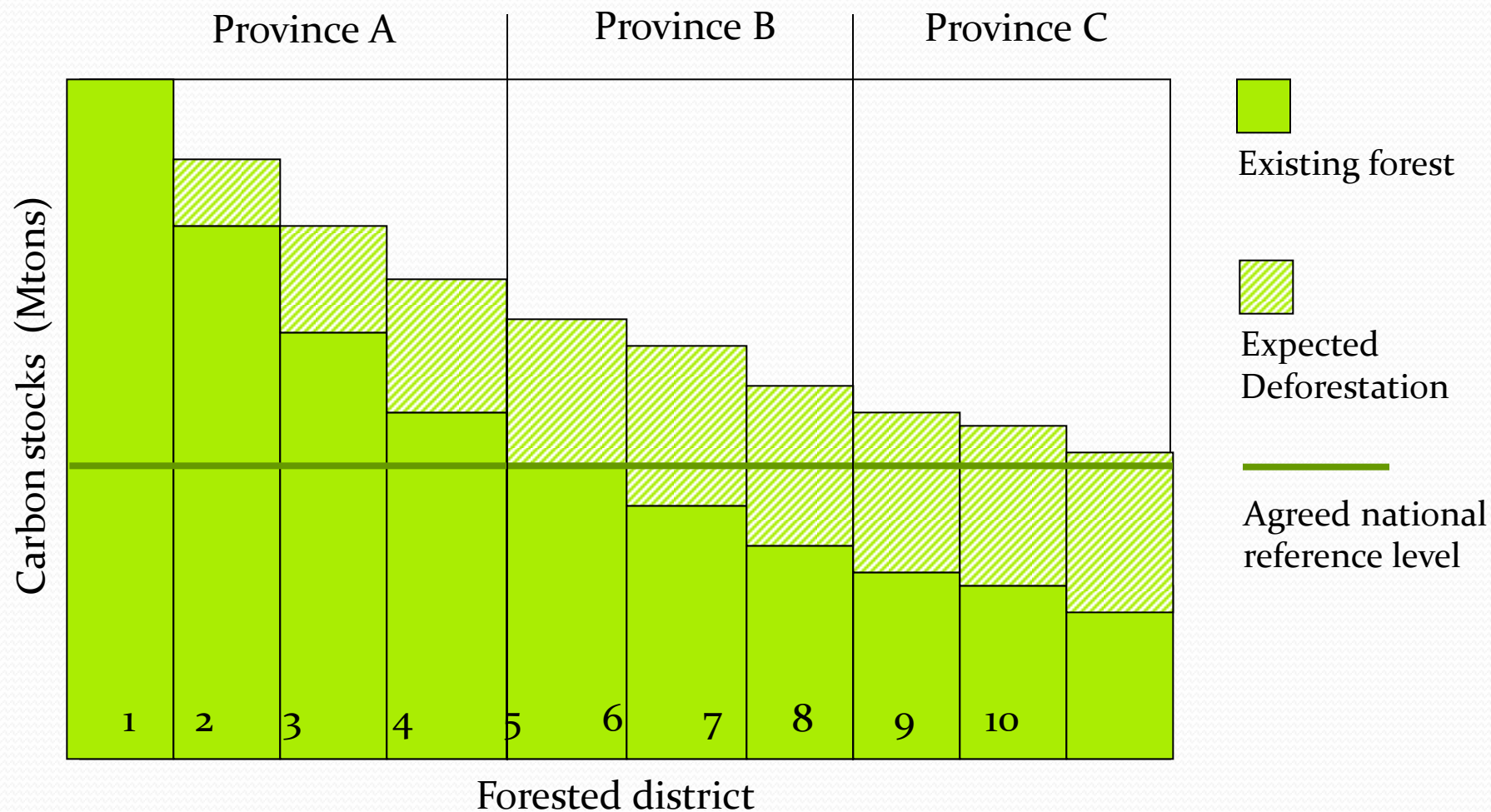
National Approach → Sub National
Implementation

QUOTA SYSTEM

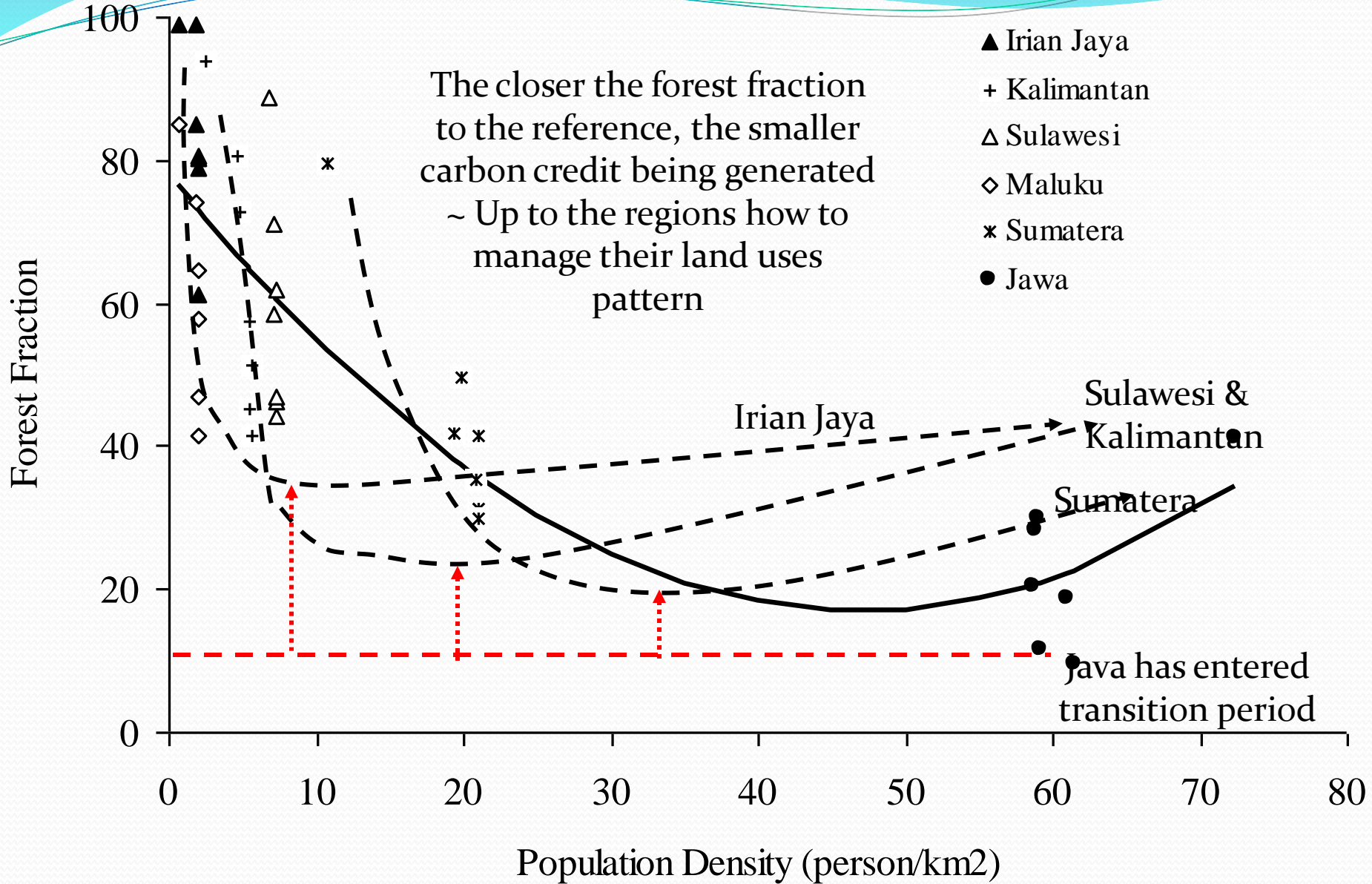
THRESHOLD VALUE



Calculating sub-national credits/debits



Applying threshold value (Approach 3.3)



2. Who set the target of Emission Reduction?

- Minister of Forestry sets the target
- Gubernur/Bupati is responsible for the target achievement
- REDD Mng Units in coordination with local govt plan to achieve the target

TIME FRAME

- REL valid for 5 years, should be renewed
- Historical emissions at least 5 years

3. Leakage/Emission Displacement

→Gub/Bupati control REDD implementation

→REDD Mng Units implement anti leakaged

4. Monitoring & Reporting

→ Min of Forestry - 3 years

→ Gubernur - 3 years

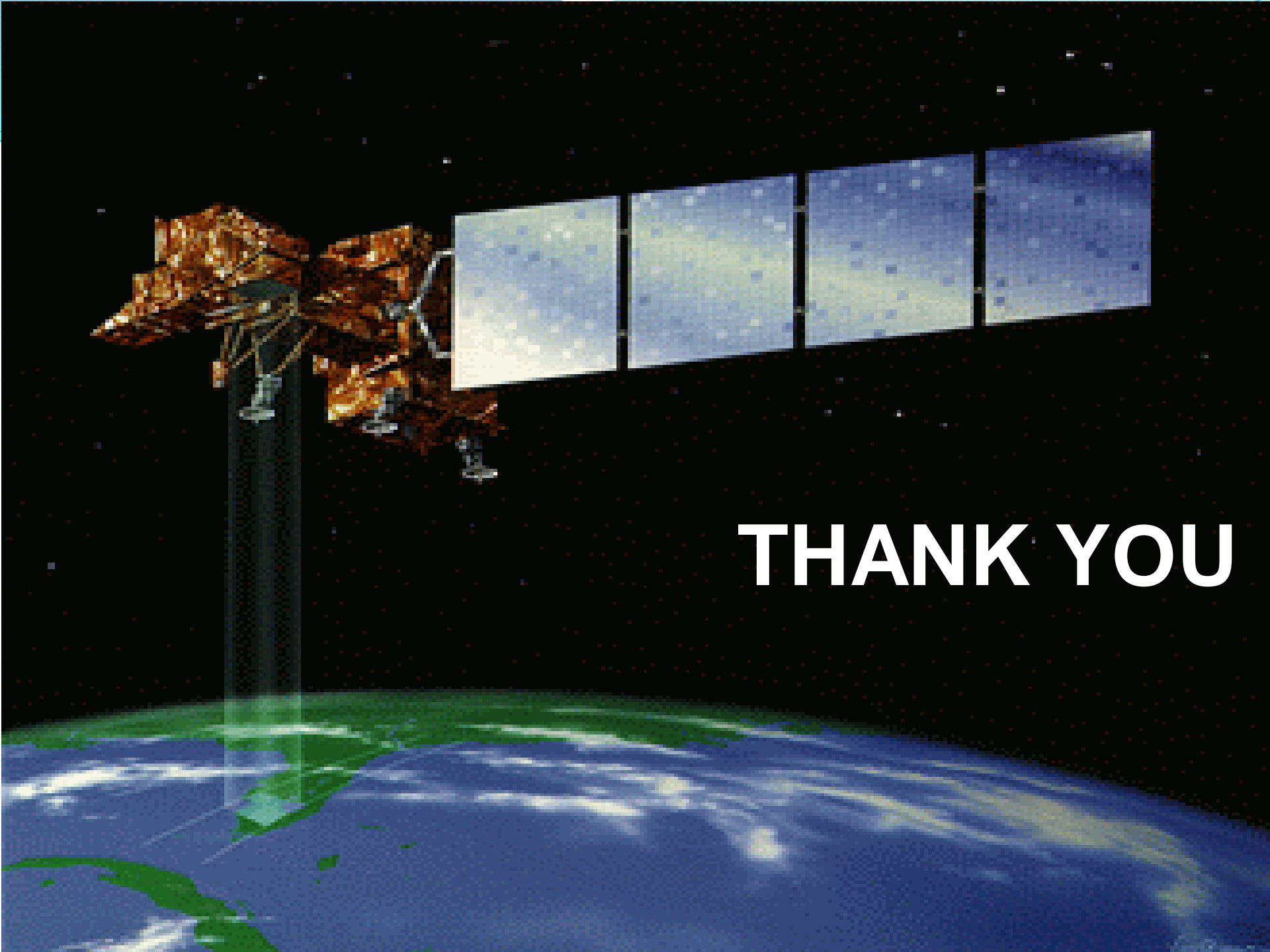
→ Bupati - 2 years

→ REDD Mng Units- 1 year

5. COSTS of:

- REL establishment,
- Monitoring & reporting

→ Budget from each level of institution,
and/or funding from other sources



THANK YOU