



Forest Carbon Partnership Facility

REDD+ Reference Levels: Insights from FCPF Country Early Proposals

Ken Andrasko
Rajesh Koirala

World Bank/Environment/Carbon Finance Unit and
FCPF Facility Management Team

FCPF -Winrock International workshop
Washington, DC November 9-10, 2011

FCPF Has 37 REDD Country Participants

Established collaborative partnership & transparent platform for meaningful exchanges on REDD issues



- **15 Donor Participants in Readiness Fund and Carbon Fund**
- **6 Observers**
- **Pioneered REDD readiness preparation process**
- **Carbon Fund seeks ~ 5 large pilot emissions reduction programs**

Cancun COP Text on Reference Levels (generic term, RL)

The Cancun COP *Decision 1/CP.16*, National Forest Reference Emission Level and/or Forest Reference Level

"71. (b) A national forest reference emission level and/or forest reference level⁶ or, if appropriate, as an interim measure, subnational forest reference emission levels and/or forest reference levels, in accordance with national circumstances, and with provisions contained in decision 4/CP.15, and with any further elaboration of those provisions adopted by the Conference of the Parties;

⁶ In accordance with national circumstances, national forest reference emission levels and/or forest reference levels could be a combination of subnational forest reference emissions levels and/or forest reference levels."

source: <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>

Definitions Remain Unclear: E.g., Forest Reference Emission Level (REL), Forest Reference Level (RL)

- Forest REL - the amount of gross emissions from a forest estimated within a reference time period?
- Forest RL - the amount of net/gross emissions and removals from a forest estimated within a reference time period?
- RL – “The BAU baseline developed by taking into account historic emissions and removals, adjusted as required by national circumstances to improve accuracy”. (Angelsen et al, 2011, CIFOR)
- FCPF use of “RL” – shorthand for FREL and/or FRL. Countries including REDD-plus sequestration activities probably will use FRL net emissions and removals . . .
- Crediting or compensation level: Estimate that credits will be based on, reflecting conservativeness and country dev. plans

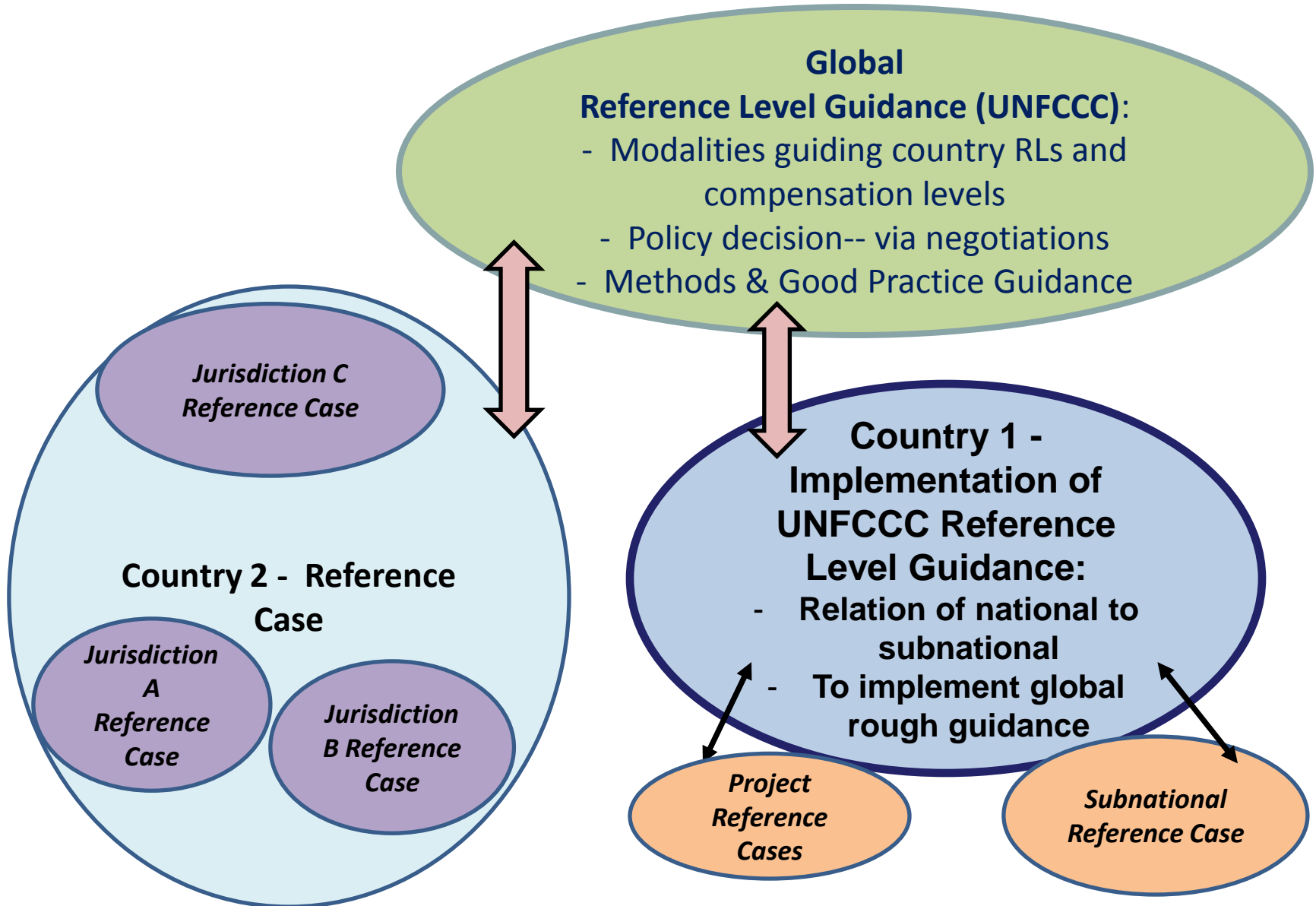
REL Definition Includes “National Circumstances”

- The SB 28 decision describes Reference Emissions Levels (REL) as:
“means to establish reference emission levels, based on historical data, taking into account, inter alia, trends, starting dates and the length of the reference period, availability and reliability of historical data, and other specific national circumstances.”
- Countries are only just beginning to explore what “national circumstances” means for their specific contexts (e.g, High Forest, Low Deforestation; x and y defor. drivers)
- . . . and for how they would set RLs

RL Problem Statement for Countries – May be How to:

- 1. Define national interests in RL issue in negotiations**
- 2. Resolve national / subnational RLs and C accounting**
- 3. Construct RL reflecting drivers of defor., and REDD-plus activities mix (eg, AR) in REDD strategy, & to monitor them**
- 4. Identify if national circumstances exist to make case for RL other than historic trend**
- 5. Assess current capacity and data, and then fill gaps in order to build capacity required for your REDD strategy**
- 6. Adapt IPCC GPG, GOLFC-GOLD & other methods to the REDD RL problem, inc. projections**
- 7. Consult with stakeholders & institutions about proposed RL.**

Reference Levels: Requires Harmonizing Global Guidance with National & Subnational REL Requirements



Three Major Approaches to RL Are In Use (for both historic and forward-looking RLs)

1. Statistical approach: Use forest inventory or remote sensing data periodic estimates
2. Geospatial (GIS) approach: Use key variables to represent land use change patterns, and to predict future patterns
3. Economic modeling approach: use economic and other variables to model nonlinear relationships driving land use

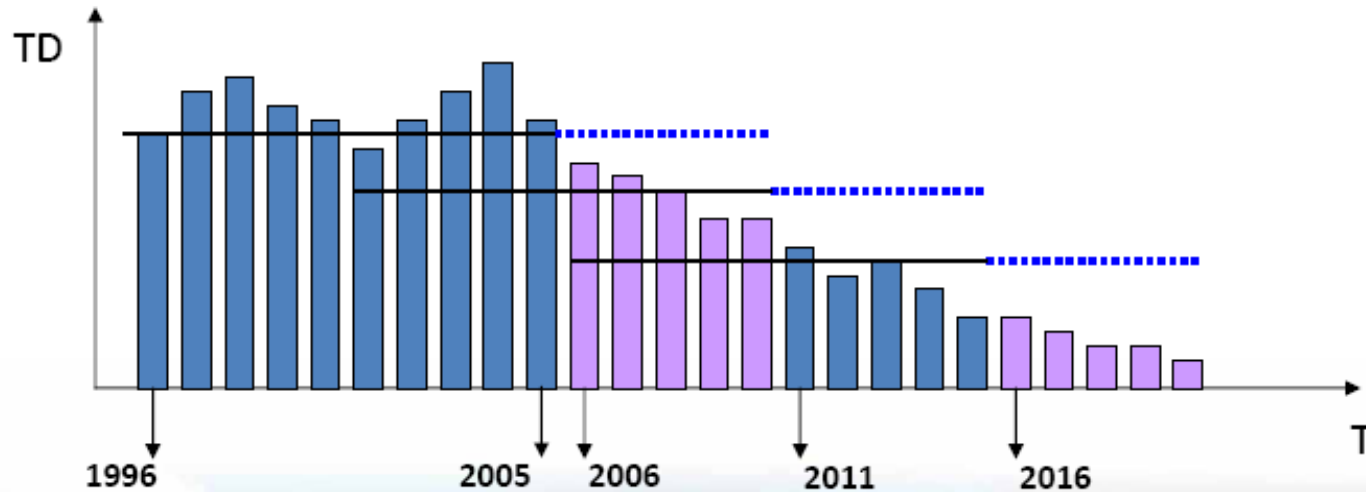
Point: Most FCPF countries use combination of 1 & 2, and some plan to use economic modeling (e.g., Congo Basin)

Brazil: Amazon Fund. Example of Statistical Approach for Historic Reference Scenario Using Annual + Default Data

AVERAGE DEFORESTATION RATE

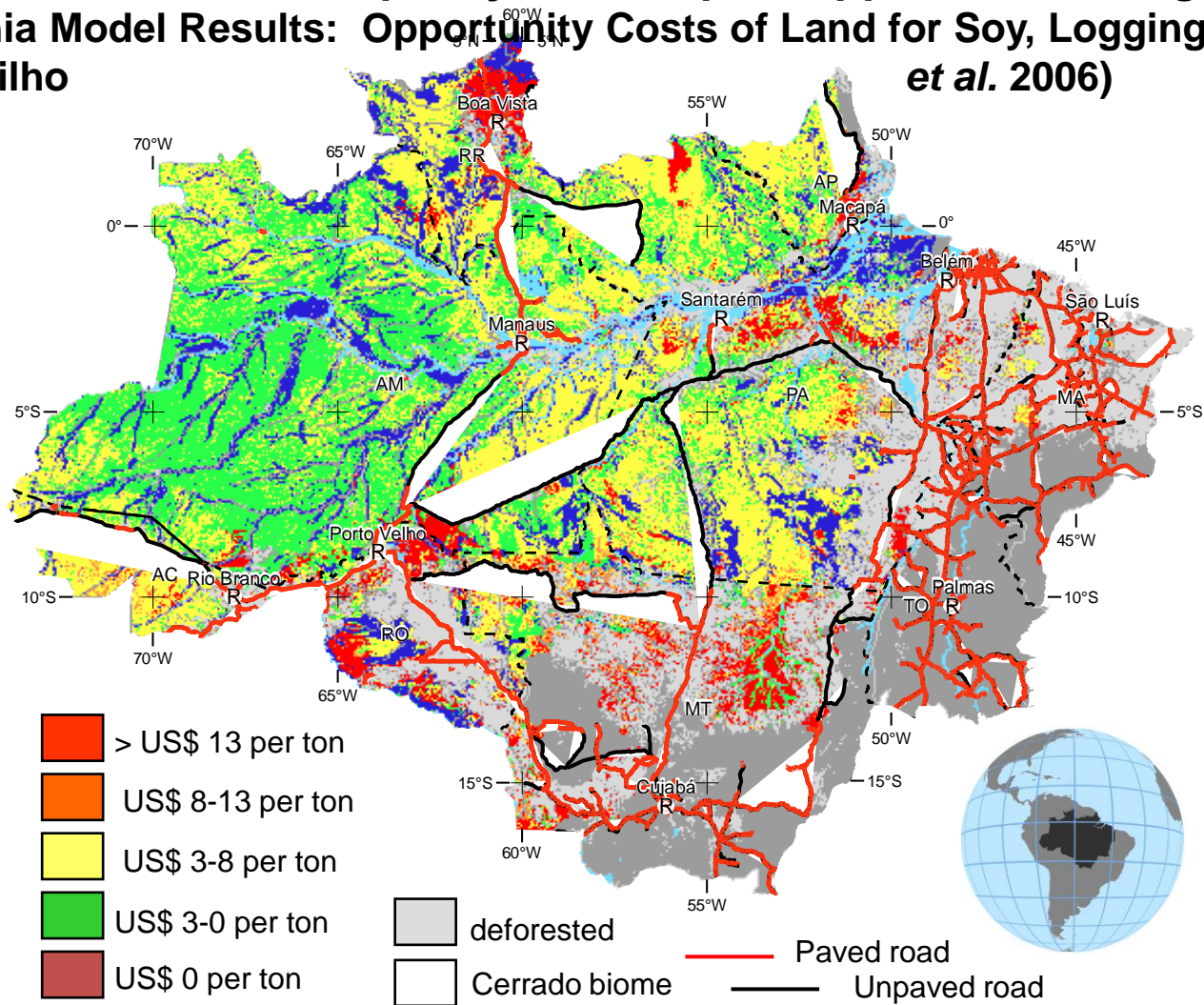
- Using 10 years average
- ADR revised every 5 years

Carbon density data limited, so use conservative 100tC/ha as default.



Year of Reference	Period for ADF calculation	ADF
2006 to 2010	1996 to 2005	1,95 million ha

Geospatial: Brazil's Capacity for Complex Approaches is high: SimAmazonia Model Results: Opportunity Costs of Land for Soy, Logging, Cattle (Soares-Filho *et al.* 2006)



Opportunity costs



Trends from FCPF country R-PPs: 1

National and Sub-national RLs

- **Countries that appear to be using national RL:**
 - Indonesia and DRC (but developing RLs for provinces)
 - Cambodia, Liberia, Nicaragua, Tanzania
 - Argentina (but with RL for each region)
- **Countries that appear to be starting at sub-national level, eventually building to national level:**
 - CAR, Vietnam, Peru, Colombia, Nepal, Ghana; Kenya?
- **Majority of countries plan to use some kind of nested approach, in reality**
 - Reflecting capacity constraints, and
 - Early actor regions or projects in countries

Trends from FCPF Country R-PPs: 2

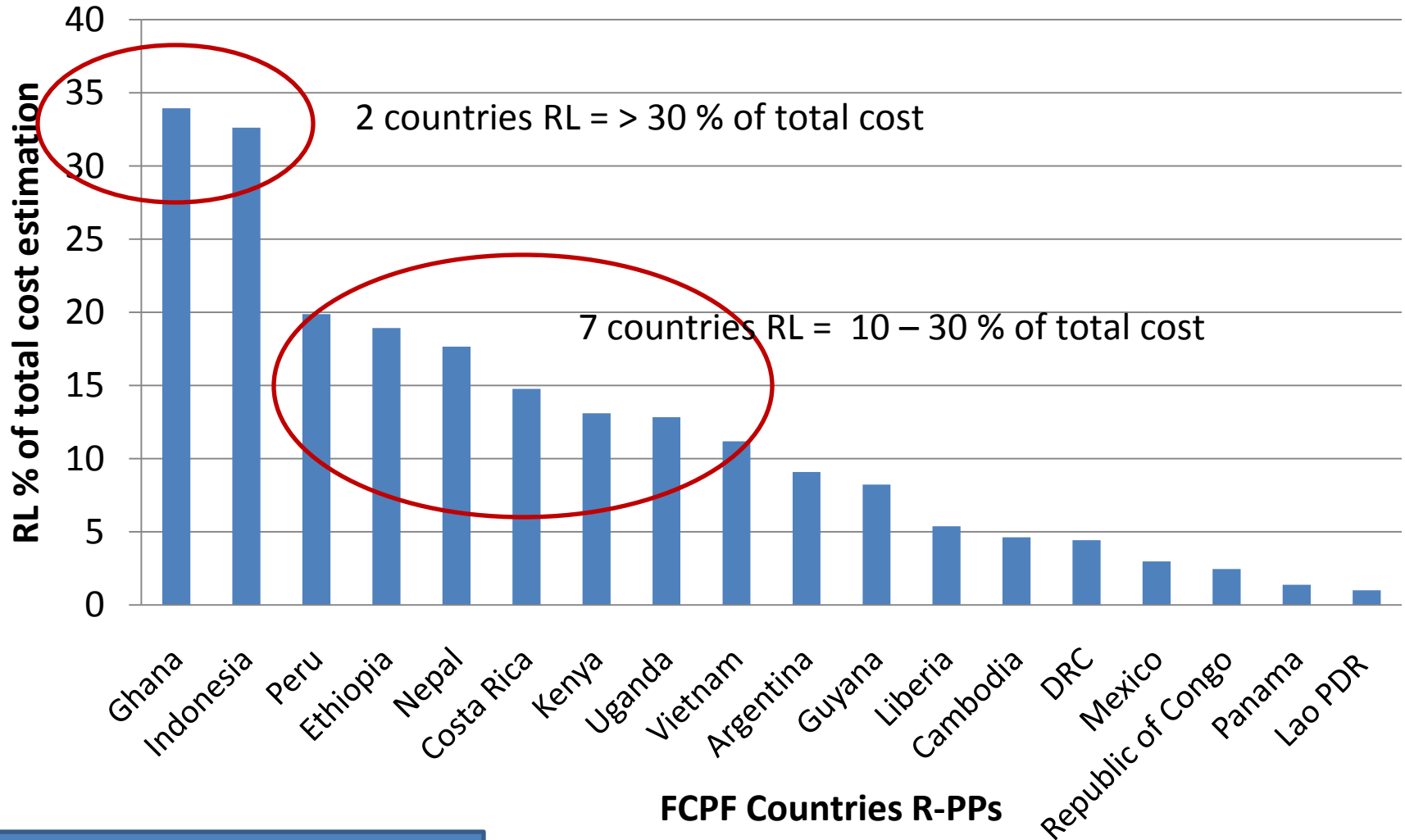
- **General RL Approach: 64% countries (16 out of 24) have proposed developing RL by analyzing historic trend, and projecting it into the future.**
 - Liberia to develop reference scenario from a combination of spatial analysis and econometric models, rather than applying a standard linear trend.
 - Lao PDR proposes to use simple projection of its 10-year development plan
- **Timeframe of RL historic or projected RL: 67% (8 out of 12) countries are taking 2000 as a base year for analyzing trend of deforestation and forest degradation**
 - 3 countries (25%) will use 1990
 - 1 country (8%, Lao) will use 1980.
 - How far into the future the countries will project trends is not identified (except for Lao, projecting until 2020).

Methods Issues: IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry

- **Most R-PPS mention country will follow IPCC Good Practice Guidance...**
- **But offer little if any other information, nor demonstrate they have capacity to do so.**
 - **IPCC approaches for representing land areas :**
 - APPROACH 1: BASIC LAND-USE DATA
 - APPROACH 2: SURVEY OF LAND USE AND LAND-USE CHANGE
 - APPROACH 3: GEOGRAPHICALLY EXPLICIT LAND USE DATA
 - **IPCC methodological tiers for estimating GHG emissions and removals**
 - Tier 1: Use default data
 - Tier 2: Use country-specific data
 - Tier 3: Use advanced methods and detailed country-specific data
- **Capacity Needs: Most countries have identified verification of existing data for their quality and consistency, and training and capacity development as immediate steps needed for RL work.**

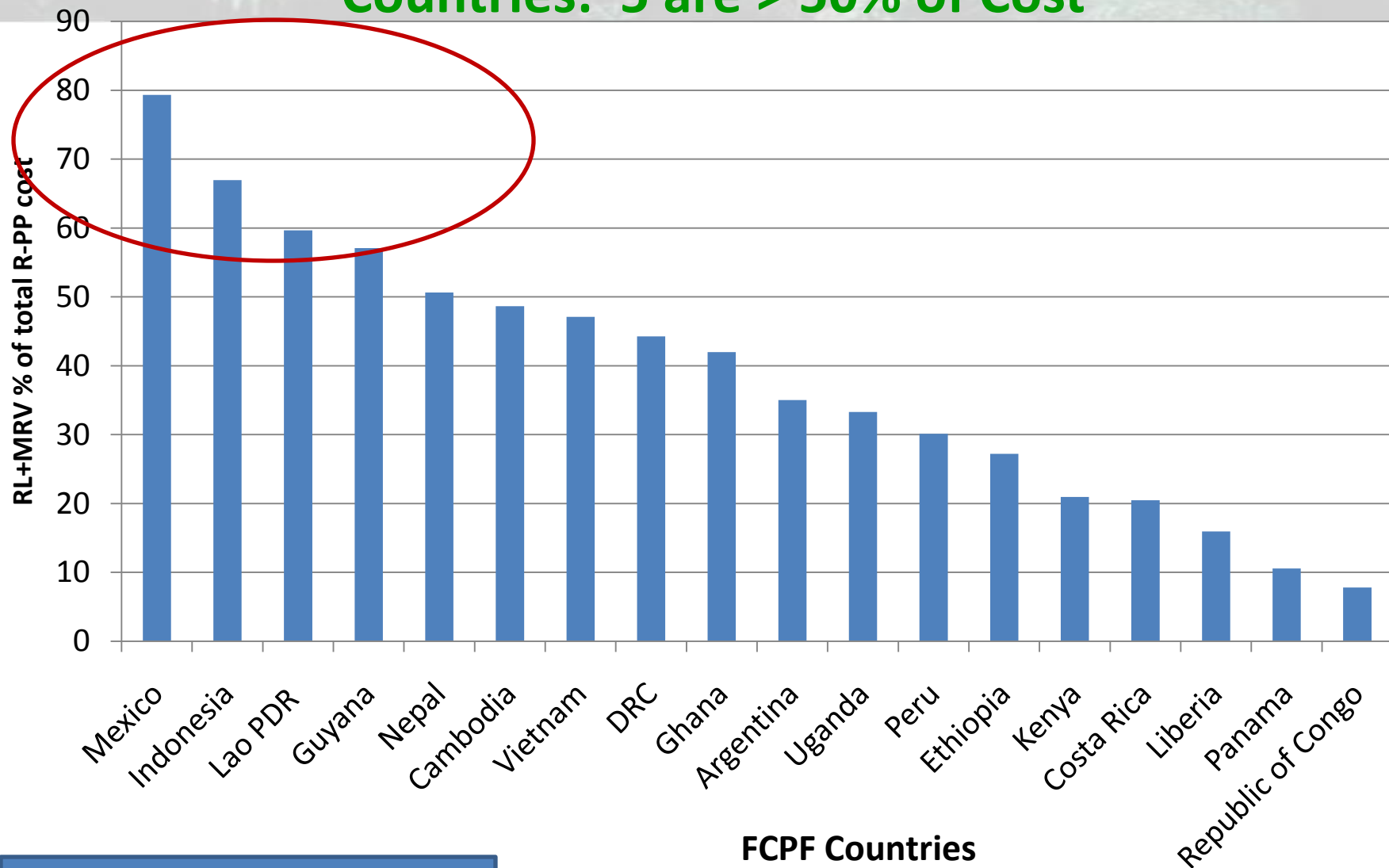
How Significant is RL and MRV Work in Country R-PPs?

RL as % of total R-PP cost estimate, for 18 FCPF countries



Source: FCPF Countries R-PPs available at <http://www.forestcarbonpartnership.org/fcp/>

RL and MRV % of Total R-PP Cost for 18 FCPF Countries: 5 are > 50% of Cost



Source: FCPF Countries R-PPs available at <http://www.forestcarbonpartnership.org/fcp/>

FCPF Country Considering A Wider Range of RL Approaches

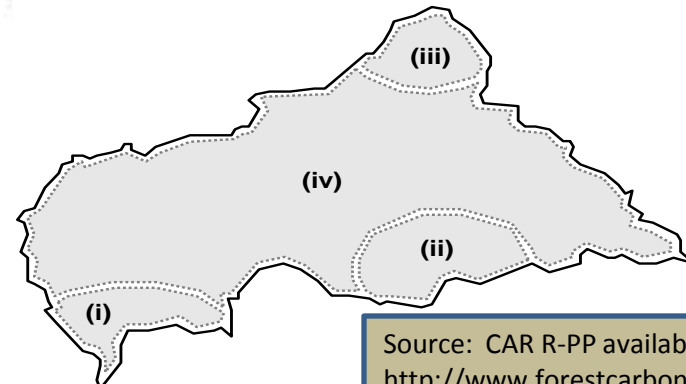
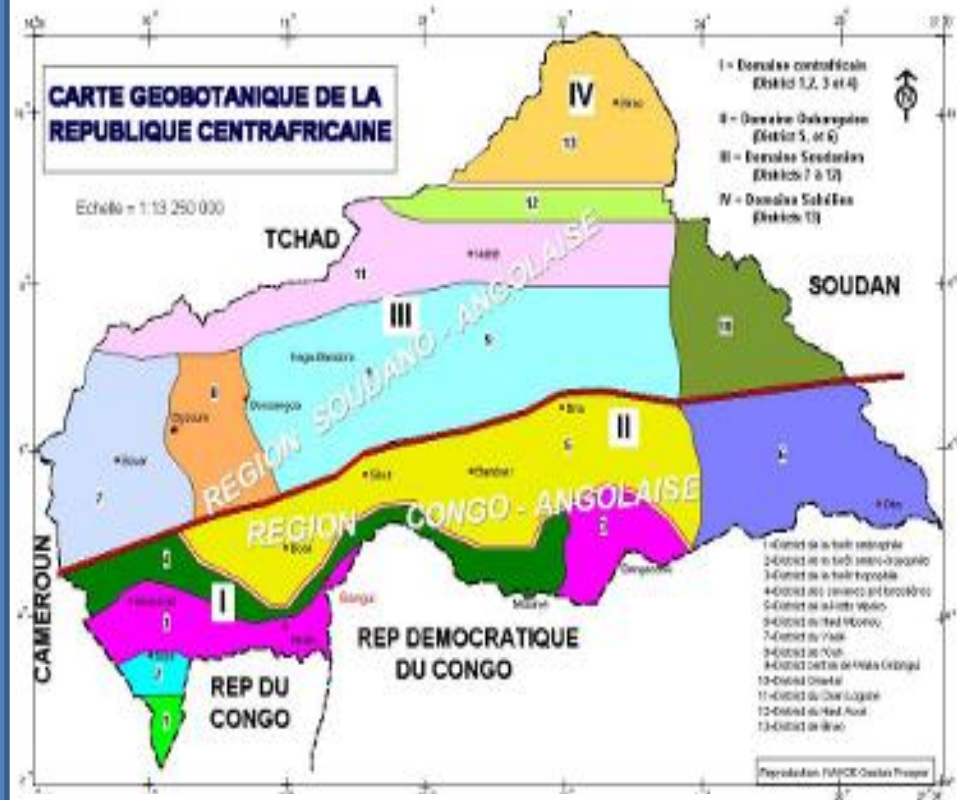
CAR Proposes to Divide Country into 4 zones for Sub-national RL -> National RL, & to Use Regional Modeling

Zones:

- (i) southwestern forest
- (ii) Bangassou Forest or southeastern range
- (iii) pseudo steppe with acacias and grassland savannas
- (iv) transition between the humid forest and the Sahelian zone

RL Approach:

1. Model a simple scenario based on a few input data for each zone
2. verify it with national map of the probabilities of deforestation produced by GEOMOD
3. Develop national reference level using CongoBIOM sub-regional modeling.
4. Compare bottom-up national reference level to a top-down national reference level.



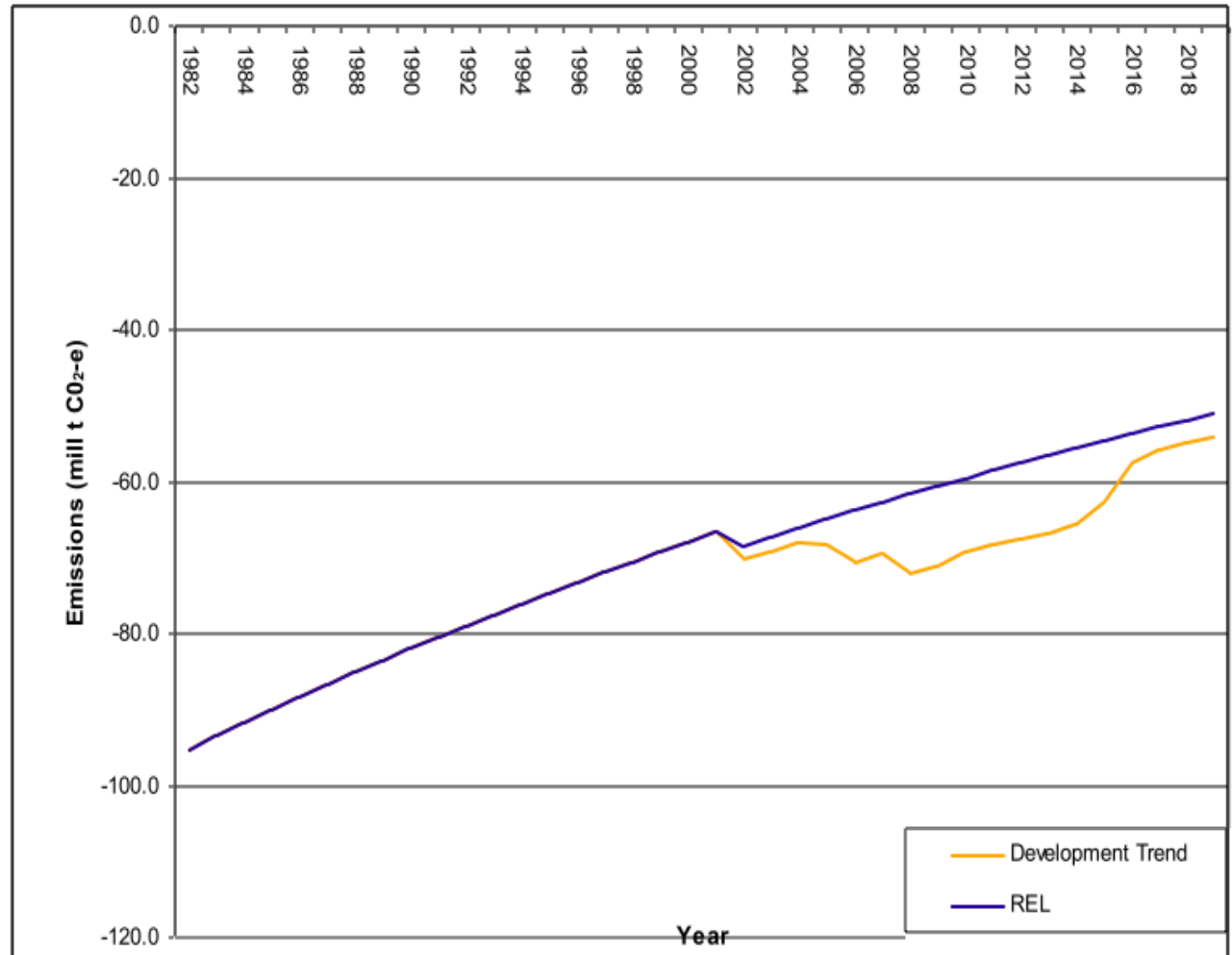
Lao PDR's National Reference Emission Level Estimated Using Historical Rates of Change and Inventory Data (1982 – 2002), Factoring in National Development Objectives; Projected to 2020.

Data: land cover assessments 1982-2002 & NFI 1992-1999.

Average deforestation rate computed 0.8%/yr, & degradation 1.12%/yr

Results: annual emissions 95.3 m tCO₂e (in 1982), 60.6 million tCO₂e (by 2010), and 51.1 million tCO₂e (by 2020)

Combining it with development objectives, estimated annual emission for the 2010-20 period is 65 m tCO₂e



Indonesia: REGIONAL CONSULTATION FOR DEFINING REL



Source: Slide from Rizaldi Boer, Indonesian analyst

FCPF Objectives for This Workshop

- 1. Listen to REDD country early RL proposals. Identify capacity needs & explore ways to help meet them.**
- 2. Receive comments on early draft methodology framework from Winrock, & offer next steps to continue methods development.**
- 3. Start building a cadre of experts to assist in these processes.**
- 4. Help countries understand the implication of their decision on RL in negotiation context.**
- 5. Share early lessons learned with international community.**