# Technical Workshop on Reference Levels for REDD+
## World Bank, November 9-10, 2011

# Draft Methodological Framework for REDD+ Reference Levels

NANCY HARRIS ECOSYSTEM SERVICES TEAM WINROCK INTERNATIONAL
NHARRIS@WINROCK.ORG

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# Why is a framework needed?

UNFCCC calls for the development of a national forest reference emission level (REL) and/or forest reference level (RL) for REDD+:

- What methods and data should be used?
- Over what timeframe?
- How to project into the future?
- National or summed subnational RLs?
- What approaches are already available?
- How much is negotiated?
- What can be done in the near term?

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# Goals of a Methodological Framework

**Framework should be:**

- Flexible
- Practical
- Feasible
- Acceptable to FCPF Member Countries
- Succinct
- Useable

**Framework should:**

- Summarize major approaches and methods for RL development
- Define interim steps best suited to countries in the near term

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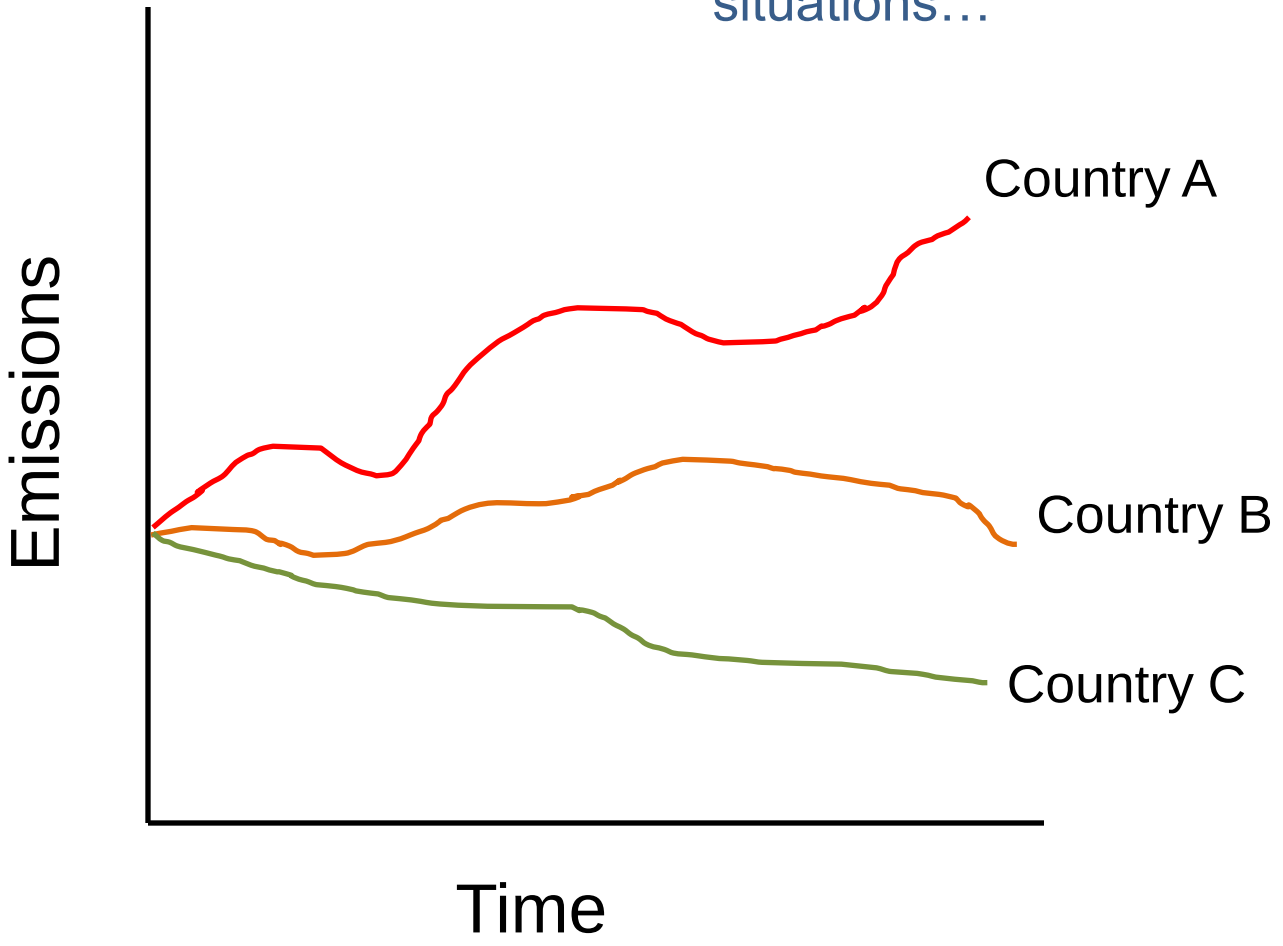
# Where to begin?

Framework must apply to all country situations…

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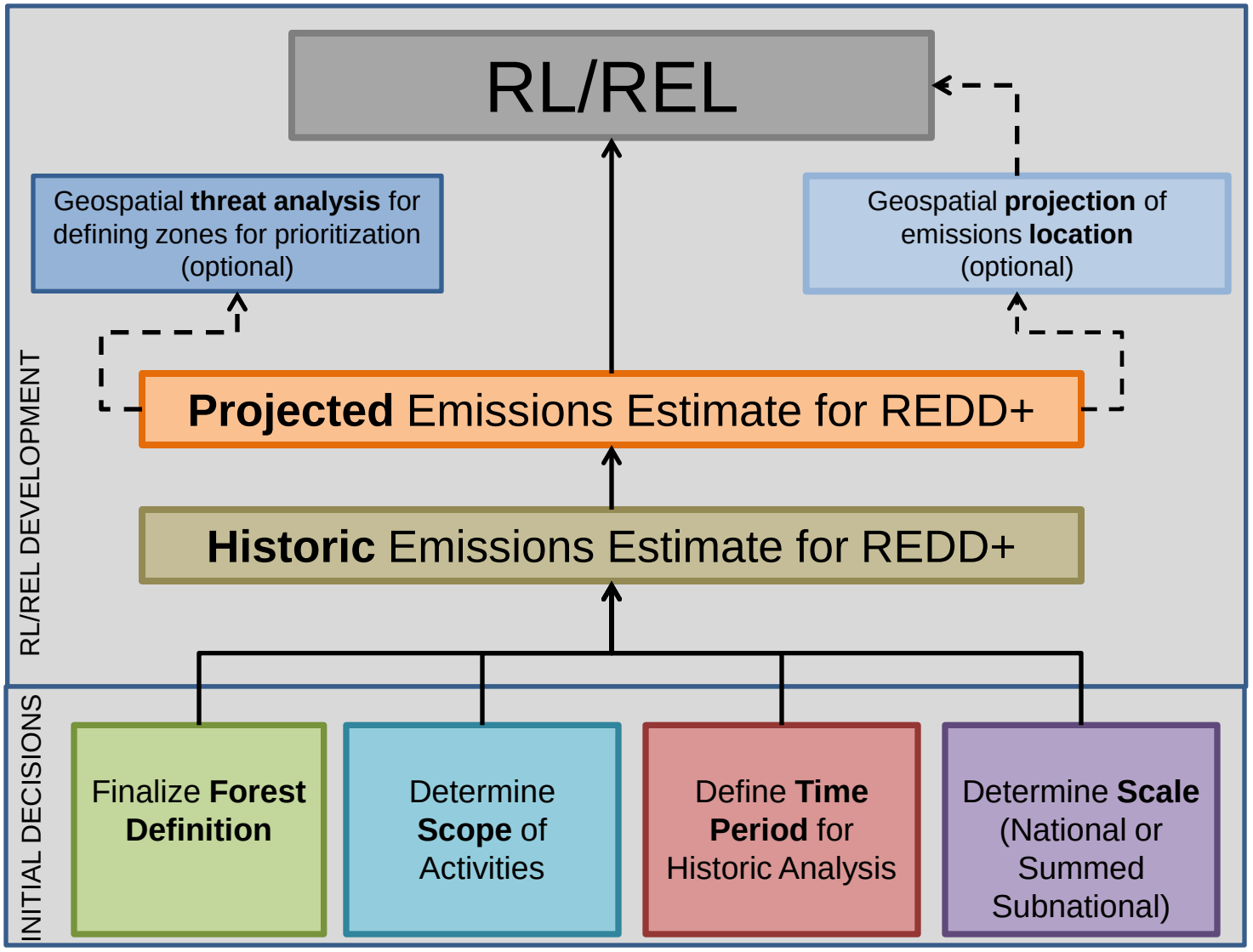
# Draft RL/REL Framework

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# Key Questions

What guidance is available for countries to decide the following?

- How to define forests for REDD+
- Which activities to include (D, D, +) in RL
- How to determine a reference time period for RL
- How to determine scale of RL
- Others?

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# Finalize Forest Definition

Finalize **Forest Definition**

Assess costs and benefits of available options

Assess country situation regarding thresholds

Determine remote sensing thresholds for detecting changes in canopy cover/height/area

Determine Scope of Activities

Review Allowable Thresholds

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# Determine Scope of Activities

Determine **Scope** of Activities

Evaluate costs and benefits of including forms of degradation and enhancement

Assess available data and statistics on other forms of degradation

Identify other forms of degradation

Assess available data and statistics on timber harvesting

Assess historic deforestation data

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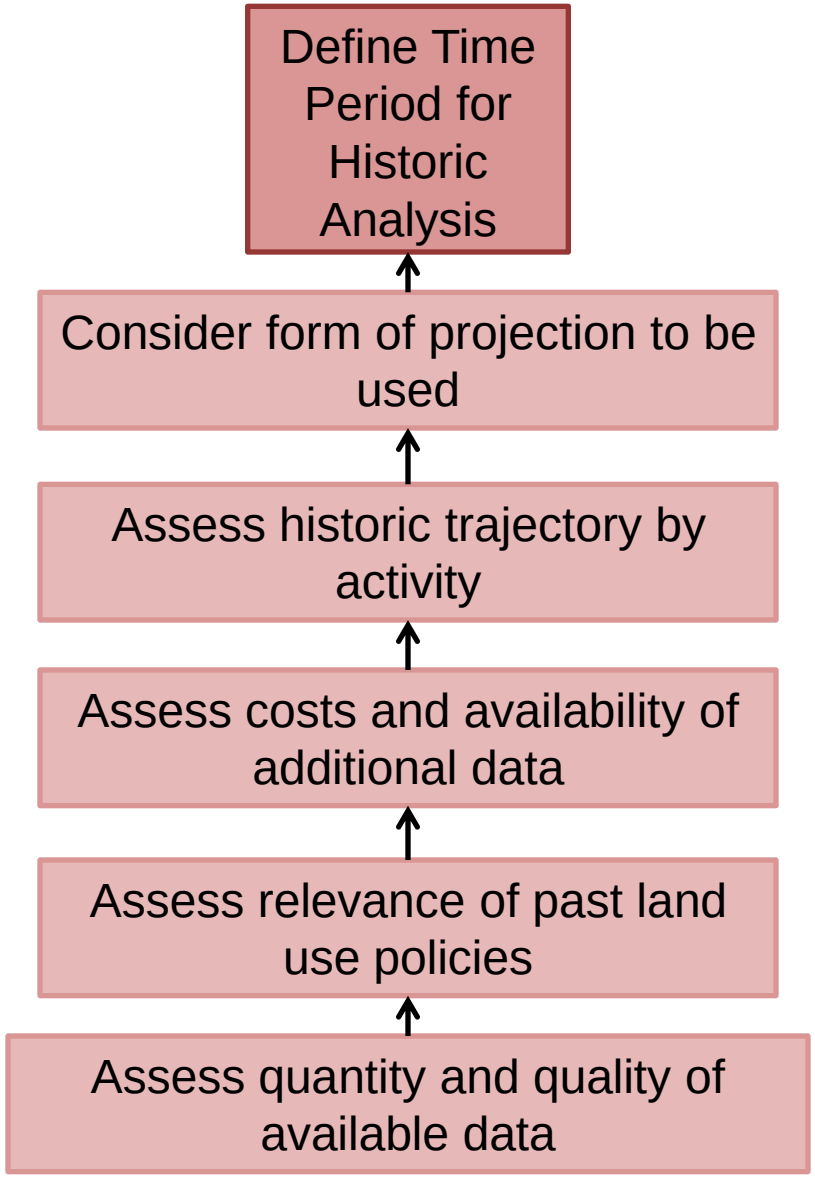
# Define Time Period for Historic Analysis

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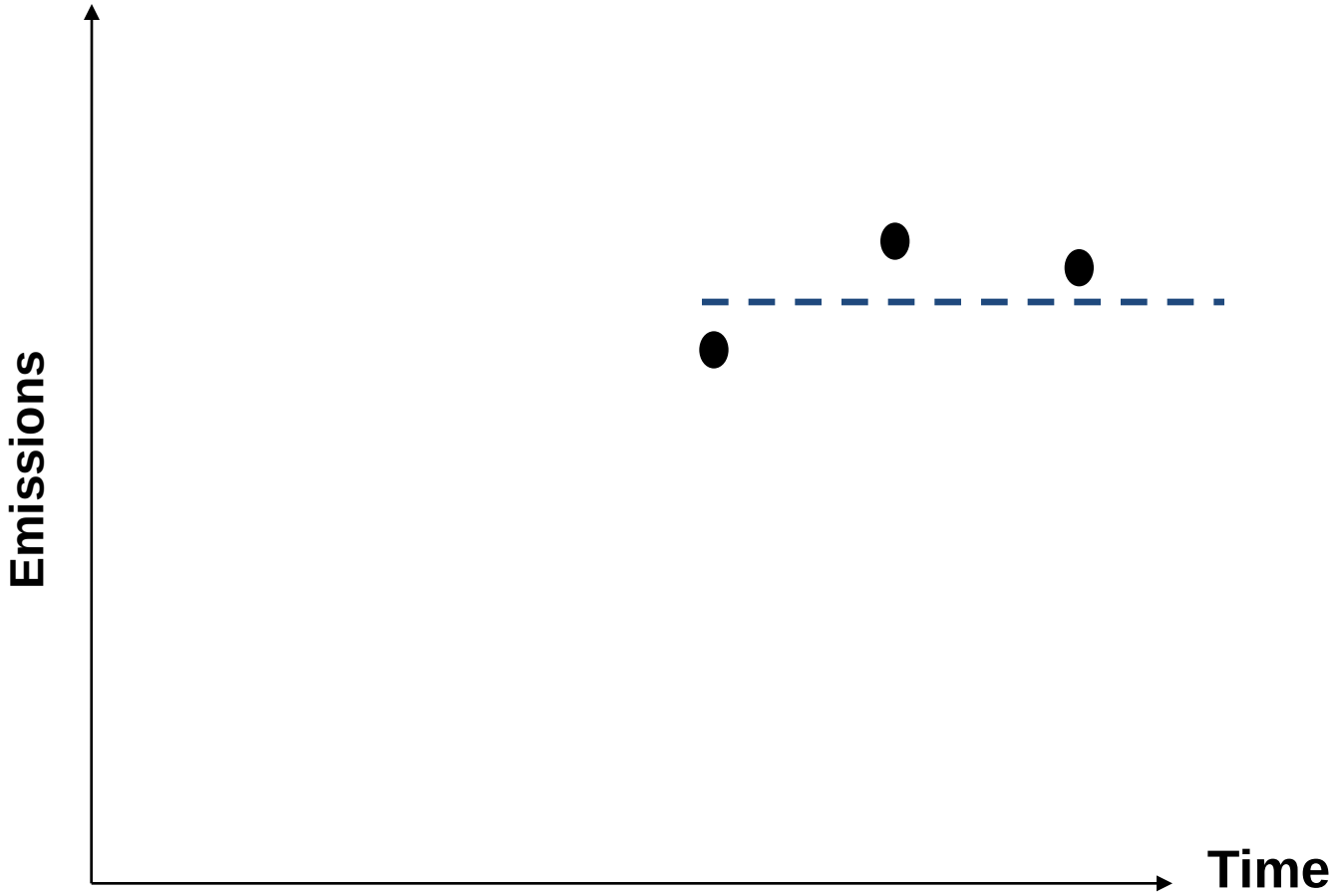


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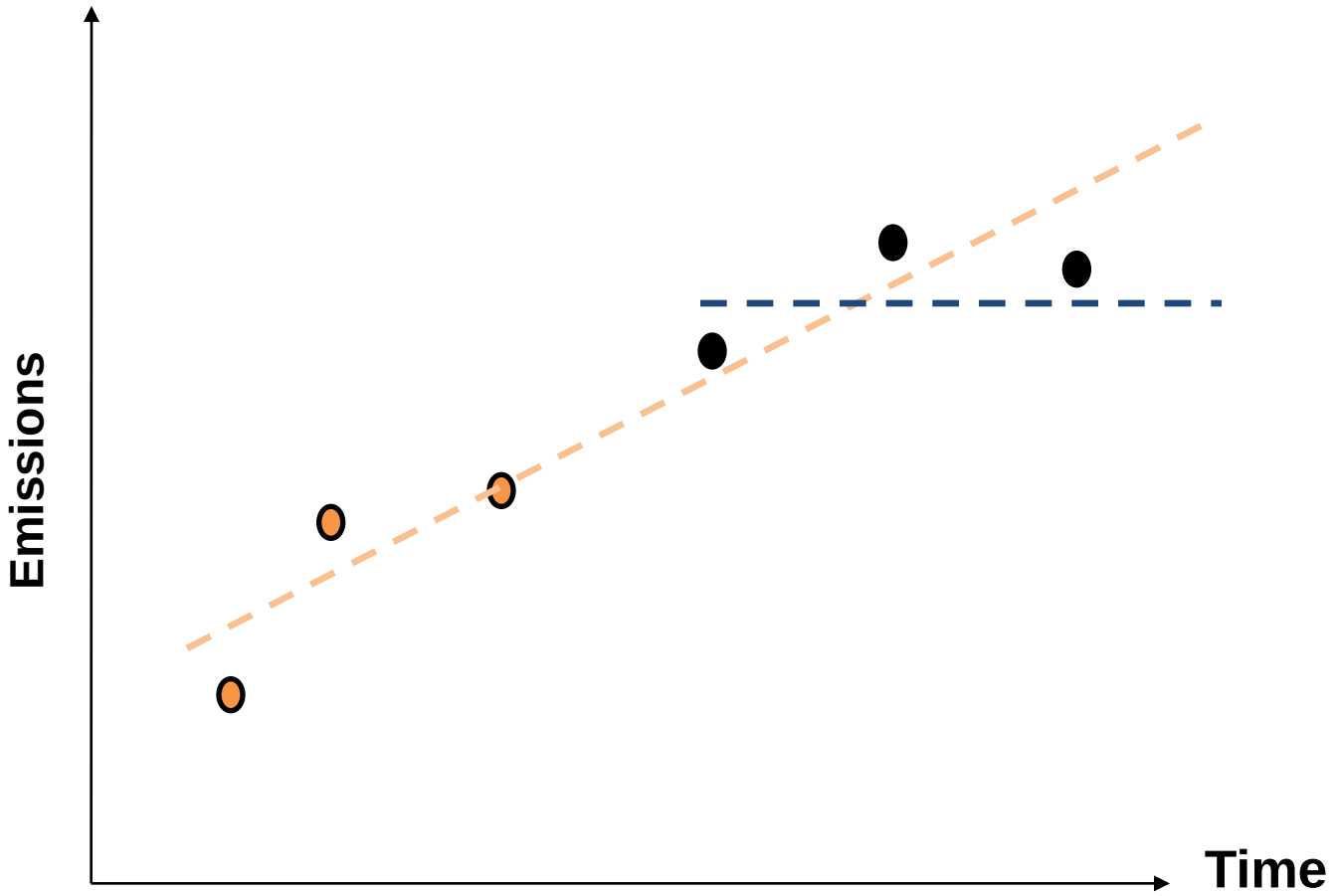


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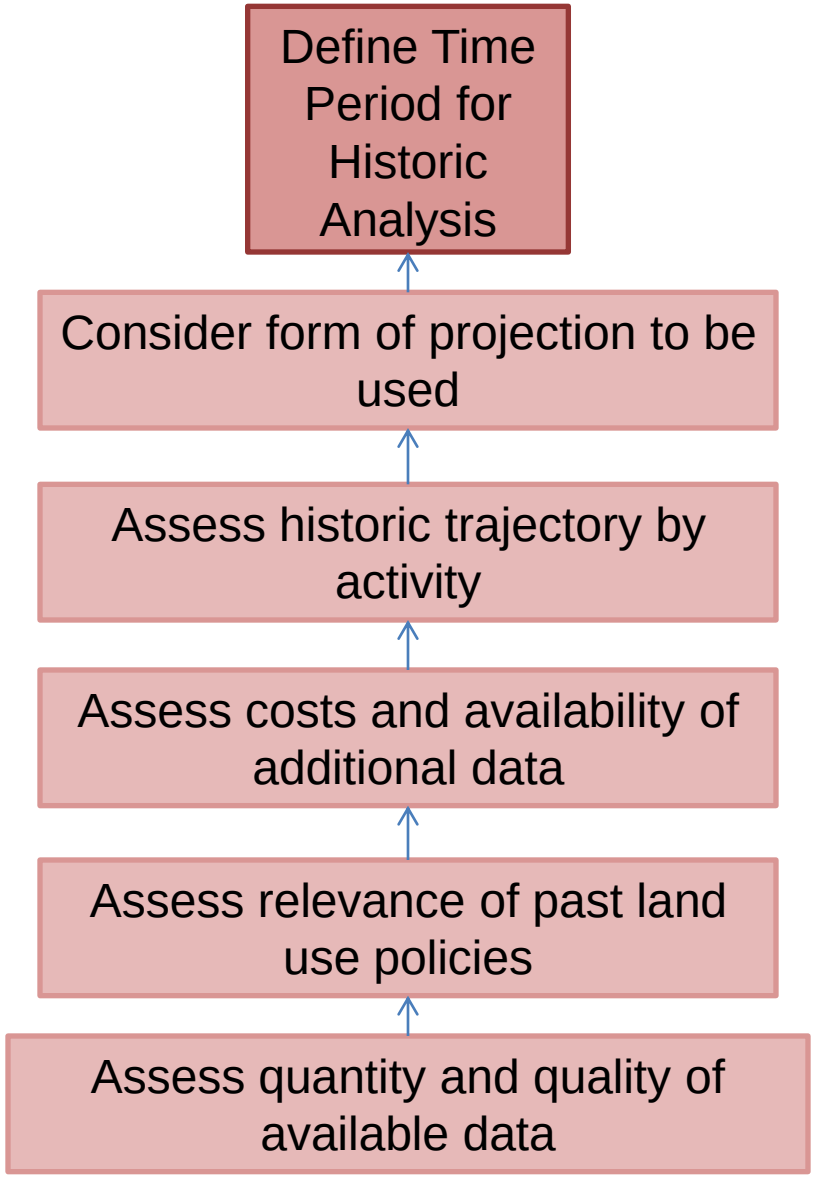


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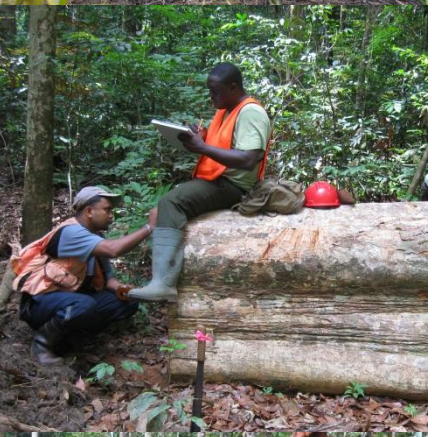
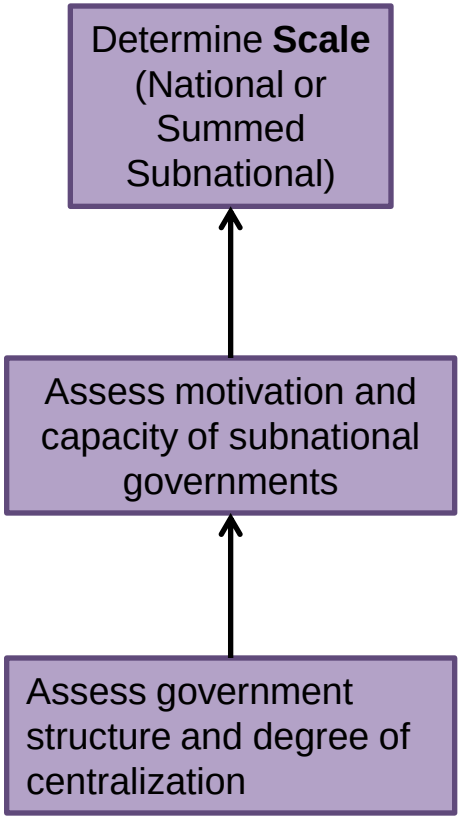


# Determine Scale

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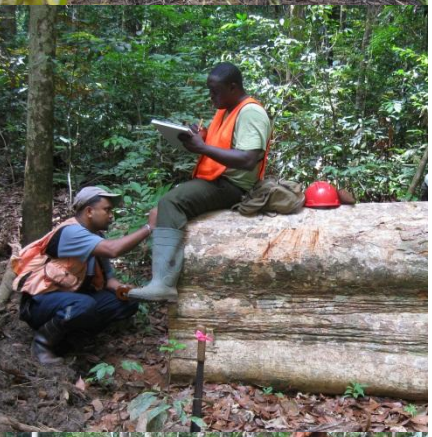
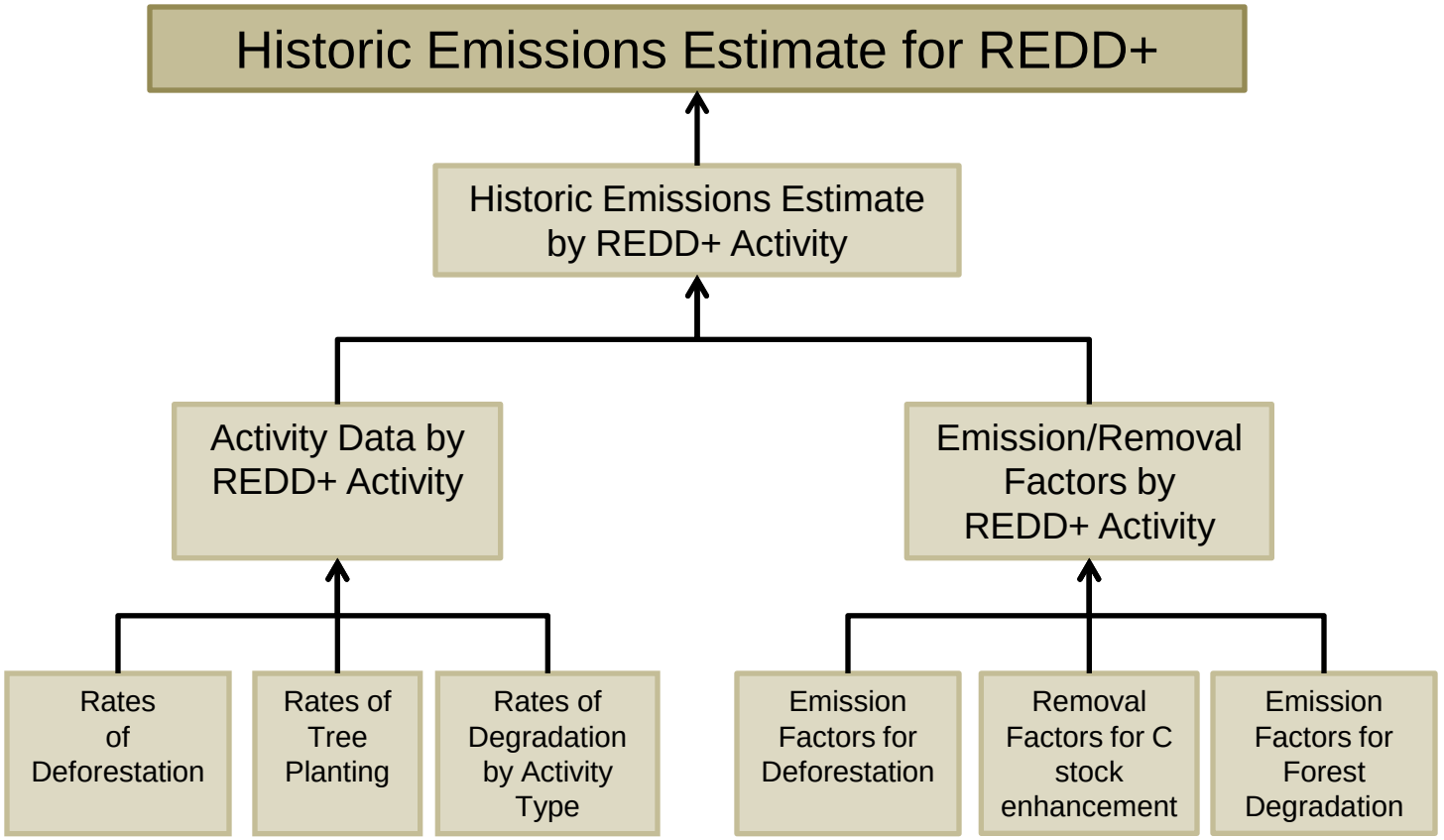


# Historic Emissions Estimate for REDD+




ACTIVITY DATA

EMISSION/REMOVAL FACTORS

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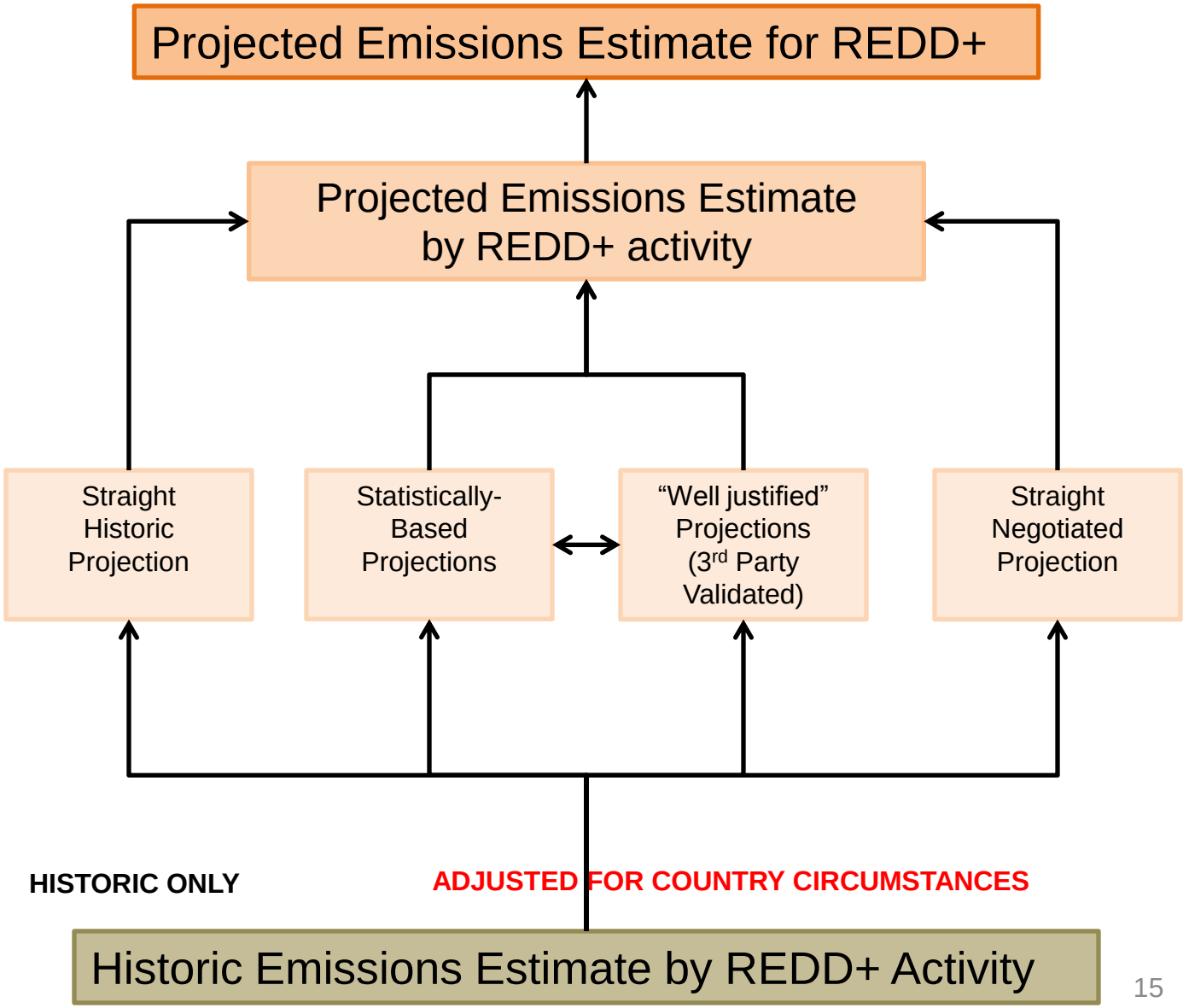
# Projected Emissions Estimate for REDD+

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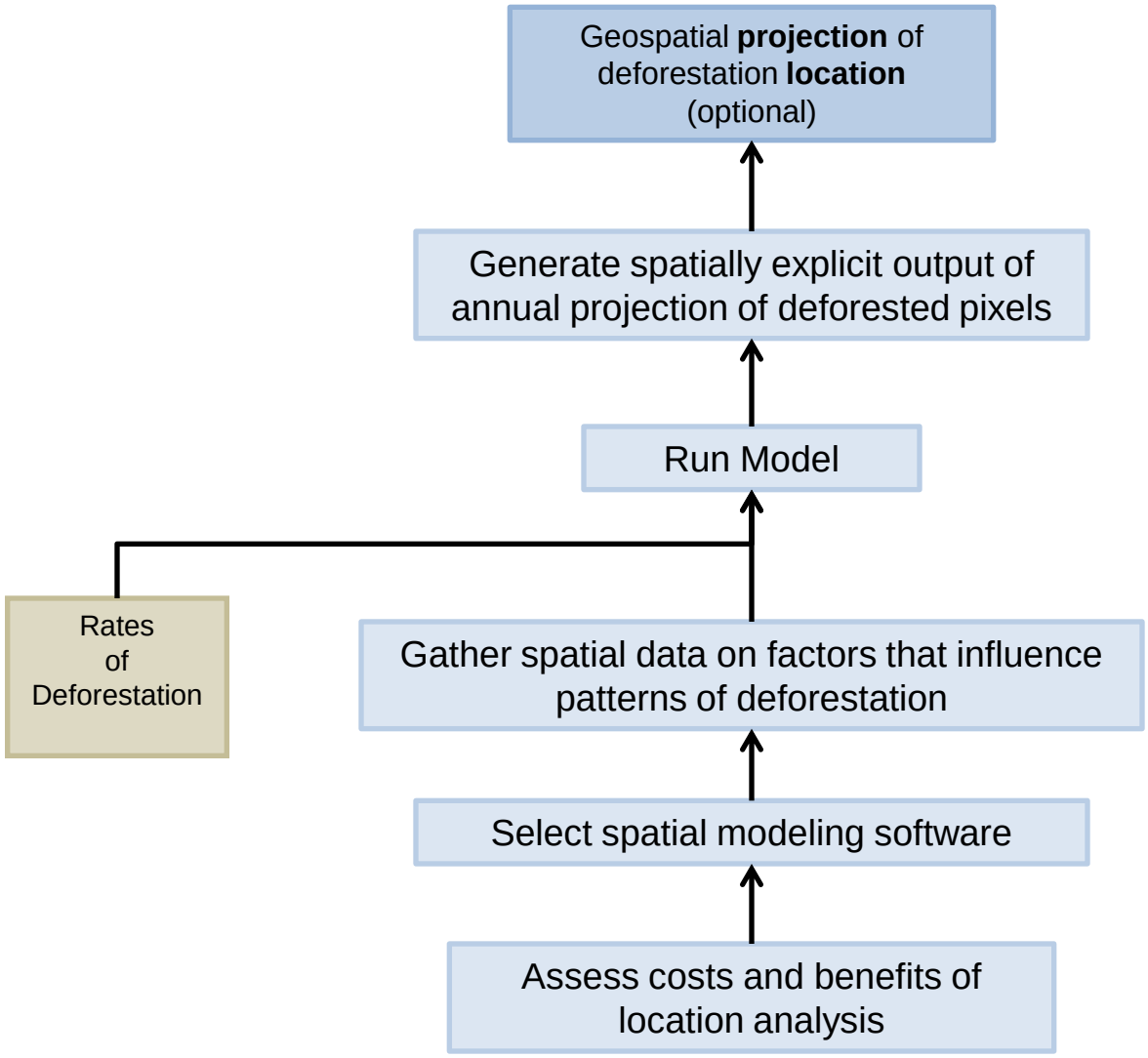
# Projecting Specific Locations of Future Deforestation

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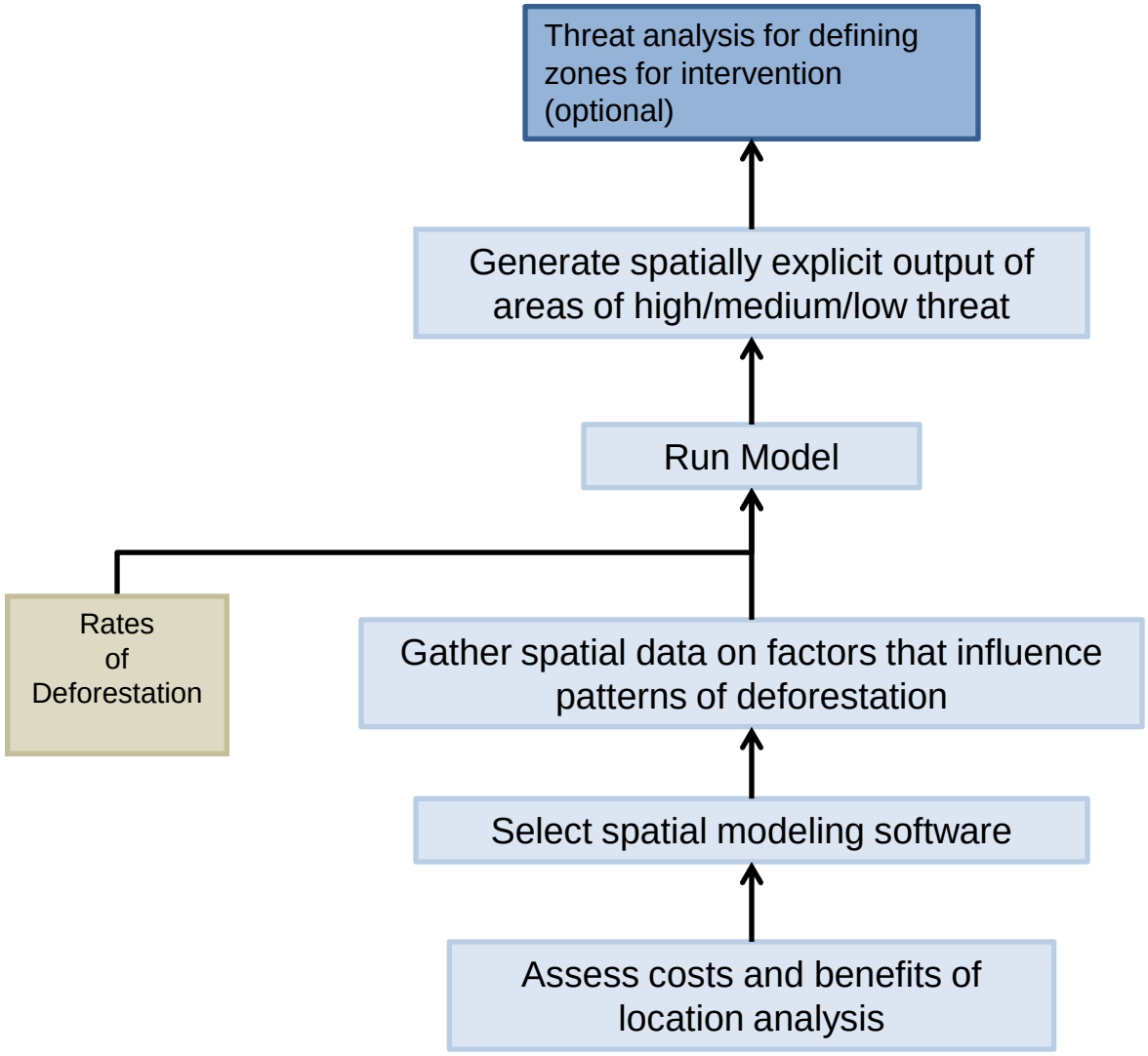
# Projecting Zones of High Threat

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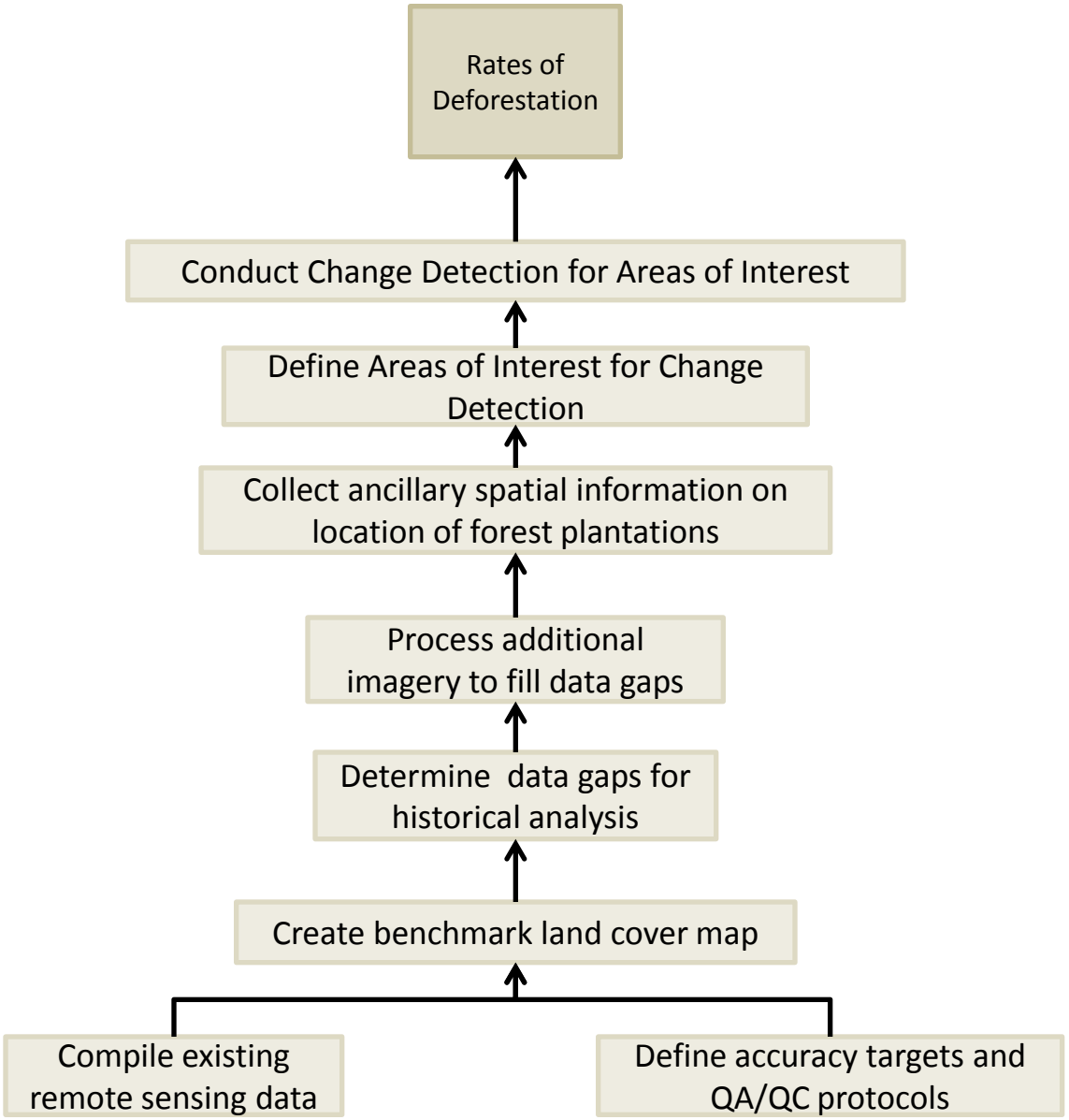
# Quantifying Rates of Deforestation

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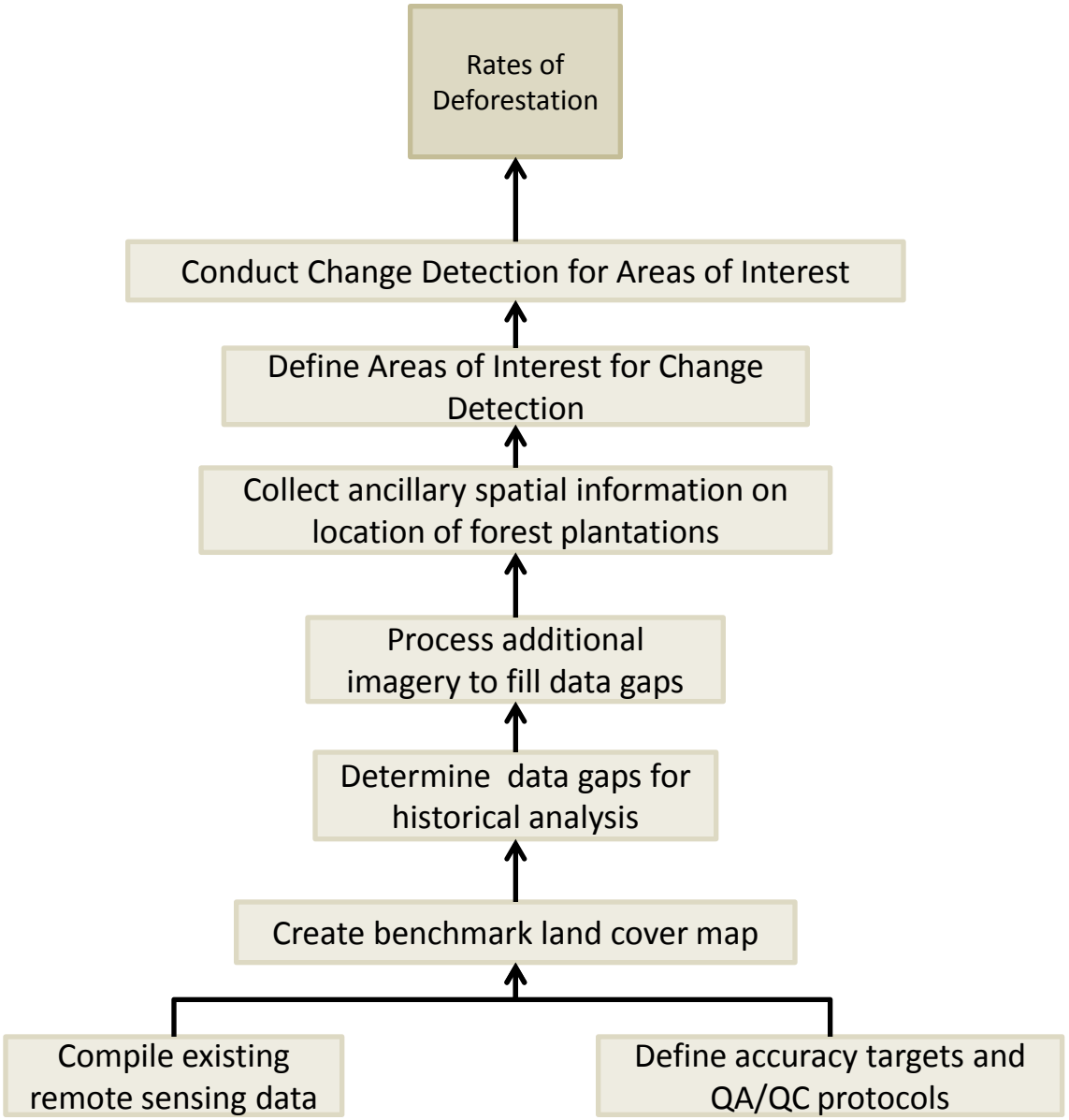


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# Quantifying Rates of Degradation

Rates of Degradation by Activity Type

Collect data to fill gaps

Develop data collection plan by activity/driver

Determine best methods for quantifying areas of degradation:
Remote sensing imagery interpretation
Statistical data collection/processing
Survey data

Identify data gaps

Compile existing data for activities included in RL:
Timber extraction rates
Fuelwood collection
Trees outside forests
Enrichment planting

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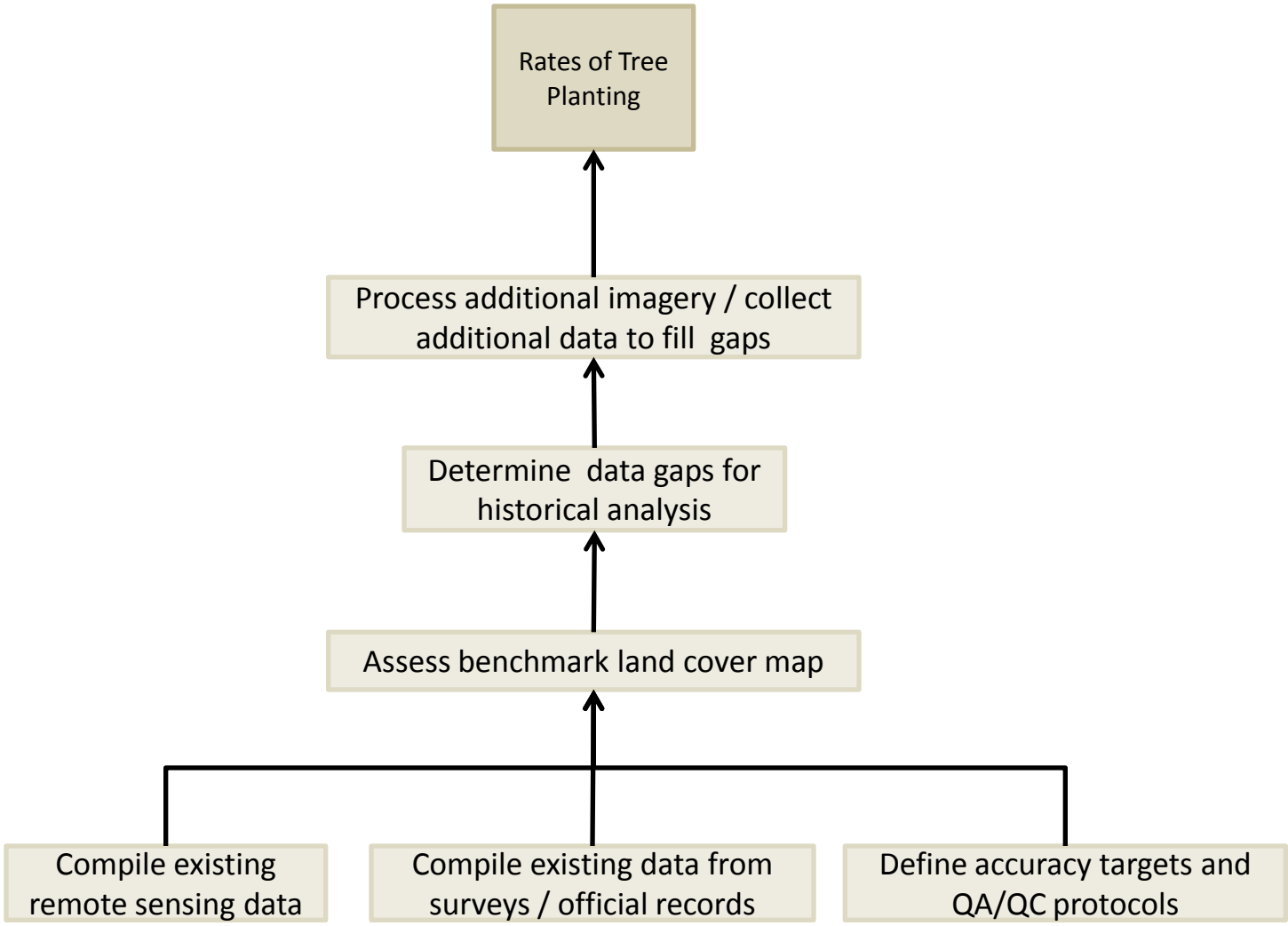
# Quantifying Rates of Tree Planting

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# Emission Factors for Deforestation

Emission factors for deforestation

- **Collect** C stock **data**
- Develop **sampling design** for C stock measurements
- Compile and **evaluate existing data** on allometric equations, biomass expansion factors, inventory data, field plots, identify gaps
- Define **area of interest** for sampling C stocks (develop potential for change maps)
- Define **accuracy/precision targets** and QA/QC protocols
- Analysis of **key C pools** to include
- **Stratify** landscape by activity (driver) and by C impact
- Compile spatial data and develop **stratification factors**
- Assess **drivers** of deforestation

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# Emission Factors for Degradation

Emission Factors for Forest Degradation

**Collect data** on C losses and gains

Develop **data collection plan** by activity/driver

Compile and **evaluate existing data** on timber and fuelwood volumes extracted

Define **area of interest** for sampling areas of degradation (logging impacts, fuelwood impacts, small scale clearing)

Define **accuracy/precision targets** and QA/QC protocols

Analysis of **key C pools** to include

**Stratify** landscape by activity (driver) and by C impact

Compile spatial data and develop **stratification factors**

Assess **drivers** of degradation

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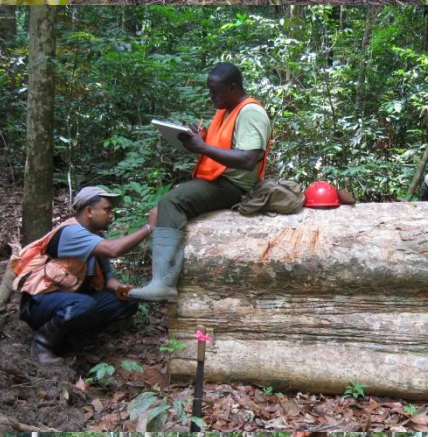
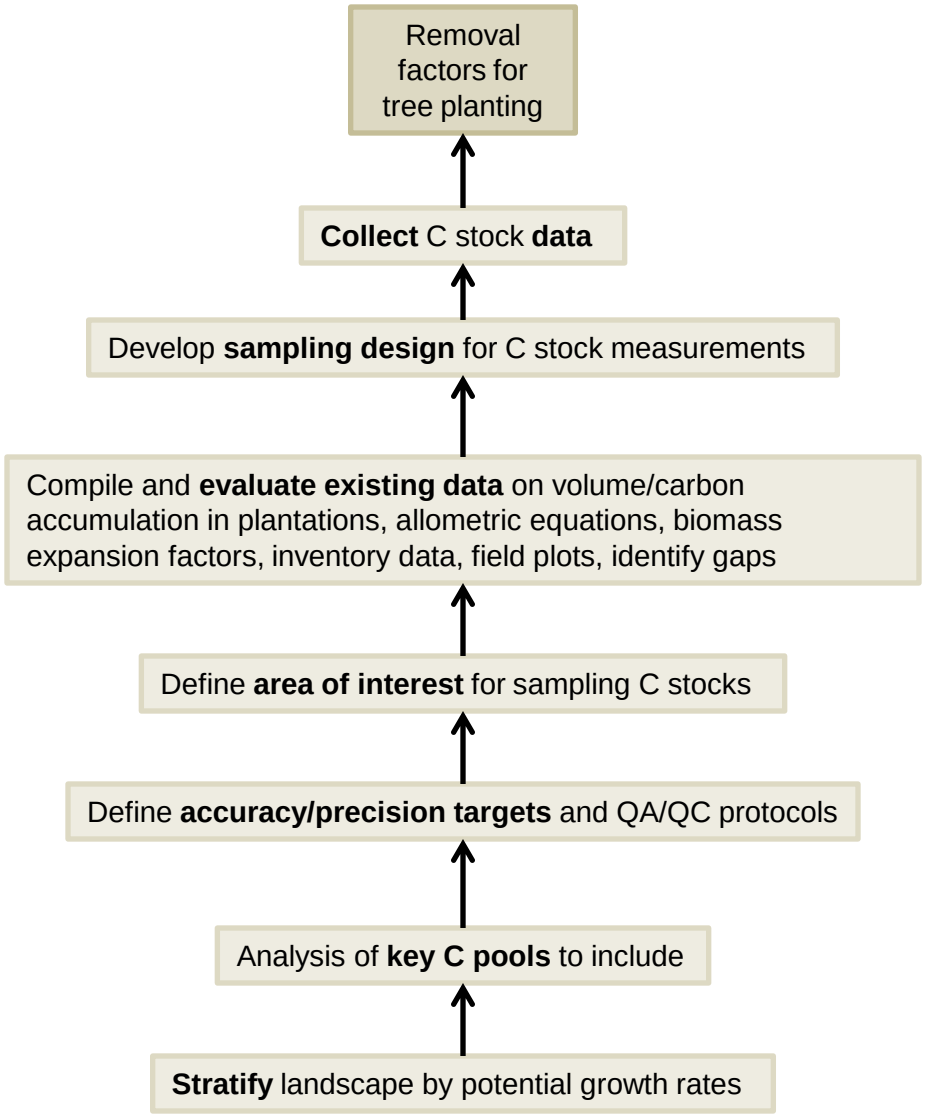
# Removal Factors for Tree Planting



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# Guidance Text

**Create benchmark land cover map**

Required Capacity:
- Checklist of human and technological resources necessary to carry out the work

Data Sources:
- Links to websites where remote sensing data can be downloaded

Additional Information:
- Links to further guidance on this step

Overview of technical steps:

**Step 1**: *Determine appropriate benchmark year.* The year of the benchmark map will be determined by the decision made regarding the time period for historic analysis.

**Step 2:** *Determine appropriate imagery source*. This decision will be affected by which data source has the best coverage for the area of interest, least cloud contamination and data gaps, in-country capacity for processing the type of imagery considered, etc.

**Step 3:** *Select method of imagery interpretation*. This decision will be affected by the training and software requirements, replicability of results, accuracy, validation plan, etc.

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