

The Economics of REDD+ and the Importance of Opportunity Costs Analysis

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Bangkok, April 25, 2011



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Economic Analysis, What For?

- To support planning and decision-making with regard to policies, programs and projects.
- Economic analysis is often used to:



Identify whether the benefits outweigh the costs

Identify least-cost opportunities, or *low hanging fruit*, for achieving a certain goal

Identify how sectors in a society are affected by a government intervention

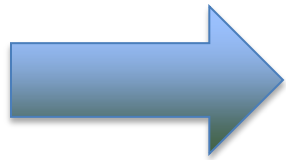
Contribute to a better design and implementation of government strategies





Timing for Economic Analysis

- **In which of the 3 phases of REDD it fits?**



Phase 1: development of national strategies or action plans, policies and measures, and capacity-building

- **Is REDD economic analysis mandatory?**

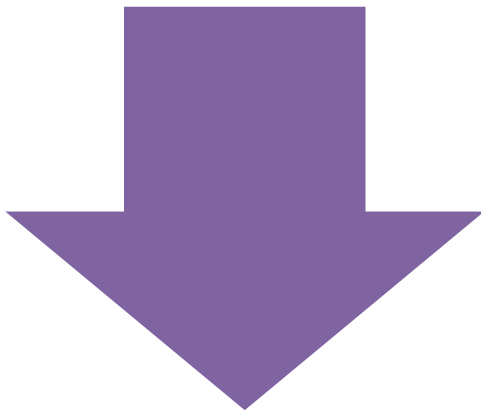
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- **No, but is in countries' interest to do it**
 - **Important for RPP formulations**

The Economics of REDD+

As in many programs and projects, REDD+ leads:



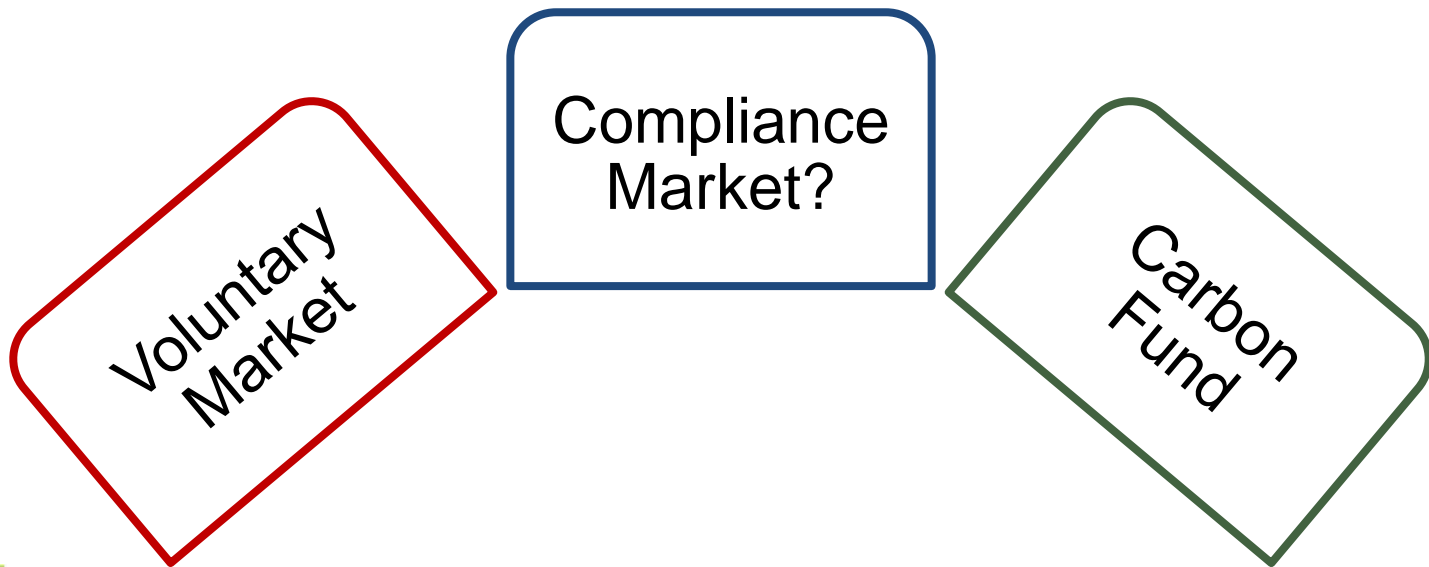
- Monetary Benefits
- Co-Benefits



- Costs
- Indirect Costs

Monetary Benefit

- Depends on the future framework for a Performance Based REDD Scheme (Phase 3)
- Not clear yet, what it would be:



Co-Benefits of REDD+

- **Helps addressing other global problems such as loss of biodiversity**



- **Contributes to preservation of watersheds, soils and recreational areas**



To be Discussed on Friday

The Costs of REDD+

Implementation Costs

- Forest Protection
- Improved Forest Management
- Administration

Transaction Costs

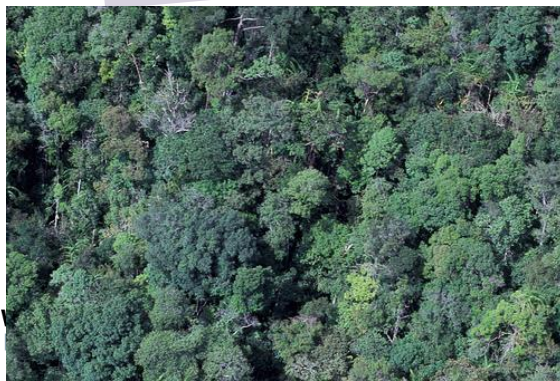
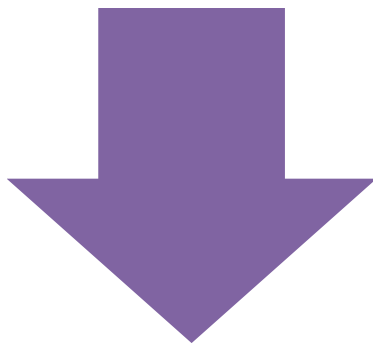
- Emission Reduction Certification and MRV

Opportunity Costs

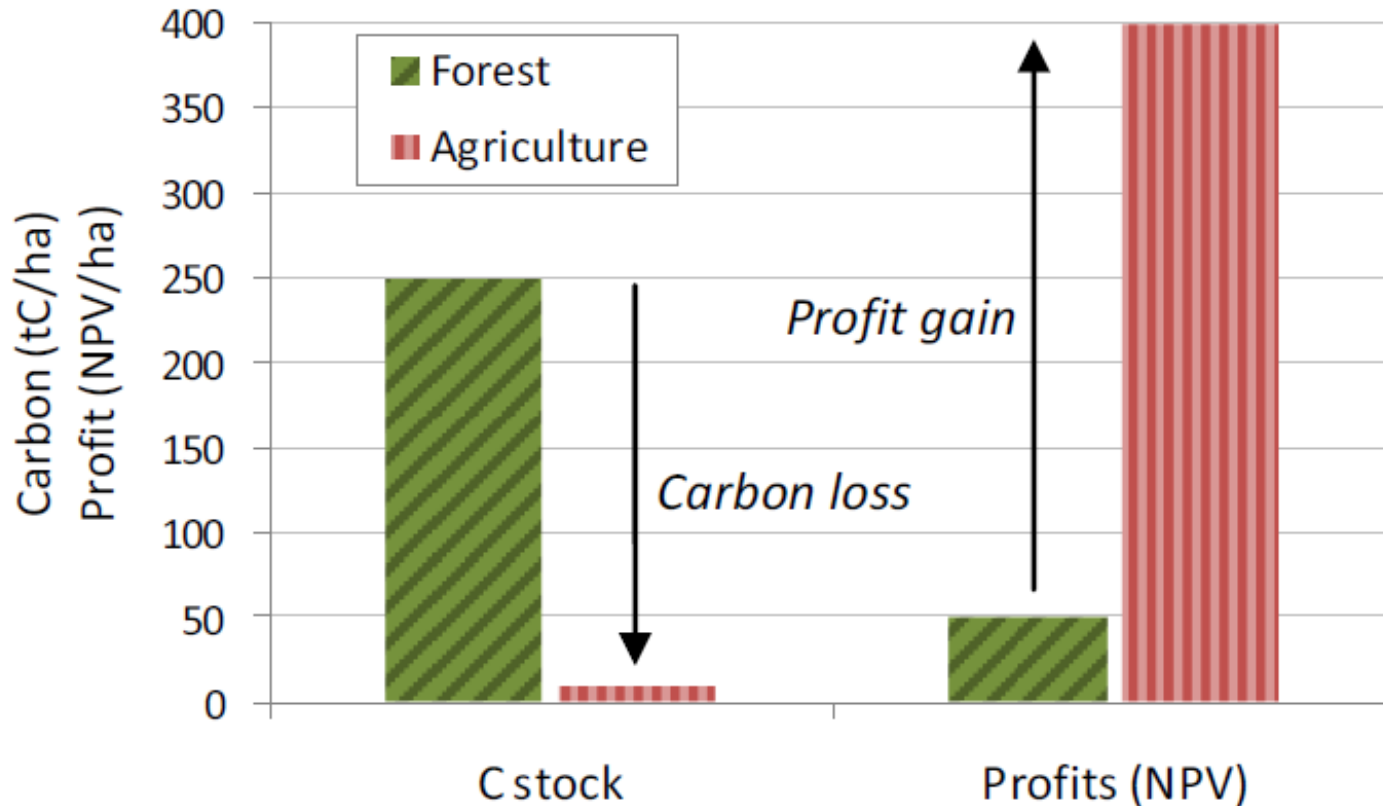
- Forgone Benefits of Alternative Land Use

Opportunity Costs

- Forgone net benefits from changing land uses, such as potentially more lucrative agricultural crops
- Difference in earnings from conserving or enhancing the forests, versus converting them to other, typically more valuable, land uses



Opportunity Costs: Example



Difference in Profits: $\$400/\text{ha} - \$50/\text{ha} = \$350/\text{ha}$

Difference in Carbon: $250 \text{ tC}/\text{ha} - 5 \text{ tC}/\text{ha} = 245 \text{ tC}/\text{ha}$

→ Per carbon basis: $= \$350/\$245 = \$1.43/\text{tC} = 0.39/\text{tCO}_2\text{e}$

Why Opportunity Cost Estimates are Important?

They are relevant

- In many experiences, most important component of REDD+ costs

Provide insights into deforestation drivers

- High opportunity costs may be linked with high deforestation pressures.

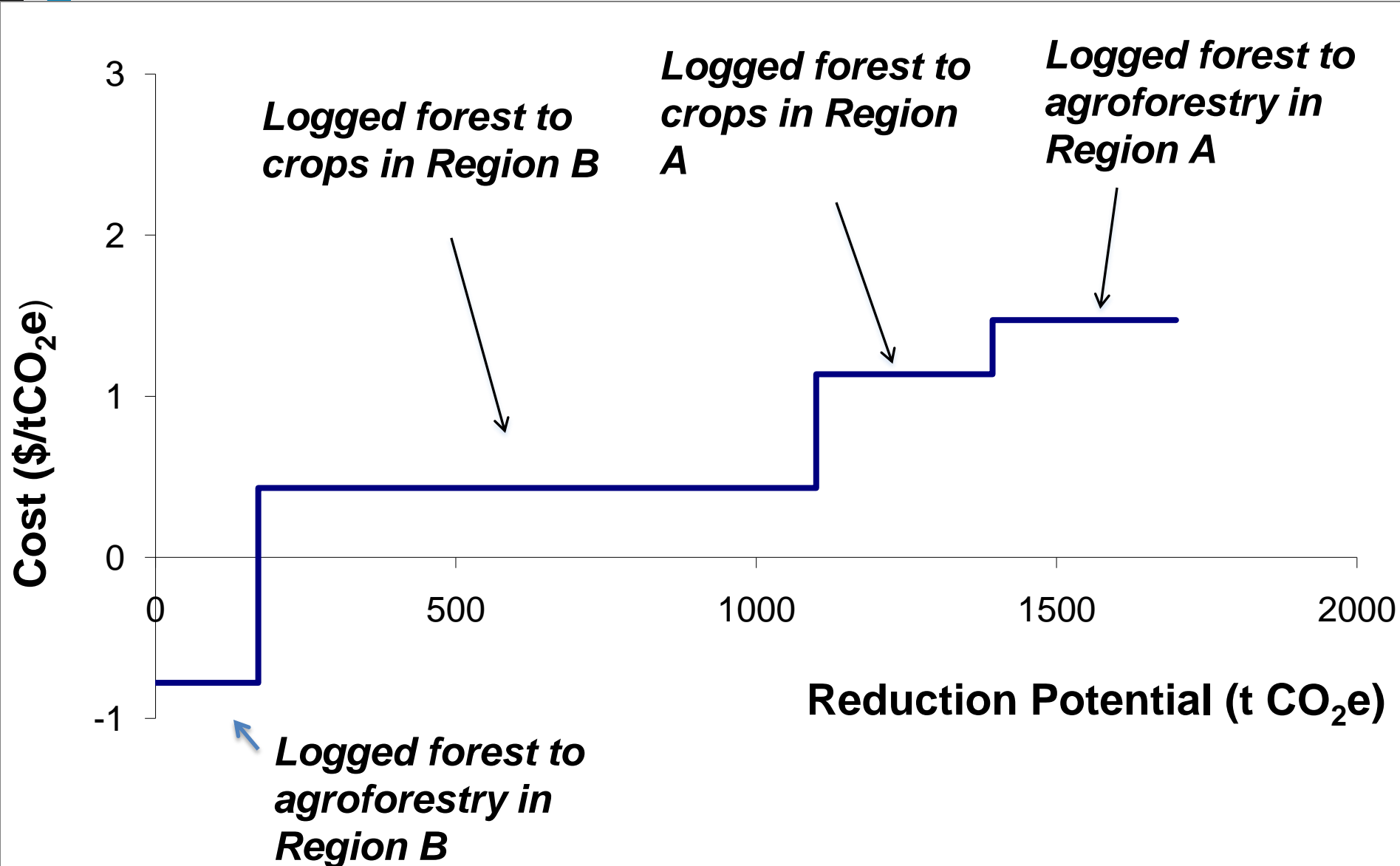
Program Impact

- Helps to understand impacts of REDD+

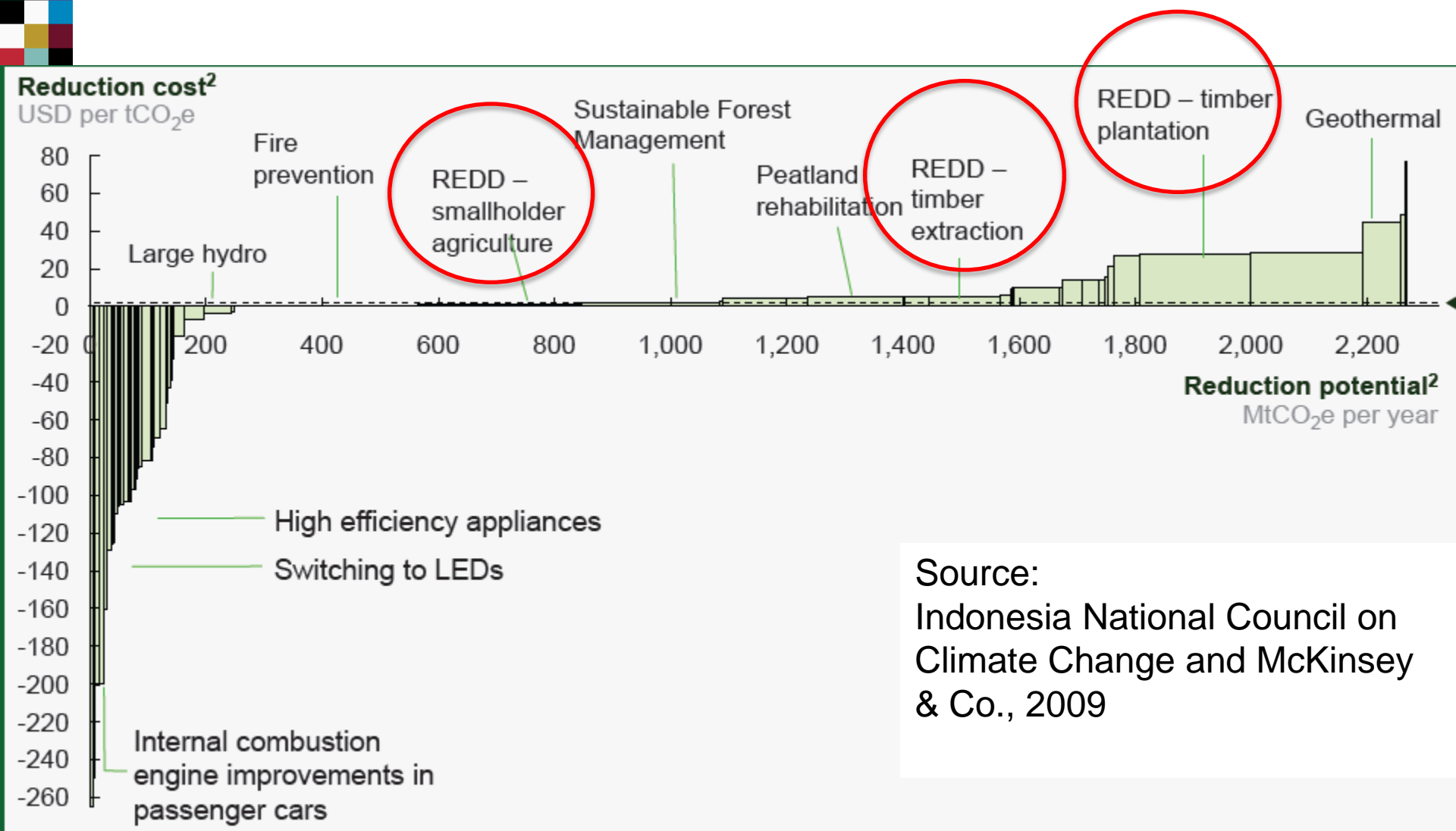
Helps to Identify Fair Compensation Schemes

- If implementing agency intends to use PES, it helps to design such scheme

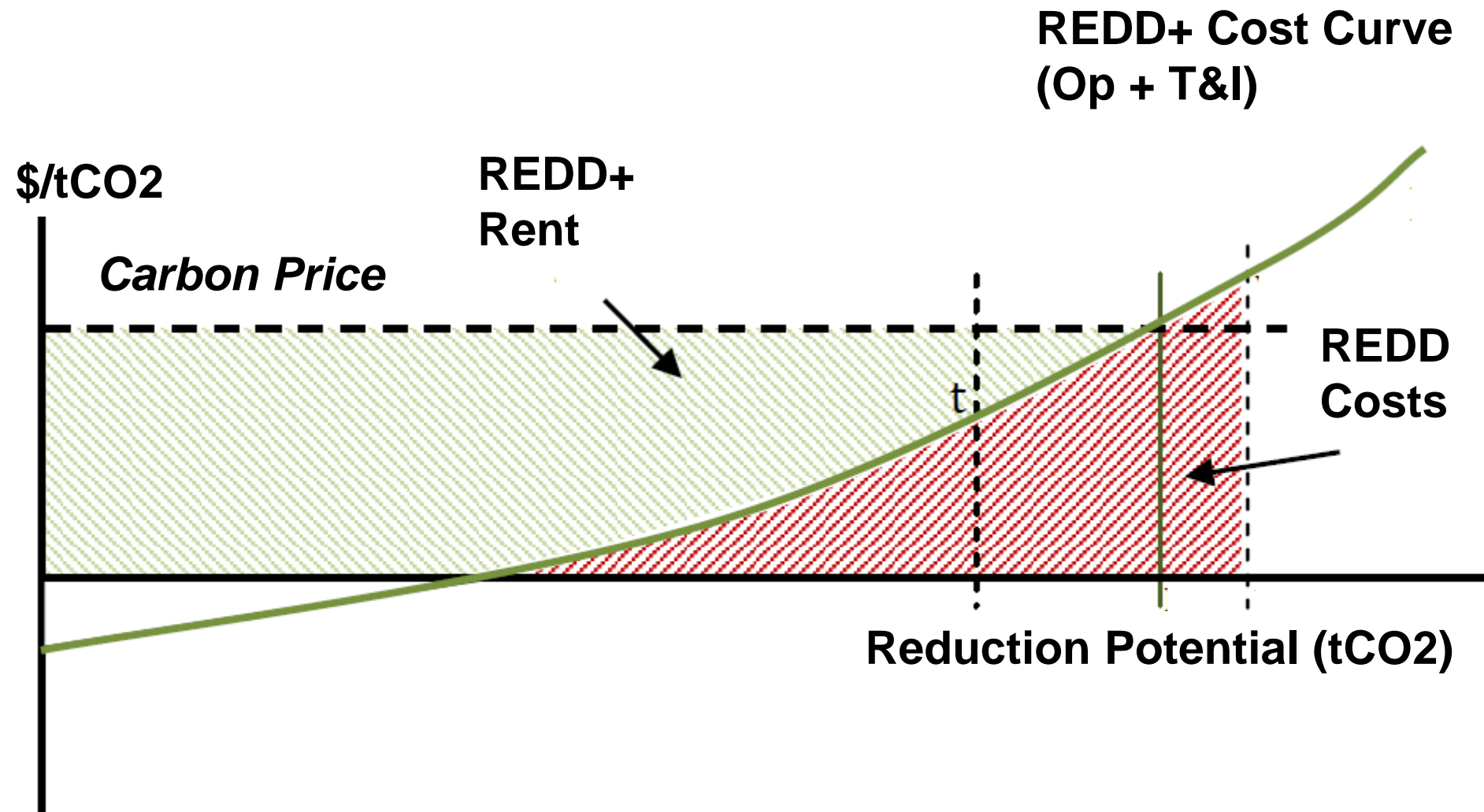
Opportunity Cost Curve



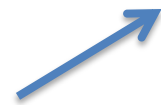
Example: a practical application



Example: The “gains” of REDD+



Methods to Estimate Opportunity Cost Curves



Econometric



General Equilibrium

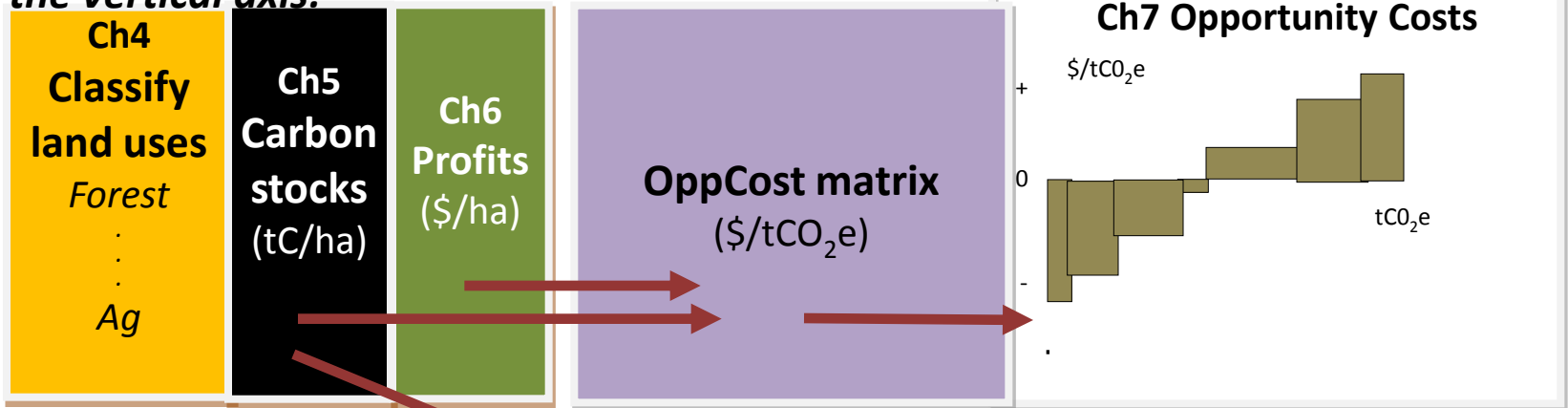


Engineering, Bottom-Up

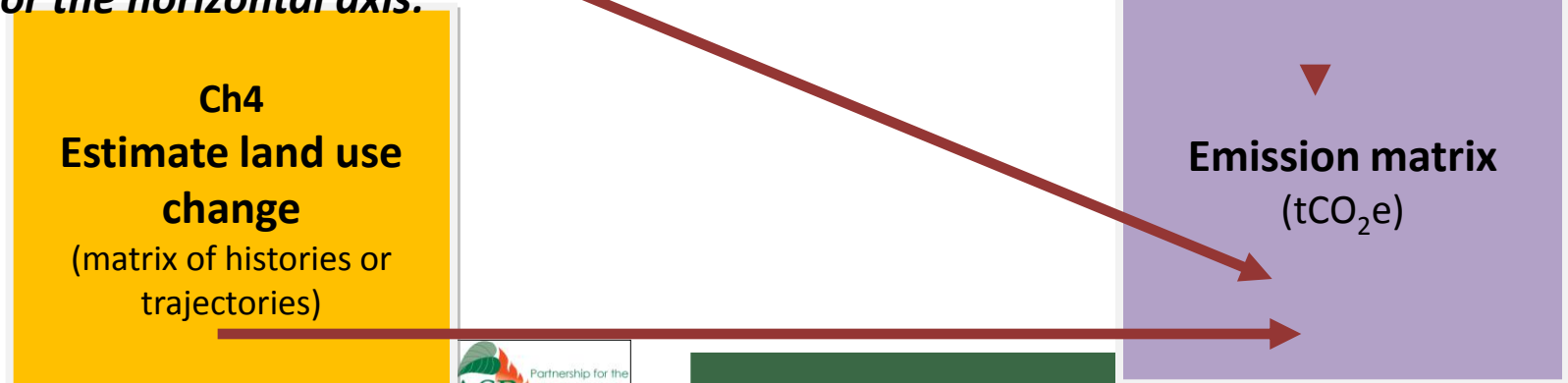
Proposed Approach

Engineering Bottom-Up; Integrating Land Use, Carbon and Profitability Analysis *(to be discussed in next session)*

For the vertical axis:



For the horizontal axis:





Advantages of the Proposed Approach

- Successfully applied in developing country contexts
- Transparent: all steps of data and assumptions
- Bottom-up, using farm-level data
- Uses a free-open access, analysis tool
- Integrates other aspects, outside of the economics expertise:
 - Land Use Modeling and Analysis
 - Carbon Measurement
 - Co-Benefits



Challenges and Limitations

- Analysis as good as the data is
- Inter-sector linkages/feedbacks excluded
- Only covers opportunity costs (implementation, transaction excluded)
- Social considerations not accounted (wealth distribution / employment/food availability)
- Focuses just on carbon: what about the other ecosystem services?



And,

Remember, opp. costs is only one aspect that contributes to decision making

→ Many other issues need to be considered:

- Social Considerations
- Land Tenure
- Environmental Considerations
- Other Costs: Implementation / Transaction



Thank You!