

Practical experiences on policies and incentives to reduce deforestation in dev. countries (& getting the basics right)

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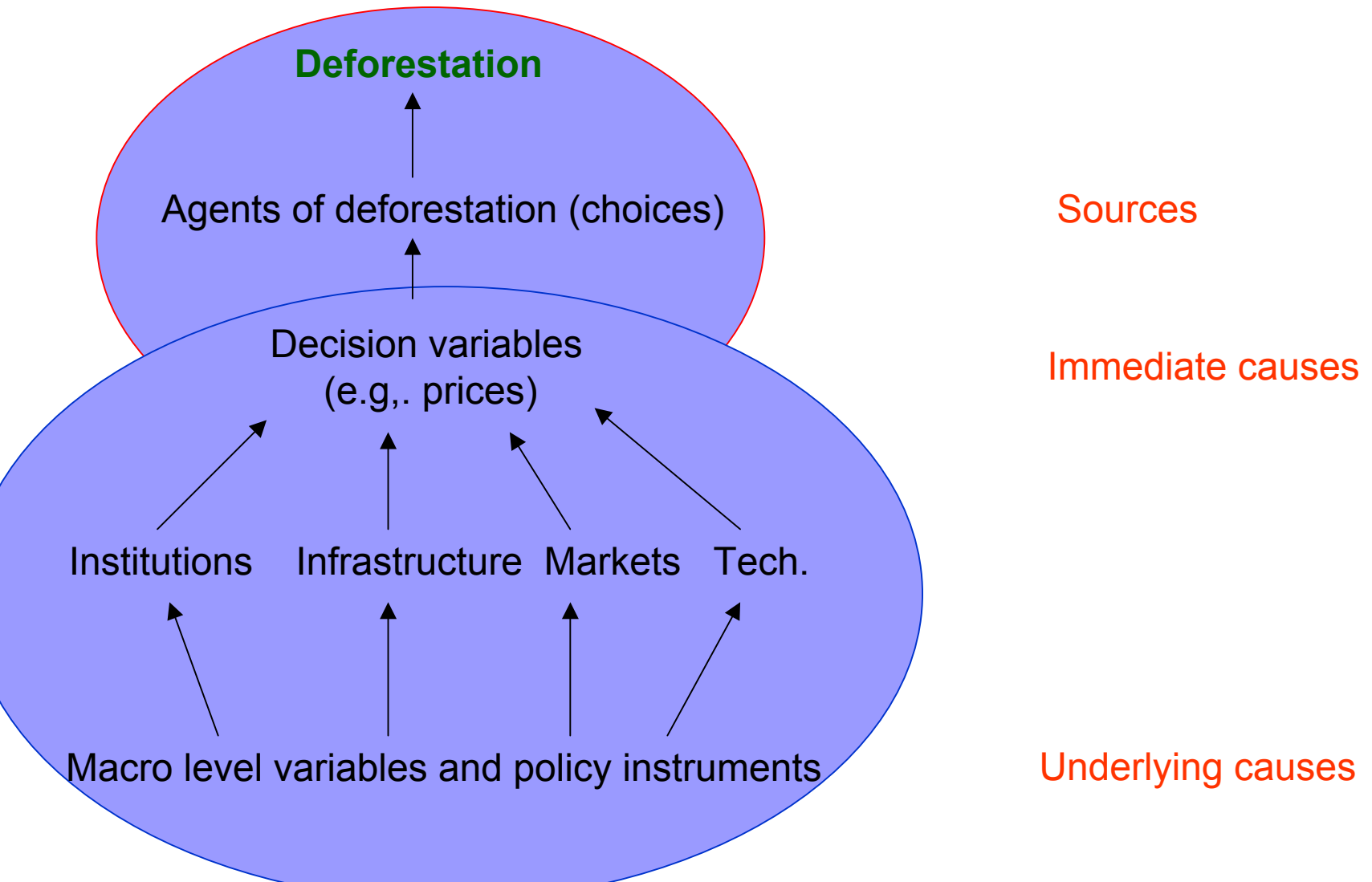
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Why are policies and incentives important?

Approach	National targets	Policies & incentives (P&I)
Example	Main Kyoto	CDM
Key issues	Setting baselines at national (regional) level! Hot air vs. acceptability	Assessing net impact: Baselines, leakage, additionality.
Measurement of change	At national level	At different scales, and for specific P&I
Role of P&I	For agreement: Only indirect: countries choose best P&I. Advisory role?	Key to identify P&I, develop criteria & measure impact
Pros	Broad & country-specific policies applied	Easier to deal with more localized effects
Cons	Hard to set national baseline (& monitor change)	Problems of local baseline, leakage and additionality

A deforestation framework

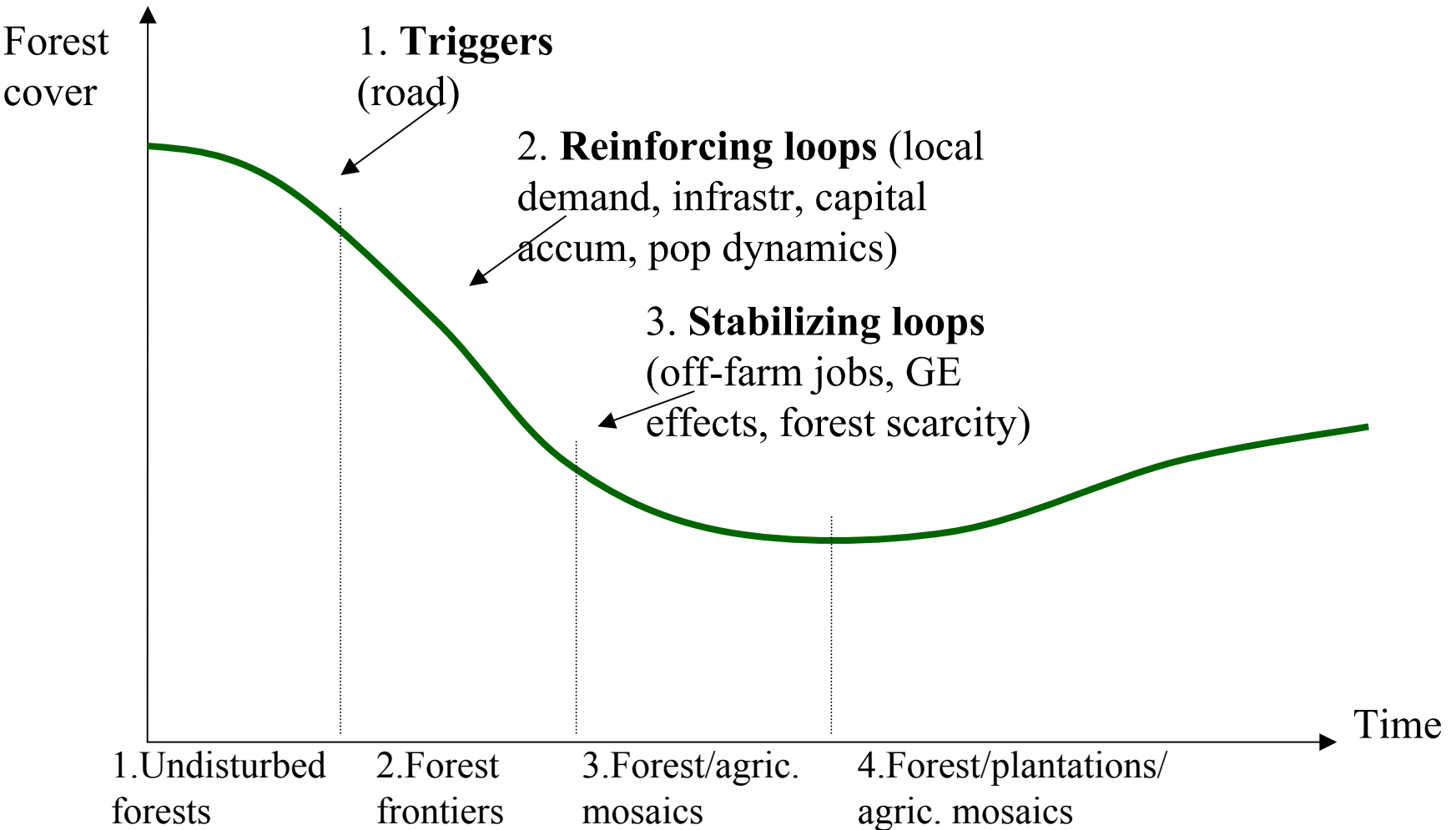
(Kaimowitz and Angelsen 1998)



Some implications

- The importance of knowing at **which level** we are in the analysis/discussion
 - “Defor caused by agric expansion, inappropriate technologies, misguided macroeconomic policies and foreign debt”
- Must **link** land users’ decisions (decision parameters) with policy variables, and be consistent
 - “Defor caused by poverty and devaluation that made agric more profitable”
- Increasingly difficult to **predict** deforestation effects as move down to underlying causes
 - A major challenge for making general policy recommendations!

The forest transition



What's driving the FT?

(Rudel et al 2005; Angelsen 2007)

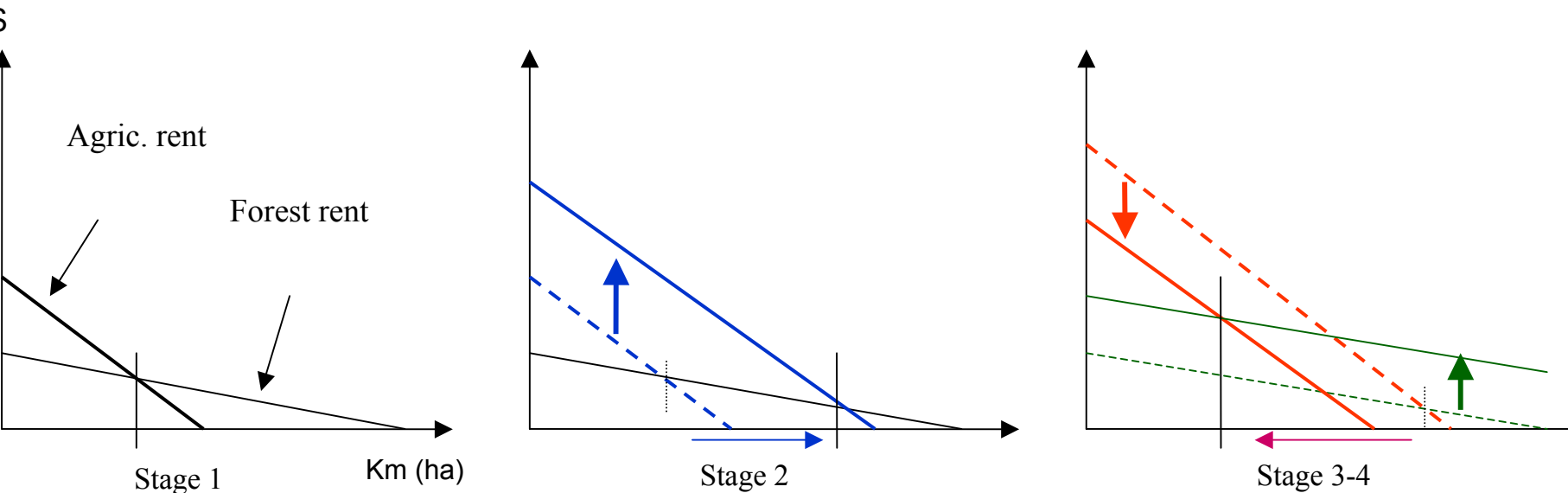
A von Thünen (1826) framework:

1. land use determined by land rent/profit (highest win)
2. rent depends on location (distance from centre)

Stage 2: agric rent \uparrow

Stage 3-4:

1. Economic development path (ag rent \downarrow)
2. Forest scarcity path (forest rent \uparrow)



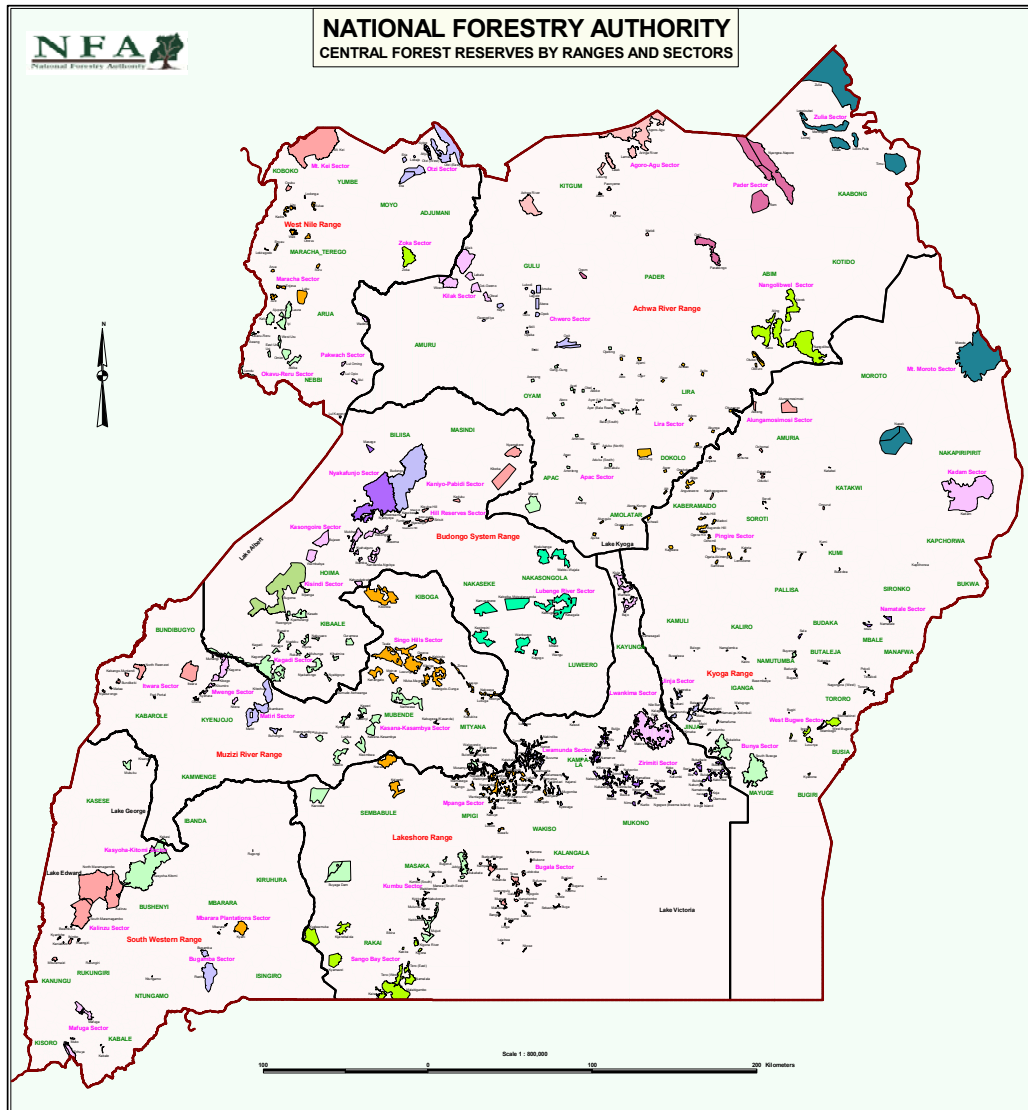
Key policy implications

1. How to slow down increase in agric rent?
 - Don't make frontier agric more profitable
2. How to speed up the economic development and thereby slow down agric rent?
 - Create alternative employment
3. How to speed up/induce forest scarcity
 - Create markets for forest products (but careful)

Difficulties in using policies

1. Defor the aggregate outcome of decisions made by millions of land users, responding to profitable opportunities for forest conversion
 - profitability is determined by underlying causes, which are not easy to apply as policies made on non-forest considerations (e.g., exchange rate)
2. Often a trade-off between poverty reduction & forest conservation
 - win-lose appears to be the rule rather than exception (agric prices, roads)
3. Defor in remote 'state-less' or 'state-thin' places
 - regulations and enforcement difficult/ineffective
 - high transaction costs

1. Conservation areas (example: Uganda)

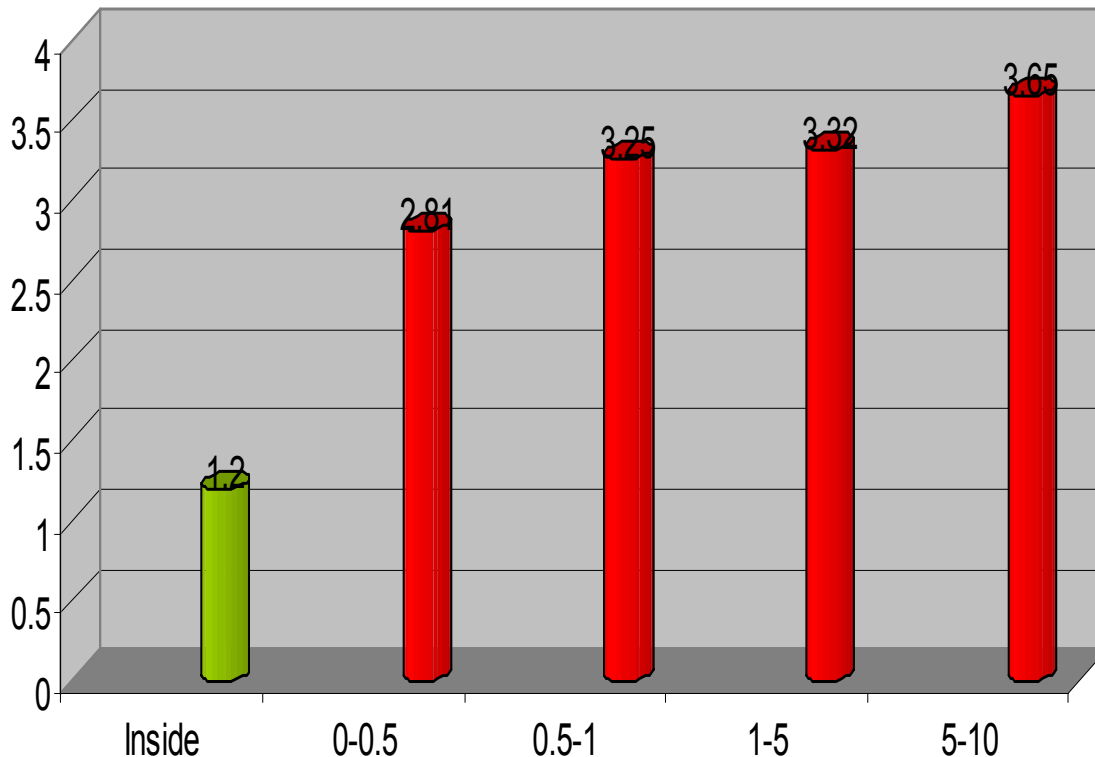


- Very good economic performance (5-7 % pa)
- Population growth: 3.4 % pa
- 24 % forest cover
 - 70 % private
- Deforestation in 1990s: 2.45 % pa

Are parks and reserves effective?

(Babigumira and Angelsen 2007)

Deforestation rates 1990-2000 (% pa).
Inside parks and reserves and in bufferzones (km)



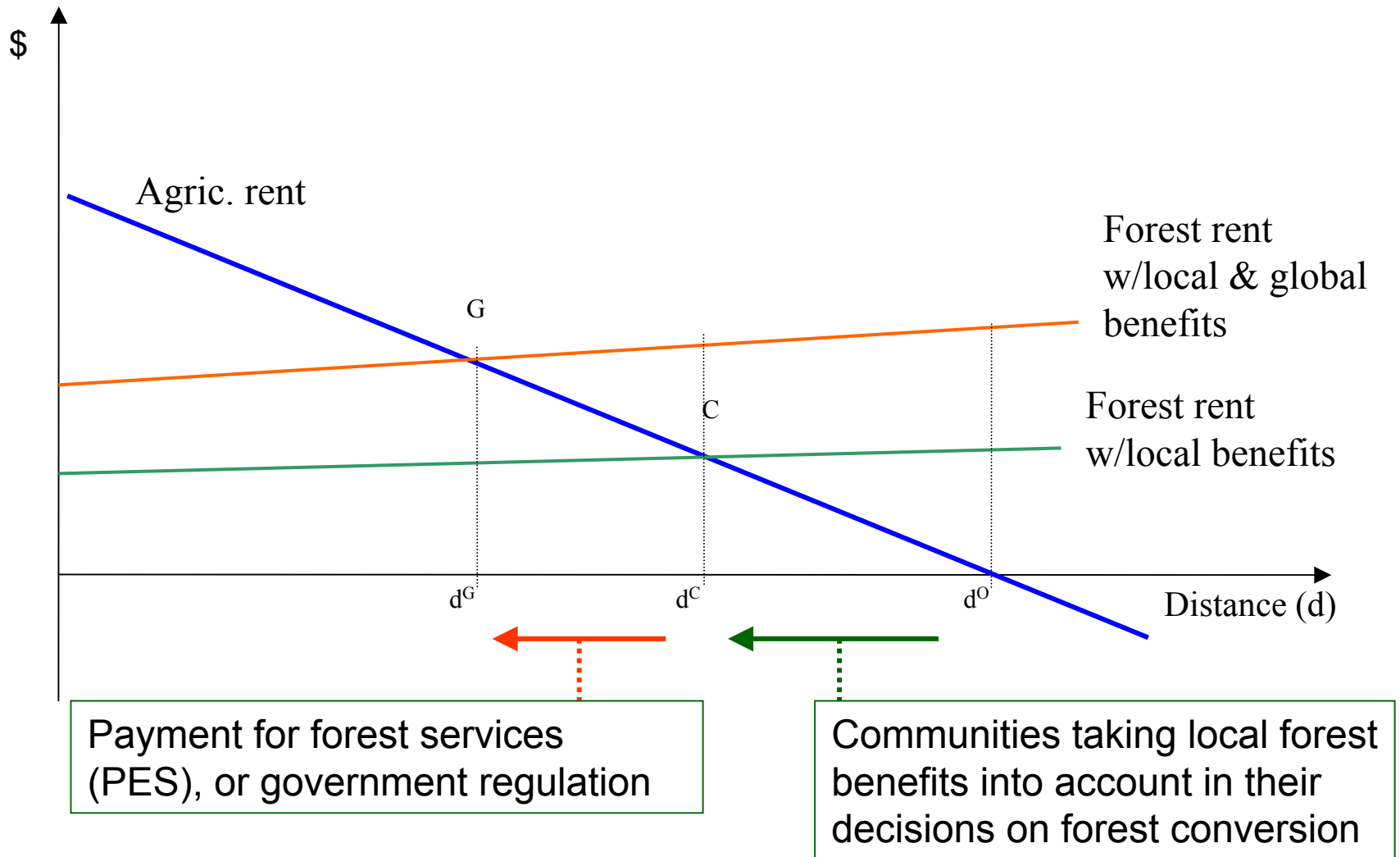
■ Yes!

- Strong enforcement

■ Methods to measure *net* impacts:

- Passive protection (parks in remote areas?)
- Leakage (more clearing outside)

2. Community forest management



Does CFM work?

- Emerging consensus:
 - Relatively successful in forest conservation
 - Relatively **unsuccessful** in raising forest income
 - Ex. Malawi & Nepal: Higher forest income for non-members
- Why?
 - Driven by a conservation (& cost saving) agenda
 - The valuable stuff (timber) not handed to local communities
 - An incomplete reform
- Policies?
 - More authority
 - Get timber rights?
 - Link to other benefits

3. Land tenure: a critical distinction

1. Degree of (exogenous) tenure insecurity

Tenure security promotes higher investments and long term thinking:

- Tree planting
- Land improvements

Good for forest!

2. How land rights are acquired

Deforestation an investment and a means to acquire and/or strengthen land rights.

Higher tenure security promotes deforestation!

• **Land reforms to enhance tenure security often promotes *both* cutting and planting of trees!**

• **Depends on stage in forest transition:
2. effect dominate early in the transition**

4. New agric technologies

- Key questions to assess impact:
 - Does it make agric conversion of forest more **profitable**?
 - Does it change the **means** (access to labour and capital) of land users to clear forest?

Critical factors for the impact of tech change on deforestation (Angelsen and Kaimowitz 2001)

Reduced

Impact on deforestation

Increased



Intensive (high)
 Constrained (subs.)
 Local
 Yield increasing
 Local, segmented

Labour and capital intensity
Farmer characteristics
Output market
Technology
Labour market

Saving (low)
 Well-off
 Global
 Cost saving
 Mobile labour
 (migration)

Intensive (lowland)

Sectors experiencing tc.

Frontier areas
 (upland)

Global
 Short-term

Scale of adoption
Time horizon of analysis

Local
 Long term

Examples of good and bad (for defor) agric technologies

- Agric technologies → **more** deforestation
 - Commodity booms (banana, sugar, cocoa, palm oil, soy bean)
 - Livestock intensification in Latin America (casual effect reverse: the potentially forest saving technologies only adopted when forests are gone)
 - New technologies for frontier agric (possibly also agroforestry, e.g., rubber in Sumatra, Indonesia)
- Agric technologies → **less** deforestation
 - Irrigated, lowland agriculture, e.g. Green Revolution
 - Technologies for intensive systems, when farmers also involved in extensive ones, e.g., more intensive maize production vs. *chitemene* in Southern Africa

Concluding remarks

- Forest transition as a useful framework to understand (stages of) deforestation and policy choice:
 - agric rent
 - providing alternatives
 - induce forest scarcity
- Hard to state generally even qualitatively the defor impact of policies & incentives, let alone quantify the impact. Also highly country-specific.
 - If P&I approach: Focus on direct projects and specific policies, e.g., conservation areas (like A&R under CDM); cannot include broader (and more forceful policies)
 - An argument for a national target approach, but requires national baselines and good inventories and monitoring

