

*Carbon and Beyond:
New Economic
Instruments to Promote
Forest Benefits*

Kenneth M. Chomitz
Development Research Group
World Bank

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Plan of the talk

- **Carbon**
 - the World Bank and the carbon market
 - National Strategies: Colombia
- **Beyond Carbon**
 - Environmental services: Costa Rica
 - Municipal incentives: Paraná
 - Tradeable development rights: Paraná

World Bank and Carbon Market

- **World Bank takes no position on the role of forest carbon in CDM -- this is an issue for Parties to decide.**
- **Prototype Carbon Fund: energy offsets only (for CDM), a learning tool**
- **NSS Program: supports client efforts to develop their own Kyoto strategies**

Prototype Carbon Fund

- **A learning tool to catalyze market**
 - baselines, contracts are public info
- **Emphasis on renewable energy projects**
- **Forest-based sinks: only in Annex I**
- **Renewable biomass substitution for fossil fuels: potential project type in CDM countries**

National Strategy Studies on CDM/JI

- **Goal: capacity-building, strategy development for Kyoto issues**
- **Donor -financed, Bank administered**
- **Client-driven priorities**
- **30+ countries participating or in discussions**

Questions about deforestation prevention projects

- **Are emissions reductions measurable?**
- **Is there leakage?**
- **Are reductions long-lasting?**
- **Do the projects support sustainable development?**
- **Do they provide technology transfer?**

Colombian NSS: forest project design

- **Strong role of forestry in project portfolio**
- **Prevent deforestation from spread of extensive pasture**
- **Protect forests while attacking root causes of deforestation**
- **Sponsor agroforestry, silvopastoral systems**

Colombian forest project characteristics

- **Attacking root causes of deforestation averts leakage**
- **Strong poverty alleviation component**
- **importance of agricultural technology; spontaneous diffusion increases benefits**
- **cobenefits: biodiversity, watershed**

Beyond carbon: other environmental benefits

- **Problem: forest conservation can impose costs on landholder, but benefits others**
- **How to provide correct incentives?**

Environmental Services Program: Costa Rica

- **Recognizes that forest conservation provides:**
 - **local benefits: regulated flow to mini-hydro plants**
 - **regional benefits: urban water supply**
 - **national benefits: biodiversity, ecotourism**
 - **global**

Financiamento de serviços ambientais

RECEITA DERIVADA DO IMPOSTO SOBRE O COMBUSTÍVEL

\$

COMPRADORES DE REDUÇÕES NAS EMISSÕES DE GÁS CARBÔNICO (“CARBON OFFSETS”)

FUNDO NACIONAL PARA A SILVICULTURA

\$

PROPRIETÁRIOS DE TERRA

PAGAMENTOS DOS USUÁRIOS DE ÁGUA

Reduções nas emissões de gás carbônico, serviços de provisão de água

Quadro de Pagamentos para Serviços Ambientais

- Reflorestamento: US\$96/ha/ano
- Manejo florestal: US\$64/ha/ano
- Proteção florestal: US\$40/ha/ano
- Regeneração Florestal: US\$40/ha/ano

Paraná: ICMS Ecológico

- **Part of state revenue-sharing system**
- **municipios rewarded for**
 - **protected areas**
 - **watershed protection**
- **compensates for opportunity costs of lost revenue: similar to environmental service payments**
- **incentive aspects: rewards for quality**

ICMS Ecológico :scale and impact

- **R\$42 million/year**
- **increase in protected areas, 1991-99: 143%**
- **adopted in Minas Gerais, Sao Paulo, Rondonia**

Reserva Legal: History

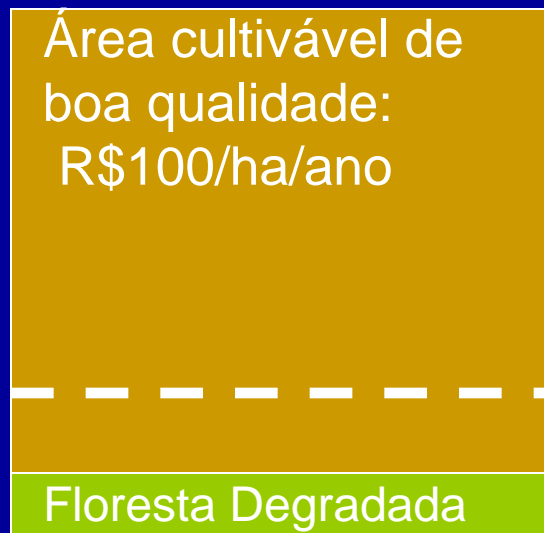
- **Origin: decreto nº 23.793 (1934)**
- **Forest Code requirements: each property must maintain 20% of its area in natural vegetation, (80% in Amazonia -- now under debate)**
- **increasing enforcement over the past few years**

Reserva legal: ineficiências

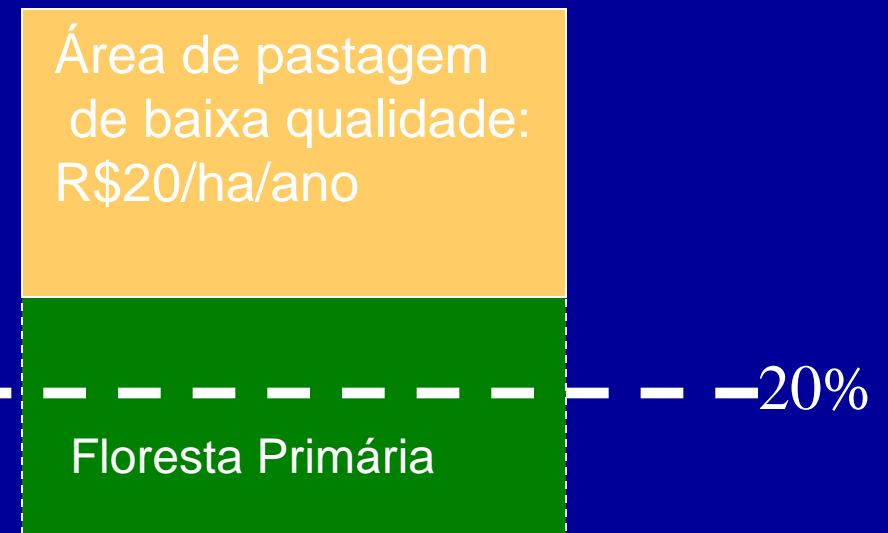
- **Ineficiência em termos econômicos:**
 - limita à agricultura de alto valor
- **Ineficiência em termos ambientais:**
 - não favorece áreas de biodiversidade de alto interesse
 - incentiva a fragmentação

Reserva legal: fiscalização sem flexibilidade

Propriedade nº 1



Propriedade nº 2



Reserva legal: fiscalização sem flexibilidade

Reflorestamento obrigatório:

Caro

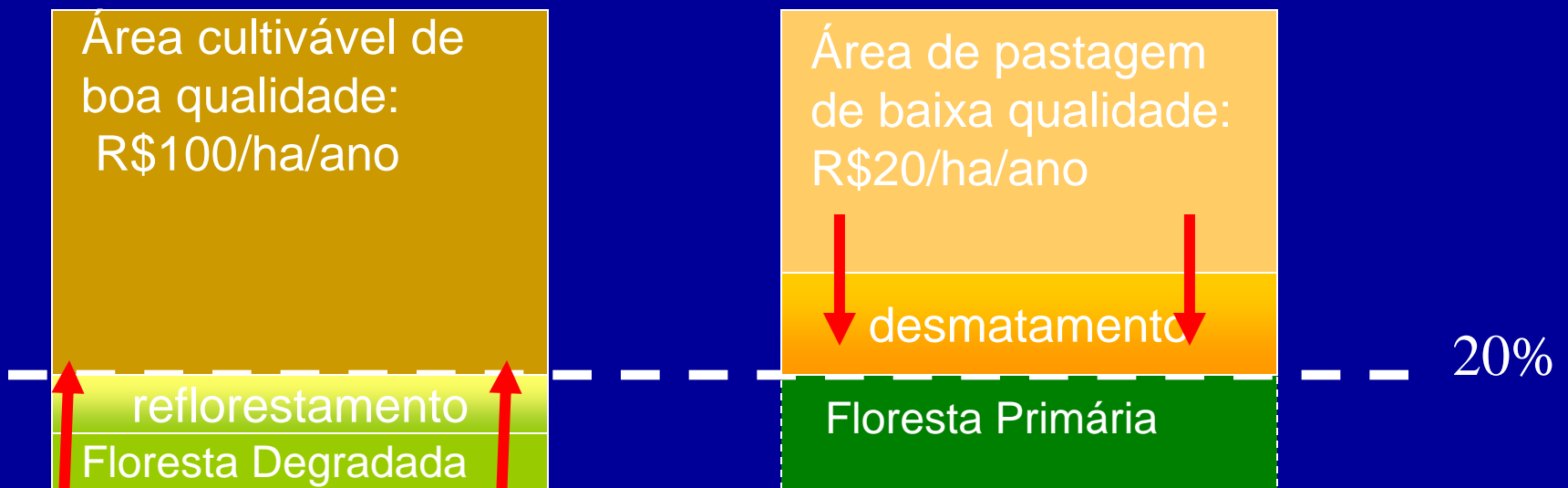
Produção reduzida, menos empregos

Ganho ambiental pequeno

Desmatamento legal:

Ganho econômico pequeno

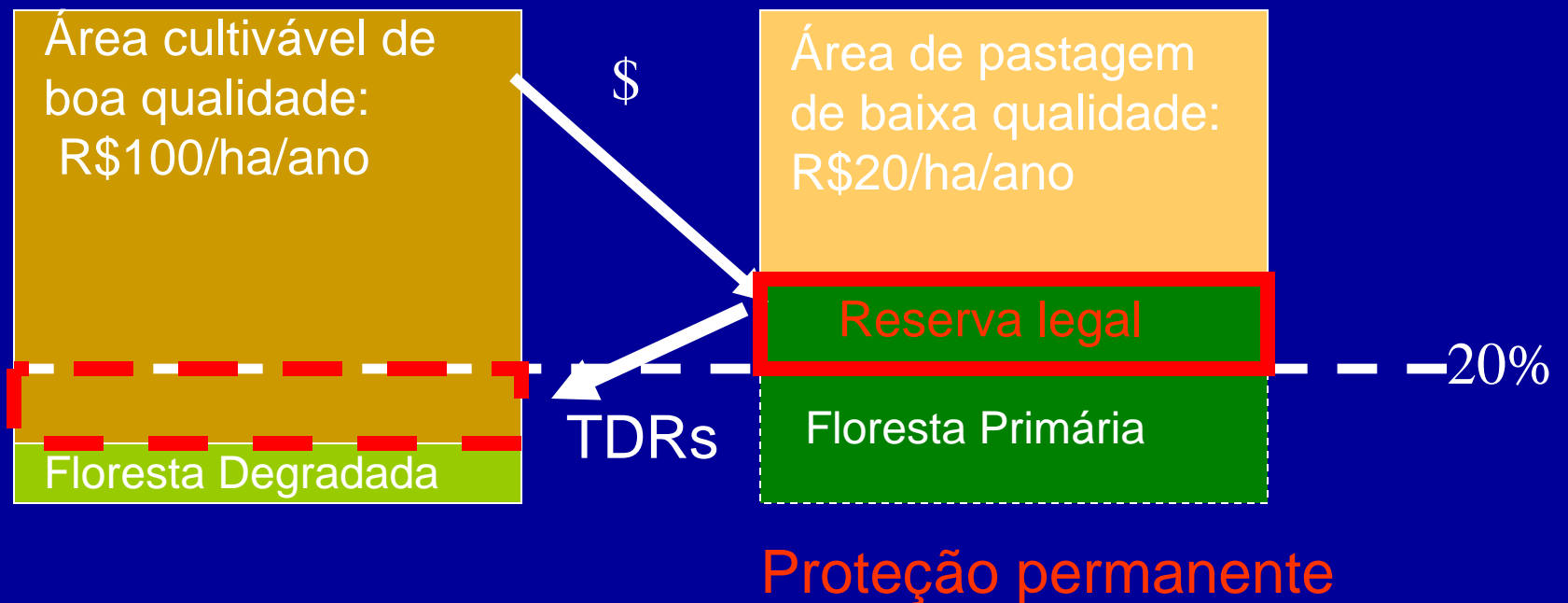
Grande prejuízo ambiental



Reserva legal: com flexibilidade

Custos de conformidade com a lei reduzidos

*Aumento da renda
Proteção florestal*



Araguari Protocol

- **Coffee farmers in Araguari (Minas Gerais): no reserva legal.**
- **Under pressure from local prosecutor, form 'condominium' to purchase 2000 ha of forest as reserva legal.**
- **Local forest price rises from R\$400 to R\$1000 !**

SISLEG: Paraná's new system for Reserva Legal enforcement

- **Landowners achieve compliance through:**
 - **forest regeneration on own land**
 - **offsite compensation:**
 - **purchase of forest**
 - **purchase of reserva legal 'rights' from another landowner**
 - **must be in same biome, same river basin**
- **All compliance plans are registered**

Tradable development rights

- **Takes achievement of habitat preservation as a goal**
- **minimizes opportunity cost**
- **design issue: which areas are substitutable**
- **institutional issues: monitoring and enforcement**
- **link to carbon issues**