Management of common forests in agrarian reform settlements in Northwest Mato Grosso, Brazil

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Summary

• Deforestation in the Brazilian Amazon
• Agrarian reform settlements in NW MT
• Policymix affecting land use change
• Common forest reserves in agrarian settlements
• Mitigation of land use change
• Innovations and institutions for adaptation
• Possibilities for replication
Shift in deforestation scale

DeFries et al. 2008 (data 2001-2005)
Agrarian reform settlements in the Brazilian Amazon

FIGURA 2. PERCENTUAL DE REDUÇÃO DE PASSIVO DE RESERVA LEGAL POR ASSENTAMENTO
Região Noroeste de Mato Grosso

Road System

Legend:
- Red: Desmatamento Acumulado 2011
- Black: Rodovias
- White: Região NO

Land tenure

Legend:
- Red: Desmatamento Acumulado 2011
- White: Região NO
- Gray: PAs
- Green: UCs
- Yellow: TIs
Interactions between a “mix” of policies and deforestation in agrarian settlements
Comparison of two settlements with collective forest reserves

What makes them so different?
Collective forest reserves in Northwest Mato Grosso

*Juruena* settlement: Internal forest frontier. Forest reserve has been invaded. Land tenure irregularities and insecurity. Fire spreads to neighboring property.

Distance apart: ~70km

*Vale do Amanhecer* settlement: Cooperative resource management. 57% of the settlement land area preserved as forest. Reserve is legally documented (7,200 ha) and certified for Brazil nut production. Socially legitimate.
Vale do Amanhecer Baseline

- Timber extracted prior to expropriation
- Lots distributed to urban landless households
- Elites resisted, in effort to keep urban wages low
- Fanfare as a “sustainable settlement”
- Collective reserve layout, less forest in individual lots; fragmentation; riverbanks unprotected
- Agricultural credit programs stimulate clearing
- Settlers slash and burn to clear forest on lots
- Pastures planted after one year of annual crops
- Extensive/low productivity dairy or beef cattle as the main economic activity in the settlement
- Successive invasions by gold miners in reserve
Consequences for adaptation

• Loss of forest stocks (timber, soil, carbon)
• Reduced ecosystem services provision (water, NTFPs)
• Environmental liabilities (permanent protection areas must be restored)
• Difficulties to access public credit
• Greater vulnerability to extreme events (2010 drought)
Vale do Amanhecer Innovations

- Community management of 7,200 ha reserve
- Agroforestry systems on farm lots
- Provision of portable saw mill to add value
- Environmental license of the settlement
- Cooperative formation, certified Brazil nut venture for oil, meal and by-products
- Supply contract with indigenous communities
- Natura purchase contract for oil
- CONAB minimum price guarantees and school lunch program for Brazil nut products
- Fires and deforestation under control
Forest cover change at landscape (settlement) scale
Vale do Amanhecer
Forest cover change at landscape (settlement) scale
Juruena settlement
Luiz Vieira do Nascimento (Luizão) (participation score: 16)

Adalto Buenos Ares (participation score: 1.7)

Ivo Kubiak (participation score: 7)

Cicero da Silva (participation score: 0)
Economic results

Baseline (dairy, beef cattle): the farmer or settler who wishes to base his economic future on ranching needs at least 33 ha to maintain a gross family income of about US$ 6,500/yr.

In contrast, at an average of 2.3 ha of AFS per lot with shaded cocoa (manageable by one adult on an annual basis), annual income increased to US$ 8,815, a gain of 26%, while using less than 7% of the area required for pasture.
Millennium Goals - Best practices award 2012
Institutional results/discussion

Feasibility and legitimacy of common property management emerges through technical assistance, strategic financing, cooperative production, institutional/niche marketing.

Seu consumo muda o mundo
Comprar produtos locais desenvolve a economia e contribui para manter a vida no planeta

Informações:
(66) 3553-1690
www.carbonjuruena.org.br

Realização:

Patrocínio:

Parceiros:
## Interventions interacting with formal policy instruments

### 8 year sequence of interactions identified by Vivan et al 2013

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<th>Instruments and ICDP Interventions</th>
<th>Forest code</th>
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<th>Tech assistance</th>
<th>Social Organization</th>
<th>SIMLAM: CAR, LAU</th>
<th>Certification</th>
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<th>Market development</th>
<th>Credit financing</th>
<th>Contracts with ind. communities</th>
<th>Contracts with private companies and CONAB</th>
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</thead>
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<tr>
<td>Brazilian Forest Code</td>
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Legend: cpl = complementary; syn = mutually reinforcing/synergistic; cnf = conflicting; seq = sequentially dependent. The direction of sequential dependence is from row to column.