Land-based mitigation: insights on REDD+ from the Global Land Project

GLP IPO & SSC:
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REDD+ in mosaic landscapes and degraded forests

Ole Mertz and many colleagues

Impacts of Reducing Emissions from Deforestation and forest Degradation + enhancing forest carbon stocks (I-REDD+)

EU-FP7 grant agreement no. 265286
http://www.i-redd.eu/
REDD+ POLICY ASSESSMENT CENTER http://www.redd-pac.org/

IIASA A. Mosnier, M. Obersteiner, P. Havlik, J. Pirker
UNEP-WCMC V. Kapos, R. Mant, B. Bodin
INPE A. Soterroni, F. Ramos, G. Câmara
IPEA A. Ywata Carvalho
COMIFAC M. Tadoum, A. Makoudjou, P. Tonga, R. Ndinga, D. Bokelo
1. Challenges for remote sensing and carbon stocks monitoring:

Key messages from I-REDD+
Mapping forest change with dense time series

Houaphan Province, Lao PDR

14% stable grassland and permanent croplands

61% shifting cultivation

First clearing year

Pflugmacher, Grogan, Thongmanivong, Hostert
2. Pathways of land use/cover change
Direct cause of deforestation: annual crops (shifting cultivation)
→ Coffee expansion over agricultural lands
→ Shifting cultivation over marginal & remote areas
→ Displacement of poor/ethnic minorities households (iLUC).

Business-as-usual scenarios - Huaphan Province, Laos

Main factors

Main factors controlling pathways of commodity crop expansion in tropical forest landscapes

**LANDSCAPE**
Availability of forestland versus other land pools:
- Physical availability
- Agro-ecological potential
- Accessibility
- Land use policies

**ACTORS**
Differences in constraints and opportunities between small and largeholders:
- Sizes of land holdings targeted to reach economies of scale
- Transaction costs and conflicts associated with land consolidation
- Capital versus labor constraints, including for clearing forests
- Capacity to negotiate with public authorities
- Capacity to establish and enforce property rights
- Capacity to establish infrastructures
- Responsiveness to governance instruments

**LAND USE / AGRICULTURAL SYSTEMS**
Relative characteristics of the different land uses:
- Export orientation
- Accessibility requirements
- Infrastructures requirements
- Specific agro-ecological requirements
- Bid rent

**FORESTRY / AGRICULTURE LINKAGES**
Contextual factors affecting costs and benefits of forest clearing:
- Amount and quality of timber stocks in forests
- Market demand and prices for timber
- Integration between forestry and agricultural activities

Meyfroidt et al. 2014 *ERL*
3. Policies for steering land use/cover change pathways
Land zoning, including logging concessions, can be effective to reduce deforestation, and sometimes forest degradation.
Preliminary results: Deforestation in Legal Amazon (2000-2010)

Remotely sensed by Modeled by GLOBIOM PRODES

Brazil

16.53 Mha

16.93 Mha
Preliminary results: Deforestation in the Republic of the Congo

Forest conversion modeled with CongoBiom

Deforestation under different policy scenarios

- Increase of deforestation in each decade

- Base: All current restrictions in place
- No_FC: Forest concessions open for conversion of forests
- No_PA: Protected areas open for conversion of forests
Trans-scalar land use planning

Figure 2: Changes in the Scale and Governance of Land Use Planning in the Developing World

Scope of Organizational Mandate

The Strategic Action Field

Non-Profits
International Environmental & Scientific NGOs & multilateral organizations

For Profits
Sovereign Funds, Agribusinesses & Other Land Grabbing Organizations

1. Decentralize land use controls and tenure landholders
2. Create national parks or privately funded biological reserves
3. Build state capacity to implement REDD+

The Nation State

Village Authorities

Take out concessions to exploit natural resources

Grab large tracts of land

GLOBE

NATION

PROVINCE

COUNTY - MUNICIPAL

VILLAGE - CUSTOMARY

Rudel and Meyfroidt 2014, Land Use Policy
4. Fairness and benefit distribution systems:

Key messages from I-REDD+:

• Just benefit distribution needs elements of both state and community control

• Locating REDD+ activities should match desirable qualities for REDD+
Conclusion

- Monitoring poses challenges but they can be addressed through landscape approaches

- Pathways of land use change are hard to predict but can be influenced by combining several interventions

- Fairness and trust issues are key