

Mapping Ecosystem Services and Poverty in the Amazon Basin

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Ecosystem Services and the Poor

Natural capital contributes significantly to well-being of the poor

Twice as important to poor households as non-poor (Vedeld et al. 2004)

Provides the opportunity to marry conservation and development agendas



Mapping Services and the Poor

Demonstrate the benefits poor people gain from ecosystem services at relevant scales

Forecast policy-induced changes in services, and impacts on the poor

Promote conservation to increase well-being *before* services are lost



Requirements for Mapping

Current approaches can give us a sense of what to expect

Poverty and ecosystem service data at appropriate scales

Institutions that control provision of service are represented



Amazon Basin

- UK DFID granted £4.8 billion last year
- Interested in serious contribution if poverty alleviation is an option
- Examine current conditions and change in 2020

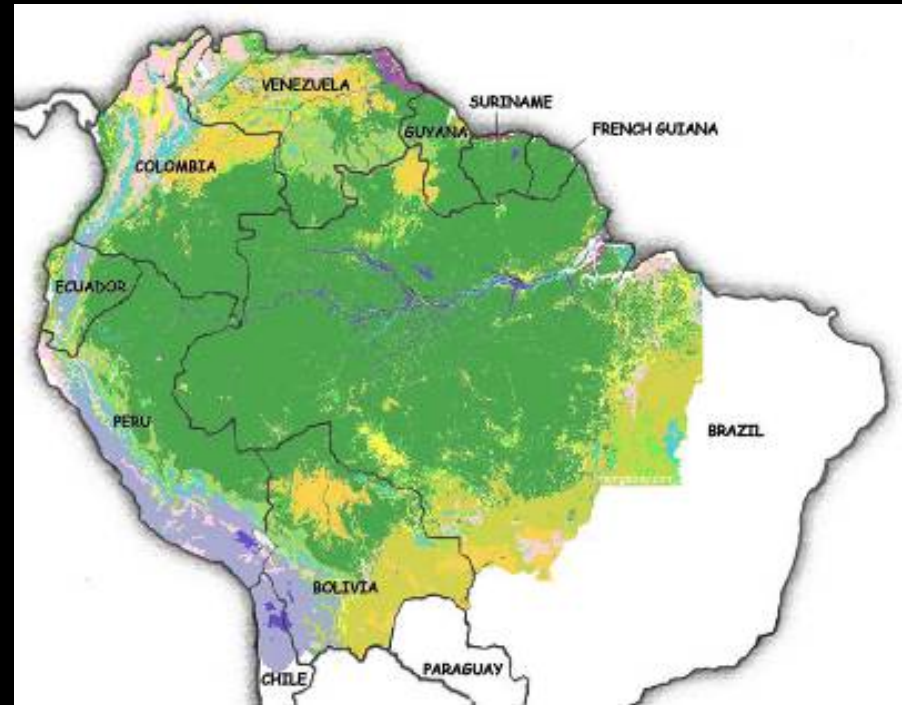


Change in the Amazon and Andes

Will projected
deforestation and **road expansion** lead to
changes in forest
products?

Will the poor lose
more?

12.5 million km²



Natural Capital Project



InVEST: Integrated Valuation of Ecosystem Services and Tradeoffs

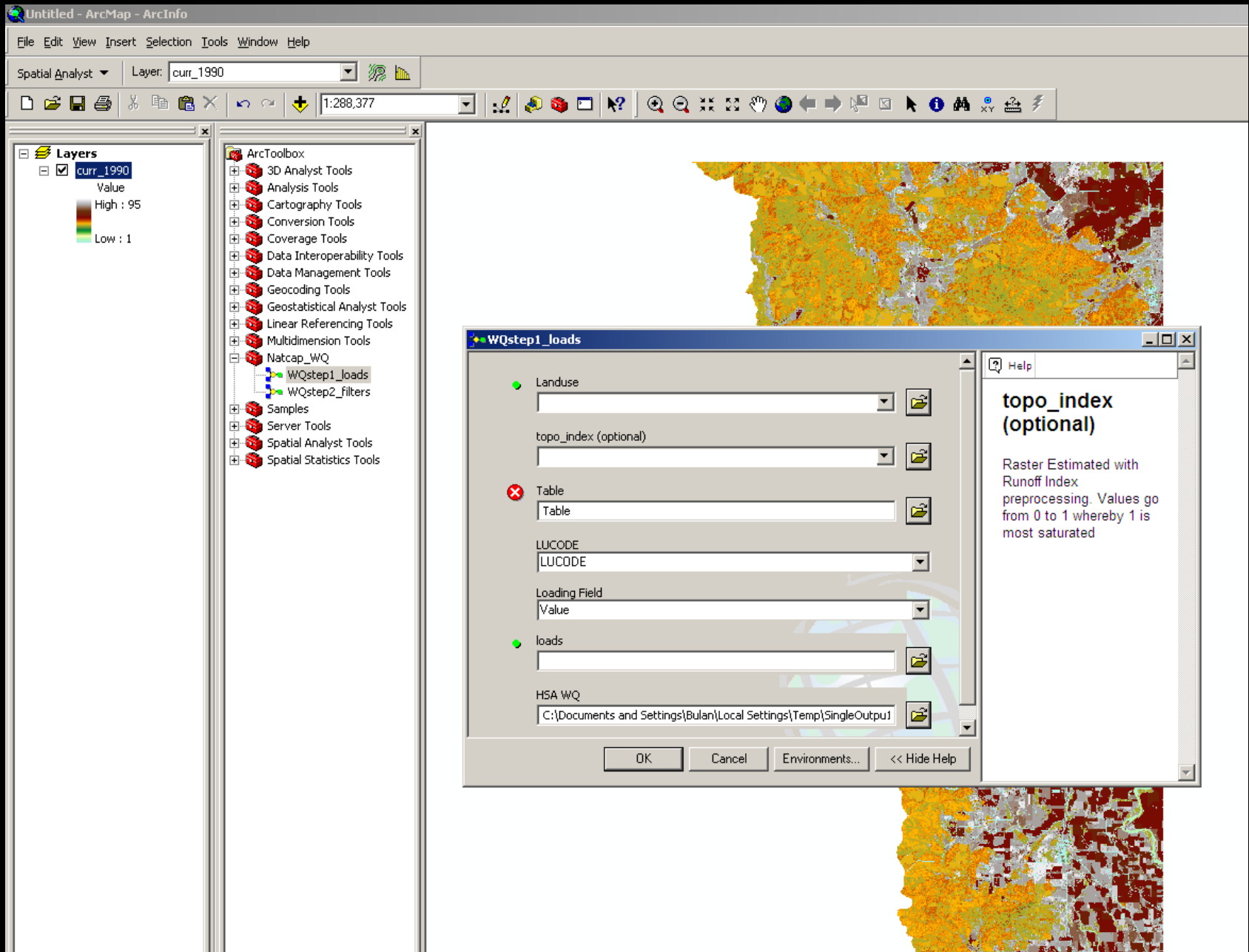
Steve Polasky, Erik Nelson, Guillermo Mendoza, Driss Ennaanay, Stacie Wolny, Heather Tallis, Marc Conte, Jim Regetz, Peter Kareiva, Taylor Ricketts, Gretchen Daily, Robin Naidoo, Eric Lonsdorf, Kai Chan, Rebecca Shaw, Dick Cameron, Neil Burgess, Andrew Balmford

InVEST

- Biodiversity and multiple services
- Spatially explicit
- Production function models
- Biophysical and economic terms
- Driven by scenarios
- Flexible and transferable



Arc Toolbox

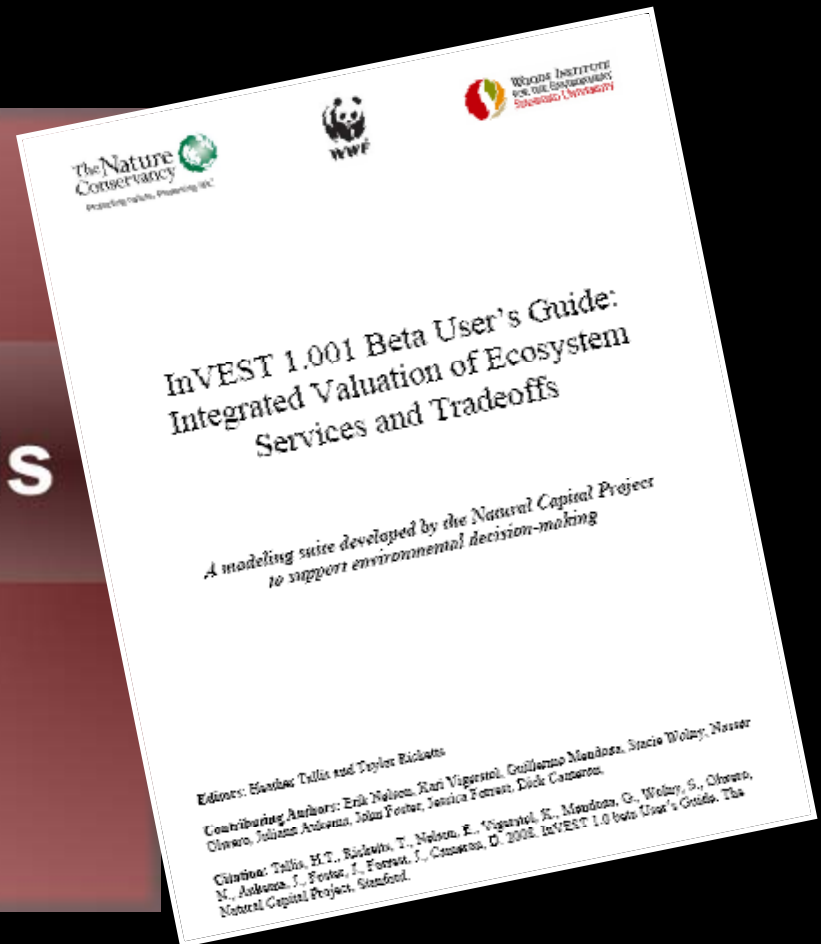


Download InVEST at
<http://invest.ecoinformatics.org>

natural
capital
PROJECT

InVEST Tier 1 Tools

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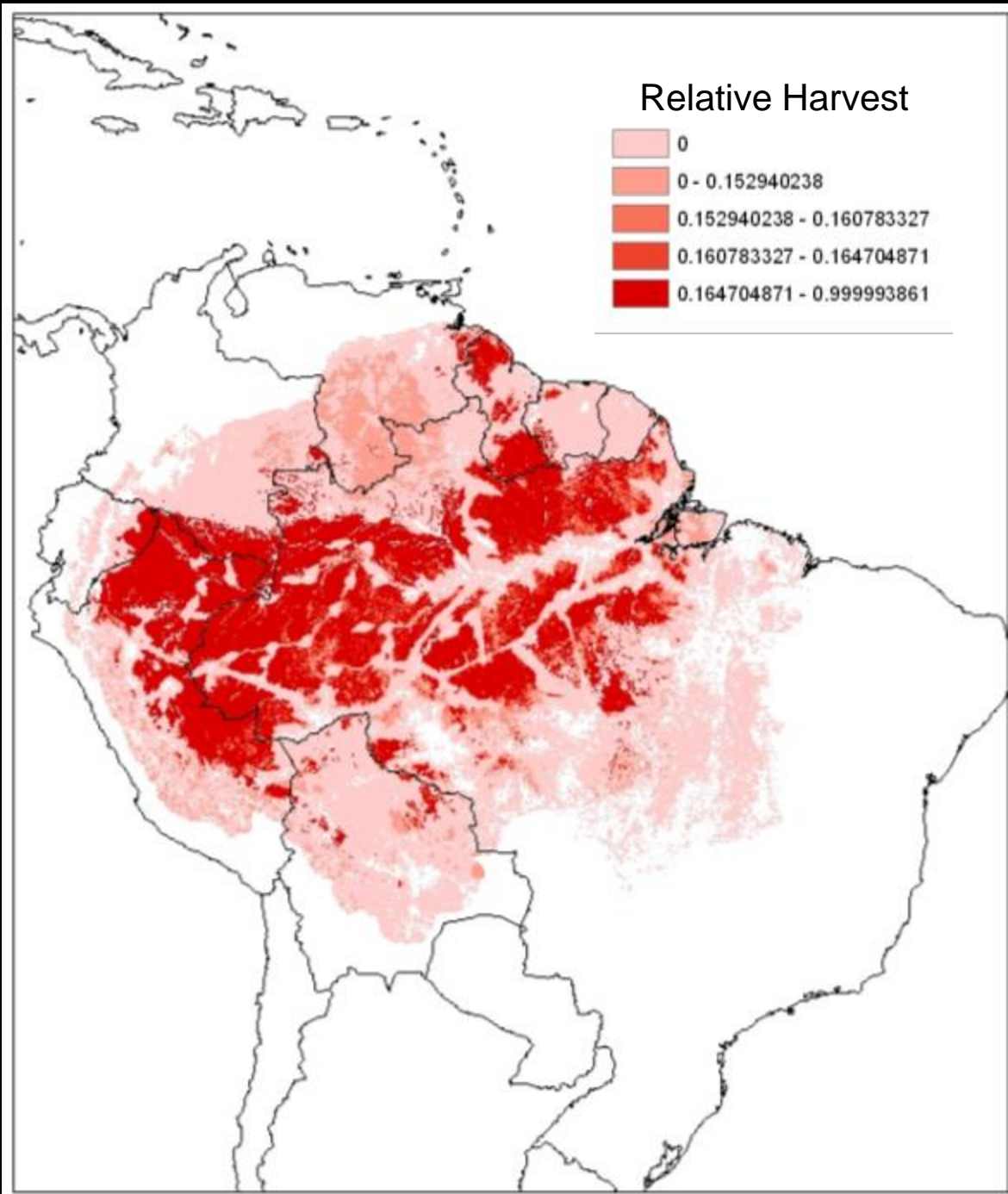


Kareiva, Ricketts, Daily, Tallis, & Polasky, Eds. 2010. *The Theory & Practice of Ecosystem Service Valuation in Conservation*. OUP.

Open Access Forest Products

- Products associated with habitat types
- Habitat quality
- Distance from population centers (>1000 people) along roads and riverways
- Ease of harvest
- Institutional protection (enforced)

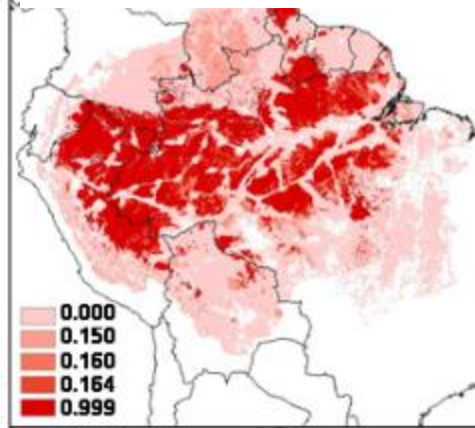
Bushmeat Status in 2000



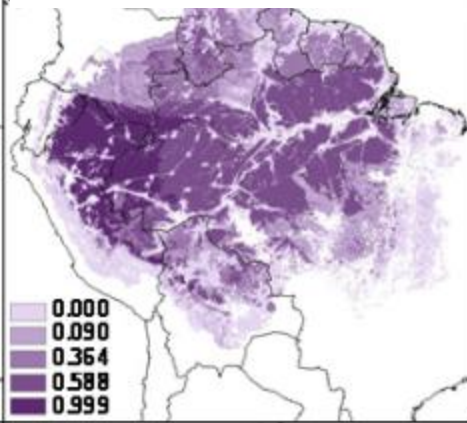
Forest Products

Status in 2000

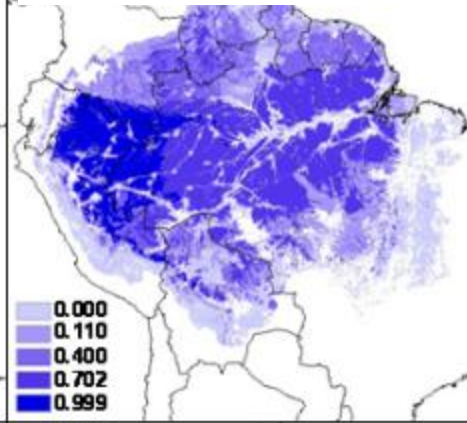
Bushmeat subsist



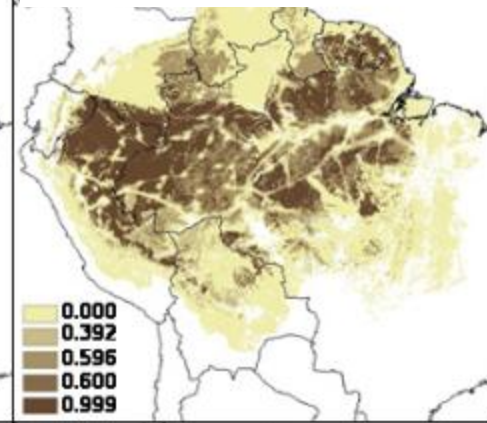
Fruits/Nuts subsist



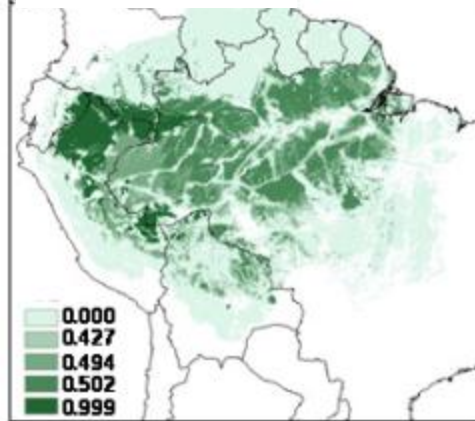
Medicine subsist



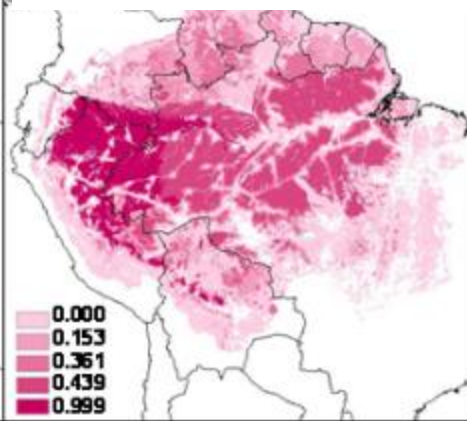
Wood subsist



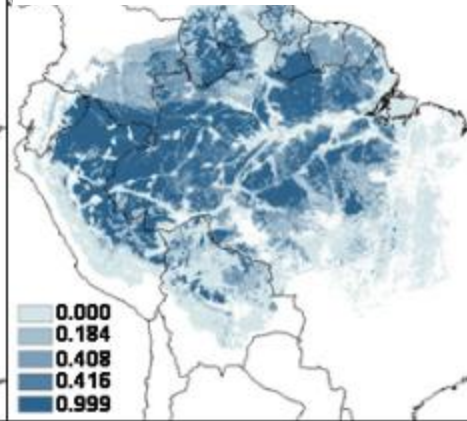
Fiber subsist



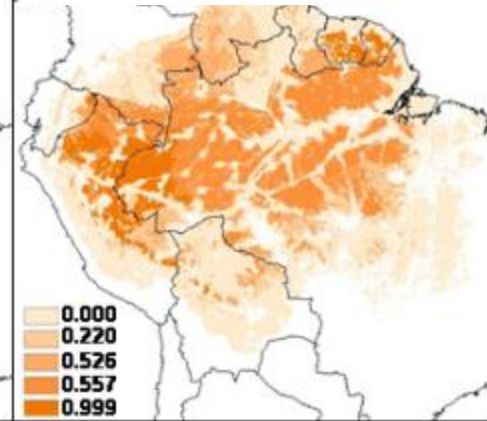
Fruits/Nuts market



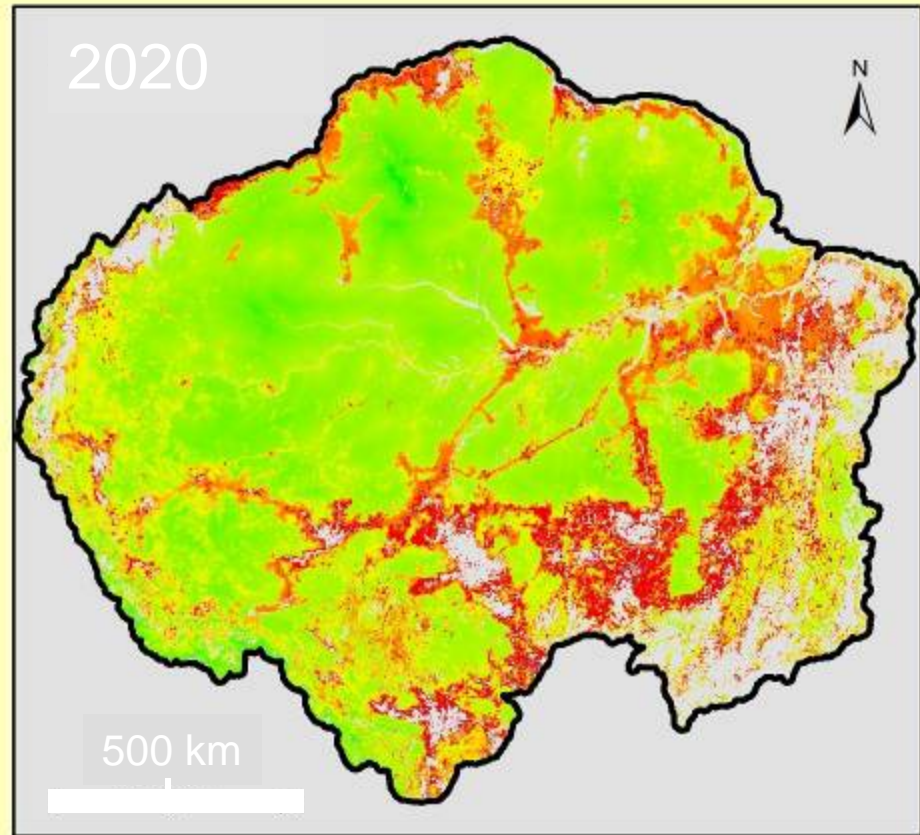
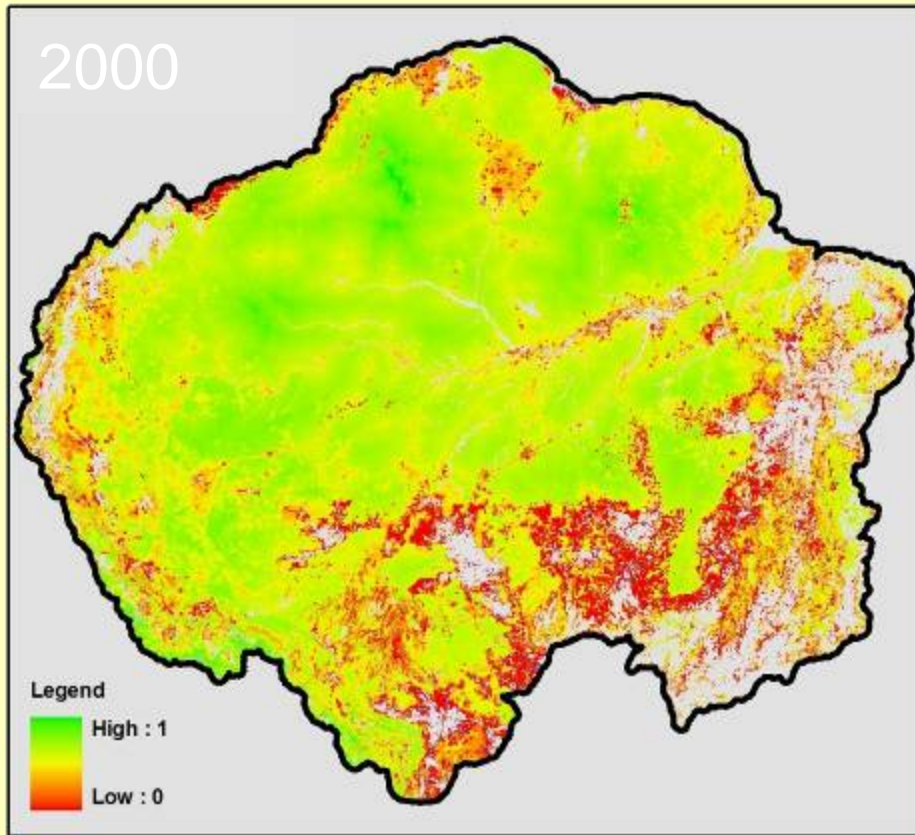
Medicine market



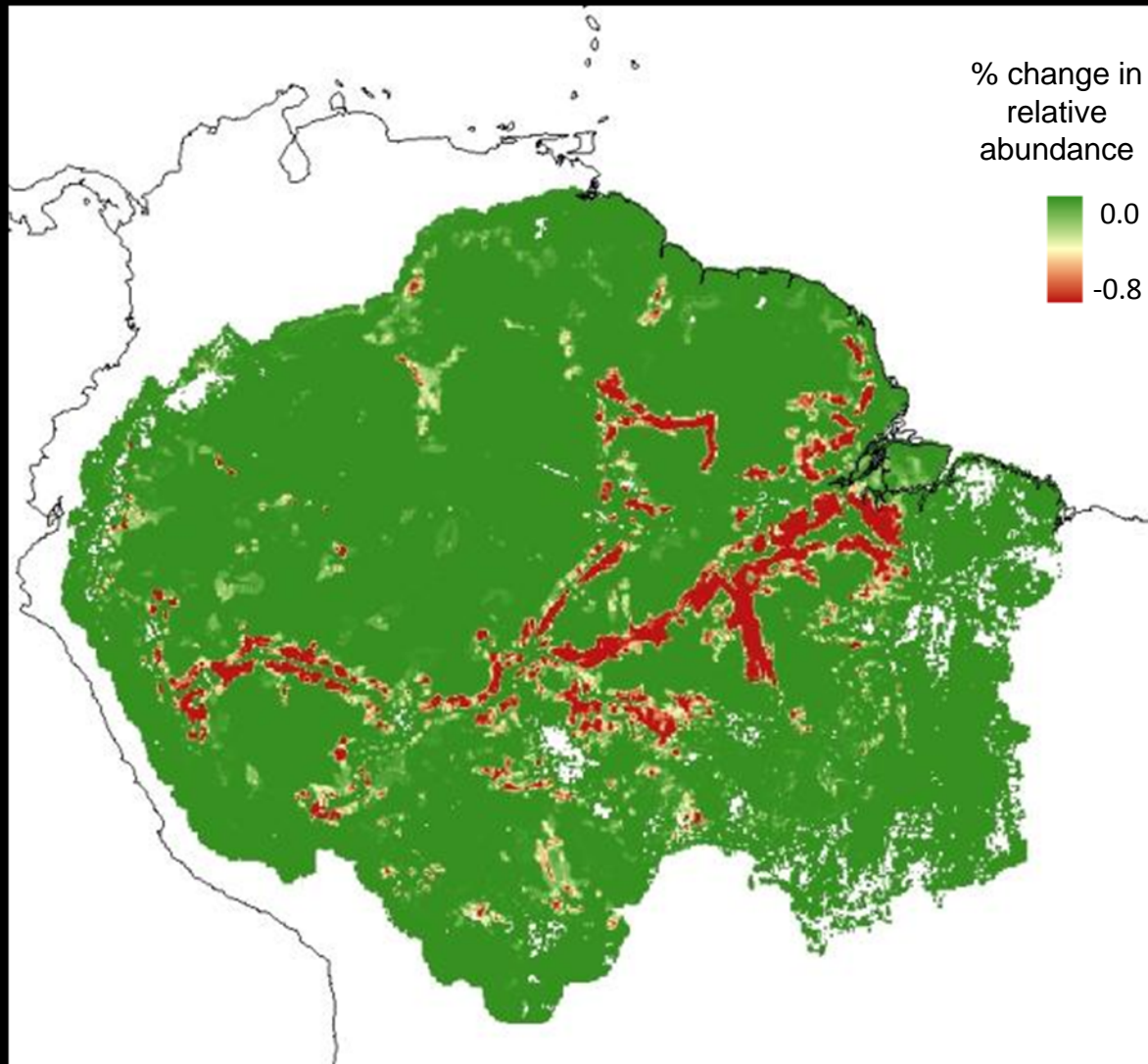
Wood market



Scenarios

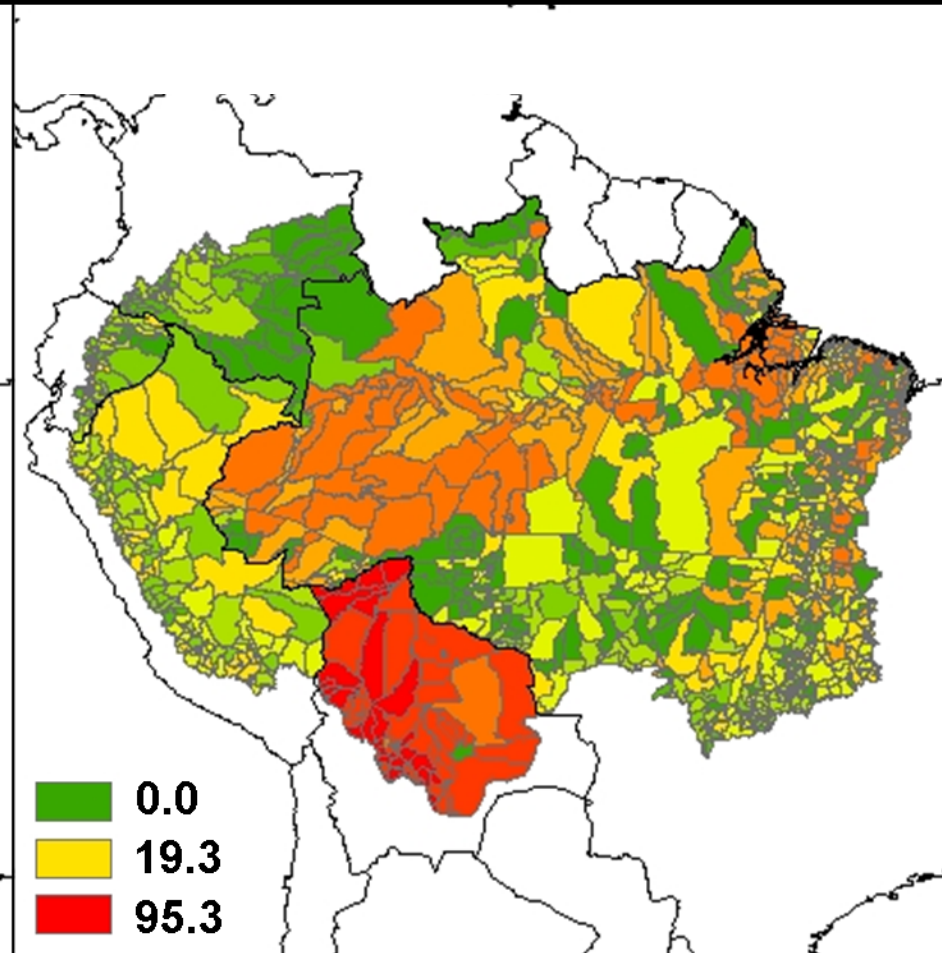
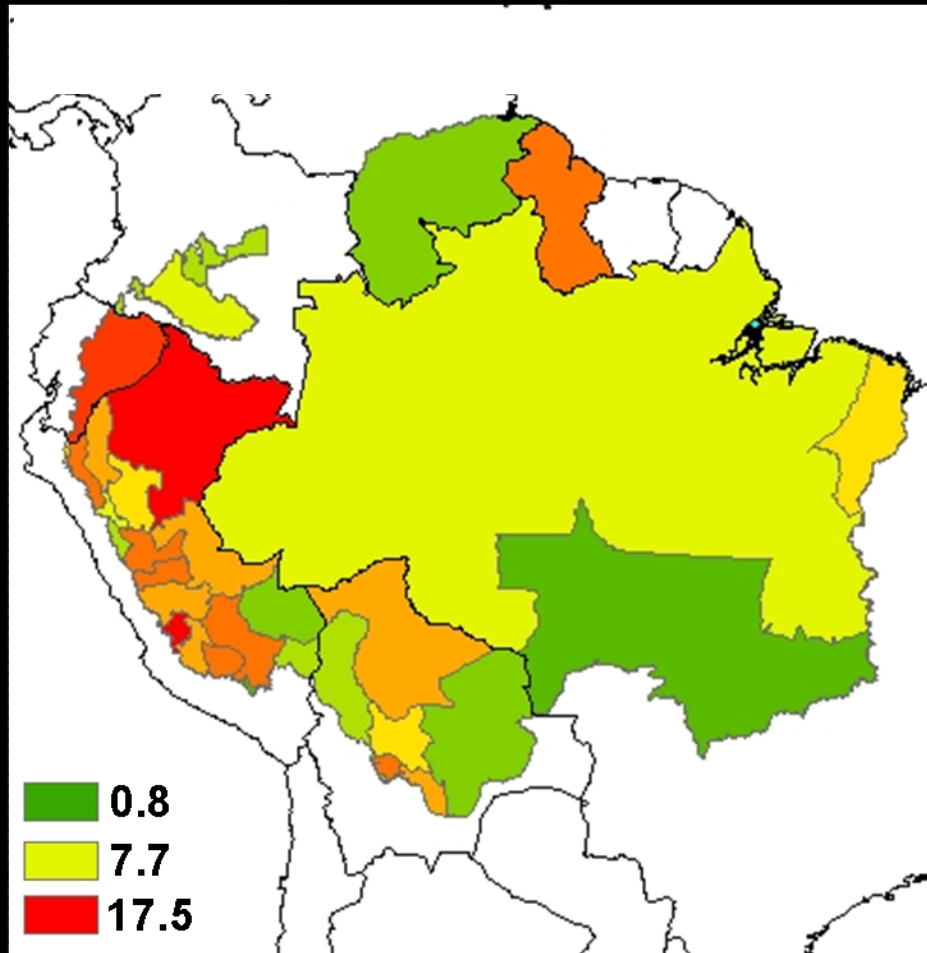


Change in fruit & nuts for market sale



% Underweight Children

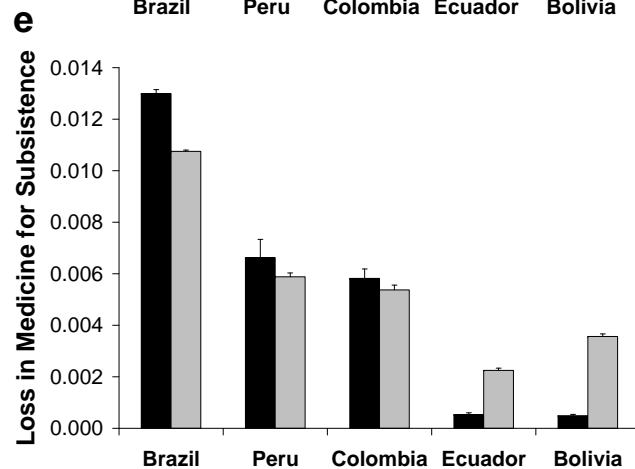
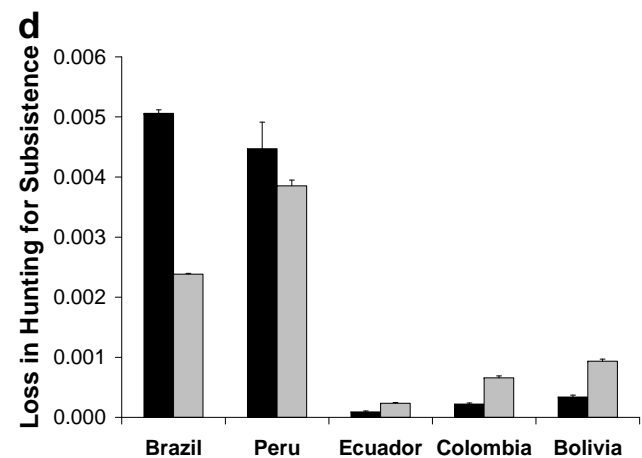
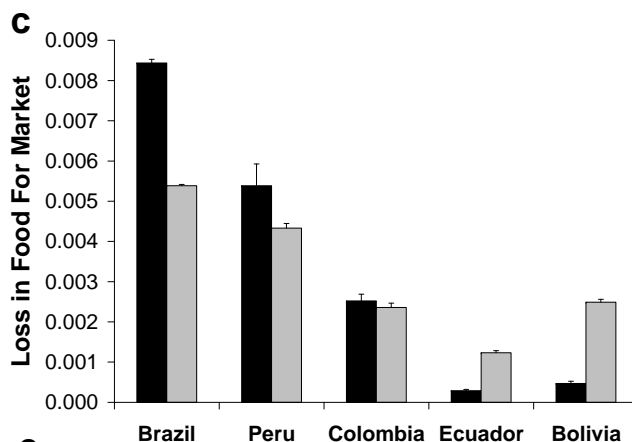
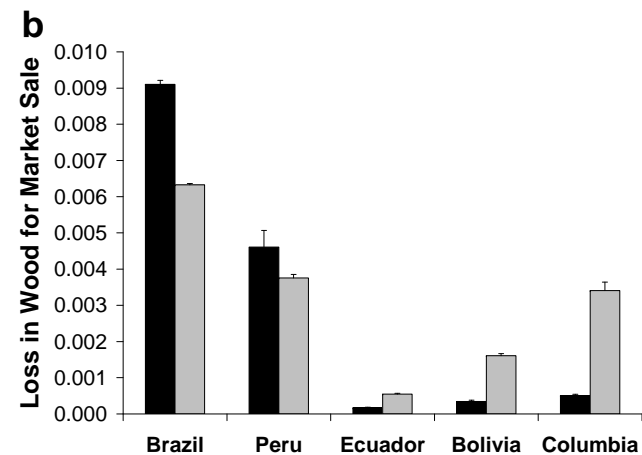
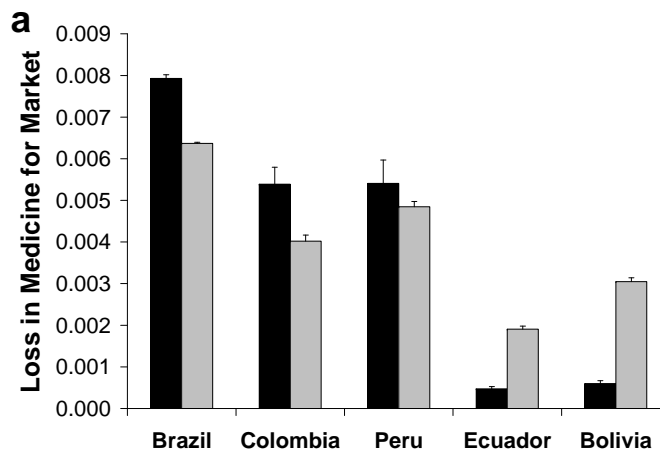
% UBN



The “poor” are the 25% of areas that are worst off

poor
 non-poor

In some countries, the poor lose more



Conclusions

- Slated deforestation and road expansion are likely to have a disproportionate affect on poor in Brazil and Peru.
- What's happening with other services?
- More detail on connection between poor and resources.
- Higher resolution poverty data.