Smallholders in Southwest Amazonia: development policies, socioeconomic conditions and forest use

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Objectives

- How current and previous development policies and socioeconomic conditions are shaping household's land use.

- Using a tri-national frontier zone with similar biogeophysical conditions but divergent development policies and socioeconomic conditions to enable comparative analyses.

Household Data ⟷ Spatial Analyses

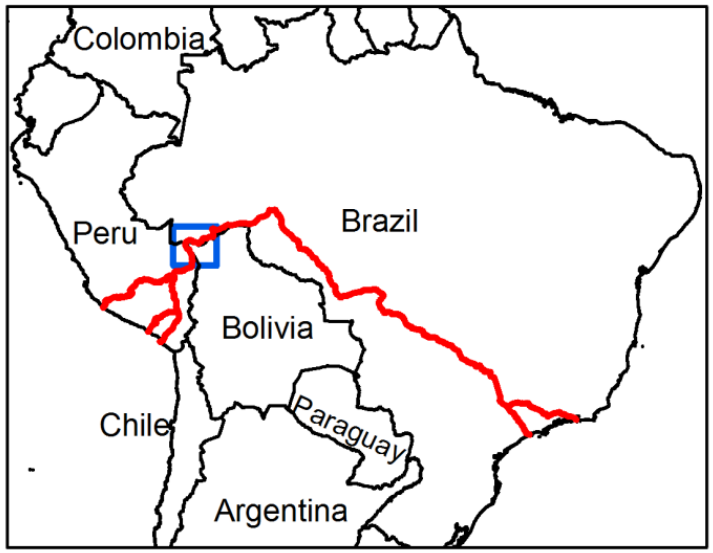






Study area

- Tri-national border
  Peru – Brazil – Bolivia,
  Southwest Amazonia
- MAP region
  Madre de Dios – Acre – Pando
- ~15000 Km^2
- 2006-2007
- 32 villages
- 262 households



STUDY AREA

Legend

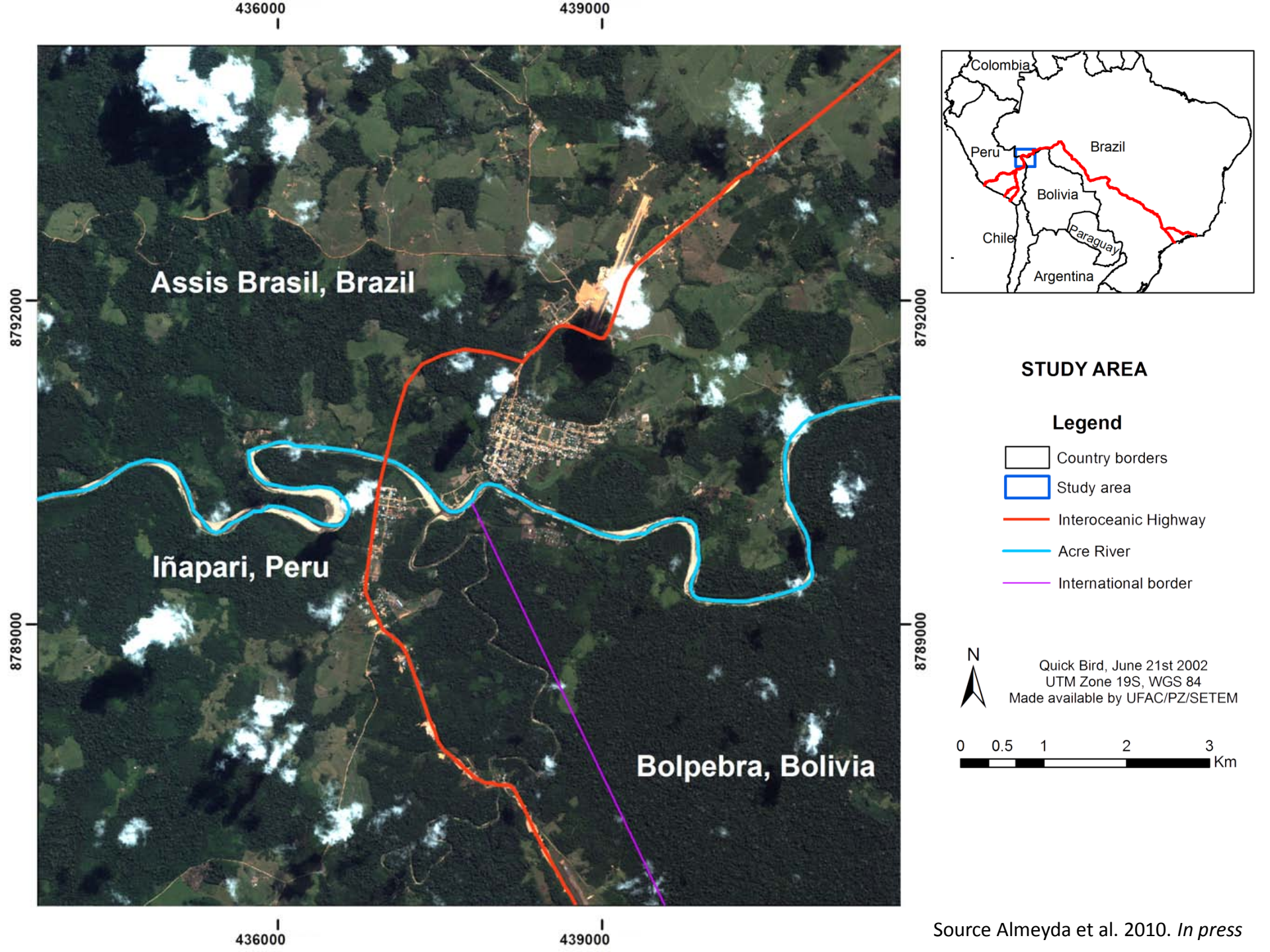
Country borders

Study area

Interoceanic Highway

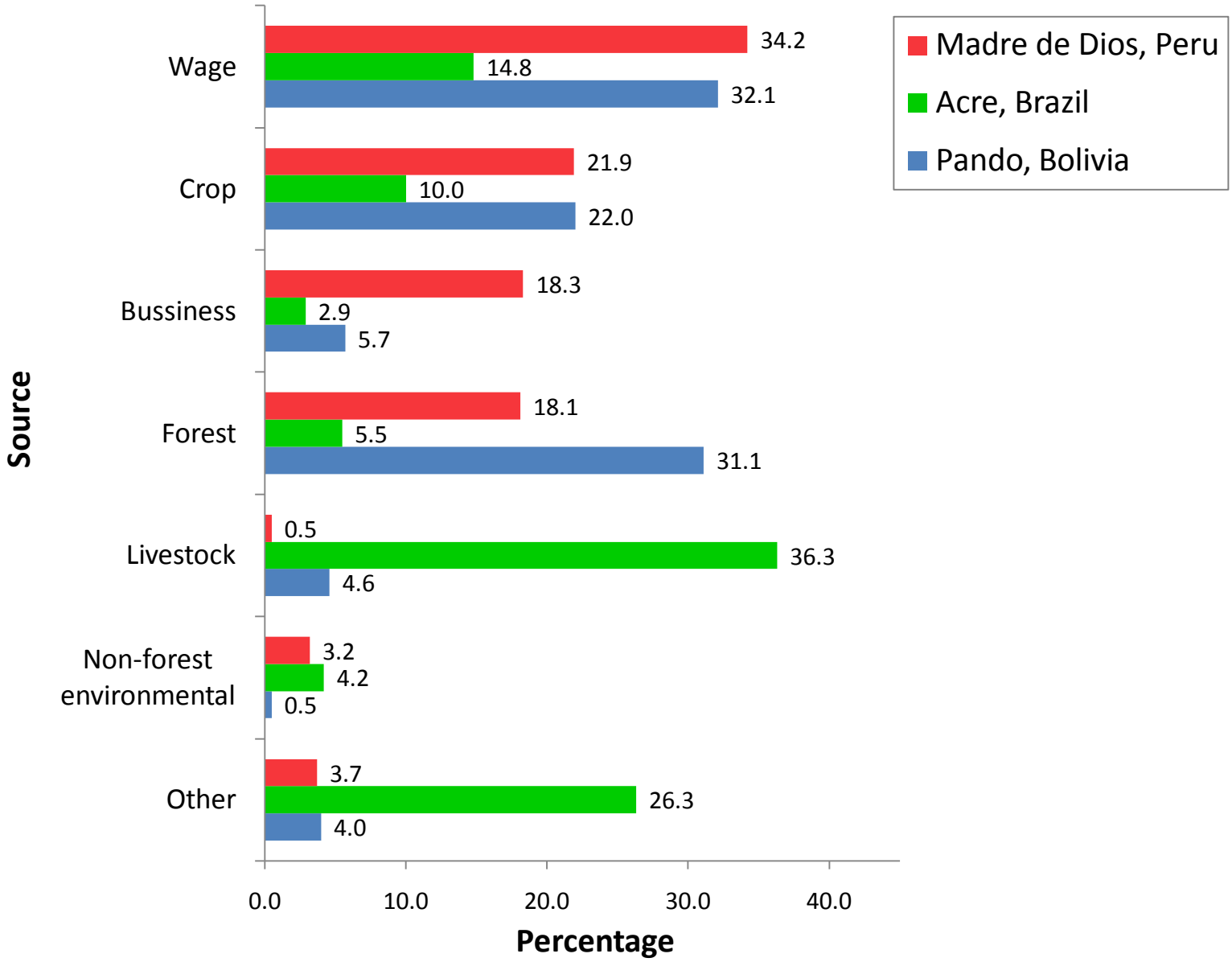
Study area

	Madre de Dios Peru	Acre Brazil	Pando Bolivia
Ecorregion	←	**Southwest Amazon Moist Forest**	→
~1870s	←	**Indigenous Terretory**	→
1870-1913	←	**Rubber Boom, inmigration**	→
1913-1959		**Rubber Bust, new economic activities**	
	out-migration	tire industry WW II, immigration	out migration
1960- 1989		**Big projects and colonization**	
	Agrarian reform	Operation Amazonia Dirt roads	Agrarian Reform
	←		→
1990-2010		**Infrastrucutre Development**	
	Initiative for the Regional Integration of South America-IIRSA, road paving		
	paving 2006-2010	paving 2000-2002	paving 2008?
Area Km2	**85182**	**153149**	**63827**
% Primary forest ~2000	**91**	**89**	**98**
Rural population ~2007	**29286 (27%)**	**207340 (30%)**	**36477 (54%)**
Size of cattle herd ~2007	**48256**	**2245687**	**65760**

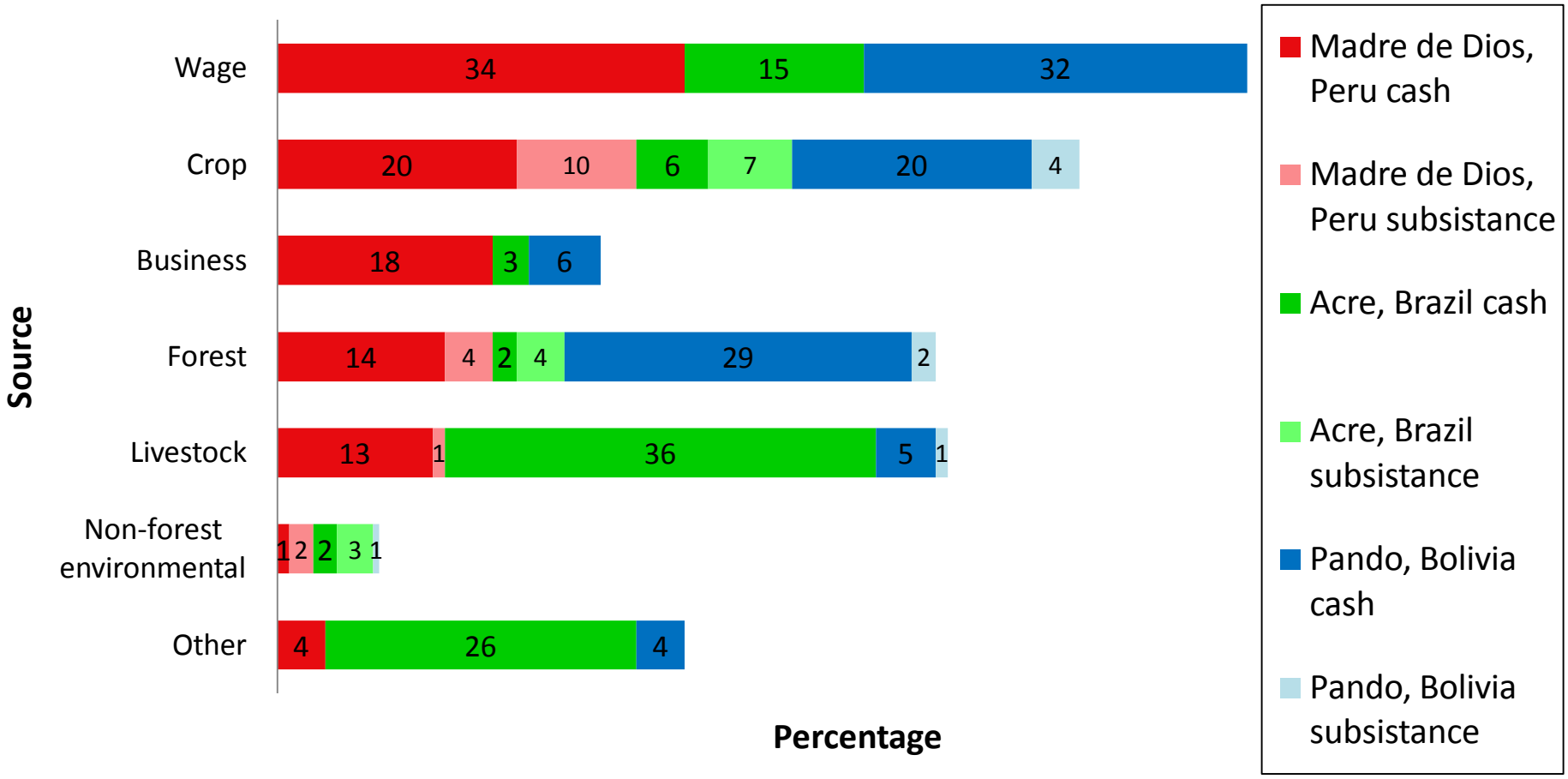


Source Almeyda et al. 2010. *In press*

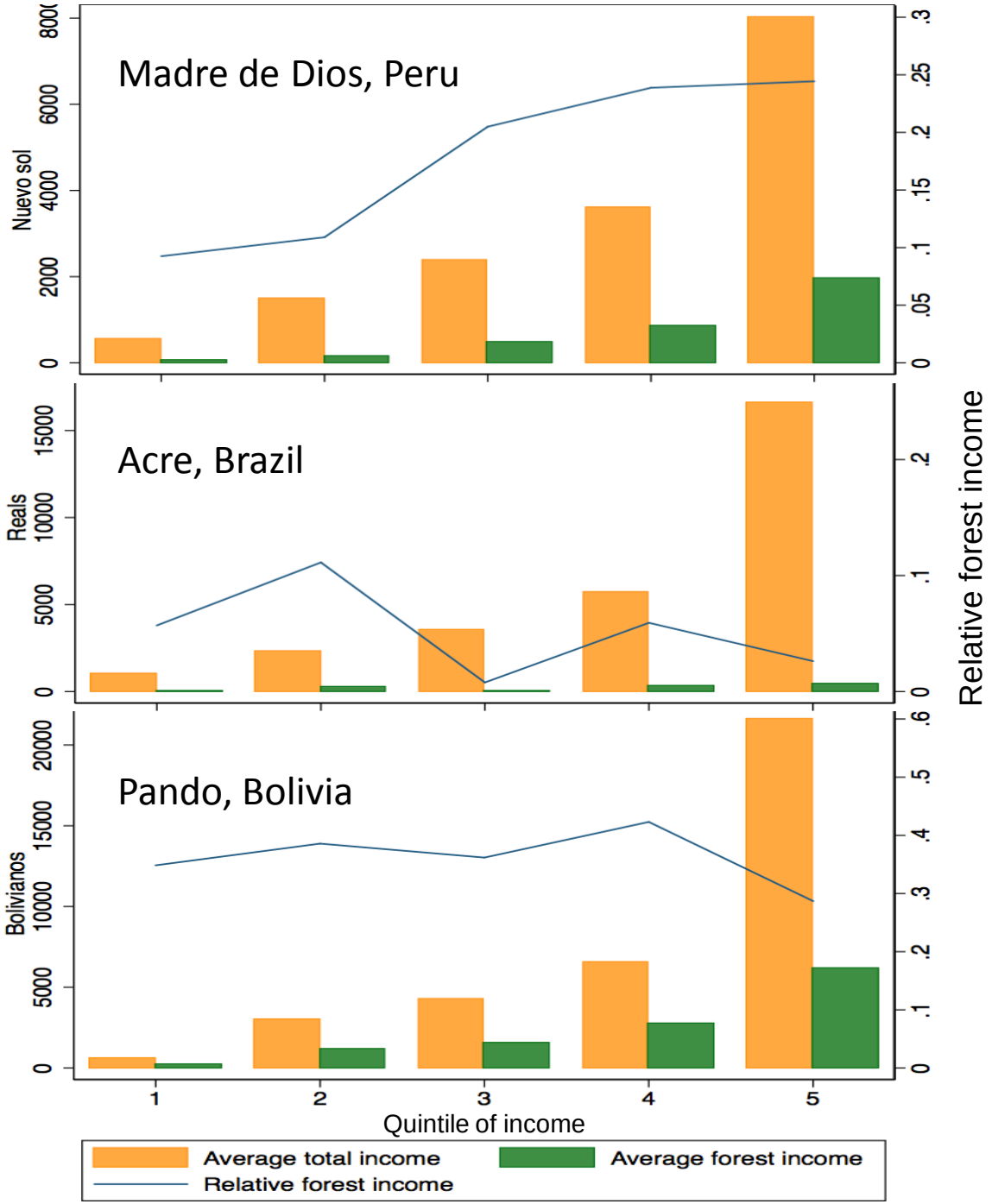
Income shares by source



Income shares by source (cash & subsistance)

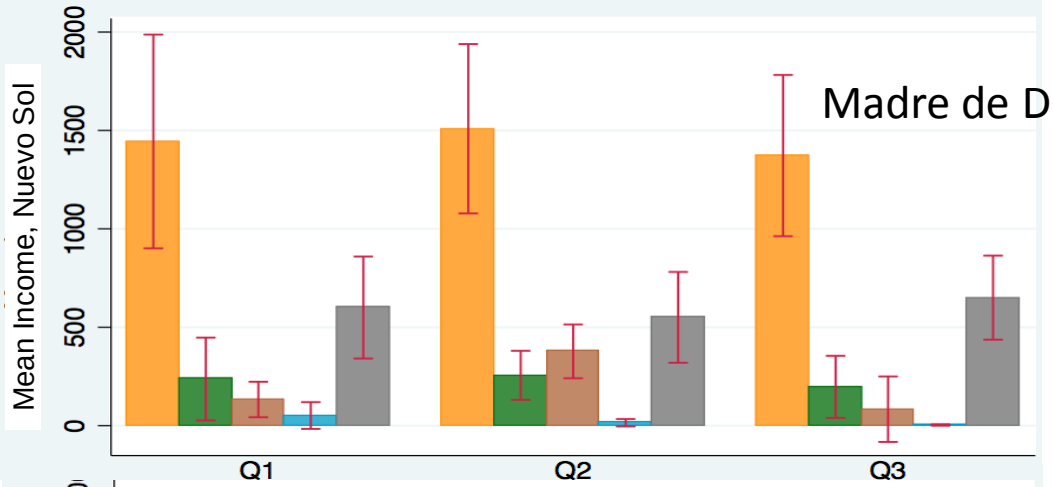


Most income is for cash, crops seem important for subsistence

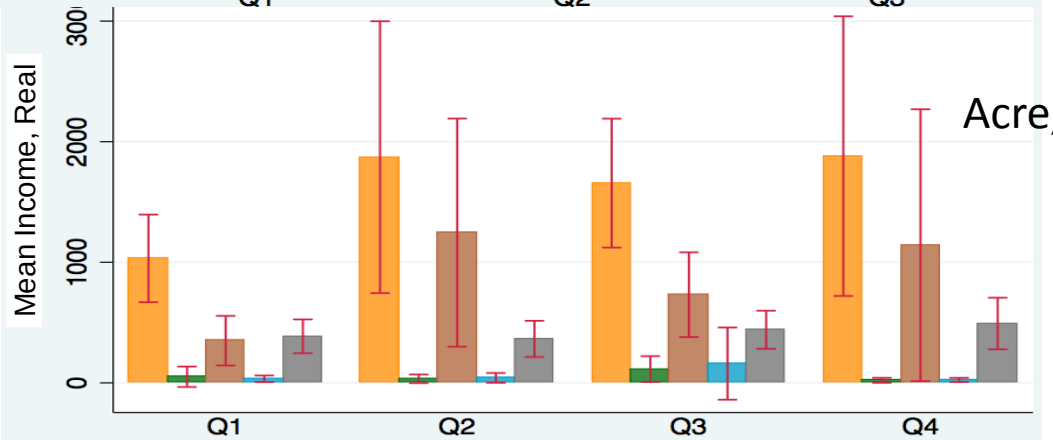


Relative forest income

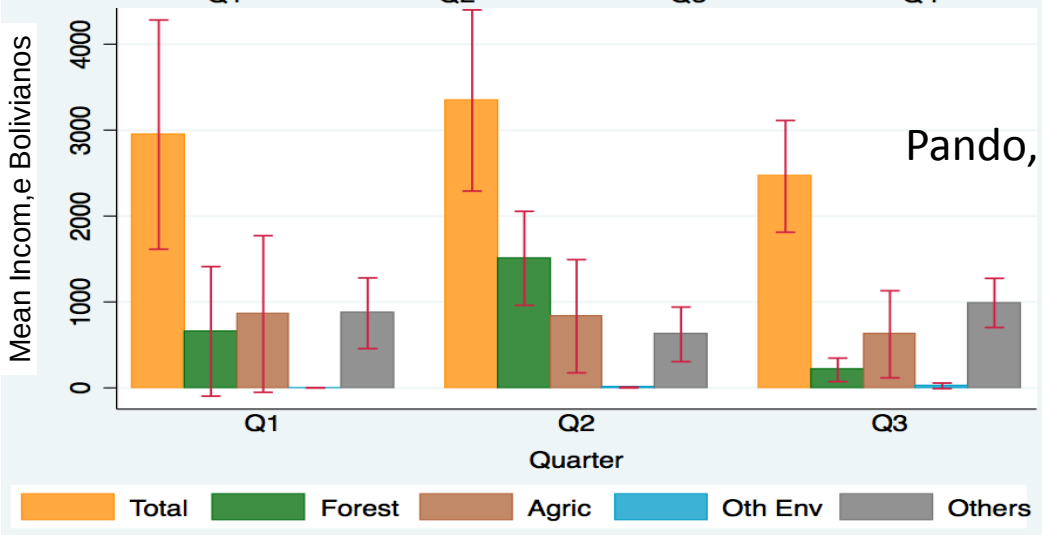
Income seasonality



Madre de Dios, Peru

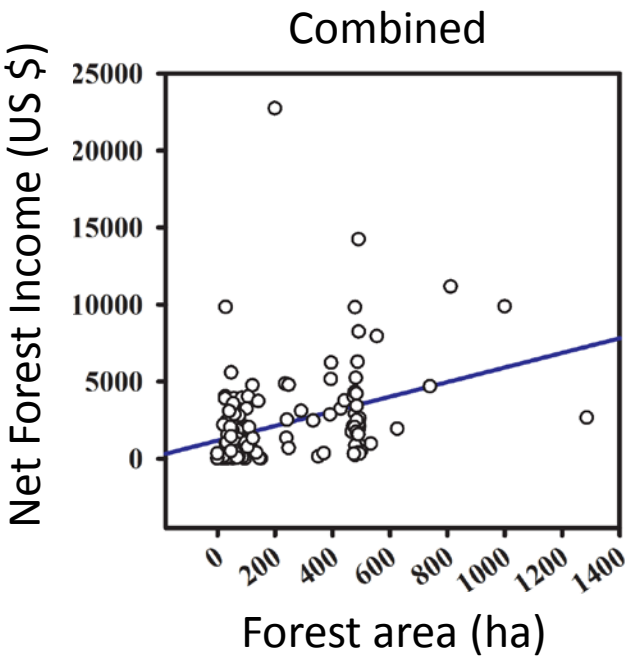


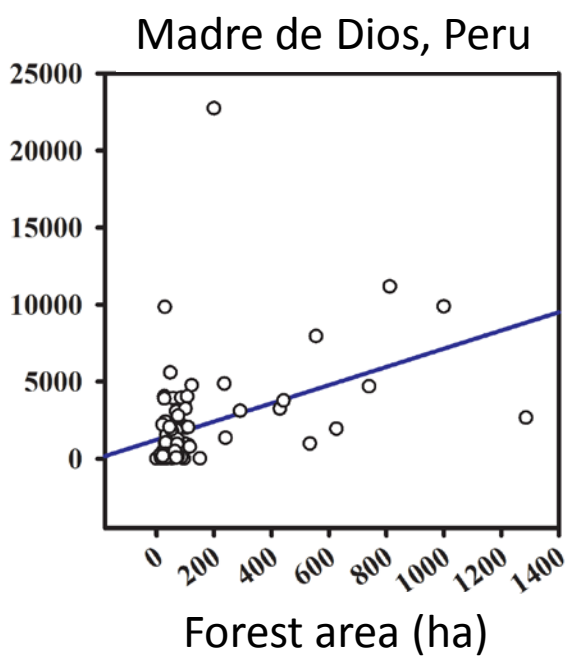
Acre, Brazil



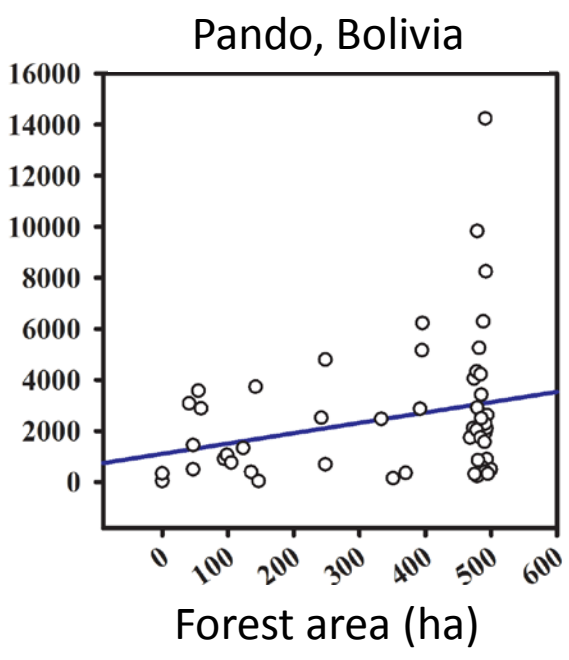
Pando, Bolivia

Forest income and forest area at household level





Private ~ 30ha



Community ~ 500ha



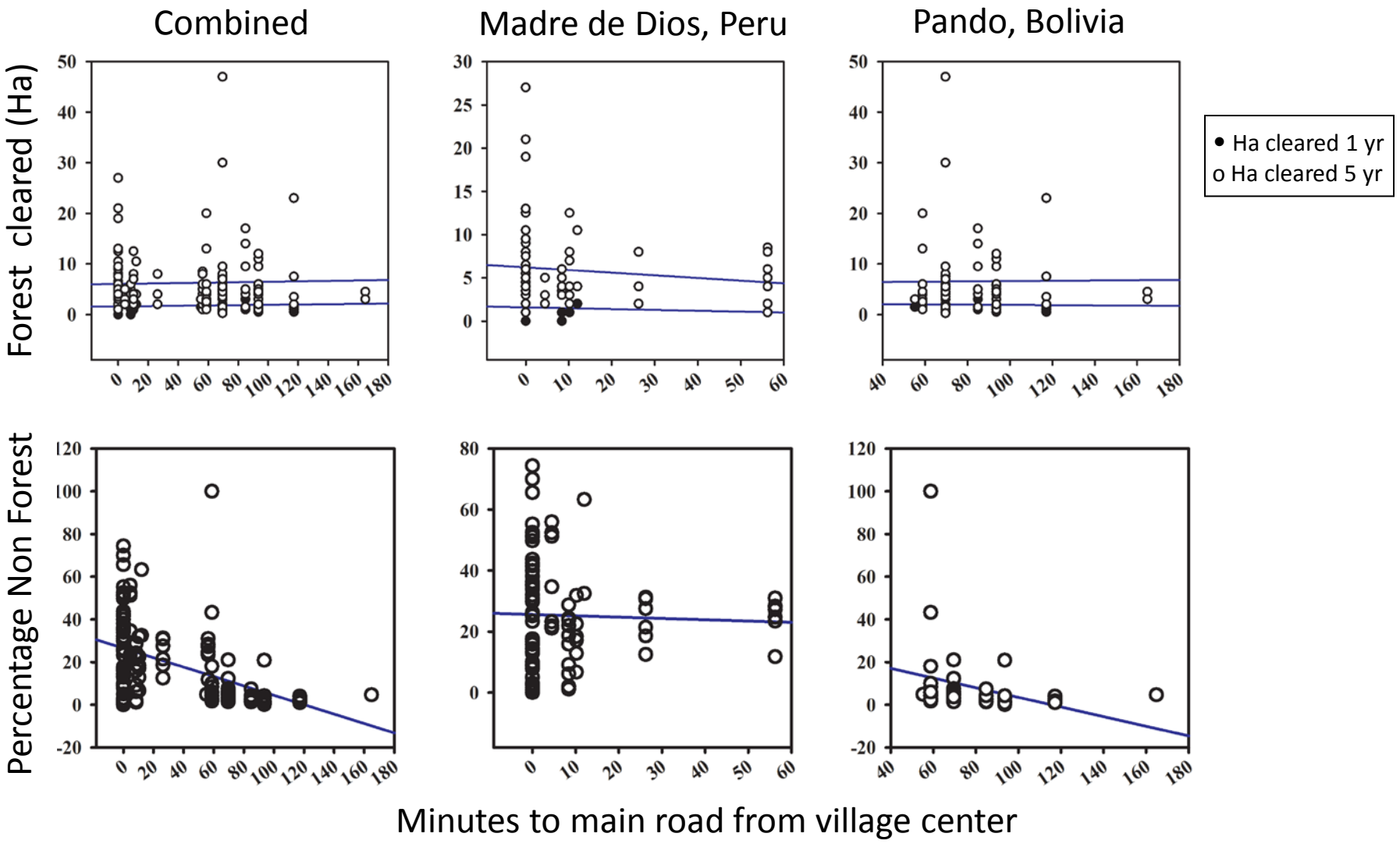








Roads and deforestation at household level



Conclusions

Large differences that follow country borders.

More aggressive development policies and longer exposure to them result in:

- High income reliance on non-forest, market oriented products
- Decrease of forest income with increase of total income
- Less seasonality for economic activities

Households with larger forest areas show larger forest income, and differences in levels of significance are rooted in land tenure

The relationship between roads and in deforestation has a historical character






















Thank you !