

Fire in the Brazilian Amazon: a household model and policy implications



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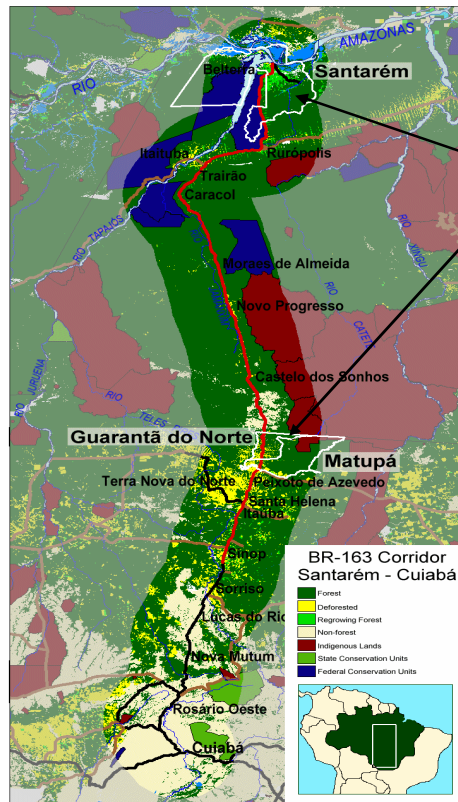
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Fire destruction in the Brazilian Amazon is causing serious negative impacts on the proper functioning of its ecosystems. This is mainly due to its effects on land cover, land use, biodiversity, climate changes and forest ecosystems. Fire is regularly used in the Amazon to deforest and prepare agricultural land and pasture. Due to its low cost, fire is strongly linked to land use patterns adopted in the region. Paradoxically fire itself is also one of the greatest threats to the Amazon ecosystems when, having escaped from human control, it accidentally burns forests, animals and material goods. This work focuses on human activity in the Brazilian Amazon land use systems as the main source of fire ignition. More specifically, the proposed models assess the decision-making process for land use and the implications of fire as a technique option, as well as whether it is seen as a risk to be prevented. Agriculture and extensive cattle ranching are the activities to be assessed in the household economic, physical and social context, in order to reveal the rationale that lies at the roots of Amazonian household behaviour with respect to fire. Additionally, this work aims to contribute to regional public policies discussions where intensification is touted as a *raison d'être*. Old frontiers should benefit from government investments in infrastructure, preventing the opening of new frontiers and the expansion of extensive land use practices. An alternative for Amazonian landholders is to engage in the environmental services market, more specifically, carbon sequestration activities.



Sites:

BR 163 Road:

Santarém

Guarantã do Norte

Objectives:

Understand and quantify the households' decision-making process for the use and prevention of fire in the Brazilian Amazon region.

Hypotheses:

Capital intensification and portfolio diversification determine the decision-making process of fire use among Amazonian households;

Fire prevention is directly related to household's investment levels and occurs as a function of the landholder's portfolio management.

Logit estimates

Log likelihood = -139.76636			Number obs = 345
			LRchi2(25) = 188.60
			Prob > chi2 = 0.0000
			Pseudo R2 = 0.4029
Fire use	Coef.	Std. Err.	
age	- .0376483	.015858	
origin	3 .219261	1.190495	
diversification	- .1453837	.3722064	
indebthness	1 .835299	.8839499	
tenure	.3635352	.3567219	
settlement	- 1 .239565	.3960854	
electricity	- 1 .252337	.3369495	
tractor	- .1907987	.2625346	

