

6.5: Trajectories of Land Use in the Brazilian Amazon: evidences from satellite imagery and Census data

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Amazonian satellite imagery show concentration of forest clearing near major roads where landscapes tend to be dominated by pastures. Census data confirm the dominance of pastures, revealing that the fraction of land used as pasture and the stocking rates increased, while the fraction of crops and unused land declined. Census municipal data suggest that the increase in the relative importance of pasture and the decline in the fraction of crops and unused land may imply unexplored trajectories of land use with consequences to the LBA agenda, if effects of land-use intensification and/or land degradation on nutrient and carbon cycling are considered. In fact, municipal level data suggest that the increase in stocking rates may be explained by such increase in 'municipios' with less forest fractions; the decline in the relative crop importance may have been accompanied by specialization in some older settlement areas where crop importance actually increased; and the decline in the fraction of unused land may be explained by its decline in areas with less forest fractions. Although comparison of the 1985 and 1995/96 Censuses requires caution, the results suggest a pattern of land-use intensification in areas with higher rates of deforestation, resulting in larger outputs from both cattle ranching and agriculture. Such evolution is apparently corroborated by the consolidation of market chains such as beef, dairy and grains, that may motivate intensification and, possibly, increase forest clearing. A hypothesis to be tested is the existence of a threshold when forest conversion lead to land-use intensification.