

Scale-dependency of socio-demographic data in a colonization settlement area in Pará, Brazil

Alvaro D'Antona, Indiana University, adantona@indiana.edu

Anthony Cak, Indiana University, acak@indiana.edu

Leah VanWey, Indiana University, Ivanwey@indiana.edu

Emilio F. Moran, Indiana University, moran@indiana.edu

Mateus Batistella, EMBRAPA, mb@cnpem.embrapa.br (Presenting)

Studies of population and environment have linked social surveys and satellite data to understand the role of human demography in land cover change. In both data sources, scale and scale-dependency are significant factors affecting data analyses and interpretation. In this work, we analyze issues of scale-dependency in population-environment relationships using primary (socio-demographic and economic data from structured field surveys) and secondary socio-demographic data sources (IBGE and IPEA) in a colonization settlement area along the Transamazon Highway between the municipalities of Uruará and Altamira, in the state of Pará. Data about population (including size, composition, and distribution); agrarian structure (size of rural properties and land tenure); economics (characteristics of rural production); availability of infrastructure and services; and land cover are overlaid in a geographic information system (GIS) at four different levels: property, settlement, census tract, and municipality. Focusing on spatial organization/distribution of people and land uses, the data are used to show that analysis at each one of the four levels, alone, shows an incomplete picture that could lead to misinterpretation of the process of change in place in this region. The results indicate the relevance of linking case studies and regional studies in order to improve understanding of land use trajectories in the Brazilian Amazon.

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