

HYDROPOWER DAMS AND URBANIZATION IN THE BRAZILIAN AMAZON – A REGIONAL ANALYSIS

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Urbanization in the Brazilian Amazon has intensified in recent decades, with urban population rates surpassing 70% and over 400 new municipalities created in the past forty years. While acknowledging that urbanization has numerous drivers, this work analyzes the impact of hydropower on population growth in Amazonian municipalities. The region's abundant hydropower generation potential, along with public policies oriented towards regional integration and energy generation, are bringing about significant change as hundreds of new dams are planned and constructed. This work seeks to understand the diversity and spatial organization of urbanization drivers across the region, with a particular focus on the role of hydropower development in spurring urban growth relative to other drivers. To do so, we used spatial socioeconomic and hydropower development data from 1980 to 2010 to assess similarities and differences in the urbanization process across all Amazonian municipalities. Results showed that urbanization was higher in regions closer to hydropower development. A division of the Amazon into quadrants also allowed to detect a spatial concentration of higher correlations in the southwestern Amazon. Although urbanization is a widespread process across the Amazon, it is happening with different intensities in different regions and is manifesting as a function of multiple drivers, including investments in hydropower systems. This work contributes to our understanding of the heterogenous urbanization process that is reshaping the Amazon and provides an updated assessment of this globally important and dynamically evolving social-environmental system.