

Land and Deforestation embodied in Trade: An Analysis for Brazilian Biomes

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Given the social and ecological importance of Brazilian biomes, which in addition to providing important environmental services on a global scale also contribute to the country's income generation in activities linked to agribusiness trade, the objective of this paper was to evaluate the agricultural land and deforestation content embodied in Brazilian trade, both at the intranational and international levels. To this end, an inter-regional input-output matrix was constructed, named MIP-Biomas, which has 47 regions, corresponding to the divisions of biomes in their respective Units of the Federation and 36 activities. The MIP-Biomas was built based on the matrix of the Instituto Brasileiro de Geografia e Estatística (IBGE) for the year 2015, considering the product-based technology and the Interregional Input-Output Adjustment System (IIOAS) method. This matrix also has the opening of the vector of exports to some of the main Brazilian trading partners, namely, the European Union, the United States, China and the rest of the world. Combining the monetary data from MIP-Biomas and physical data on direct agricultural land use and deforestation from satellite images Mapbiomas, indicators were constructed to measure agricultural land and deforestation content in intranational and international trade, separately. Among the results, it shows the pressure exerted by regions of the Mata Atlântica on land use and deforestation in the national territory, with land and deforestation displacement from the North to the South of the country, and a concentration of the impacts of the North and Northeast regions in their own territories. At the international level, the agricultural deforestation content from the Caatinga biome stands out. At the sectoral level, in both intranational and international trade, it is possible to verify the concentration of agricultural land and deforestation content in activities linked to the food sectors, highlighting proteins such as beef and its meats, milk and its derivatives, in addition to pork and poultry. It is emphasized that there are regional and sectorial variations in these results, as detailed in the paper. The results contribute to an evaluation of the origins and destinations of agricultural land use and deforestation in Brazilian trade and can serve as a basis for the formulation of national and international policies to fight deforestation and for a better allocation of land use.