

# APPLICATION OF GEOGRAPHIC INFORMATION SYSTEM IN AGROECOLOGY STUDIES AT TOCANTINS STATE - BRAZIL

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Tocantins State was created by a federal decree in October, 1988. It has a population of approximately 1,5 million people living in an area of 286,000 km<sup>2</sup>. The indiscriminated land occupation has lead to an intensive degradation of fragile ecosystems, which in some cases, are in an irreversible situation. There are also cases of unsuitable land exploration due to an absence of planning. As an effort to slow down this process it was implanted, in Tocantins State, the Geographic Information System developed by the Brazilian Institute for Space Research (INPE). Information about Geology, Geomorphology, Vegetation, Pedology, Hidrography, Ambiental Protection Areas, Stratification of Agricultural Areas, Actual Occupation, Actualized Urban Area, County Division, Actualized Road Course and Potential Areas for Preservation were stored in 330 maps in the scale 1:250,000 (30 modules with 11 levels of information each one). As a result of the ponderation of 7 information levels, an Agroecological Mapping was generated. It is now possible to identify potential areas for preservation, despite of those already delimited, and also indicate the appropriate regions for agricultural practices based on its agricultural potential. This is the first Brazilian study to provide a data bank with basic agroecological information for an area of large dimensions such as the Tocantins State. The Geographic Information System has proved to be of great usefulness in environmental planning for developing countries.

Key Words: Agroecological Mapping, Geographic Information System, Tocantins State, Environmental Planning