Detailed soil survey in an area in the municipality of Igarapé Açu, Pará.
(ENV-25/3)

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This study was undertaken in an area of 34.9 ha of farm land in the municipality of Igarapé-Açu. The farmer uses a natural regeneration system in hopes of recuperating productivity. With technical cooperation from EMBRAPA/CPATU/SNLCS we have developed a series of experiments. The results of this work may contribute to achieving a sustainable equilibrium for this region. The main objective of our study is to map and characterize the physical, chemical and morphological aspects of the main soil units, with the goal of making a diagnosis of their limitations and or limiting factors for their productivity and maintenance. The methodology used to achieve these objectives is based on the methods conceived by EMBRAPA/SNLCS. In the area of the study the following soil units were found: "Serie Abrúptica; Serie Alúvio; Serie Arenosa and the Serie Igarapé-Açu (Brazilian classifications). This last series with "Adensamento and Mosqueado" variations. The first, third and fourth series pertain to the Brazilian classification as podzolico amarelo álico Tb A - moderate texture, medium sand, equatorial semi-evergreen forest phase, flat relief, which corresponds to the American classification (U.S. Soil Taxonomy) known as typic kandiudults. The Alluvial series classified in the Brazilian system as areia quartosa hidromórfica álica A, moderated equatorial semi-evergreen forest phase, flat relief and known in the American system as typic hydraquents.

Multi-temporal study of the plant cover in the agricultural landscape of the municipality of Igarapé Açu, Pará, using digital processing of TM Landsat images
(ENV-25/4)

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In northeastern Pará State, one of the first areas in the Amazon to be settled, the natural landscape has been substantially altered by intense human activity. The municipality of Igarapé-Açu, on an area of 756 km^2 is within this context, and as are the few remaining forest areas that are impoverished by diverse processes of utilization. The predominant unit in the landscape is estimated to be secondary forest in various stages of succession due to agricultural management. Many areas generally found on small farms, are used as the fallow component in the land use system for the production of food crops. Thus it becomes necessary to map, characterize and quantify the area of different land use classes of the municipality, which is made possible by the employment of remote sensing. The realization of a multi-temporal study, using the orbital data of three distinct years, is proposed with the aim of analyzing the modifications which occurred in the agricultural landscape for this historical time frame. Techniques of digital processing of satellite images will be employed, where the spectral (color and tonality) and spatial (texture and geometry) attributes for the different targets form indispensable parameters for this classification. The application of techniques from Geographic Information Systems (GIS) makes it possible to analyze the information obtained for each year, together with data collected in the field regarding the physical environment (soils, relief and drainage).