



# Geotechnology in research on semi-arid watersheds of Brazilian Northeast

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FUNCAP PUBLIC NOTICE No. 04/2021 – Environmental Vulnerability in the Groáiras River Sub-basin, Groáiras – CE  
PBPU/FUNCAP PUBLIC NOTICE No. 01/2022 – Analysis and Environmental Planning of the Jatobá Creek Sub-Basin, Mucambo – CE

The project Geotechnology in Research on Semi-arid Watersheds in the Brazilian Northeast has been developed by researchers from the UVA geography course, more specifically, members of the Laboratory of Geoprocessing and Water Resources (LAGERH) and the research group Planning and Environmental Management in Watersheds (PLAGESBH) with the support and funding of the Ceará Foundation for Support to Scientific and Technological Development (FUNCAP) and the National Council for Scientific and Technological Development (CNPQ).

The research associated with this project has the premise to elaborate a set of diagnoses in watersheds of northeastern Brazil through integrated studies, field research, and production of cartographic material with the aid of GIS software, such as QGIS, which enables the reading, manipulation, and generation of geo-referenced data. It contributes to proposals for environmental analysis and management in watersheds of the northeastern semi-arid region. What follows

are records of field studies, which are essential for local recognition.



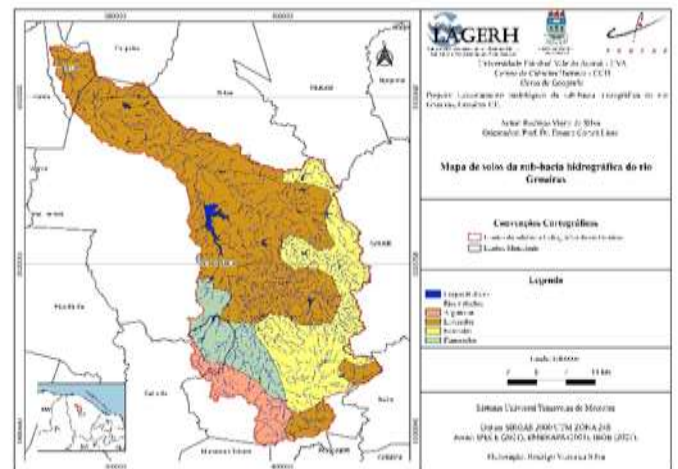
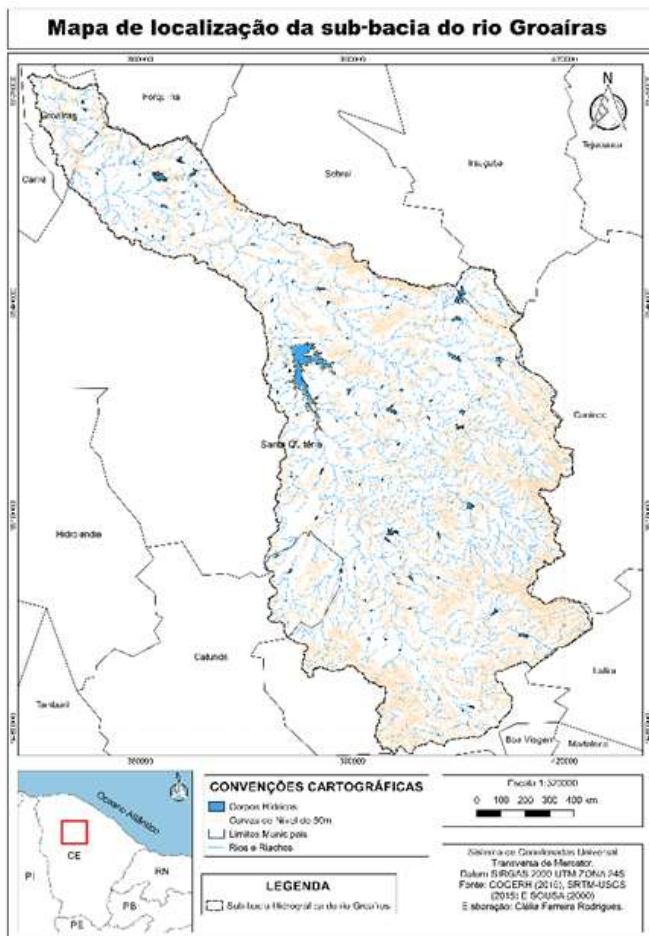
Watersheds are zones that present a vast territorial expansion with specific characteristics of each environment in their sectors, such as upper, middle, and lower courses.

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In the map below, there is a highlight for the area of the Groaíras River Sub-basin, Groaíras/CE, material that is part of the research entitled Environmental Vulnerability in the Groaíras River Sub-basin.



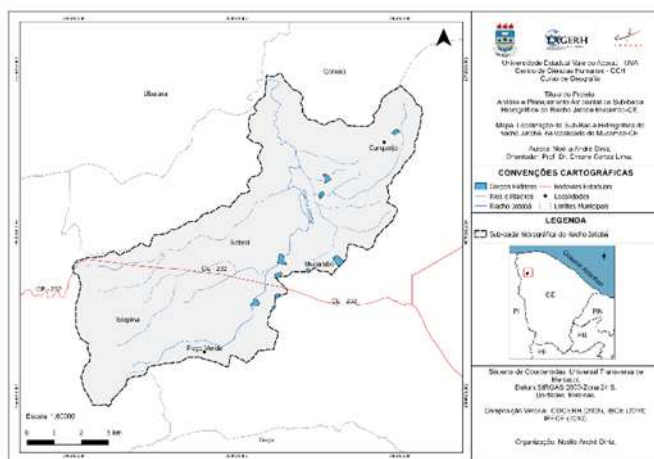
The reading of the Groaíras River Sub-basin soil map is an example that should undergo such a systemic look.

Besides the research on the Groaíras River Sub-basin, another one is under development, whose title is Analysis and Environmental Planning of the Jatobá Creek Sub-basin, Mucambo-CE. The maps above and the ones below originated from these two pieces of research.

The characteristics present in a sub-basin suffer effects from a system related to the whole. For instance, when analyzing the vegetation and soil, it is clear that both receive influence from the climate or other peculiarities.



These pieces of research aim to understand the local physical-natural and socioeconomic aspects, diagnosing the principal potentialities and limitations that compose the study area in the case of the Jatobá Creek Sub-basin research and verify the current environmental characteristics of the high, medium, and low course of the Groaíras River Sub-basin, considering its geo-environmental aspects (geology, geomorphology, climate, vegetation, and soil) and its socioeconomic characteristics, enabling the survey of the environmental vulnerability rate of the sub-basin. In the case of the Groaíras River Sub-basin, it is essential to apply these mapping techniques to have a representation of the natural and socioeconomic elements, enabling a better reading of the object of study.



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