

Geoenvironmental Study of the Rio de Janeiro State

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Multithematic studies of the physical environment were developed jointly with various research institutes, in the scale 1:250.000, in Rio de Janeiro State, over approximately 44.000km². The main purpose was to supply technical information to state and municipal administrations and private institutions, aiming the sustainable development management of the Fluminense territory and the Brazilian programme of ecological-economic zoning, according to AGENDA 21. The following themes were developed: lithostructure, mineral resources, inconsolidated covers, geomorphology, landslides inventory, vegetation and land-use, geophysics, environmental geochemistry, hydrology (storm rainfall study, water availability), and hydrogeological characterization. Integration of the information of these themes provided the mapping of areas with a natural vocation for each kind of land-use – protection, conservation, reclamation or development – aiming to a diagnosis of the natural or induced potentialities and vulnerabilities of all the state, represented in the Geoenvironmental map. The studies can be applied to the following sectors: mining, energy (water availability), agriculture (natural fertility), public health (quality of waters, excess/need of natural elements or antropic action), urbanization (limitation or expansion), basic sanitation (surface and underground sources), building (material for building: sand, clay, crushed stone, ornamental rocks), civil defense (floods, landslides, erosion), transport (road works), tourism (indication of scenic beauty views) and mainly the environment.