

DECISION SUPPORT IN LAND USE PLANNING USING REMOTE SENSING AND GIS IN PARIQUERA-AÇU, SÃO PAULO, BRAZIL

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Geographical Information Systems techniques were used to support land use planning in Pariquera-Açu township, Ribeira Valley, São Paulo, Brazil. This is a municipality with a surface area of 360 sq. km a population of 16,000, with an agricultural economy (tea, bananas, ornamental plants and lumber). In the urban area the main activities are related to state and city administration, commerce, ecotourism and little industry. Land use and vegetation cover maps have been obtained from satellite images - Landsat 5 (1986) and Spot 4 (1998) - processed using the Easi PCI 6.2 program, with field checks. Other data (geology, soil, soil use capability, agricultural potential, geotechnical, geomorphological, relief, hidrography, roads and urban area maps) were compiled and digitized, with field checks when needed. The favorability for urban development was analyzed with decision support multi-criteria techniques, using the Idrisi for Windows 2.0 program. Two methods were used: boolean, with sharp division between positive and negative influence of a parameter on the favorability to development; and fuzzy logic, with gradual transitions between favorable and unfavorable parameters. Favorability areas grading from highly favorable to urban development to totally unfavorable, were determined, based in natural environmental factors. The fuzzy method yielded better results in determining classes of favorability than the boolean one.