SOME USES OF REMOTE SENSING FOR URBAN PLANNING

Maria de Lourdes N. de Qliveira and Maria Suelena S. Barros

Instituto de Pesquisas Espaciais - INPE
Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq
Caixa Postal 515
12200 São José dos Campos, SP - Brasil

Urban planning consists of a decision making process which requires, as a support, a system for delineating and providing useful information. This paper describes some experiences on urban planning on the Systems Engineering Division of the Institute for Space Research - INPE, using airborne remote sensing techniques to provide information about urban areas.

The main objective is to show the use of remote sensing data in planning networks of social use equipments and as input for implementing mathematical models. The mathematical models considers the following aspects of urban planning: urban quality analysis, allocation of urban population to hospitals, planning of large telephone networks, identification of priority areas for Public Health Care improvements, urban performance analysis, projection and location of the urban population.

Remote sensing techniques are particularly usefull in Brazil since urban land in its cities is very not homogeneous. The social, economical and cultural disparity among the human groups, resulting mainly from the existing social organization, shows up also in land aspects. Through urban tissue analysis using air photos at an approximated scale of 1:10000, minor residential areas (homogeneous zones) and their physical aspects are identified, and different resident groups characteristics are indirectly recognized. Remote Sensing has been a valuable instrument in Brazil, reducing the necessity of the expensive surveys, either complete or by sampling.

São José dos Campos, São Paulo, Brazil, with 300.000 inhabitants, has been used as the test area.