

MONITORING URBAN EXPANSION OF TIRUCHIRAPALLI TOWN OF TAMIL NADU STATE, INDIA USING IRS-1C SATELLITE DATA

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ABSTRACT

Urban planners and policy makers need to access to up-to-date base maps and systematic information on urban land use pattern and environmental problems. An unplanned city growth is an indicator of rapid industrialization which is usually reduces the quality of the environmental health of a region - sometimes disastrously. Monitoring provides the planners and decision - makers with required information about the current state of development and the nature of changes that have occurred.

The study on development of urban lands and the changes in the surface water resources in and around Tiruchirapalli town of Tamil Nadu state, India has been monitored by using IRS-1C PAN (1:20,000 ; 1997), IRS-1A LISS II (1:50,000 ; 1989) satellite data, aerial photos (NRSA, 1:20,000 ; 1979), the State Town and Country Planning map (1980) and survey of India toposheets (1971 and 1928) with limited field checks.

The study area Tiruchirapalli town is lighted by the presence of river Cauvery, which is one of the important perennial river in Tamil Nadu. The study highlights the changes in urban development changing the surface water resources.

In the study area, the depletion in the surface water resources such as rivers and tanks in this area has been studied and interpreted as it is caused by the growth of urban lands, land erosion and siltation. The growth of building lands necessitates the filling upto tank beds and river portions which negatively changes the surface water resources. Such changes are also caused by decreasing annual rainfall and increasing city population. The changes in the rivers and streams area are clearly indicating the variation in the rainfall. The mapping of the urban developments and its changes in the study area has been interpreted and identified as different zones viz. Zones A, B and C. It illustrates the growth of the urban lands. The brief characteristics of urban land use and the changes in the surface water resources are as follows.

ZONE A: Zone A is the heart of the cities, in which the development of building land has caused the disappearance of tanks.

ZONE B: Developing of buildings in tank areas creating the shrinkage of tanks in respect of area.

ZONE C: Developing of buildings and industries, land erosion and siltation causing the shrinkage of tanks.

The study is also proved that the better resolution of IRS-1C satellite data is a valuable tool for accurate detecting and locating of the newly built and reclaimed urban areas.

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