Analysis of drinking water problem in Coimbatore City Corporation, Tamilnadu, India using Remote Sensing and GIS tools

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ABSTRACT

Drinking water is most essential for livelihoods and for other consumptions. Here, the drinking water supply in Coimbatore City Corporation was chosen for the study. Due to over population, increase in drinking water consumption was arisen. Relevant data were collected from relevant Government departments. The data were analyzed and the objective of the study was derived from the data analysis. Suitable suggestions and recommendations were made to decrease the problem of drinking water supply in a proper manner. This attempt will helpful to decrease the drinking water and its attribute problems in the study area and it lead to a sustainable example for future generations and also be a good fore step for the research field too.

Keywords: Water quality, Remote Sensing, GIS, Water problem

1. Introduction

The three basic needs in human life are food, air and water. Among which the three water occupy 1/3 portion of the hole globe. In human body 60 per cent of whole body weight is occupied by water. Most compounds contain air and water. In addition, man needs water and air for external use and in industry. While the water is ubiquitous, the supply of water is limited. Water is not replaceable. Human needs are growing rapidly and the need for water is also growing. The main source of water supply is no doubt rainfall. But the rainfall in India; especially in Tamil Nadu is not uniform neither spatially nor temporally. Human need for water can be classified as those of domestic, agricultural and Industry. To produce food sufficient to give calories, we need 33 tons of water per day. Clean/fresh water is essential for nearly every human activity. Availability of water determines the location of human activities. All agricultural operations need water. A freshwater resource of the total water available on earth is 3 per cent. They are Glaciers, Ground water, lakes, pond and wetland.

2. Aim and Objectives

The aim of the study is to find the characteristics of distribution of water supply in Coimbatore city, in order to identify positive and negative areas with respect to water supply and we may maintain the quality of the drinking water in order to live a hygienic life. In order to achieve the above aim, the following objectives are identified. Land use and population of the region (Coimbatore) has been studied in order to know about the distribution of the drinking water. Distribution of the drinking water during the different seasons (summer, winter and monsoon) were been surveyed. Drinking water supply through the pipe lines open of tube wells has been clearly described in

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the study. Maintenance of the ground water level of water by harvesting rain water through pit technique is described. Data related to the usage of water, water contamination and the ways and means of conserving water has been collected in order to stress the point on the conservation of the renewable water resource.

2.1 Study Area

The present study is concerned with the spatial distribution of drinking water supply in Coimbatore city. The Coimbatore city fact is urban water supply by pipe lines, Lorries and handcarts or bullock carts. The drinking water supply through lorry service to Chennai is delayed when compared to other cities. Coimbatore is the third largest city in Tamil Nadu, of more than the population of Coimbatore City is 9.3 lakhs of the 2001 census. There are more than 30,000 tiny small, medium and large industries and textile mills. The city is known for its entrepreneurship of its residents. The climate is comfortable round the year.
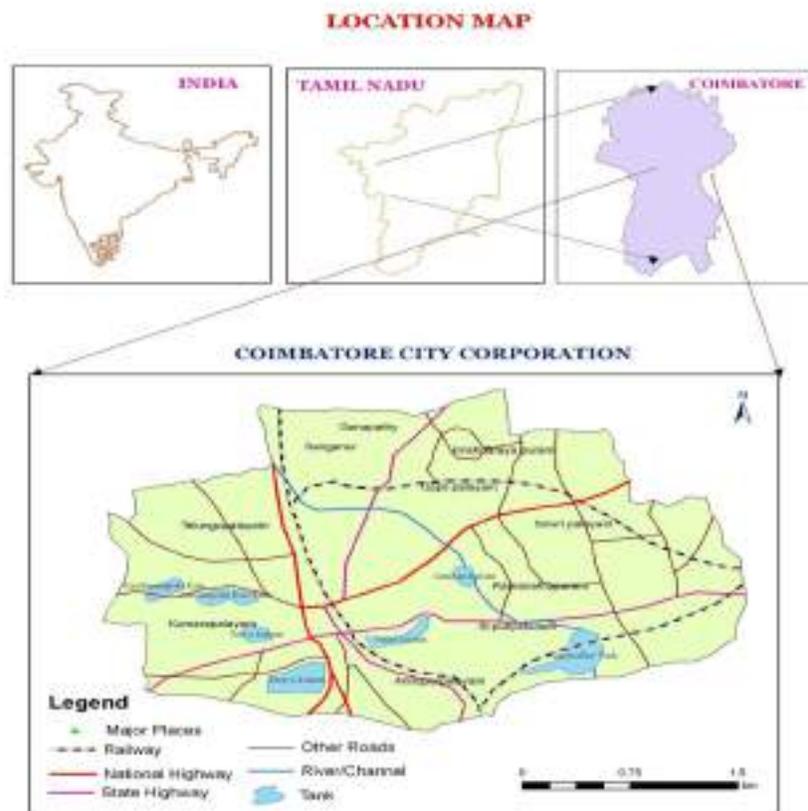
Figure 1. Location map of the study area