Short Communication

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

Yuvaraj .D, Alaguraja .P, Sekar.M, Muthuveerran.P,Manivel .M

Department of Geology, Bharathidasan University, Tiruchirappalli
raj21387@gmail.com

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

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.

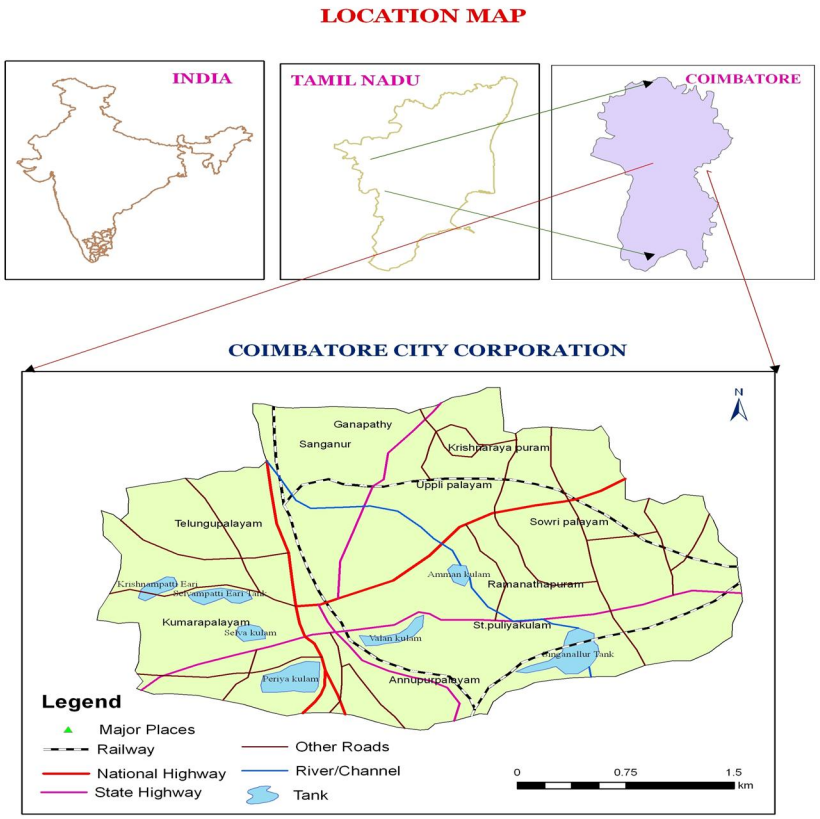

Figure 1. Location map of the study area

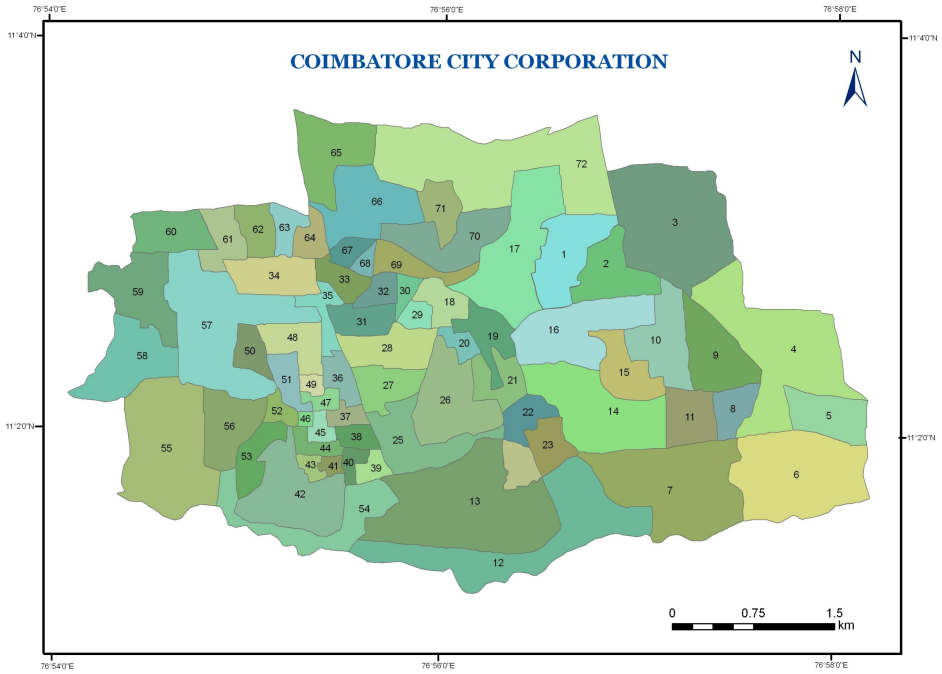

Figure 2. Administrative boundary of the study area

3. Methodology

The nature of drinking water supply in Coimbatore has been found by using the questionnaire based data. Random sampling method has been adopted in the selection of samples people of different social status have been interviewed to get relevant information. Collected information was manipulated, cartographically as well as statistically so as to explain various aspects of water supply in Coimbatore. Especially the location and distributional aspects of consumption, economic status and distribution of different sources are explained cartographically. Rainfall temperature data and population data are also represented by diagrams and cartographic illustrations. In order to establish the relationship between population, consumption and amenities, semi-quantitative techniques have been adopted. Rainfall and temperature data are correlated to find out the evapo-transpiration and to find out the recharge levels in Coimbatore City Municipal Corporation limits with the help of methods available from Indian researches, most importantly, those of Bhattacharya et al (1953), Chatuvedi (1944), and Tamil Nadu Agricultural University, Coimbatore (1990).Statistical methods employed in the study are explained in the relevant chapters, however, the study is essentially qualitative though certain amount of quantification has been attempted.

4. Results and Conclusion

The growing population in the city of Coimbatore, the domestic need for drinking water supply ahs increased while non-domestic uses have shown increasing demand with increasing industries, constructions and transport. The interest in urban water supply is widespread. It appears that there is an imbalance in Drinking water supply and demand and that is also perennial in nature. The nature and development of water pipeline network at all region levels, in different parts of the world, had also been carried out by the geographers, economists and engineers. Because of the environmental changes, almost every part of the world is facing this problem, and hence, in recent years, the study of drinking water supply in urban systems has gained importance and the number of scholars analyzing the various aspects of this problem has increased. The present study has deal with the drinking water supply in Coimbatore City Corporation at a micro level in a similar vein to most such studies. Coimbatore is the second largest town in Tamil Nadu. It is an industrial town growing in its size and population rapidly. The occupational structure of the city also has drastically changed from primary to secondary and now to tertiary. The population has almost doubled in one decade.All political party should take step to join the rivers in the country to avoid wastage and to increase the utility of the water. More than policies and planning, proper awareness on safe drinking water among the people should be created. The conservation of water is a collective responsibility of all citizens of India. Let us all join together to conserve and protect water.The primary and secondary data which have been collected from respondents and respective departments are very much useful in finding the consumption rate and nature of pipeline network and its distribution. The spatial distribution and development of drinking water supply spatial distribution and development of drinking water supply have also been analyzed from these data. The spatial pattern of drinking water supply by varied means, the distribution and the development over the years are intimately associated with the growing connections should be improved in all five zones because in all there are inadequacies. A number of wells have been located in the heavily populated areas and areas where protected drinking water supply is distributed. The detailed analysis in the first four chapters clearly exposes the imbalance in the distribution of different drinking water supply means. The following are a few suggestions towards improving the drinking water supply in Coimbatore city. In conclusion, the author would like to point out that Coimbatore protected drinking water supply system has done needy. The scholar would like to recommend that the various urban system of the Coimbatore City which comes closed to an efficient system, although there are yet some deficiencies.

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