



A Geographical Analysis of Water and Sanitation Facilities in Jaipur

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Abstract:

Since the beginning of life on this planet water always remained the most important tool for survival. Water is the basic necessity of life. Safe drinking water and sanitation are fundamental to health, survival, growth and development. In 2010 the UN Human Rights Council adopted a resolution recognizing that the human right to water and sanitation are a part of right to an adequate standard of living. Safe drinking water and basic sanitation are so obviously essential to health that they risk being taken for granted. Most of the Indian cities are facing acute problems of water in the form of quantity as well as quality. Jaipur is the capital and the largest city of the Indian state of Rajasthan in Western India. People in the city are facing problem of water availability. Traditional water reservoirs in the city are depleting day by day. Lack of govt. initiative and increasing population pressure are some of the main causes behind their apathetic conditions.

Introduction:

Since the beginning of life on this planet water always remained the most important tool for survival. Water is the basic necessity of life. Safe drinking water and sanitation are fundamental to health, survival, growth and development. In 2010 the UN Human Rights Council adopted a resolution recognizing that the human right to water and sanitation are a part of right to an adequate standard of living. Over 1.1 billion of our fellow citizens do not use drinking water from improved sources, while 2.6 billion lack basic sanitation. The chief sources of potable water are surface water and ground water sources. Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and feces. Achieving the MDG drinking water and sanitation target poses two major challenges: a rapid pace of urbanization, which requires a major effort even to keep up the current coverage levels; a huge backlog of rural people unserved with basic sanitation and safe drinking water, which calls for an intensive mobilization of resources to reduce the vast coverage gap between urban and rural populations. As per the report of National Sample Survey Organization Rajasthan lies in the category of states of having least access to basic drinking water and sanitation facilities in rural areas. The region is also facing the problem of garbage and waste disposal.

❖ Objectives:

The present study covers the following objectives-

1. To study the traditional water supply and management methods in the study area.
2. To assess the present scenario of water and sanitation facilities.
3. To suggest some adaptation and mitigation strategies.

Review of Literature:

Urban centers in our country are increasing rapidly and same the no. of residents in these cities. In urban areas in developing countries like in India the most vulnerable section of the society is urban slum dwellers. Lives of Hundreds of slum dwellers are threatened by lack of access to basic human amenities such as water, sanitation, shelter and health etc. It is quite visible that people living in these type of settlements are living with little access to clean water, sanitation and other essential public services. In some areas in Chandigarh daily water supply is restricted to few hours with very low water pressure. Most of the residents get water from community standpost based supplies (S.K. Negi,

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2017). Planning, development and maintenance of water resource for well being of the society is of utmost importance. Rajasthan is one of the driest states in the country with a total of surface water resources in the state comprising only 1 percent of the total surface water resources in India. So the water resources in the state are not only scarce but also highly unevenly distributed both in time and space (B. Zutshi and V. Kumar, 2017). Water resources management policies in India have been a disaggregated collection of political and economic priorities for more than half century. Geographically water resources regions of the country have their different patterns of priorities and problems. These diverse patterns even challenge the rationales of a national water policy. Recently water administration has incorporated a specific intervention in climate change mitigation in the form of some new programs and schemes (S. Kumara and R. Bilas, 2017). The water quality of Renukoot Industrial area in Sonbhadra district of Uttar Pradesh has been studied to analyze the water quality scenario of the region. The hardness and alkalinity in the water found due to limestone and dolomite sources. Major processing controlling the water quality is the silicate weathering, mineral dissolution because of hard rock structure in the study area. Some desired treatments are necessary to keep the high values as per acceptable limits (D.K. Bharti and M. B. Singh, 2017).

In the entitled “House hold technology and the domestic demand of water” develops a demand modal for the efficient use of water resources. Emphasised on the contribution of economic principles of efficiency in public water supply among indemonstration of the interdependence among investment planning (Batchler R.A. 1975). The cost structure of a water supply system is a debatable topic. Usually the cost of supply of drinking water falls in two parts : production cost and distribution cost. The production cost of treatment pumping of untreated and treated water and laboratory charges (Clark, Robert M. And Stevis 1981). It is the need of hour to study and examine some infrastructure like water supply and sewage which can be improves with the help of better financial management. It can be improved through better tariff policy, use of modern techniques and equipments (Maduskar B.A 1981). It is vital to examines the broad issue involved in putting an economic value of water. This study covers the demand and value of water in different sectors. It opens a broad look at the components of water demands and economic determinants of the demand (Gibbons, Dianna C. 1986).

Research Methodology:

In the present study both primary and secondary data sources have been used to meet the aforesaid objectives. Secondary data have been collected from various govt. and non govt. publications, websites and documents. Primary data have been collected by doing primary field survey. A well structured questionnaire has been prepared. A total of 160 respondents have been interviewed by adopting random sampling method. For the analysis of data different statistical tools such as average, percentage and other methods have been used. Various charts, tables and diagrams have been prepared for presenting various issues of water and sanitation.

Water Supply in the Study Area:

Jaipur is the capital and the largest city of the Indian state of Rajasthan in Western India. It was founded on 18 November 1727 by Jai Singh II, the ruler of Amer after whom the city is named. As of 2011, the city has a population of 3.1 million, making it the tenth most populous city in the country. Jaipur is also known as the *Pink City of India*. Jaipur is located 280 km (174 miles) from the Indian capital New Delhi.

Jaipur water supply is more than 100 years old, initially fed by local Open wells, augmented in the year 1918 based on ground sources (16 large dia open wells on Amanshah Nallah bed) and tap water supply at common points introduced. 7.0 MLD of water production added from surface source Ramgarh Dam in



1952. Later augmented for 27 MLD in late sixties. Tube well drilling introduced in late sixties. Augmentation from Ramgarh lake for 45 MLD in the year 1982. Water production from Bisalpur started in 2009. Municipal Water Supply is the main source of drinking water supply in Jaipur (Fig.3). Although the groundwater is continuously depleting in the region, but a significant proportion of the population is also using ground water (Fig.1).

The depth of the ground water table varies from 15 to 40 m with seasonal variations of 1 to 3m. There are 990 tube wells over the city through which 276 million liters per day of raw water is fetched. Ramgarh Lake is the only surface water source of the city. It is an impounded reservoir located 35 km northeast of the city. The lake is dependent on rainfall for its water supply. It was constructed in 1903 with a gross storage capacity of 2650 million cubic feet. Due to the semi-arid climate zone, rainfall is sparse. Thus, the lake almost dried up. Presently about 0.13 mld (0.35 lakh gallon/day) of water is taken from the lake due to erratic rainfall. Due to increasing industrial and urban pressure the quality of groundwater is continuously depleting.

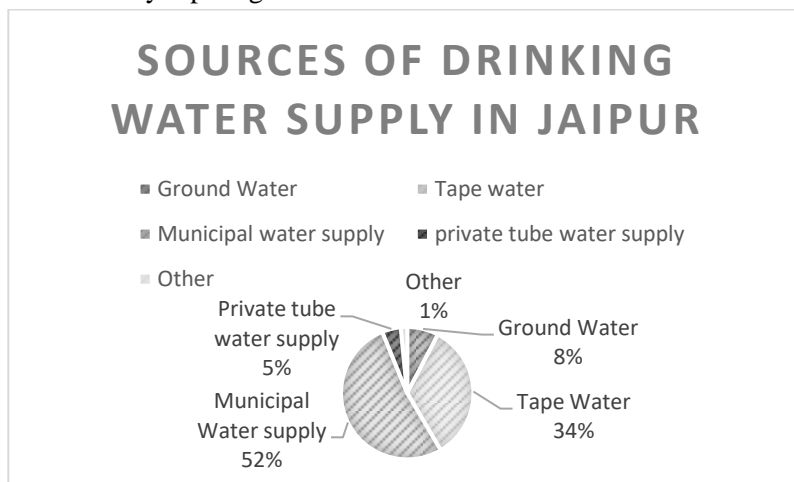


Fig.1 Source: Primary Survey

Quality of Ground Water:

Though the major source of drinking water in the city is municipal water supply and tape water, but the ground water has also a significant share in meeting the water demand. The available groundwater in the region is of average quality. Rapidly increasing industrial units and population pressure put the ground water resources of the city at stake. Due to poor ground water quality water borne diseases are also on the rise which put a lot of pressure on already fragile health facilities (Fig.2).

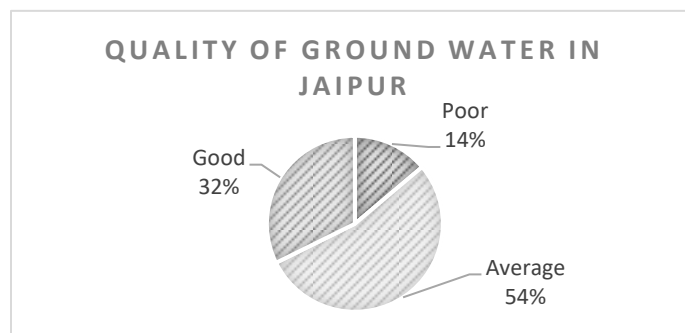


Fig.2 Source: Primary Survey

Status of Sanitation:

Condition of sewage system in any human habitat is the primary symbol of level of development. In the present study area the condition of sewage system is not upto mark (Fig.3). Most of the habitat in the city has grown haphazardly. So without proper sewage system sanitation related problems are increasing. Old city area is more affected with lack of proper sanitation facilities. With the passage of time city outgrown from the walled area but sanitation facilities failed to keep pace with changing demographic condition in the city.

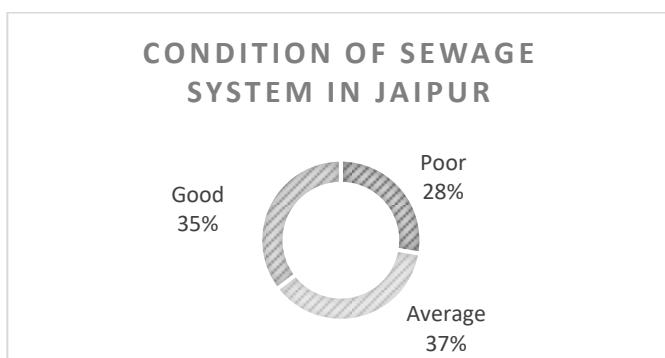


Fig.3 Source: Primary Survey

Water pipelines in any urban habitat are of significance because through these are the arteries through which one the most important resources of the earth is flowing. The condition of water pipelines is average in the study area. Tourism is one the important source of income in the study area. Apart from income tourism also make some burden on the already depleting water resources of the city.

Mitigation strategies and suggestions:

Population in the study area is rapidly increasing but the available water resources for human consumption are rapidly decreasing. So to fulfill the idea of sustainable development of water resources there is no other option than to change our life style apart from technical innovations. This survey report provides information of drinking water and sanitation facilities in Jaipur.

For the Optimum utilization of the water resources apart from technical and financial improvement, public awareness at large scale is very important. A number of programme and initiatives are driven by state and central govt. agencies. But awareness level is still not significant. Lack of people satisfaction towards existing water and sanitation facilities in the study area is the matter of concern. More sound efforts should be made in this direction to win the trust of common man to improve people participation.

Old water reservoir used to have a significant role not only in the water supply and management but also in the ecological balance of the region. If we have to rejuvenate these old channels, then different stakeholders should come on common platform. Govt. has the bigger role to play in this effort (Fig. 4). Special cleanliness drive should be organized through more people participation.

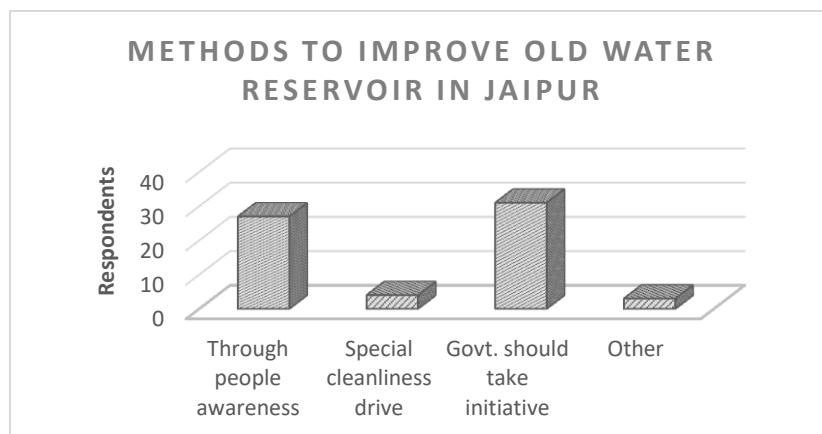


Fig. 4 Source: Primary Survey

Improvement in Water Supply Management:

India has plenty of water resources but still per capita water availability is very low. The main reason behind this is improper management of water resources. During survey we have observed that still old and traditional way of water management are in use. Technical and financial Improvement in the water management is need of Hour. We all know that water resources on the earth surface are very limited. A judicious use of these resources is the primary necessity of sustaining life on this lonely habited planet. History is evident of the fact that on that part of the earth where water was wasted in vain, progress is still waiting outside the door. People should have knowledge and wisdom about methods of waste water treatment.

Conclusion:

Water is one of the most precious resources available on the mother earth. We can not stop using water resources but we can do a lot more things to preserve the precious resource for our future generations. Optimum and judicious utilization is the only way to get success in this race. Our cities are growing very rapidly. Industrialization and urbanization put a stress on water resources in the cities apart from some specialized activities as tourism in Jaipur. Apart from rejuvenating and maintaining old water reservoirs we have to keep the modern supply and management system up to mark to cater the need. People awareness and participation is need of the hour to keep water and sanitation facilities in cities as per desired levels.

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