



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2016; 2(4): 626-628
www.allresearchjournal.com
Received: 13-02-2016
Accepted: 15-03-2016

Dr. S Saravanan
Assistant Professor
Department of Economics
PSG College of Arts and Science
Coimbatore- 641014.

Water Sources and Water Accessibility in India: A Study

Dr. S Saravanan

Abstract

Water is indispensable to sustain life because it is a crucial factors not only human beings but also all other living beings. Water is also needed for various other industrial and commercial activities. Water is also unavoidable for overall economic development of the human society. Due to rapid rise in population and growing economy of the country, there will be continuous increase in demand for water, and it will become scarce in the coming decade. The water demand in the year 2000 was 634 km³ and it is likely to be 1093 km³ by the year 2025. The availability and access of water is the question because of inter-state dispute and over-exploiting groundwater. Hence, in this paper analyze with respect to the sources and accessibility of water in India.

Keywords: Water, Accessibility, Availability, Rural and Urban

Introduction

Water is indispensable to sustain life because it is a crucial factors not only human beings but also all other living beings. Water is also needed for various other industrial and commercial activities. Water is also unavoidable for overall economic development of the human society. Though the water is plenty but the availability and access of water is the question because of inter-state dispute and over-exploiting groundwater as already pointed out by Millennium Development Goals Report 2015 that the proportion of water resources a country uses is affected by national water policies and water scarcity. Scarcity can be physical (lack of water of sufficient quality), economic (lack of adequate infrastructure, due to financial, technical or other constraints) or institutional (lack of institutions for a reliable, secure and equitable supply of water).

Statement of the Problem

Water is important for all living. In India, large numbers of households in both rural and urban do not have access to one of the most basic of human needs. There are so many steps are taken in every budget, five year plans and even in Millennium Development Goals for achieving water for all but the water sources and accessibility is different in urban and rural areas. The water utilization in urban areas is more than the rural areas. In rural area people depend on pool, tube well, bore well etc but people live in urban areas fully depend on the municipality supply water. Due to rapid rise in population and growing economy of the country, there will be continuous increase in demand for water, and it will become scarce in the coming decade. The water demand in the year 2000 was 634 km³ and it is likely to be 1093 km³ by the year 2025. Hence, the paper analyze

Objective

To understand the sources and accessibility of water in urban and rural in India

Sources of Data

The study was based on secondary data. The data were collected from the National Family Health Survey, as well as published and unpublished secondary sources.

Sources of Drinking Water

In India, the drinking water facility requires analyzing the access to different sources of drinking water and sufficiency of drinking water. The accessibility of drinking water at

Correspondence
Dr. S Saravanan
Assistant Professor
Department of Economics
PSG College of Arts and Science
Coimbatore- 641014.

household level has other aspect like the distances travelled by members of a household to reach the source of drinking water. The quality of drinking water was also a very important component in maintaining good health of the population. Many households attempt to improve the quality of water they drink by adopting various methods for treating the water before drinking.

Issues on Water Sources

The supply of water in large cities of India is going to be a big challenge in future. The rapid increase in population in these cities, depleting water resources and enhanced consumer needs are going to create a difficult situation. The market oriented development is creating new needs in sectors like entertainment industry and tourism, building industry, adapted new technologies pushing up water needs, more supply in shopping malls, and so on. Simultaneously, the alarming rise in pollution levels in surface water bodies and even in groundwater is going to add to the situation. Therefore, an urgent need is felt for a comprehensive water policy for cities which is suitable and satisfactory to growing needs of citizens Shaban and Sharma (2007) [6]. About 30 per cent of the urban households do not obtain

water from their municipality/local government. However, even those households who do have some access to water from the government, have to share it with their neighbours – almost 59 per cent of the households either share water with their neighbours or the supply is for the community Bajpai and Laveesh Bhandari (2001) [1]., Ishaku *et al* (2011) pointed out that in Nigeria over 70 per cent of households in rural communities do not have access to improved water supply. They rely solely on self-water supply (free source) such as rivers, perennial streams, water ponds and unprotected wells. These rural populations are engaged in farming activities with low income level living in small scattered settlements thus, making provision of piped water supply very difficult. Governments' interventions towards rural water supply have been through the provision of hand-operated boreholes and wells. These sources yield little or no water during the dry season and are prone to frequent breakdown; leading water crisis and shortages. This situation forces households especially the women and children to spend more time walking longer distances during the dry season to trot water for domestic purposes.

Table 1: Sources of Drinking Water (in %)

	Tap		Well		Hand Pump/ Tube well		Other sources	
	2011	2001	2011	2001	2011	2001	2011	2001
Rural India	30.8	24.3	13.3	22.2	51.9	48.9	4.0	4.5
Urban India	70.6	68.7	6.2	7.7	20.8	21.4	2.5	2.3
All India	43.5	36.7	11	18.2	42	41.2	3.5	3.9

Source: Millennium Development Goals India Report 2015

The Census provides details of sources of drinking water accessed by the households. In 2011, in rural India, Hand Pump/ Tube well (51.9%) is the main source of drinking water followed by Tap (30.8%). In urban India, Tap water (70.6%) is the major source followed by Hand Pump/ Tube well (20.8%). The others sources was very low it was 3.9 per cent in 2001 and decreased to 3.5 per cent in 2011 in Table 1.

Accessibility of Water in India

The World Health Organization (WHO) defines access to water supply services as the availability of at least 20 litres per person per day from an "improved" source within one kilometre of the user's dwelling. Improved sources are those likely to provide safe water such as household connections, public standpipes, protected dug wells, rainwater collection, boreholes, and protected springs.

As pointed out by *Monte 2015* that in India as the poorest country in the world in terms of number of people, would also have the correspondingly highest number of people without access to water in absolute terms and 29 per cent of the rural population, or 244 million people, and 23 per cent of the urban population, or 90 million people, would still lack access to adequate safe, sustainable water. Water provision in India is unable to provide convenient and safe access to drinking water for a large sector of the population. Urban water delivery is characterized by irregular delivery and pressure, provided by inefficient and heavily subsidized municipal boards which are unable to maintain and expand the existing system. The situation is somewhat worse in peri-urban and rural areas with declining water availability,

groundwater depletion and poor maintenance of existing infrastructure. Substantial reform is needed in order to cater for existing needs, and to meet increasing demand for water fuelled by both population and income growth McKenzie & Ray (2005) [4].

Table 2: Accessibility of Drinking Water (in %)

Particulars	Tap/Hand Pump/ Tube well			
	2011	2001	1991	1981
Rural India	82.7	73.2	55.5	26.5
Urban India	91.74	90.0	81.4	75.1
All India	85.5	77.9	62.3	38.2

Source: Economic Survey of India, 2014

The above table revealed that the accessibility of water in terms of tap, hand pump and tube wells in Urban and Rural areas. It was found that the accessibility of water has been increasing in Rural from 26.5 per cent in 1981 to 82.7 per cent in 2011 and in Urban areas it increased from 75.1 per cent to 91.74 per cent in the respective years. It also noted that compared with all India level, the accessibility of water in all India areas was low during the study period i.e 38.2 per cent in 1981 to 85.5 per cent in 2011

State-wise Accessibility of Water in India

It appears that there are noticeable disparities among different Indian states as regards access to drinking water is concerned. Available data on the state-wise population having access to safe drinking water facilities through different sources are given in table 3.

Table 3: Households Access to Safe Drinking Water (Tap/Handpump/Tubewell) in India (in per cent)

States		1991			2001			2011		
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
North India	Delhi	95.8	91.0	96.2	97.2	90.1	97.7	95.0	87.9	95.2
	Uttar Pradesh	62.2	56.6	85.8	87.8	85.5	97.2	95.1	94.3	97.9
	Arunachal Pradesh	70.0	66.9	88.2	77.5	73.7	90.7	78.6	74.3	91.3
	Madhya Pradesh	53.4	45.6	79.4	68.4	61.5	88.6	78.0	73.1	92.1
South India	Maharashtra	68.5	54.0	90.5	79.8	68.4	95.4	83.4	73.2	95.7
	Kerala	18.9	12.2	38.7	23.4	16.9	42.8	33.5	28.3	39.4
	Tamil Nadu	67.4	64.3	74.2	85.6	85.3	85.9	92.5	92.2	92.9
	Andhra Pradesh	55.1	49.0	73.8	80.1	76.9	90.2	90.5	88.6	94.5
	Karnataka	71.7	67.3	81.4	84.6	80.5	92.1	87.5	84.4	92.3
All India		62.3	55.5	81.4	77.9	73.2	90.0	85.5	82.7	91.4

Source: Economic Survey of India, 2014

The national average of access to drinking water for states was 62.3 per cent in 1991 and it has increased to 85.5 per cent in 2011. In North India, the states like Delhi, Uttar Pradesh, Arunachal Pradesh and Maharashtra has access to water above the national average while Madhya Pradesh was below the average level i.e 53.4 per cent in 1991 to 73.1 per cent in 2011. On the other hand, it was found that, in South India accessibility of water in Karnataka was high in 1991 both in rural and urban areas i.e 67.3 per cent in rural and 81.4 per cent in urban. But in 2001 Tamil Nadu had top in the accessibility in urban and rural areas. Whereas in 2011 the rural areas Tamil Nadu was high (92.2%) but in urban Andhra Pradesh was high 64.5 per cent. It was also found that among the south Indian states Kerala was least in terms of accessibility during the years (18.9 % in 1991 to 28.3% in 2011).

Conclusion

The government is responsible for managing the water resources through various aspects of planning, design, development and management. And also necessary legal and institutional changes should be made at various levels. At the national and state level the Water Users' Associations and the local bodies such as municipalities and gram panchayats should particularly be involved in the operation, maintenance and management of water infrastructures and also inviting the participation of private sector may help in introducing innovative ideas, generating financial resources and introducing corporate management and improving service efficiency and accountability to users.

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