



CONSUMPTION OF WATER AND SANITATION: A CASE STUDY FROM RURAL HOUSEHOLDS OF PASUR VILLAGE IN COIMBATORE DISTRICT

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ABSTRACT

Water is a underpin for human life and their activities. In recent years, rapid population growth induced more demand for water, people are face lot difficulties to collect the freshwater for consumption and domestic activities, water shortage due to exploitation of water for industrial activities, water pollution and improper management of water bodies. Right to access the water is a basic human right. In India, the rural households are lack to access the drinking water and invariably all the section of people get water in an equitable, efficient and sustainable basis has remained a challenge and prominent issues. According to UNCIEF 2017 report, India faces economic burden of 600 million dollars per year due to waterborne disease alone. In India 29 percent of rural households have portable water supply within premises and 40 percent of rural households lack to access the drinking water. The World Bank report on India Diagnostic Assessment of Select Environment challenges 2013, indicated that India's Annual mortality was 12.60 percent owing to water supply, sanitation and hygiene. Therefore, this study mainly focuses to analyse the community wise average water consumption, water quality and sanitation facilities available in the Pasur village of Coimbatore district. The proportionate random sampling method was adopted to selected 46 sample households. This research found out the water consumption of rural households was much higher than Government norms. The rural households reported that water quality is bad due to leakages, sewage mixed into water. And also found out beneficiary under Swachh Bharat scheme in Pasur village.

KEYWORDS: Water consumption, Households, Sanitation, Water shortage.

1. INTRODUCTION

Water is a renewable resource in once upon time. It was directly and indirectly used to multi-purpose of human life, household's activities and industrial development. But in 21st century it was changed, the water scarcity and water pollution are the main the global environmental problems (UN water and FAO, 2007; Harikishore, 2017). Then water become a scarce resource due to anthropogenic activities. According to Article 21 of Indian Constitution, state duty is not only provided the adequate drinking water but also protect the water sources from pollution and encroachments. (Ramachandraiah and Prasad, 2004). Access to clean and protected drinking water has been treated as a fundamental right of all the people in a country (Ramachandraiah, 2001; Manikandan, 2012). "All people, whatever their stage of development and their social and economic conditions have the right to have access to drinking water in quantities and of a quality equal to their basic needs" (United Nation, 1997). But still people are faces lot of disparities in getting the water. In India more than the 163 million of people does not have access to clean water. According to UNICEF, FAO and SaciWATERS 2013 report, stated that water contamination is the main reason for water borne diseases in India annually 37.7 million of people affected by water borne diseases and diarrhea kills 1.5 million of children. Every year, 73 million of working days are lost due to waterborne diseases. In India, diarrhea alone caused 6514 deaths over the five years. WHO and UNICEF, 2017 report found out the inequalities gap persists between rural and urban areas in basic water, sanitation and hygienic condition. As per 2001 census report, the availability of drinking water in rural households within the premises was 28.7 percent and nearby premises was 51.8 percent, and in 2011 census report, drinking water availability of rural household within the premises was increased to 35 percent and nearby premises was decreased to 42.9 percent and National Sample survey 2018, stated that in India only 58.2 percent of rural households have drinking water facilities within the premises. Therefore, this study analyses the community wise average water consumption, water quality, available water sources and sanitation facilities in Pasur village of Coimbatore district.

2. REVIEW OF LITERATURE

The safe drinking water supply and basic sanitation facilities are vital needs for healthy human life and complexly linked with daily activities. (Manikandan et al., 2019). The access to quality of water is a major issue



in rural areas, contamination of water is root cause for water borne diseases and it turned as health cost. (Manikandan and Boopathi, 2017). Drinking water, sanitation, housing, health care and road facilities are intrinsic to community development and it was turn to economic development of the rural people. And the planning, implementation and maintenance of the sources leads sustainability of rural water supply. (Ravichandran and Boopathi, 2002). Even though state allocation on water sector was increased but at the same time found that large segment of population deprived for drinking water. (Manikandan and Boopathi, 2018). The proper restoration and preservation of waterbodies helps to remove drought condition, storage the rainwater and increase the groundwater level. (Rajendran, 2020).

3. OBJECTIVE OF THE STUDY

- This study mainly focuses to analyse the community wise average water consumption, water sources, water quality and sanitation facilities available, especially beneficiary under Swachh Bharat scheme in Pasur village of Coimbatore district.

4. METHODOLOGY

Pasur village in Coimbatore district has been chosen for this study. Pasur Village panchayat is located in Annur block in Coimbatore. Pasur is one of the largest villages located in Coimbatore North Taluk. According to 2011 Census, Pasur village total population was 3,219 and with 888 households. Of the total households, 5 percent of the sample households are proportionately selected. The total 46 sample households was selected for this research. Both primary and secondary data has been used. The primary data was collected with structured questionnaire. Secondary data was collected from Census, Ministry of Jal Sakthi report, UN Water, World Bank and various Journals, Newspapers.

5. RESULT AND DISCUSSION

The accessibility and availability of water and sanitation facilities are shows disparities between the urban and rural areas. However, the urban people have better access to improved water supply and sanitation compare to rural areas. Hence, this research analysis the socio - economic condition of households, water sources and average water consumption, quality and sanitation facilities avail, especially beneficiary under Swachh Bharat scheme in Pasur village.

Socio-Economic Condition of the Rural households in Pasur village

- In this study, 56 percent of respondents are female and 44 percent are male, the majority 41.30 percent of the respondents are illiterate, 36.9 percent have higher secondary to graduation, 10.9 percent completed primary level education and 10.9 percent have secondary education. Among all class the highest number illiterate in SC/ST category.

Table 1: Average Income and Expenditure of the Rural Households in Pasur Village

Caste	Total monthly Income of the Family	Total Expenditure of the family
SC/ST	15930.55	25275.00
BC	18812.50	20300.00
MBC	11505.55	22138.89
Others	18026.80	19209.33
Total	15998.95	22250.87

Source: Primary survey

The table 1 shows the average family monthly income of the respondents Rs.15,998.95 and expenditure was Rs.22,250.87. The high level of income gained by BC Rs.18,812.50 followed by other category Rs.18,026.80. And the high amount of family expenditure was incurred for SC/ST with Rs. 25,275 followed by MBC with Rs.22,138.89. There are a few numbers of income earners with less income and average 4 family members. They managed expenditure by borrow the money from neighbours and debts. The respondents of all category family expenditure were much greater than family monthly income.

Facts about the water sources and average water consumption, quality and sanitation condition of Pasur village

- The study found out that the majority 50 percent of the respondent depend on House Service Connection for drinking water, followed by 39.2 percent collect the water from stand post, 6.5 percent get water from borewell and 4.3 percent of respondents get water from well.
- The majority 73.9 percent of respondents are reported that existing water supply not sufficient for all proposes and 26.1 percent are somehow managed with present water supply.



- The majority 52.2 percent of the households have expressed they are not willing to pay for additional water supply but 47.8 percent of the households are willing to pay for getting additional water supply.
- The majority 56.5 percent men are fetching water for drinking and other domestic needs, 28.3 percent of women are collected the water and 15.2 percent of school going children are collected water. It was evident that men are fetch water for the house is greater than the women. Because of water supply in uneven time.
- In Pasur village, 100 percent, all the households are faces water shortage problem during the summer season. Reason behinds this majority of households are depend on government water supply for drinking water and other purpose. The reason is that as the dependence on the public source of water is increasing and lack of conservation of water bodies in rural area.
- The 67.4 percent of the respondents have rain water harvesting system in their houses but, due to improper construction and lake of maintenance it was not function and 32.6 percent of the respondents does not have rain water harvesting system in their houses.

Table 2: Total consumption of water and per capita of water consumption (LPCD)

Caste	Statistics	Consumption of Water for various purposes								Consumption of water (Total)	Per capita per day (All purpose)	Total consumption according to norms	Per capita per day (Norms)
		Drinking	Cooking	Bathing	Washing	Cleaning utensils	Ablution	Cleaning house	Sprinkling at entrance				
SC/ST	Sum	630	431	1110	1240	760	1070	210	18	5469.00	1351.33	4481.00	1095.03
	Mean	35.00	23.94	61.67	68.89	42.22	59.44	11.67	1.00	303.83	75.07	248.94	60.84
BC	Sum	445	258	655	715	495	580	175	16	3339.00	1302.37	2653.00	1006.33
	Mean	29.67	17.20	43.67	47.67	33.00	38.67	11.67	1.07	222.60	86.82	176.87	67.09
MBC	Sum	275	185	440	550	355	440	115	9	2369.00	616.12	1890.00	492.00
	Mean	30.56	20.56	48.89	61.11	39.44	48.89	12.78	1.00	263.22	68.46	210.00	54.67
OTHER S	Sum	95	103	210	235	160	185	45	4	1037.00	291.00	828.00	230.10
	Mean	23.75	25.75	52.50	58.75	40.00	46.25	11.25	1.00	259.25	72.75	207.00	57.53
TOTAL	Sum	1445	977	2415	2740	1770	2275	545	47	12214.00	3560.81	9852.00	2823.47
	Mean	31.41	21.24	52.50	59.57	38.48	49.46	11.85	1.02	265.52	77.41	214.17	61.38

Source: Primary survey

The table 2 indicates that community wise total water consumption and per capita of water consumption. In Pasur, the total average water consumption was **265.52** litres per day required for all purposes, according to norms 214.17 litres only and per capita of water consumption was **77.41** litres per day as per norms 61.38 litres only. It reveals that there was big gap between government norms and actual consumption of water. The maximum total water consumed was by SC/ST category 303.83 litres of water/day while according to norms only 248.94 litres of water requirements, 263.22 litres consumed by MBC, other category required 259.25 litres of water and BC required 222.60 litres of water. And the maximum per capita per day water consumption for all purpose was 86.82 litres of water for BC category of respondents while according to government norms it should be only 67.09 litres followed by SC/ST category required 75.07 litres, other category of respondents required 72.75 litres of water and MBC category respondents required per capita per day water consumption for all purpose was 68.46 litres of water. The table concludes that irrespective of caste per capita of water consumption and the total consumption of water was much greater than the norms which show the increasing water demand, family size are to be considered and in ground reality, norms are fixed less than the water requirements of the respondents.

Table 3: Water quality of Pasur Village

Source of Drinking Water	Water quality: Odour		Total	Water quality: colour		Total	Water quality: taste		Total
	Yes	No		Yes	No		Good	Bad	
Well	0 (0.0)	2 (100.0)	2 (100.0)	0 (0.00)	2 (100.00)	2 (100.00)	2 (100.00)	0 (0.00)	2 (100.00)
HSC	1 (4.3)	22 (95.7)	23 (100.0)	14 (60.90)	9 (39.10)	23 (100.00)	9 (39.10)	14 (60.90)	23 (100.00)
Stand post	0 (0.0)	18 (100.0)	18 (100.0)	10 (55.60)	8 (44.40)	18 (100.00)	8 (44.40)	10 (55.60)	18 (100.00)
Bore well	0 (0.0)	3 (100.0)	3 (100.0)	3 (100.00)	0 (0.00)	3 (100.00)	0 (0.00)	3 (100.00)	3 (100.00)
Total	1 (2.2)	45 (97.8)	46 (100.0)	27 (58.70)	19 (41.30)	46 (100.00)	19 (41.30)	27 (58.70)	46 (100.00)

Source: Primary survey

The Table 3 explains the water physical parameters odour, colour and taste of sources of drinking in Pasur village. The majority 97.8 percent of respondents stated that all the drinking water sources does not have odour problem but, 4.3 reported of the odour problems only in house service connection (HSC). The majority 58.70 of percent households are reported the colour of water is not good and quality of water also bad due to leakages in pipelines and sewage mixed into water and 41.30 of percent households stated the colourless and get good quality of water. The study found out the well water was good for consumption because the physical parameters of well water odour, colour and taste was good, it was stated by the users.

Table 4: Toilet facilities available in Pasur village

Caste	Constructed Toilet through Swachh Bharat Scheme	No Toilet	Own Constructed Toilet	Total
SC/ST	12 (66.7)	5 (27.8)	1 (5.5)	18 (100.0)
BC	6 (40.0)	5 (33.3)	4 (26.7)	15 (100.0)
MBC	4 (44.4)	3 (33.4)	2 (22.2)	9 (100.0)
Others	0 (0.0)	0 (0.0)	4 (100.0)	4 (100.0)
Total	22 (47.8)	13 (28.2)	11 (24.0)	46 (100.0)

Source: Primary survey

The table 4 reveals that majority 47.8 percent of households are benefited and constructed the toilet under Swachh Bharat Scheme and 24 percent have own toilet with septic tank in their house but remaining 28.2 of households still does not have toilet facilities. They use public toilet and open area. The SC/ST category has maximum number of beneficiaries, 66.7 percent of households are constructed toilet under Swachh Bharat Scheme in Pasur village.

- ❖ The 78.3 percent of the respondent are aware of Swachh Bharat scheme but, still 21.7 percent of respondent are does not have awareness about Swachh Bharat scheme.

6. CONCLUSION

The access of clean drinking water fundamental right and needs of people and central and state government have responsibility for provision of clean water and sanitation services to people. Both Central and State government initiated the various policies and programmes, such as National Rural Drinking Water Programme Jal Jeevan mission for betterment of rural water supply, Swachh Bharat Scheme for toilet facilities and so on. But still people live in rural areas, lack to access to adequate water supply, basic sanitation facilities and struggle with water shortage problem during summer, poor hygienic condition. It reveals, there was lack of maintenance in government measures and policies implemented in rural areas. The Pasur village panchayat supplying water for both drinking and other purpose but, it was not fulfilling the water demand by people. The ground reality of Pasur village is water requirements of households for various consumption is much higher than Government norms. In Pasur village, the majority of rural households are benefited under Swachh Bharat



scheme and they have own toilet facilities in their house. It was good indication of Government actions to stop the open defecation.

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