

Status of Drinking Water Supply through Piped Water to the Villagers of Kadalmangalam Panchayat, Uthiramerur Block, Kancheepuram District, Tamil Nadu, India

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Abstract: This study explores the drinking water demand and how it has been on the increase due to the rapid growth of population and better living standards which are resulted from the global economic development. It has been on the critical observations and witnesses that drinking water available for the withdrawal and usage has been declined due to climate change arising from accelerated urbanization and industrial revolution. Under this drinking water scarcity conditions, foremost importance of drinking water supply should be equitable distribution of limited available drinking water to all the consumers. In addition to the above discussion, it pictures the real conditions of the people dwelling in Kadalmangalam panchayat in Kancheepuram district, of how they manage to survive only with the piped water supplied by the local panchayat administration. The results of this study revealed that the drinking water scarcity has pushed the villagers of Kadalmangalam panchayat to compulsorily depend on piped water provided by the panchayat administration. Thus the results indicate that drinking water supply through public taps/ stand posts need to be improved.

Keywords: Water, Drinking Water, Water Supply, Availability, Accessibility, Piped water, Water scarcity.

1. INTRODUCTION

Water is an important and life-sustaining drink to all living beings and it has been a center of every being's wellbeing. No one can live without access to water. Water sources without pollution are becoming increasingly scarce today and the drinking water crisis's looming not only in urban areas but also in rural areas. Access to fresh and safe drinking water is becoming nightmare to every citizen of the world, especially the citizens of India.

It is estimated that approximately one billion people in the world lack access to drinking water sources; some put this figure closer to two billion if growing numbers of urban poor are to be included. The largest increase in un-served populations is expected to be in rapidly expanding peri-urban areas of sub-Saharan Africa and South Asia (UNDP 2006). In India, although official statistics state that approximately 91% of urban households have access to drinking water (MOUD 2006), a recent study finds that only 71% of households surveyed across major cities consider the quantity of water supply to be adequate (Shaban and Sharma 2007).

The provision of clean drinking water in India has been one of key priorities in 47th article of the Constitution, conferring the duty of providing clean drinking water and improving public health standard to the State of India. It has been on the constant efforts to actualize the article of the constitution, starting from the Bhole committee in 1946 to Accelerated Rural Water Supply Programme (1972), Rajiv Gandhi drinking water mission (1991) and Swajaldhara scheme (1999 empowering and involving local communities in tackling water and sanitation issues).

Despite the national commitment to supply safe drinking water, access to water is difficult especially in rural areas. The National family health survey-III (2005-06) projected that only 25% of households in India had private water supply

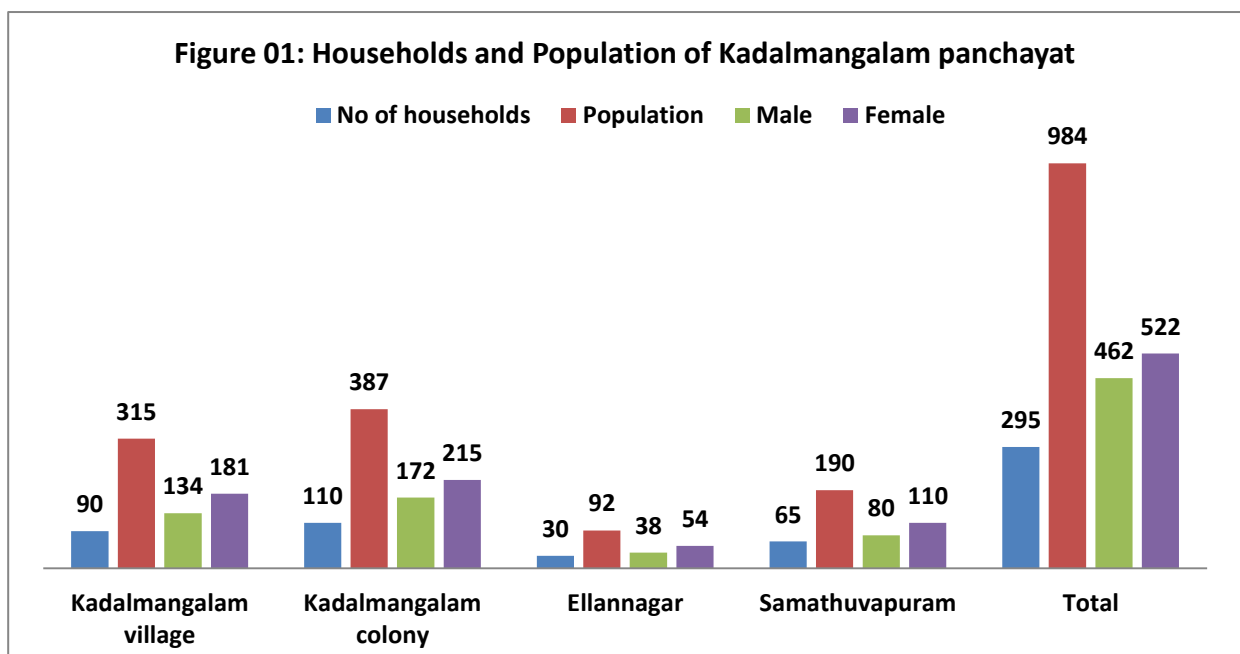
facility, 18% used public water supply and 43% used tube wells (National Family Health survey III, 2005-06). The Department of drinking water supply said that the drinking water coverage was 66.4% in rural areas (Department of Drinking Water Supply, Union Ministry of Rural Development. 2009. And, the census 2011 reveals only 47% have house service connections, a good 36% still have to fetch water located within 500 metres in rural areas (Census 2011, Government of India. 2012)

The government's think tank NITI Aayog has warned that "India is suffering from the worst water crisis in its history and millions of lives and livelihoods are under threat. Currently, 600 million Indians are facing high to extreme water stress" (Smart Water Magazine, February 2020).

The central government's ambitious programme (Jal Jeevan Mission) to provide tap-water to all households in the country by 2024, may cost a sum of Rs.3.6 lakh crores, but the scheme was allocated Rs.11,500 crore in the current budget in 2020. The rest of the funding would be mobilized over the next few years. India has around 18.5 crore rural households (The Hindu Business Line, 1st February, 2020).

2. STUDY AREA

According to Census 2011, the location pin code of Kadalmangalam panchayat is 629 821. It is located in Uthiramerur block of Kancheepuram district in Tamil Nadu, India. The total geographical area of the panchayat is 667.14 hectares. Kadalmangalam has a total population of 984 and there are 295 houses in the panchayat with four habitations. Uthiramerur where there is its block level local administrative office is the nearest (6KMs) town to the panchayat.



3. PROBLEMS FACED BY THE VILLAGERS OF KADALMANGALAM PANCHAYAT

3.1 Oorani which was the main drinking water source has been left without use.

3.2 Water scarcity prevailed in the village has forced the villagers to depend only on the piped water provided by the local panchayat administration.

3.3 Prevailing disparities in the name of caste while supplying drinking water during the season of summer.

3.4 Lack of access to get drinking water from the nearby Cheiyyaru River (12KMs from the study area).

3.5 Groundwater shortage burdens the villager to face acute water scarcity during the summer.

Mentioned the above are the key problems that the villagers of the study area face regarding availing, accessing and getting quality of drinking water.

4. OBJECTIVES OF THE STUDY

Key objectives of the study are:

- To study the natural and man-made sources of drinking water supply available to people of Kadalmangalam panchayat.
- To study the availability and accessibility of drinking water in Kadalmangalam panchayat.
- To assess the usage of piped water by the villagers in Kadalmangalam panchayat.

5. METHODS

This study attempts to understand the ‘Drinking Water Supply through Piped Water to the villagers of Kadalmangalam Panchayat, Uthiramerur block, Kancheepuram District’. Quantitative method was adopted in the study.

Stratified random sampling technique was followed to draw samples from all the four villages of the panchayat. All the villages in the panchayat were stratified based on their population size into four strata. From each village, 20% of households were selected randomly. Later, based on the tuned observation, in each village, 10% of the households were again selected at random by simple random sampling method with the individual household being the sampling unit. A total of 30 households were finally identified. Data collection was done both by field observation method, check list and also by using a pre tested interview schedule. In each village, a prior consent was taken from the village leaders after having a preliminary meeting with them and explaining them the purpose of the study.

The methods of this study are developed with the base of the both, primary and secondary data. Primary data was collected through personally prepared Interview Schedule. Secondary data was collected from books, journals, research papers, articles, Government data, websites, and various governments’ published sources.

The researcher reviewed various previous literatures to understand the concepts of water, drinking water, piped water, water supply and water scarcity. The interview schedule covers all the variables selected for the research. The tool was pre-coded for easy processing with computer. Each respondent nearly took 25 minutes for answering all the items.

The researcher classified the raw data into purposeful and useful categories under different variables of the study. The collected raw data were meticulously checked and then they had been codified. After the data had been codified, using the Statistical Package for Social Sciences (SPSS) programme, the entire data was entered into the computer.

6. RESULTS

The results of the study were analyzed using the following criteria:

Availability of water was defined as presence or absence of a water supply delivery system in the village. Access to safe drinking-water was measured as the proportion of population using an improved drinking-water source (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2004).

6.1 Households Vs Caste of villagers in Kadalmangalam panchayat

Table 01

S.No	Name of the hamlets	Name of the caste					Total
		SC	ST	BC	MBC	OC	
1	Kadalmangalam village	0	1	0	87	2	90
2	Kadalmangalam colony	110	0	0	0	0	110
3	Ellannagar	30	0	0	0	0	30
4	Samathuvapuram	28	0	37	0	0	65
Total		168	1	37	87	2	295

The above table 01 presents the caste wise households in the study area of Kadalmangalam panchayat. Of the total households (295), 168 households or 57 per cent are from the caste of Scheduled Caste. Though there are four hamlets in the panchayats, only one village (Kadalmangalam village) has the households 87 or 30 per cent from Most Backward Caste (MBC). There are two households from Other Caste (OC) one household from Scheduled Tribe (ST).

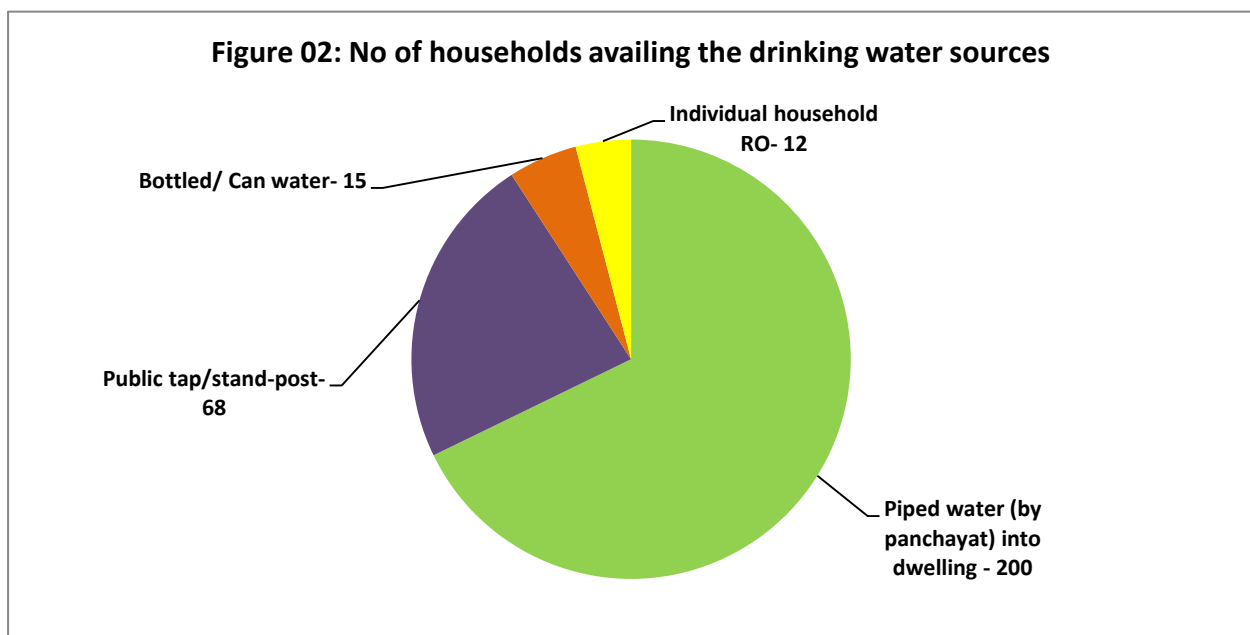
6.2 Permanent sources of drinking water of the respondents

Table 02

S.No	Permanent source of drinking water	No of households being used
1	Piped water (by panchayat) into dwelling	15
2	Public tap/stand-post	10
3	Individual household RO	4
4	Bottled/Can water	1
Total		30

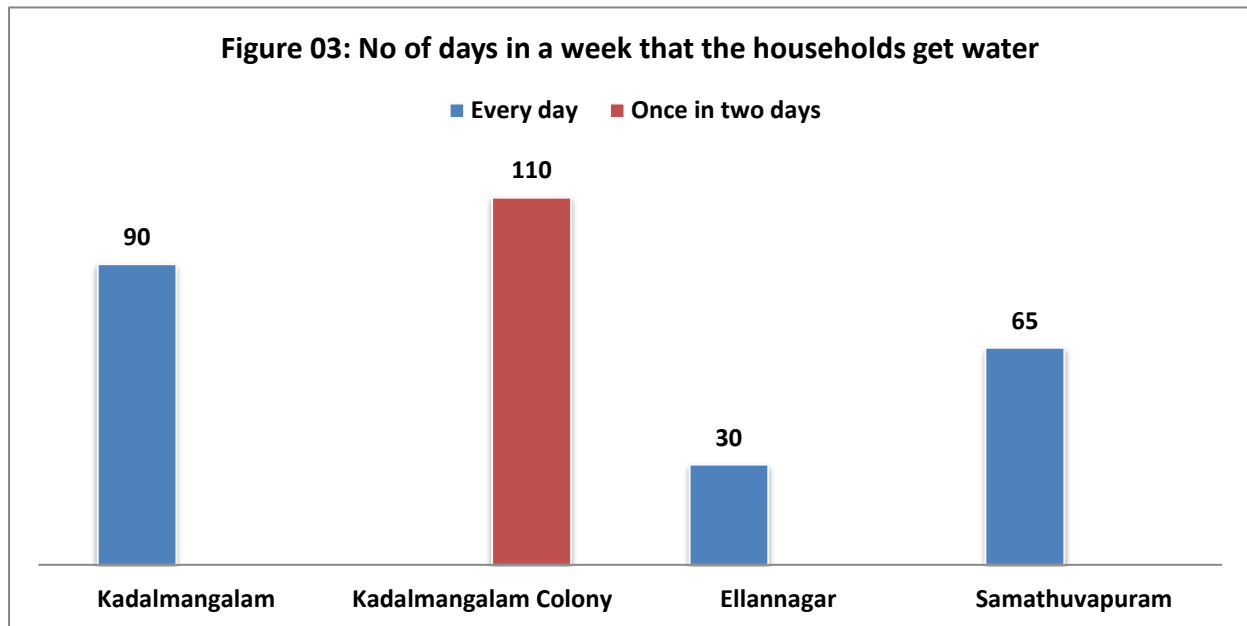
It was found through the interview schedule (Table 02) that of the total respondents (30), 15 respondents (50 per cent) were taken efforts to have piped water (supplied by the panchayat) into their dwellings while 10 respondents (33 per cent) were using public taps/stand-posts installed at the corners of the streets of the panchayat (supplied by the panchayat). Four respondents (13.3 per cent) use their own household individual ROs while one respondent (3.3 per cent) use bottled/can water.

6.3 Households availing and accessing drinking water from the sources



As the above figure 02 depicts, it was further clarified during the interactions with the panchayat clerks and the village leaders that 200 households (68 per cent) of the panchayat are smoothed with the piped water into their dwellings while 68 households (23 per cent) are fetching water from the public taps/stand-posts installed at the corners of the streets. 15 households (5 per cent) are buying bottled water/can water from the private concerns while 12 households (4 per cent) are using water from their own individual households' ROs.

6.4 Usage of piped water by the villagers in Kadalmangalam panchayat



As the figure 03 represents, of the total households of 295 from the four villages 110 respondents who are from Kadalmangalam colony have once in two days of water supply during the summer, while the other villagers who are from the nearby Oorani and Over Head Tank (the main source of water supply) get drinking water on every day basis during the summer as well.

7. DISCUSSION

The researcher's observation revealed that the water supply system was both available and accessible to all the households in the four villages of Kadalmangalam panchayat. These findings are in line with the final report of the Joint monitoring programme (2015) and far better than that reported by census 2011. The availability of water in the panchayat was from underground source from the bore-well pumped to the overhead tank.

An important observation was that there was a disparity of water distribution in the name of caste. The communities of MBC have availability and accessibility of piped water all through the year while the communities from SC have drinking water distribution in alternative days during the summer. The main reason given by the clerk of the panchayat was distance between the establishment of water source and the dwelling areas of SC communities. The communities from MBC get easy access to the piped water as they are nearby the tank while the people from SC are away from the water source.

The households who have connections to their houses are paying Rs.30 per months including the charge of Rs.1000 as deposit which will be paid back when the tap in the dwelling units is discharged.

It was further added by the respondents and the stakeholders that there was a main river called 'Cheiyyaru' which is 12KMs away from the panchayat. The river water has connections nearby panchayats and they wanted the same connections to their panchayat as they face water scarcity during the summer. "If the river water of Cheiyyaru is connected to our panchayat as well we will not have any water scarcity and people in the panchayat will get enough water during the summer as well without any differences" panchayat clerk expressed.

8. CONCLUSION

Though water scarcity is not widely witnessed by the villagers in Kadalmangalam panchayat, the need (connecting river water supply from the 'Cheiyyaru') of villagers is still not fulfilled and it becomes demand from the villagers.

The drinking water that the villagers currently drink was never subjected for the quality testing since its establishment. This is the scope for the study to be under taken as Chlorination of the overhead tanks was not satisfactory. It was also not

done regularly and in a scientific way. The researcher found that there is a gap regarding clean and safe water storage, usage and purification.

The local administration of panchayat together with the health department needs to impart health education regarding awareness on drinking quality of water by practicing stages of purifications.

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