**Scarcity of Water in Perambalur Municipality, Tamil Nadu**

Dr.Tamilselvi1, Dr.N.Manimekalai2

1Research Associate, Central Theme, RUSA 2.0, Bharathidasan University,

2Director & Head, Department of Women’s Studies, Bharathidasan University,

**Abstract**

 Total population of Perambalur Municipality is 49,648; among 24659 are males while 24,989 are females (Census, 2011). Perambalur Municipality has 21 wards. The Municipality people were met the water problems. The main source of drinking water is Perambalur Kollidam combined water supply scheme and other sources is 29 open well available. It has 6 Over Head Tanks; water capacity of OHT is minimum 1.50 lakhs litres to 8.00 lakhs liters. At present altogether 2.00 Millions of Litre per Day (MLD) of water is being effected for 1.30 hours on daily for a population 49678 at a rate of 95 Litre Per Capita per Day (water consumption between 135-225 litre LPCD) from the above combined water supply scheme and local open wells. The individual separate water tap connected houses are 9256 and the public fountain is 24. The total quantity of water supply is 49 lakhs per day. But in reality is totally different. According to the study, drinking water available within 10-15 days gap, some wards water available within 8 days. Especially the women met struggling to collect water, (e.g) in ward 4th women went to 2km for collect good water, the good water available in government office quarters. In some wards non-drinking purpose water also unavailable. The scarcity of water supply affecting the Perambalur Municipality people’s day to day life; particularly school going children, women, pregnant women, adolescent girls are meeting the problems like bathing, no water to clean genitals organs during menstruation.

Keywords: Water, Water scarcity, Water problems, Water problems in city, Water in Prerambalur

**Introduction**

According to 2001 census India Urban population was 28.53 %, which proportion was increasing to 35.4 % in 2021 census. Tamil Nadu is one of the most rapidly industrialising and urbanising states and is the third most urbanised state in the country in India, with 48.45 per cent of its population living in urban areas. Tamil Nadu will continue to grow its urban population and the number of voters in urban area had also increased in the past ten years. (Deccan Chronicle, July 4th 2017). An increasing urban population has been creating a huge gap between demand and supply of water every year. In India 2,00,000 population was died due to 70 % of water contaminated (NITI Aayog, 2020). The last Census estimated that approximately only 70 per cent of urban towns have access to safe drinking water. The minimum per capita supply of water required in urban areas varies from 70 lit/day to 130 lit/day, and this requirement of water supply varies according to the land use classification of the towns. The 2.7 crore urban population of Tamil Nadu require a wide range of urban services including water supply, sewerage, solid waste management and streets as well as social infrastructure like schools, hospitals, markets and so on. Based on ever urgent social demand for water surveying, this paper analyses the availability, quality and influences of scarcity of water in Tamil Nadu.

**Objectives:**

Main objectives are given below:

* To study the water issues in Perambalur Municipality
* To study the influence of the water issues Perambalur Municipality city

**Study Area Profile:**

 Perambalur is the one of district of Tamilnadu state, Latitude and longitude coordinates are: **11.230000, 78.879997.** Towns place category with the gps coordinates of 11° 13' 48.0000'' N and 78° 52' 47.9892'' E. The city is divided into 21 wards, it has population of 49,648 of which 24,65 are males while 24,989 are females as per report released by Census India 2011. Perambalur Municipality has total administration over 12,732 houses to which it supplies basic amenities like water and sewerage. It is also authorize to build roads within Municipality limits and impose taxes on properties coming under its jurisdiction.Perambalur Municipality has 21 wards.

Details of sources of water taken from the Municipality official website, as they follow; one is Perambalur Kollidam combined (Cavery river water) water supply scheme for drinking purpose and another 29 open well sources for non drinking purpose.  The Kollidam River water 72km length of Pumping from Thalakudi Kollidam River to Perambalur.  Supply main to over head tanks at Alambadi, Aranarai, Vadakku Mathavi Road and Thuraimangalam. The daily supply from this source is 3.20 MLD through the 6 over head tanks. That water distributed through 6 OHT from the capacity of OHT is minimum 1.50 lakhs litres to 8.00 lakhs liters. And other urban local bodies open well sources are 29. They are named as Odasakulam, Uppodai (East), Uppodai (West), Alambadi (South), Alambadi (North), Indira Nagar Puliyankulam (South), Puliyankulam (North), Sengunam, Aranarai , Thuraimangalam.  Currently 2.00 MLD of water is being effected for 1.30 hours on daily for a population 49678 at a rate of 95 LPCD from the above combined water supply scheme and local open wells. The individual separate water tap connected houses are 9256 and the public fountain is 24. Perambalur Municipality supplying the water in following manner, Kollidam water scheme 32.0 lakhs liters, 13.0 lakhs liters from local sources, 3.0 lakhs liters from Mini PP, 3.0 lakhs from Bore wells, 1.0 lakhs from lorry supply. The total quantity of water supply is 49 lakhs per day.

**Methodology:**

This was qualitative study, consisting focus group discussion. In the FGD 12 people participated and discussed about their real life water problems and the influences.This study based on Focus Group Discussion (FGD), and the guidelines was developed in local language (Tamil), and the guidelines consisting of Socio economic and demographic characteristics, availability of water, supply timing, quality of water, and purification water etc. was included in the FGD guide. The Municipality’s total wards 21, among 7 wards selected for the FGD. The focus group sites were Perambalur Municipality wards, like wards 19 Sangupettai, Ward 4 Madhanagobala puram, ward 20 Annaganagar and ward 7 Dheeran nagar. The selected sites were contacted the ward members and completed the FGD by their help. Focus groups four focus groups were conducted at the four sites in the month of April, 2022, each group had 9 women. All focus groups were conducted in Tamil language.

**Results and Discussion:**

**Socio-Economic and Demographic characteristics:**

The analysis revealed that average current age of the respondents was 24.6 years. Majority of respondents were Hindus 65.4 per cent constituted the followed by Christians 34.5 per cent. 60.9 per cent of the respondents belonging scheduled community, 39.0 per cent of others. The average household size was 3.8 persons. The educational status of respondent ranged from 18.1 per cent of illiteracy in 47.2 per cent of primary and 34.5 per cent middle level. 71.8 per cent of the respondent was currently married living with their husband, 17.2 per cent of separated and 10.9 per cent of widowed. All the women belonged from nuclear families. Average number of children of women was male 1.08 and 1.0 of female children. Buildings construction labour workers and housekeeping labour constituted the majority of women. The average monthly income of respondent was Rs. 9063.63.

**Table 1**

**Percentage distribution of Background characteristics of the**

**Respondents**

|  |  |  |
| --- | --- | --- |
| **Sl.No** | **Background characteristics** | **Percentage** |
|  1. | Current age | 15-19 | 16.3 |
| 20-24 | 31.8 |
| 25-29 | 36.3 |
| 30-34 | 15.4 |
| Average 24.6 years |  |
| 2. | Religion | Hindu | 65.4 |
| Christian | 34.5 |
| 3. | Caste | SC | 60.9 |
| Others | 39.0 |
| 4. | Marital status | Currently married  | 71.8 |
| Widow  | 17.2 |
| Separate  | 10.9 |
| 4. | Family Type | Nuclear | 100 |
| Joint |  |
| 5. | Average Number of Male children | 1.08 |
|  | Average Number of Female children | 1.60 |
| 6. | Household size | 2-3 | 33.6 |
| 4-5 | 64.5 |
| 5+ | 1.8 |
| Average 3.8 |
| 7. | Educational Attainment | Illiterate | 18.1 |
| Primary | 47.2 |
| Middle | 34.5 |
| 8. | Occupation | Housekeeping | 27.2 |
| Construction work labour | 52.7 |
| Small business | 20 |
| 9. | Monthly Income | <=10000 | 60.9 |
| 10000-15000 | 39.0 |
| Average 9063.63 |

**Access and availability drinking and non drinking water:**

 According to the Focus Group Discussion the sources of drinking water kollidam water for drinking purpose. The people reported ‘once upon a time that area people used the open well and Thirumangalam lake water drinking and non-drinking purpose, but at present cannot use the surface water due to pollution’. But most of the household having own bore well in the municipality, among them wealthiest people using RO system for purifying the water and others using for non drinking purpose.

According to the focus group discussion the availability of drinking and non-drinking water is not available regularity, that means the municipality supplying from 8 days to 15 days once water like ward 1, 2, and 5. In ward 4 every seven get water. In the ward 5 ward, before the local body election drinking water came weekly once but after election it is coming 15 days once only. Upper middle class people are dominating lower middle class people in accessing Cauvery water due to technological support they get. In ward 1 and 2 (drinking water) Cauvery water comes once in ten days. In ward 4 every seventh day, Cauvery water is available for drinking purposes, In the same wards some wards not connected pipe for Cauvery water, as well public tape also not available.

In ward 6 having two drinking water sources one is Cavery water and another one is Uppodai water. The Municipality supplies the Cavery water once in 15 days, in between supplying Uppodai water in the same pipe line connection. But it is not enough for all the streets like such as Chithambaram Nagar, MM Nagar, Vengadajabathi Street, and the Old SP office street. Likewise in ward 21 has same situation in availability of water. Ward 21 people used to get Cauvery water once in 15 days. In between, they Municipality supply local well water in the same pipeline. Some wards people reported, “Nearby the OHT wards get more water and others getting less water”. Some wards not available drinking and non drinking water also. In ward 20, street name Anna Nagar, no water connection drinking or non- drinking purpose.

A woman reported, “In my street no good water pipe connection to my street, the good water available in government collector quarters only, so I would walk 2 kilometer to get good water”, In the same street another woman reported, “I and my family members staying in rental house, in that house no water connection, even non drinking purpose also”.

One woman was told, “in my street no water facility for drinking and non drinking, but in the same street a small Pillaiyar Temple there, in that temple having a small bore well with small black syntax water tank, if the Temple priest when coming for doing Pooja, that time he would open the tank water, that time we would take the water, that pooja weekly two time like Tuesday and Friday only happen”.

In ward 7, Dheeran Nagar is especially for Transport corporation working people society, that area was developed in 20 years back, in that period that areas people buying own land and create open well with motor and tank for drinking purpose and supplying water through water pipe connection to the whole household from that day to till the day. After some years the Municipality started to supply the drinking water to that area. So Dheeran Nagar having two sources for drinking purpose. But now if newly joined workers come to the area for stay the previous corporation society people did not allow fetching the open well water, the new comers access only the Municipality water. This is society based issues.

**Situation of surface water:**

Current situation of surface in Perambalur is very worst condition. 20 years back that people used the Thuraimangalam Lake, bond and open well water for drinking and non drinking purpose. A 78 years elder person reported as “I am a farmer, in my early age (may be 30), we were using the open well water for agriculture as well as drinking purpose, and used the Eswaran Koil bond water for drinking purpose, but now all are polluted, now cannot use for any purpose”. At present the Thuraimangalam Lake is using for open defecation to the the people, and also they dumping the wastage in the lake, moreover in the lake full of filling cypress oak.

 One woman reported her situation, that is, “we have a open well more than three generation, we were using that water for all the purposes, but now it was polluted, because when the lake water polluted automatically well also polluted”, now we cannot use the water, struggling for water”.

 In Perambalur city’s open surface water bodies filled by wastage including plastics papers, cups, bottles, cloths, even the people throw their children’ napkin, and menstrual napkin also. So cannot use the surface water any purpose. Most of the surface water totally polluted in Perambalur. Water saving habit is absence in the area. Rare people having rain water harvesting system. In ward 4 Manathagobala puram a person saving the rain water.

**Quality of water:**

Perambalur Municipality is supplying combinedCavery river water, which is acceptable for drinking, colourlessand transparent and taste also good. Most of the household having own bore well that is salty water. But sometimes the water having color because the cavery river water comes fifteen days once, in between the bore water would supply in the same pipe, so the water taste changed. If have any problems like the pipe would damaged in rainy seasons or any other issues the water would change color and taste. Most of the household having RO system for purify the water and use for drinking purpose.

**Influences and Scarcity of water:**

Most of the days the water not comes, so saving water is main problems, how if, big size vessels or tank needs, at the same time most of the people directly using the water they did not purify, so they don’t know how save water safely, like how covered, clean the vessels etc. For example when used the unhygienic tank or plastics used for save the water insects may affect create or affects the water. Sometimes mosquitoes will develop in that water. The school going children, working women, affect for scarcity of water. If no, water cannot cook, bath, and cannot use the toilet also.

 A woman reported, “want to move from 2 km for fetch the good water, in this situation my, school going children also helping me and they went to school late”

A pregnant woman told, “This is summer time, I need water more for bathing and frequent use toilet but here no water, I feel ugly my body”.

They don’t practice hygiene, if they went to open defecation taken more than 10 minutes for clean the genital organs, each and every time passed urine they cannot clean their genital organs, adolescent girls did not change their menstrual pad with the proper interval, moreover they throughout the menstrual pad in open place like the lake. So, lack of personal hygiene and public hygiene with them.

A women reported, “most of the time I cannot wash my genital organs after passing urine, even went to motion cannot wash immediately taken more than 15 minutes for wash, because of scarcity of water”.

Another one major issues in Perambalur, Under Ground Drainage (UGD) Treatment Plant, it is situated in near the villages, and the balanced UGD water mingles into the water source like river. When review details of the plant with the workers, and they reported, “we are properly treated the faecal and then delivering the colonized water in the river, it is using for agriculture purpose”. Not only that the treated water distributed through the Neduvasal River. So it is also affected the nearest water source, like bore well, open well, pond, lake etc. The Neduvasal people reported “we are dying due to the UGD treatment plant water, sudden deaths occur in our village, but we cannot assume why sudden deaths occur? Moreover domestic animals also dying due to the river water, how if, Goats and cows die when they drink that river water. But we cannot control the animal, in the evening time mosquitoes attacking heavily, we cannot open the door in night time, bad smile also coming so we are dying, we are given complaint with the Collector office but they did not take any action”.

**Conclusion:**

As per Ministry of Housing and Urban Affairs, 135 litres per capita per day (lpcd) has been suggested as the benchmark for urban water supply. About 15.5 cups (3.7 liters) of fluids a day for men for drinking purpose and 11.5 cups (2.7 liters) of fluids a day for women. But in Perambalur Municipality person needs approximately 6702480 liters per day based on population. But the Municipality supply 49 lakhs water per day. In this situation can realise the scarcity of water to the city people and their problems.

 The Municipality did not supply sufficient water to the whole Wards. Availability of water also insufficient, some wards gets water within 5-7 days and some wards get fifteen days once drinking water. In other days non-drinking purpose water supplying in the same pipe line, so some times quality of water changed, like color and taste also changed. The nearby ward of the OHT gets more water, and other ward gets fewer amounts. Women, children, pregnant women, adolescent girls particularly in menstruation time are affected due to the lack of water.

**Suggestions:**

 The major conclusion drawn from this research stress the need for some of the following recommendations:

* Cypress oak is major reason for scarcity of water. Urgent need to remove the cypress oak, it is serious issues, because it can observe moisture from air and grow healthy, so even in dry will became dry more and more. So should take action immediately to destruct and safe the surface water.
* Should develop the rain water harvesting in Municipality administration level, and motivate the individual also.
* Should prevent the waste water generation.
* Should organize the awareness camp to the entire people get water equal share.
* Perambalur Municipality ward members should take effort to monitor and ratification the access and availability of drinking and non-drinking water.
* Municipality should check up the water pipe line water leakage, damaging the pipe etc.

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