**Water issues in Ooty, Tamil Nadu**

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**Abstract**

**Introduction:**

By 2050, at least 30 Indian cities will face a grave water risk, according to the WWF. The problems range from poor management of water sources, contaminated supplies, leaky distribution networks and vast volumes of untreated wastewater being poured into India's rivers (Kaushik Deka, 2021). The water budget based on Ministry of Water Resources estimates shows utilizable water of 1,123 billion cubic meters (BCM) against current water demand of 710 BCM, suggesting more than adequate availability at the aggregate level given current requirements. The Standing Subcommittee of the Ministry of Water Resources estimates total water demand rising to 1,093 BCM in 2025, which reaffirms a comfortable scenario at the aggregate level even in 2025. Our World filled with 97.2 percent of salty water, availability of good water 2.8 percent. The source of good water is 30.1 percent from ground water and 0.9 per cent other source. Other water means 87 per cent lakes, slough 11 per cent and rivers are 2 percent (Training Manual SIRD).

Water availability per person is dependent on population of the country and for India, per capita water availability in the country is reducing due to increase in population. The average annual per capita water availability in the years 2001 and 2011 was assessed as 1816 cubic meters and 1545 cubic meters respectively which may further reduce to 1486 cubic meters and 1367 cubic meters in the years 2021 and 2031 respectively (Ministry of Jal Shakti, 2020). Indians using 80 per cent of good water used for agriculture, 5 per cent water using for domestic purpose and 15 per cent of the water using for factories (NITI Aayog, 2018).

India currently stores only 6% of its annual rainfall or 253 billion cubic metres (8.9×1012 cu ft), while developed nations strategically store 250% of the annual rainfall in arid river basins. India also relies excessively on groundwater resources, which accounts for over 50 percent of irrigated area with 20 million tube wells installed. India has built nearly 5,000 major or medium dams, barrages, etc. to store the river waters and enhance ground water recharging. The important dams (59 nos) have an aggregate gross storage capacity of 170 billion cubic metres (6.0×1012 cu ft). About 15 percent of India’s food is being produced using rapidly depleting /mining groundwater resources. The end of the era of massive expansion in groundwater use is going to demand greater reliance on surface water supply systems.

 As per Ministry of Housing and Urban Affairs, 135 litre per capita per day (lpcd) has been suggested as the benchmark for urban water supply. For rural areas, a minimum service delivery of 55 lpcd has been fixed under Jal Jeevan Mission, which may be enhanced to higher level by states.

Indian Council for Agriculture Research (ICAR) Director General T Mohapatra pointed out that the per capita annual water availability has declined to 1,508 cubic meter in 2014 from 5,177 cubic meter in 1951. The per capita availability of water is estimated to decline further to 1,465 cubic meter by 2025 and 1,235 cubic meter by 2050. If it declines further to around 1,000-1,100 cubic meter, then India could be declared as water-stressed country. (The Hindu Business Line, 2019). Because of Indian’ using the ground water then other sources. But they lack of storage habit would lead to the water issues.

**Objectives:**

The main objective: To study the water related issues in Ooty district’s urban places.

**Methodology:**

**Study area:**

 Above study was conducted in Ooty Municipality and Ketty Town Panchayat. Those areas select for compare study research problems. Udhagamandalam, popularly known as Ooty, it is the capital of Nilgiris District. It is nestled at an altitude of 2240 meters above Mean Sea Level and spread out at 11.24 degrees North latitude and 76.44 degree longitude. Ketti is a selection Grade Town Panchayat, constituted in the year 1920. The Town is coming under the administrative territory of Nilgiri District. Because 75 per cent of Agricultural land is surround in this area. The Ketti Town Panchayat situated at the top of View point of Udhagamandalam. The Ketti Town Panchayat has 64 habitations, 18 wards and 120 streets. The total extent is 19.20 sqkm with total population of 23,229 out of which male 11,476 and female 11,753 as per 2011 census.

**Data:**

The data base of this paper is the Author‟s RUSA 2.0 Social Science, Work titled “Access to Water, Sanitation, Hygiene (WASH) in Urban, Peri-Urban Areas in TN- Challenges & Concerns of Gender Environment & Marginalized Communities”. The information gathered from the following places of Ooty Municipality like L Hill, Kandal, as well as Mission compound area, Mickel colony, New Line and Kammand in Ketti Town panchyat.

 This is a qualitative study, data collect through focus group discussion, which aims to analyze availability, and accessibility of water and the quality of water for drinking and non-drinking purpose in Ooty Municipality and Keti Town Panchayat. The study ran from August - September 2022. The venue was chosen to ensure accessibility for all, absolute neutrality, and a relaxed and quiet atmosphere. The date and time of the meeting considered the personal constraints of most participants. Each participant was contacted the day before the meeting date to ensure their presence and to answer any questions. Arrangements were also made to record all discussions.

In addition to handwritten notes in local language (Tamil) during the focus groups, the discussions were recorded and later transcribed and translated into English. All questions were open questions. The privacy and confidentiality of the interviewees, and positive interactions between the individuals and the interviewer, were maintained during data collection.

Additionally, 85 participants were selected for five (5) focus groups. Women and men were participated and opinions were also gathered on the question of surface water hygiene. The groups consisted of a mix of water point users and managers to confront the behaviors and practices around the water bodies. The number of participants in each focus group ranged from eight to twelve.

**Results:**

**Socio Economic and Demographic Characteristics of the study areas:**

Kandal is a hevy densely populated area in Ooty city. It is an area inhabited by people various culture, religious and castes. In Thiruvalluvar street, people most belonging Scheduled Caste Arunthathiyar, their occupation sanitation work as well as most of the people retired aged person. Mostly the economic condition of the people living here is backward. Their occupation remains wage labour, i.e. boat industry work, agricultural labour, sanitary work, and women going to the domestic work. Most families live in rented accommodation. Even if have your own house, you don't have enough facilities. Their house is without any basic facilities like water, toilet and hygiene, cannot even accommodate two people in those houses, but more than 5 people living in those houses.

 Kammand is called as ‘Atti’, that means a particular community people only living in a same place, which is called Atti. The Padugas community people living in the place, all follow the same culture, customs. Here most of the people having Tea Estate, agriculture land and they cultivate Carrot, Potato, and others. Moreover their Living arrangements like house and other facilities also well.

 New Line colony is fully occupied by the Scheduled Adidravidar Community people. Their living arrangements poor, population density is more. A retired person was shared the information regarding population increase as “in 1926 this New Line colony was established by 20 houses but now 250 houses development, as well as the actual population also increased”. This area people 50 per cent engaged as sanitary workers. The Most of the youth got degree but they are doing under employment in agriculture, building construction labor, and driver etc. It is the same situation in Gandhipet area. SC people living here are without adequate basic facilities. There is no public latrine, no private latrine, and no space to construct a private latrine.

 A notable event in Pilliyar Koil Street has been built by the British, it is 100 years old and they have built a toilet in that house. It is noteworthy that the residents of that house have been using the toilet for the past 100 years.

**Access and Availability of Water:**

Ooty Municipality and Town panchayat administration not permit to bore well. The main sources of water are surface water like Paikara Dam, Emarold Dam, Avalanji Dam, Kuntha Dam, and etc. And the same most of the houses having Open well and save the rain water and use it. (i.e) in Mission Compound area, ward 12 all the houses having Open well. The source of water for people in Gandhipet area is spring water. The water that seeps from the mountain is made like small wells and used for drinking and other needs. A SC woman living on Michael Street suffers from no water connection and has to walk 2 miles up the hill for water, she said.

The water coming from the oasis in the area above New Line Colony is collected in a tank with a capacity of 20 thousand liters and distributed to the houses. They refer to the forest as an oasis. The capacity of the reservoir there is 20 thousand liters. During heavy rains, even if the pipes are broken by wild buffaloes, there is no water, and one has to risk one's life to repair it.

All the houses in the Mission Compound area have open wells. Wells are dug while building houses. Here municipal water is coming but it is not enough, water is coming only once in 7 days. In Kammandu area, water is supplied to everyone only through public taps. Here only one tribe lives in the area and they have a common well. Water is supplied to all the streets through pipes from it. No one's home has private plumbing. The general rule of the people is that everyone should get water from the street pipe. People in Kanthal area get water only once in 7 days. On other days, when water is scarce, they buy it for cash.

**Quality of Water:**

 When there is no rain, the water is clean, but during the rainy season, the water becomes cloudy and muddy due to the breaking of water pipes and damage by other wild animals. In Kandal, residents of Mushroom Factory Street have reported that the water is highly chlorinated, making it unfit for drinking.

Although the water coming from the New Line area is in good condition, it is mentioned that the water quality is not good during the rainy season. In Gandhipet area people drink tank water; there is one tank for every four houses or one tank for every 2 houses. The lime is covered with moss. The people there defecate in the open in the mountains, and during the mountain season, it is more likely to mix with the sinkholes, so the people there drink impure water.

Water problem varies from street to street. People in one street mentioned that water is coming continuously, while people in some streets have water coming day after day. They mentioned that water comes 24 hours a day, and on days when there is no water, water not fully available. In most of the areas, the water is drinkable, and in some places (Mushrooms factory street), there is a lot of chlorine in the water and the color of the water has changed. Upland areas have no access to water; they take spring water for drinking, but mentioned that sewer water also mixes near that water.

**Water Issues:**

Water and sanitation are closely related. Water scarcity is another major cause of the problem. When there is no water, the toilets become unhygienic, the toilet requires more water, and now people follow the Weston culture of standing toilet basins, which require two or three times as much water to go to the toilet. People live in poverty. Clothes are not washed, there is a problem of water for washing clothes, and there is some kind of bad smell in the houses. There is no water problem in the populated area known as Paducah. Water problem is more in places where Tamil people live and SC people live. No daily water supply, Water is available at intervals of more days. The water supplied is inadequate and of poor quality.

**Conclusion:**

Ooty is known as the queen of hills, but today the condition of Ooty is very bad. Although the water resources here were an important resource for Tamil Nadu and neighboring Karnataka, A large part of the mountain has been deforested and the water resources are decreasing and people are living without water and sanitation. The people who traditionally lived here were the Tamils, but during the Mughal era, the Mughals migrated and became slaves of the British under the rule of the British and claimed Utkai Hill as their own. Race, economy, system of government and the ever increasing population are the causes of the water problem. Man disturbs the wildlife by building his luxury bungalows where the wildlife lives, but humans consider the "animals" as disturbing them.

People who have accumulated property worth crores, people in Chennai, Bangalore, etc. also build houses on the top of the hill to reduce the summer heat and live luxuriously, so that the spring water generated from there is blocked and there is water shortage. Ooty's natural erosion and man-made debris have led to water scarcity.

**Suggestions:**

* 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 surface water.
* Ooty Municipality, Town Panchyat ward members should take effort to clean the surface water bodies and ratification the access and availability of drinking and non-drinking water.
* Repair of broken pipes, replacement of plastic pipes with copper pipes, more flexible
* Construction of drinking water storage tanks and appropriate measures should be taken to prevent rodents from living in drinking water tanks.
* Ooty Municipality should increase water supply to meet the growing population.
* Refusal of entry to new immigrants to Ooty.

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