



An Innovative approach in Mohkhed MVS to achieve 100% Service Level benchmark & Revenue Recovery

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Abstract:

Water consumption has grown at more than twice the rate of the population for the past century. Although there is not yet a global water shortage, about 2.8 billion people, representing more than 40 % of the world's population, live in river basins with some form of water scarcity. More than 1.2 billion of them live under conditions of physical water scarcity, which occurs when more than 75 % of the river flows are withdrawn. Under Jal Nigam, 55-70 litres of water per person per day (LPCD) is to be supplied to the villagers through 20 schemes. The production cost of water is Rs 10-14 per kilolitre. Rs. fixed by the government on the water used after water supply. An amount of Rs 3.25 per kilolitre is charged. The average collection of water tax in these schemes is 20-30%, the main reason for which is uneven distribution of water and lack of willingness of villagers to pay water tax. To change the above scenario, study the ground reality and solve the problems.

Situation before the start of the change process:

The work order for Group Water Supply Scheme (cost Rs 54.89 crore) based on Saroth Dam for 30 villages of Chindwara district under PIU Seoni was placed on 20.07.2015. On 06.03.2018, the work of Mohkhed Rural Group Water Supply Scheme was completed and regular water supply was started. In the initial days, various difficulties were faced in supplying water, the main reasons for which were as follows: -

- i. Due to people not closing the taps, there was no supply of drinking water to the houses at the last end.
- ii. People were not aware of the cost of produced drinking water and the importance of economical use, which led to its misuse.
- iii. No one was informed about leakage in the pipeline due to which water kept flowing for a long time.
- iv. Due to the above problems, a minimum of 55 litres of drinking water per person per day had to be supplied to the last house and about 100 litres of drinking water per person per day to the first village and first houses. People were not satisfied due to lack of uniform water supply. as a result, revenue collection was less.

- v. In the year 2018, total domestic connections for 39035 population were 7807, 63 complaints were received on CM Helpline portal and water consumption was 40 lakh litres per day. Despite water supply (102.47 LPCD) in excess of the prescribed quantity (55 LPCD), there were many complaints and revenue recovery were 81%.
- vi. It was targeted to reduce water consumption (55-70 LPCD) through innovation and proper water distribution policy and establish an ideal model policy by providing water to all consumers equally, on time, in appropriate quality, pressure and quantity and achieving 100% revenue recovery.
- vii. With the objective of providing the best services to the consumers to achieve the targets of 100% water tax collection and prescribed service level benchmark (water supply quantity 55-70 LPCD, quality as per IS 10500, pressure minimum 7m and complaint redressal in 48 hours), the above to overcome the difficulties, proper engineering, management and social engineering were started.

Keyword: Service Level Benchmark, water supply quantity, Household, LPCD

Methodology:

With the objective of providing the best services to the consumers to achieve the targets of 100% water tax collection and prescribed service level benchmark (water supply quantity 55-70 LPCD, quality as per IS 10500, pressure minimum 7m and complaint redressal in 48 hours), the above to overcome the difficulties, proper engineering, management and social engineering were started.

Using proper engineering, technical management and social engineering, drinking water of standard quality was successfully provided to all the consumers at sufficient pressure. Every villager is satisfied with the water supply services, that is why 100% water tax is being paid to the government by all the water consumers.

The main features of methodology are as follows:

- i. Water supply at stipulated time by dividing the village into minimum 4 zones.
- ii. After filling the drinking water tank, water is supplied first to the remote villages and also to the last areas of the village, then to the nearby villages.
- iii. Appointment of one valve man for water supply in 2 to 3 villages connected to one tank and training and honorarium for supplying equal quantity of water (Rs. 8700/per month).
- iv. Selection of informed persons and 50 percent participation of women in Village Water and Sanitation Committee (VWSC).
- v. Collective punishment for misuse of water (not having taps, theft, vandalism, installing pumps in houses inside the village).
- vi. Installation of additional sluice valves, flow control valves, small diameter washers and use of other technical methods for uniform distribution of water.
- vii. Monitoring of service level benchmark (water quantity, pressure, quality and resolution of complaints within 48 hours) through mobile app GAM and WhatsApp.
- viii. Selection of effective aware person and determination of honorarium by Village Water and Sanitation Committee (VWSC) for water tax recovery.

- ix. Publicity to make the public aware of the money saving and health benefits of economical use of pure water and to promote its adoption.

Result:

- i. The result of providing the best services by setting ideal standards for drinking water supply is that the water consumers of all the villages are satisfied and are getting 100% water supply for the last 2 years. The target of 100 percent collection of water tax was achieved.
- ii. The target of reducing water consumption from 80-100 Liters per person per day to 60-70 litres per person per day was achieved. The water consumption of the scheme was 40 lakh litres per day in the year 2018, which was successfully reduced to 32 lakh litres per day.
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- iv. The target of supplying water at more than 7-meter pressure to all consumers was achieved.
- v. The cost of water production in the scheme was approximately Rs. 12 per kilolitre in the year 2020 - 2021, based on this, the water consumption in the year 2020-21 will be approximately 8 lakh litres per day due to the use of less water in comparison to the year 2018-19, which will be approximately 35 lakhs. Rupees were saved. Revenue collection in the year 2018-19 was 81.63 percent which increased to 114.49 percent in the year 20-21.
- vi. With the success of this innovation, approximately Rs. Savings of Rs 90 per person per year were possible. Based on the success of the said innovation, the experiences and experiments gained on this basis are now being implemented in other group schemes. Due to which water wastage in 19 other operated schemes was reduced by 30% resulting in saving of Rs. Saving of Rs 11.35 crore per year and 100 percent revenue recovery will be possible.
- vii. The cost of water production for the country's 140 crore population is Rs. With the value of 14/kilolitre, water wastage is 30% less than the above model, approx. Rupee. Potential savings of Rs 21462 crore per annum.

Conclusion:

- i. Appointment of separate valve main for water supply in 2 to 3 villages connected to each tank, training on necessary works for regular uniform water supply, proper honorarium and installation of additional sluice valves to create minimum 4 zones in each village in the scheme. Were done.
- ii. After filling the tank, water was first supplied to the last 2 villages between 5 to 9 am in the morning and to the nearest villages last or from 5 to 7 pm in the evening, so that the villages got the desired quantity of water at the desired pressure as per the actual requirement. Delivery became possible. The work was supervised through mobile app.
- iii. The time limit of 30 minutes to 45 minutes was fixed for uniform water supply to the houses located in the streets of the locality within the villages and this was ensured by

completing the work of training and installation of additional valves to provide water supply first to the last end of the locality.

- iv. In the streets of villages, flow control was done by installing small diameter washers after ferrules for flow control in the first houses so that there was equal water supply in the first and last houses.
- v. The use of mobile app and WhatsApp was started to verify the quantity, quality, time and pressure of water in every village so that monitoring is quick and resolution is also quick. This gave people confidence in the scheme and reduced wastage of water.
- vi. To prevent water loss due to pipeline leakage, maintenance mobile van and team were deployed and immediate repair work was arranged, due to which the loss of water due to pipeline leakage was reduced. For this, help was taken to get information using mobile app and WhatsApp group, which helped in immediate repair work of pipeline leakage.
- vi. Water collectors were deployed in each village on the basis of connection established by the Village Drinking Water and Ad-hoc Committee with appropriate honorarium (Rs. 3000-5000/month).
- vii. The village committee passed a resolution to stop wastage of water and was given training and information about its benefits for effective implementation. As a result, cases of not installing tape, water theft, damage to pipes after installing motor pumps have become negligible. To fulfil these works, an undertaking was obtained from the beneficiary at the time of new connection.
- viii. Water consumers were made aware through Village Drinking Water and Ad-hoc Committee to stop misuse of water by installing tap taps. Also, Village Drinking Water and Ad-hoc Committee imposed financial penalty on the consumers who did not install tap taps and forced them to minimize the misuse of water. As a result, it was possible to reduce the consumption of raw water per day from about 40 lakh litres to the current level of about 32 lakh litres per day. There has also been a reduction in electricity consumption and chemicals used for water purification. Saving of substantial amount was possible due to paying less water usage bill to Village Water and Sanitation Committee (VWSC) every month and full recovery from the beneficiaries with Village Water and Sanitation Committee (VWSC).

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