

Evaluation Study on Impact Assessment of Rural Drinking Water Supply Scheme- with special reference to SC/ST Households

**Submitted to
Department of Social Welfare
Government of Karnataka**



Submitted by



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Preface

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Executive Summary

Drinking water is a basic need and therefore lack of access to it is a major deprivation. Hence, it is one of the major indicators in Multi-dimensional Poverty Index (MPI). The marginalized communities –SC& ST have lack of access to quality life and therefore, provision of basic needs is one of the core objective of SCSP/TSP.

This present report evaluates the impact of the Rural Water Supply scheme across five districts- Chikkaballapur, Dharwad, Hassan, Chitradurga and Raichur. Responses were collected from beneficiaries and scheme staff alike, using the Public Affairs Centre's flagship survey tool- Citizen Report Card (CRC) to catch the real feel of the people during the period of July-November 2021, Case studies were undertaken to understand the depth of the impact. Quantitative as well as qualitative methodologies were used to arrive at results within a Impact Evaluation framework anchored in 3E's- Equity, Efficiency and Effectiveness.

Salient findings from the study are as follows:

Major Findings

Major findings from the study are presented as follows–

Equitable context:- Access & Reach

1. All beneficiaries were not aware of the different components of the scheme. While 20 percent of beneficiaries reported having received no information across any of the components, beneficiaries in Dharwad and Raichur seemed to be more aware of the key facets of service delivery. Most of the beneficiaries reporting receiving no information were from Chitradurga district. The major gap is with regard to maintenance of the water supply system.
2. In terms of distance travelled to be able to avail the scheme, beneficiaries have travelled a distance of less than 5 kms (Dharwad) to 11.4 kms (Hassan) to the scheme office. Outliers point to 31 kms in Hassan and 23 kms in Chikkaballapura as well.
3. The following districts, which are also major locations of the SC/ST population, need to be covered on priority basis. Emphasis should be on remote villages and Tandas.

Coverage of HH- Districts below the State average

Sl.No.	District	% of SC HH covered
1	Ballari	65.21
2	Vijayapura	63.94
3	Mysuru	63.52
4	Chickmagalur	61.04
5	Kalburgi	59.75
6	Bidar	58.93
7	Chitradurga	57.12
8	Tumkur	53.35
9	Vijayanagara	51.94
10	Hassan	51.31
11	Uttara Kannada	49.85
12	Bangalore Rural	48.72
13	Chikkaballapur	41.22
14	Kolar	35.14
15	Bangalore urban	27.31
16	State Average	68.52

Estimated from JJM website

Not all scheme offices had the same number of staff to be able to implement the scheme across their jurisdiction within a fixed time period – field staff, for example varied between 28 in Chikkaballapura to 105 in Chitradurga.

The extent of use of IEC to generate demand and implement the scheme was different in each of the study districts. The maximum promotion of IEC was found to be in Dharwad and the least in Chitradurga. **However, the component of health and hygiene and clean surroundings was less in the IEC.**

Efficient Mechanisms:- Implementation

1. Efficiency of the scheme is reflected in the ease with which beneficiaries have been able to avail the scheme. In the case of RWSS, on average beneficiaries have spent approximately 48 days to be able to get the connection. **The time period according to Sakala Act is 45 days and the average time period is three days more than it.** This varies between more than 100 days in the case of Chitradurga as against 14 days in Chikkaballapura district. This is despite the fact, that the latter district has less field staff than the former.
2. In terms of ability to complete all scheme related processes, staff/ service providers have reported issues mainly related to the process of document verification and the actual provision of water connection to the household. O&M as a responsibility for the GP to be carried out is yet to be a priority for the GP and the community of users due to lack of awareness of any specification related to this component of service delivery.
3. Issues affecting efficiency were also reflected in the responses provided by beneficiaries. During the application process, nearly 18% of them faced issues related to verification while 16% faced challenges with regard to filling up the application form, getting the supporting documents. Post getting the connection, 16% also faced water leakages, taps not working (8%), maintaining the connection (11%), improper fitting (7.4%). However, 70% beneficiaries also reported receiving support for maintenance of the connection.
4. Addressing issues related to quality of water is important. While there were generally good feedback about the quality, 8% beneficiaries did report a bad odour which needs to be addressed to prevent any health problems in those households.
5. There is reportedly a high rate of problem resolution especially related to fixing and maintenance (as reported earlier) but after interaction between the two parties, the beneficiaries agreed with the scheme staff.

Effective outcomes:- Impact analysis

1. By availing the RWSS, beneficiaries were able to save more than 2 hours per day of their time as experienced in Dharwad and Raichur, while even in Chitradurga, beneficiaries were freed by nearly 85 minutes.

2. The scheme was able to give more pots of water to most beneficiaries – the number of pots amounted to 27 in Dharwad, followed by 23 in Hassan and 21 in Chikkaballapura.
3. The major impact is seen as reduction
4. The satisfaction due to this, is reflected when it is noted that nearly three-fourth of the beneficiaries in Dharwad expressed that the scheme has successfully met their water needs. At the same time, it is interesting to note that despite getting more water in Hassan, only 15% beneficiaries agreed that their water needs are being met. But overall the response was satisfactory.

Recommendations

The following are recommendations abstracted on the basis of the findings from the CRC survey:

1. Demand-responsive selection of Villages for providing water supply connection; There are 15 districts below State average in coverage of HH connections- The districts of Kalaburagi, Chitradurga, Bidar, Vijayanagara, Hassan, Chikkaballapur, Kolar need to be given priority and additional allocations to cover the deprived households.
2. **Conduct extensive IEC campaigns to strengthen** community awareness and **information**. The IEC should also cover issues related to maintenance of clean surroundings, hygiene and economy in use of water.
3. Provide adequate **drainage facilities** for proper flow of water near the public tap connections and mini water tanks.
4. **Quality Control and effective O&M system**- Maintenance of water taps, pipelines, valves, bore wells, overhead tanks etc. Give training in O&M to **local youths** for maintenance of the system.
5. Ensure **regularity in water supply** and generate awareness on judicious use of water and promote water savings.
6. **Water Filtration Plants (WFP)**- it is also suggested that in regions where RWSS has been implemented as a multi-village scheme, a centralised WFP be set-up at the village level for filtration of water supply to all habitations.
7. Convergence of the programme under different schemes- All the individual schemes related to drinking water, sanitation, roads and other infrastructure to be converged

under **Habitation Infrastructural Development Programme/ SC.ST colony Development Scheme.**

8. Conduct a social audit of the scheme to bring out the functioning and impact.
9. Increase **community participation and ownership** for better maintenance of the scheme. Promote formation of User Associations involving women SHGs and youths.
10. **Digitisation of Water Supply Mechanism;** Staff/ service providers from Raichur and Dharwad have indicated the need for digitalisation of water supply mechanism for efficient functioning. While this has not been initiated in the NRDWP, the National Jal Jeevan Mission has provisions for rolling out of sensor-based Internet of Things (IoT) solutions to measure and monitor water supply in the hinterland. Further, digitized solutions can also be used for GIS based record keeping of villages with water connection and maintenance coverage.

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1. Introduction

Rural drinking water initiatives in India have been in progress since decades. The decentralization after the 73rd Amendment to the Constitution of India in 1992, placed the subject of drinking water in the 11th Schedule of the Constitution wherein its management was assigned to the Gram Panchayats. In line with the 73rd Amendment, many decentralized, demand-based, community managed, sectoral reform programmes have been initiated. In the initial days, the initiatives entailed installation of hand pumps. Later, rural water supply schemes consisted of small tanks or stand posts placed at strategic points in the village. Since the turn of the century, emphasis was gradually placed on providing piped water connections to every rural household through the National Rural Drinking Water Program (NRDWP). However, the ultimate goal of providing safe drinking water 24/7 to every rural house, however, has largely remained aspirational for India to date.

In the Constitution of India, water is a matter included in Entry 17 of List-II i.e., State List 2. Thus, water is primarily a "State Subject", with legislation and administration substantially framed within the context of the State boundaries. Since availability of and access to safe and potable water becomes a common denominator for both drinking water and sanitation practices, the status and availability of water in Karnataka becomes very important in the current scenario. The Government of Karnataka (GoK) intends to provide every household with a Functional Household Tap Connection (FHTC) by 2024 as part of the *Jal Jeevan Mission (JJM)*, launched by the Government of India (GoI) in 2019. JJM introduced the state-wide *Jaladhare* program, which is completely aligned with the central program. The Rural Drinking Water and Sanitation Department (RDWSD), nodal agency for the Jaladhare, is making concerted efforts to achieve the approved targets (100% coverage).

Studies have shown that water flows in rivers are declining in summer seasons and there is evidence that rivers such as Arkavathy, Dakshina Pinakini, are in the danger of almost drying up; the same water decline is visible in reservoirs and minor irrigation tanks. And these declines are not so much to do with climate change, but increased water use by a rapidly growing population. Secondly, groundwater levels have been declining drastically for several decades in many parts of the state. 44 of the erstwhile 176 talukas in the state have been declared 'over-exploited', 14 are in the 'critical' category and 21 are in the 'semi-critical' category with regard to groundwater exploitation, all in the Eastern Plains region.



Thirdly, surface water bodies across the state are partly or heavily polluted, including 13 out of 17 river stretches that are being monitored, and most urban tanks. Sewage is the single biggest source of such pollution, but contamination from industrial effluents is beginning to show up in several pockets. Geogenic contamination is also being reported from many regions, with fluoride being detected in 1038 habitations spread across 18 districts, and other locations showing arsenic, nitrate or salinity problems.

All this has been happening in the context of a high frequency of droughts - Karnataka is one of the most water stressed states in India - with large areas of the State being drought prone. In the Kharif season, most northern districts are projected to have an increase in drought incidences by 10-80% with some districts projected to have almost a doubling of drought frequency. Floods are becoming common every year due to heavy rainfall which is higher than the long-term average in some days and sometimes 10 to 20 times above the normal (Karnataka State Water Policy, 2022¹). There is a grave realisation that Integrated Water Resources Management (IWRM) is necessary to ensure water for health, food, and energy, while maximising sustainable, economic, social and environmental outcomes. One of the goals of the Karnataka State Water Policy 2022, is ensuring water security for the entire population of the State - this includes securing the supply of adequate, clean, accessible, affordable and safe water to all citizens for drinking and domestic purposes. In the process of managing its water resources, the State is also supported by programmes launched by Government of India to ensure tap at home in every home including the Jal Jeevan Mission, also called Mane Manege Gange in Karnataka.

The current evaluation of the Rural Water Supply Scheme for SC/ST Households under SCSP/TSP is an impact assessment study and has incorporated primary data collection at the micro-level. The evaluation has used both qualitative and quantitative data collection tools. The methodology that has been used here seek to enable the concerned departments to assess the impact of their interventions, as economic and social return on investment, and generate evidence that is useful for shaping their future programme interventions to improve the human development and social indicators for the target population.

¹ <https://aciwrm.karnataka.gov.in/storage/pdf-files/Report%20PDFs/StateWaterPolicy-English.pdf> , last accessed on 15.04.2023.



2. Review of Literature Related To Rural Water Supply Schemes

Access to safe drinking water and sanitation is essential for both individual and population health as well as for quality of life and dignity. Indeed, improvement in water supply, sanitation, and hygiene has shown substantial influence on reduced water borne diseases such as diarrhoea (Bartram and Cairncross, 2010)².

It is estimated that around 37.7 million Indians are affected by waterborne diseases annually, 1.5 million children are estimated to die of diarrhoea alone and 73 million working days are lost due to waterborne disease each year. The problem of chemical contamination is also prevalent in India with 1,95,813 habitations in the country are affected by poor water quality. The major chemical parameters of concern are fluoride and arsenic. Iron is also emerging as a major problem with many habitations showing excess iron in the water samples (Khurana and Sen, 2006)³.

Water quality is very important, and it will get affected due to unplanned urbanization, industrial wastages, improperly managed landfills, poor sanitation and other pollutions like fertilizers and pesticides and many districts in India is facing contaminated water sources and it will badly affect human health (Central Ground Water Board, 2017)⁴. Water quality is affected by sewage discharge, industrial wastages, run off from agricultural fields and urban areas, and lack of awareness and education. The other important elements to maintain water qualities are hygiene, environmental sanitation, storage, and disposal (Khurana and Sen, 2006). Due to poor drainage facilities in both rural and urban areas, waterborne diseases remain a major health risk, especially among the vulnerable regions and groups (Saleth and Sastry, 2004)⁵. Children are more prone to waterborne diseases and malnourished to suffer from diarrhoea and sickness episodes last longer. Repeated incidences of diarrhoea result in weight loss, stunted growth, and vitamin deficiency, with greater chances of dropping out from school, leading to reduced earning power and poverty (Khurana and Sen, 2006).

²Bartram, J. & Cairncross, S. 2010 Hygiene, sanitation, and water: forgotten foundations of health. PLoS Med. 7 (11), e1000367. doi: 10.1371/journal.pmed.1000367.

³ Khurana, I., & Sen, R. (2006). Drinking water quality in rural India: Issues and approaches (No. 288701). WaterAid.

⁴ CGWB (Central Ground Water Board) 2017 Dynamic Ground Water Resources of India. CGWB, New Delhi.

⁵ Maria Saleth, R., & Sastry, G. S. (2004). Water supply and sanitation sector of Karnataka, India: status, performance and change. *Water Policy*, 6(3), 161–183. <https://doi.org/10.2166/wp.2004.0011>



The important issue is the population growth and urbanization that has led to the pressure of fresh water and decrease availability (Prakash, 2014)⁶. Poor management and inadequate utilization of water resources also decreasing the availability. Further, Poor service levels is one of the most important barriers to sustaining water (Thomson and Koehler, 2016)⁷. NFHS (2019-20)⁸ data shows majority of the Indian states face universal access to an improved source of drinking water. The water schemes face the challenge of sustainability, and it requires proactive planning (Wescoat Jr. and Murthy, 2021)⁹. Tiwari suggested the concept of water governance such as efficient governance equity in distribution, delivery process transparent, accountable, participatory, and responsive, empowerment of citizens and delegation of powers to enhance their welfare. The other important challenges are growth of the city and population, lack of infrastructure, governance, and urban planning, etc. (Bahri et al, 2016)¹⁰.

Studies conducted in India on drinking water programs and management, a study of the water supply system of Tamil Nadu found the important lacunas of the system are inadequate supervision and monitoring, lack of skilled or trained operating staff, schemes not operating in their full efficiency, visible leaks remain unattended for long, standby units in pumping plants, chlorinating units and other equipment remain under repair for long, many components of treatment plants not functioning for years, water meters not functioning right from inception, air valves and valve glands dripping and valve pits susceptible to flooding and pollution, officials not interested in placement of maintenance jobs and non-payment of water charges by local bodies (Ramakrishnan, et al, 2004)¹¹. In Delhi, the city faces the problem of lack of coordination between the Delhi Water Board and other departments (Ruet and Zerah, 2002)¹². In one study conducted in Gujarat on the

⁶ Prakash, A. 2014 The peri-urban water security problem: a case study of hyderabad in southern India. *Water Policy* 16, 454–469.

⁷ Thomson, P., & Koehler, J. (2016). Performance-oriented Monitoring for the Water SDG – Challenges, Tensions and Opportunities. *Aquatic Procedia*, 6, 87–95. <https://doi.org/10.1016/j.aqpro.2016.06.010>

⁸ National Family Health Survey (NFHS-5) 2019–2020 Government of India. Ministry of Health and Family Welfare.

⁹ Wescoat Jr., J., & Murty, J. (2021). District Drinking Water Planning for Sustainability in Maharashtra: Between Local and Global Scales. *Sustainability*, 13(15), 8288. doi: 10.3390/su13158288

¹⁰ Bahri, Brikké, F., & Vairavamoorthy, K. (2016). Managing Change to Implement Integrated Urban Water Management in African Cities. *Aquatic Procedia*, 6, 3–14. <https://doi.org/10.1016/j.aqpro.2016.06.002>

¹¹ S Ramakrishnan, K N Chandran and P Gopalakrishnan, Improving the Efficiency and Functioning of Operation and Maintenance of CWSS Including Preventive Maintenance Upgradation of Existing Water Conveyance Systems Including GIS for the Existing Conveyance Systems, *TWAD Technical Newsletter*, January 2004, available at http://www.twadboard.com/photos/Newsletter_jan2004_chap7.pdf.

¹² Joel Ruet and Marie-Helene Zerah, Organizational Analysis of Water Boards/ Municipalities: Lessons from Calcutta, Chennai, Delhi and Mumbai (Paper presented at the Water Management Seminar, Centre de Sciences Humanities, 17 December 2002, Delhi).



awareness about water supply schemes, water charges and the responsibilities of the users. Study reported that the Grama Sabha is a good medium to aware the program and people express their faith. However, low participation and poor management, lack of time or improper timings, less women participation, literacy level, etc. were negatively affect the program awareness at village level (Meena, 2007)¹³.

Karnataka is forerunner in providing at least one safe drinking water source for all villages and the coverage, quality, and service levels for both rural and urban in Karnataka are higher relative to the national average (Saleth and Sastry, 2004).

However, there are quality issues. A study conducted in Karnataka examined for uranium contamination in groundwater, and it found that the water also carried high fluoride content. Also, the eastern districts facing ground water scarcity due to excessive use of surface water and groundwater, low adoption of water harvesting techniques, etc (Srinivasan et al, 2021)¹⁴. Another study found that the southern part of Karnataka has low levels of fluoride in drinking water, and may require fluoridation treatment in order to mitigate for dental caries and further ailments related to fluoride deficiency. The districts within the north-eastern region have contrastingly high levels of fluoride, an observation which has been linked to dental and skeletal fluorosis (Chowdhury et al., 2016)¹⁵. Further, water quality in River Cauvery is deteriorating due to the disposal of sewage from pharmaceutical industries, chemical and electroplating industries, animal farm houses, agricultural sectors, hospitals, and temples. The physiochemical environment of the river has become an ideal ground for the rapid ultiplication of many gastrointestinal pathogens. This results the increased permissible count of bacterial and fluoride contents (Skariyachan et al., 2015)¹⁶.

¹³ Panickar, Meena. (2006, July). *State Responsibility in The Drinking Water Sector an Overview of the Indian Scenario* (No. 1–17). IELRC WORKING PAPER. <http://www.ielrc.org/content/w0706.pdf>

¹⁴ Srinivasan, R., Pandit, S. A., Karunakara, N., Salim, D., Kumara, S., Kumar, M. R., Khatei, G., & Devi Ramkumar, K. (2021). High uranium concentration in groundwater used for drinking in parts of eastern Karnataka, India. *CURRENT SCIENCE*, 1459–1469.

¹⁵ Chowdhury, C.R., Shahnawaz, K., Kumari, D., Chowdhury, A., Bedi, R., Lynch, E., Harding, S. and Grootveld, M. (2016). Spatial distribution mapping of drinking water fluoride levels in Karnataka, India: fluoride-related health effects. *Perspectives in Public Health*, 136(6), pp.353–360.

¹⁶ Skariyachan, S., Mahajanakatti, A.B., Grandhi, N.J., Prasanna, A., Sen, B., Sharma, N., Vasist, K.S. and Narayanappa, R. (2015). Environmental monitoring of bacterial contamination and antibiotic resistance patterns of the fecal coliforms isolated from Cauvery River, a major drinking water source in Karnataka, India. *Environmental Monitoring and Assessment*, 187(5).



Under the Jal Jeevan Mission the Government of Karnataka initiated proactive steps to provide safe drinking water to the villages located in the fluoride-endemic belt in eastern Karnataka. The state installed RO units to purify the groundwater used to supply drinking water in many villages. They study also found that the RO treatment in the long run does not appear to be environment-friendly and the units have not been able to remove pollutants to the desirable level of concentration, probably because of fouling and scaling of the RO membranes (Srinivasan et al., 2022)¹⁷. Another study conducted on coastal villages in Karnataka found that inadequate water supply is an important issue in coastal areas. Scarcity during summer ranged between 3 to 6 months and drying up of open and borewells, this force people to purchase water. Accessibility is a problem not only during the scarcity months but also throughout the year, specifically for drinking water. Access to required quantity of water was limited, and a distance from 1 to 3 kms to get water. In the coastal villages, one of the major problems was the terrain, which made it difficult to lay pipelines and supply water and salinity and saltwater intrusion (Manasi et al, 2009)¹⁸. Study also found the poor maintenance of infrastructure causes discontinuous water supply and this force them to collect and store water from unprotected sources such as open wells (Argyam, 2009)¹⁹. Similar study conducted in Belgaum found the same that open wells contaminated with some physico-chemical parameters such as TDS, TH and chlorides, which shows maximum value than the permissible limit (Sunkad, 2013)²⁰. Another conducted in the rural villages of Karnataka reported that the respondents used taps as principal source of water and bore wells as subsidiary source of water for domestic purpose with adequate availability. Quality of water also reported good, hence, bore water is not desirable for consumption. Respondents use different filtering methods before collecting for domestic use. They aware of basic tips for saving water and practice in their routine life. The study highlighted the need for education of rural masses in methods of

¹⁷ Srinivasan, R., Pandit, S.A., Khatei, G., Karunakara, N., Kumara, K.S., Riotte, J., Moger, H., David, P.A., Jindal, M., Gowrisankar, G. and Ramkumar, K.D. (2022). Reverse osmosis units in groundwater based public water supply system in rural eastern Karnataka, India: an analysis. *Current Science*, [online] 123(12), p.1493.

¹⁸ Manasi, S., Latha, N., & Raju, K. V. (2009). *Emerging Trends in Managing Drinking Water – Case Studies of Coastal Villages in Karnataka* (No. 212). Institute For Social and Economic Change.

¹⁹ Arghyam. (2009). ASHWAS. *A Survey of Household Water and Sanitation. Karnataka – 2008- 2009*. Bangalore.

²⁰ Sunkad, B.N. (2013). Better Management of Ground Water Source for Drinking Purpose in Belgaum District of Karnataka, India. *International Journal of Scientific & Technology Research*.



water purification, storage of water and conservation of rain water for better living (Hasalkar et al. 2017)²¹.

An evaluation study conducted on the Performance of SC/ST Colony Infrastructural Facilities Scheme under the SCSA/TSA found that the deprived population is facing lack of access to drinking water, hygiene and sanitation, leading to health complications.

While the NRDWP was a major step towards providing tapped water connection to households, and identified critical aspects of development to ensure a sustainable and clean source of water, there has been high disparity in terms of its implementation. A study of Mysore Taluka conducted in 2014, indicates several challenges and loopholes in the service delivery mechanism and process flow. In addition, only 41 percent of the total households use tapped water sources in the study region, where around 25 percent were supplied with untreated water. Further, while only 17 percent of the households receive untreated drinking water through water supply scheme in urban areas of the taluka, it is almost 34 percent in rural regions. The resultant health issues faced by people in rural areas and amounts spent on the same has been presented in another study²², where treatments related to water and sanitation-borne diseases has cost between Rs.345/- as direct burden for cholera to Rs.1500/- as direct burden for joint pain. This further reiterates the need to ensure the supply of safe, potable water fit for human consumption especially for the deprived and marginalized households.

The Government Initiatives – Central & State

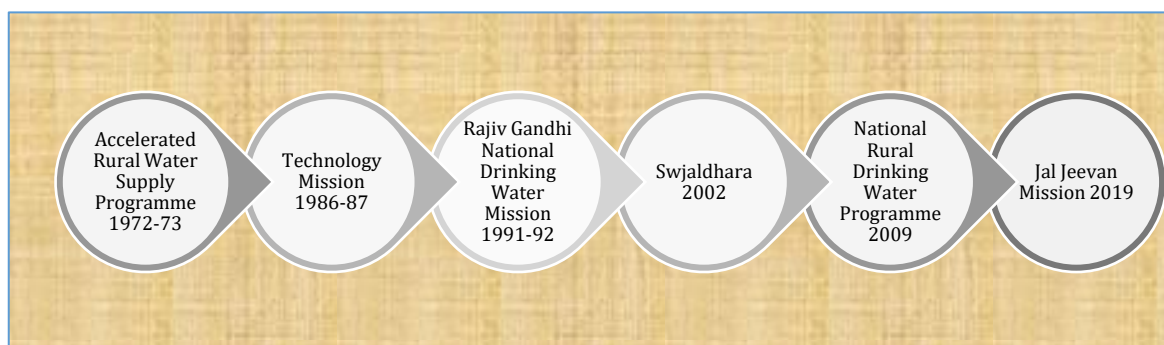
The history of rural water supply schemes goes back to the early 1970s, with the Accelerated Rural Water Supply Programme being launched in the year 1972 (Kuzhivelil, 2021). After several modifications, and incorporation of aspects of sustainability, portability, convenience, and equity, the modified National Rural Drinking Water Programme (NRDWP) was presented in 2009.

²¹ Suma Hasalkar, Yallawwa Uppar, Geeta Chitagubbi & Shobha Huilgol. (2012). Water Conservation, Management and Safe Drinking Water in the Villages of Karnataka State, *Journal of Human Ecology*, 39:3, 255-259

²² https://rjhssonline.com/ShowPDF_Paper.aspx, last accessed on 15.04.2023.



Figure 1: Schemes of Rural Water Supply by the Government of India



Source: Kuzhivelil, 2021

One of the key findings during the interventions in water supply prior to 2009 was the realisation of key challenges such as varying climatic conditions, inadequate water quality, lack of infrastructure for increasing the service level benchmarks, lack of resource efficiency, missing community involvement, governance and institutional challenges; which have a major impact on the success of rural water supply schemes. The modified scheme, i.e., the NRDWP and the recent Jal Jeevan Mission of 2019 has more targeted objectives to fulfil water needs by 2024, mostly by enhancing the rural infrastructure for water supply through piped connections and community bore wells.

The responsibility of scheme interventions in rural regions, currently lies with the Panchayati Raj Institutions (PRIs), where water supply and sanitation are enlisted as one of the 29 key functional areas as according to the 73rd Constitutional Amendment. Thus, it becomes highly important for an intervention to be driven by, and monitored at the last mile by the PRIs (Ministry of Rural Areas and Employment, GoI, 2009). This is because, PRIs have come to be recognised as appropriate units to involve people and enable them to participate in such activities as motivating and educating the community, provision of drinking water and sanitation services, monitoring, evaluation and management. Despite these provisions, there has been substantial inter departmental governance failures in rural water supply schemes. Most of this can be due to a lacking roadmap intervention, mentioning key stakeholders for accountability at specific stages of the scheme.

The post independent period, the state governments started implementing rural water supply programs to provide drinking water to rural population. The water supply and sanitation were recommended priority areas by the Bhore Committee (1946)²³ and the

²³ https://www.nhp.gov.in/bhore-committee-1946_pg



Environmental Committee (1949)²⁴ with wider plans. However, the central government did not take immediate action for the recommendations, aided the states to establish special investigation divisions in 1954 and introduced the Accelerated Rural Water Supply Programme²⁵ in 1972-73. Later, the country started initiatives to mitigate the water stress under different ministries and departments, such as National Water Policy (NWP) (2012)²⁶, National Water Mission (NWM) (2008)²⁷, Draft Water Framework Law of India (2016)²⁸, Model Ground Water Bill (2016)²⁹, Atal Bhujal Scheme (2019)³⁰ and Har Ghar Jal Programme (Jal Jeevan Mission) (2019)³¹ (Sarkar and Bharat, 2021)³². The continues emphasis on drinking water supply programs, about 25 percent of rural population is still without the access to an adequate and safe supply of drinking water (Saleth and Sastry, 2004).

Rural Drinking Water supply Programs in Karnataka

The Karnataka Jnana Aayog (KJA) (Karnataka Knowledge Commission) in the year 2019, presented the Karnataka State Water Policy which expresses the idea of a paradigm shift in the current water governance system in the State. This, however, necessitates a structural transformation which involves schemes or programmes which are integrated, transparent, knowledge-based and participatory in nature (Karnataka Jnana Aayoga, 2019). While water supply schemes in the country as well as in the State have been initiated with the objectives of providing clean, and reliable water, the implementation outcomes have largely dissipated due to poor monitoring, maintenance and failure of inter-institutional coordination.

The latest Karnataka State Water Policy of 2022, takes this a step further by mentioning clearly that the strategy that now needs to be adopted is the implementation of a comprehensive Integrated Water Resources Management (IWRM) system that will address the growing intersectoral demands of water.

The government of Karnataka implemented different drinking water supply schemes and programs, include World Bank assisted IRWS & ESP-I, IRWS & ESP-II, Jal Nirmal, DANIDA-

²⁴ <https://www.indianculture.gov.in/report-environmental-hygiene-committee-1949-0>

²⁵ <https://rural.nic.in/sites/default/files/Study%20of%20ARWSP.pdf>

²⁶ http://jalshakti-dowr.gov.in/sites/default/files/NWP2012Eng6495132651_1.pdf

²⁷ <http://nwm.gov.in/sites/default/files/nwm28756944786.pdf>

²⁸ http://jalshakti-dowr.gov.in/sites/default/files/Water_Framework_18July_2016%281%29.pdf

²⁹ http://jalshakti-dowr.gov.in/sites/default/files/Model_Bill_Groundwater_May_2016_0.pdf

³⁰ <http://jalshakti-dowr.gov.in/schemes/atal-bhujal-yojana>

³¹ <https://jaljeevanmission.gov.in/>

³² Sarkar, S. K., & Bharat, G. K. (2021). Achieving Sustainable Development Goals in water and sanitation sectors in India. *Journal of Water, Sanitation and Hygiene for Development*, 11(5), 693–705. <https://doi.org/10.2166/washdev.2021.002>



funded water supply, Netherlands funded water project etc. Such as Borewell fitted with Hand pump³³, Mini Water Supply Scheme (MWS)³⁴, Piped Water Supply Scheme (PWS)³⁵ and Multi-Village Water Supply Scheme (MVWSS)³⁶ All these programs implement through Panchayati Raj Institutions. However, the programs criticized that were inadequate investment in capital and operational activities, inadequate availability of ground water, withdrawal of excess ground water for agriculture, sustainability issues, poor maintenance of the schemes, and so on. To overcome the limitations, Jal Jeevan Mission launched, and it aims to provide functional water tap connections to rural households by 2024.

According to National Rural Drinking Water Program (2019), 18.33 percent of rural households only have water connections. Among that 80.92 percent covered fully (40 lpcd), followed by 15 percent partially covered and 3.45 covered with quality issues. Under 55 Litre per capita per day, a major group of the household covered partially (49.28), and almost equal number of households covered fully (47.26).

Table 1: Distribution of rural water supply- coverage by service

Service level	Fully covered ³⁷ (%)	Partially covered ³⁸ (%)	Quality affected ³⁹ (%)
40 lpcd*	13,96,304 (80.92)	2,69,661 (15.63)	59,611 (3.45)
55 lpcd*	8,15,523 (47.26)	8,50,442 (49.28)	59,611 (3.45)

*Litre per capita per day

Source: National Rural Drinking Water Program (2019)

³³ Borewells fitted with hand pumps are the major source of potable drinking water in rural areas. Since inception of the programme 2,25,640 borewells have been drilled in the State. An amount of Rs.1,000/- per borewell is being provided for the annual maintenance of borewells to Gram Panchayats (GPs) by the Rural Development and Panchayath Raj Department (RDPRD).

³⁴ Water is pumped to one or more small tanks (cisterns) fitted with 3-4 taps, from where water can be collected by households. Since inception of this programme, 51,582 MWS schemes have been completed. Rs.5,000/- per annum.

³⁵ PWS schemes have been completed and commissioned under both State and Central Sectors. Rs.10,000/- per PWS is being provided to GPs per annum towards O & M of these systems.

³⁶ Provides drinking water to the rural area by following the guidelines of National Rural Drinking Water Supply Scheme.

³⁷ Habitations getting at least 40 lpcd of safe drinking water throughout the year available within 100 meters (horizontal/ vertical) from their households.

³⁸ Habitations other than Fully Covered and Quality Affected categories.

³⁹ Habitation with at least one of the drinking water sources not meeting parameters of chemical contamination (Arsenic, Fluoride, Iron, Salinity, Nitrate and Heavy Metals) as stipulated in IS:10500 and with remaining safe sources, service delivery level of 40 lpcd is not ensured.



Jal Jeevan Mission in Karnataka

Karnataka accommodates 78.64 lakh rural households across 27481 (2011) villages. Among them about 48,000 households depend drinking water on bore wells and which is not reliable and quality issues. Some of them (11,900) depend on multi-village water supply schemes. In such a condition, previous Chief Minister B S Yediyurappa announced “Mane Manege Gange” (Jal Jeevan Mission) in Budget, March 5, 2020. It functions under the central program of Jal Jeevan Mission. The state government ensured Rs 1,100 crore for the project and half of this will come from the Centre. The project aimed for four years and targeted providing tap water connection to 10 lakh rural households in 2020-21. In 2021 Budget, the state government promised a functional tap connection to 25 lakh homes with an outlay of Rs. 4316 crore and increase it to 27.15 lakh households in 2022-23 and to cover the remaining 10.72 lakh households by the end of December 2023 (The Indian Express, 10th March, 2021)⁴⁰.

Grey Water Management and Water Quality Monitoring and Surveillance Programme (WQM&SP): it is an integral part of Jal Jeevan Mission. Under Jal Jeevan Mission, provide 55 lpcd water to every household. About 70 percent of the water discharged as grey water. Thus, the management is important to maintain hygienic conditions in villages. At present, there are 31 district level water quality testing laboratories and 48 Sub-divisional/Taluka level water quality testing laboratories in the state. These laboratories undertake analysis of totally 13 physio-chemical for the drinking water sources.

A World Bank study carried out prior to the introduction of the NRDWP mentions that intervention should be extended in the form of demand-responsive schemes compared to the supply-driven schemes; to instil in the beneficiaries a sense of ownership and responsibility (The World Bank, 2008). This, in turn, also reduces a cost burden on the implementing agency, which can be used for infrastructural improvement in the programme. As a result of several such suggestive interventions, the Jal Jeevan Mission initiated the participation of community members from SC households in the Gram Panchayat/ Village Water and Sanitation Committees.

An important aspect of schemes of this nature is also the Operations and Maintenance (O & M) components, which has been highlighted to be poor in several regions with multi-village schemes; the high cost of O & M being one of the primary reasons. An efficient service delivery, should be characterised by a strong after-implementation support, which should

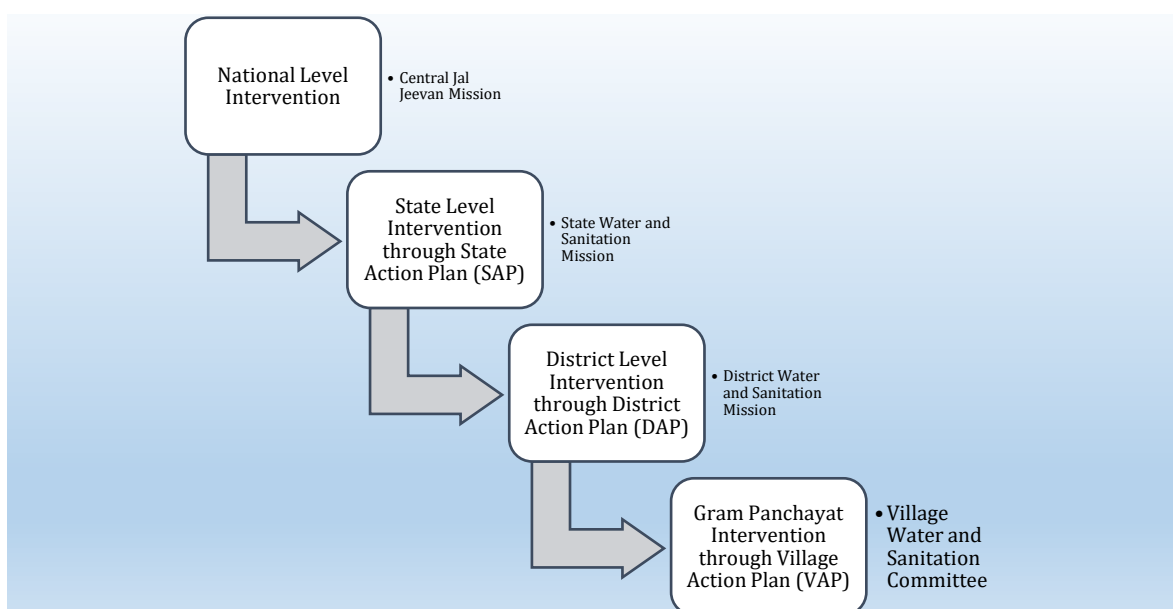
⁴⁰ <https://indianexpress.com/article/india/karnataka-tap-water-supply-rural-home-central-grant-7396826/>



be anchored by the PRIs (Gram Panchayats), with adequate support, both institutional and financial, from suitable departments such as Rural Development and Panchayati Raj (RDPR) or the Public Works Department (PWD). The Karnataka State Water Policy of 2019, mentions that improper coordination between departments have decreased the sustainability of water supply projects. This can be mitigated through the adoption of the IWRM approach in the State Water Policy of 2022 that will subsume all relevant institutions that respond to the scarcity of water resources, e.g., shifting focus from yield per acre to yield per unit of water consumed.

The recently modified Jal Jeevan Mission takes a participatory approach in its implementation -

Figure 2: Institutional Mechanism under Jal Jeevan Mission (which subsumed the NRDWP)



Source: Kuzhivelil, 2021

The Jal Jeevan Mission was launched on August 15, 2019 with the aim at providing Functional Household Tap Connection (FHTC) to every rural household by 2024. The 73rd Amendment of the Constitution deals the subject of drinking water in the Eleventh Schedule and comes under Gram Panchayats. Thus, the Gram Panchayat (GP) and local community play an important role in the planning, implementation, management, operation, and maintenance of water supply systems including drinking water. The important stakeholders in the water supply sector – Research and Development (R&D) institutions, Trusts, Foundations, Non-Governmental Organisations (NGOs) Village Organisations (VOs), Community Based Organisations (CBOs), Self Help Groups (SHGs), user groups, corporates, international agencies, and spirited individuals. The Government



has initiated Jal Shakti Abhiyan (JSA) campaign in water stressed districts to harmonise water conservation efforts of all stakeholders⁴¹.

Overall, JJM is mandated to assist, empower and facilitate the –

1. Planning of participatory rural water supply strategy for ensuring potable drinking water security on long-term basis to every rural household and public institution, viz. GP building, School, Anganwadi centre, Health centre, wellness centres, etc.
2. creation of water supply infrastructure so that every rural household has Functional Tap Connection (FHTC) by 2024 and water in adequate quantity of prescribed quality is made available on regular basis
3. planning for their drinking water security
4. planning, implementing, managing, owning, operating and maintaining their own in-village water supply systems at the GP level
5. developing of robust institutions having focus on service delivery and financial sustainability of the sector by promoting utility approach
6. capacity building of stakeholders and create awareness in community on significance of water for improvement in quality of life
7. Making of provision and mobilization of financial assistance for implementation of the mission⁴².

After implementing the program, the country achieved a big jump of 3.23 crores to 12.26 crores of progressive of functional household tap connections from 2019 to 2023. As compared to the national average of total coverage of the program (53.02 percent), Karnataka stands above the national average (68.53 percent). As per the JJM Dashboard maintained by the Mission under the aegis of Government of India, Karnataka presently has tap connections in 67,93, 864 households which is 68.53% of the total of 1,01,16,653 households in the state. Gadag and Dharwad tops on the table with an excellent coverage (99.2% and 98.6% respectively). On the other hand, Bangalore Urban and Kolar stand at the bottom (25.8% and 32.9% respectively) (Table 2).

⁴¹ Operational Guidelines for the Implementation of Jal Jeevan Mission – Har Ghar Jal, December 2019, pg 8.
https://jalshakti-ddws.gov.in/sites/default/files/JJM_Operational_Guidelines.pdf

⁴² Operational Guidelines for the Implementation of Jal Jeevan Mission – Har Ghar Jal, December 2019, pg 14.



Table 2: Distribution of tap connections at the district-level

S.No.	District	% Coverage	S.No.	District	% Coverage
1.	Gadag	99.2	17.	Ballari	65.1
2.	Dharwad	98.6	18.	Mysuru	62.4
3.	Koppal	87.3	19.	Vijayapura	62.3
4.	Dakshina Kannada	86.1	20.	Chikkaballapura	60.2
5.	Chamrajanagar	85.8	21.	Bidar	57.7
6.	Haveri	84.3	22.	Kalaburagi	57.4
7.	Kodagu	83.7	23.	Chitradurga	56.0
8.	Ramanagara	82.5	24.	Tumkur	52.5
9.	Belagavi	82.2	25.	Vijayanagara	50.8
10.	Shivamogga	77.6	26.	Hassan	50.8
11.	Bagalkote	80.6	27.	Uttara Kannada	50.0
12.	Shivamogga	77.6	28.	Bengaluru (R)	45.0
13.	Davanagere	77.2	29.	Chikkaballapur	40.7
14.	Udipi	76.2	30.	Kolar	32.9
15.	Raichur	75.2	31.	Bengaluru (U)	25.8
16.	Yadgir	75.0		Total	68.53

Source: <https://ejalshakti.gov.in/jjmreport/JJMState.aspx>, last accessed on 15.04.2023.

Jal Jeevan Mission – equity and inclusiveness

The following section checks the inclusion of marginalised community in Jal Jeevan Mission in Karnataka (Table 3). According to Census report (2011)⁴³, Kolar district accommodates a large portion of SC population (30.32) and a notable portion of ST population (5.13), as compared to other districts in Karnataka. However, the beneficiaries of piped water connection are only 35.14 percent of total household (including SC-ST and others) which is below the total marginal proportion. Similarly, about 57 percent received the connection in Chitradurga, hence district occupies largest number of SC-ST population across Karnataka (23.45% and 18.23% respectively). The same trend is visible in Bangalore rural, Chickballapur, Bidar, Yadgiri, etc. In Chamrajanagar district, the total SC-ST population is

⁴³ <https://censusindia.gov.in/2011Census/pes/Pesreport.pdf>



37 percent and 86.77 percent household covered JJM. On the other hand, among the largest achieved districts, Gadag and Dharwad occupies less marginalised community and majority of the rural households received piped water connection (99.33% and 98.57 % respectively). This is clearly showing the disparity between the district with more marginalised and less marginalised population in Karnataka.

Table 3: Distribution of district wise SC-ST population and rural household with PWS

Sl. No.	District/Division	Distribution of SC population	Distribution of ST population	Percentage of household with PWS as on 01-06-2023
1	Bangalore Rural	21.57	5.34	48.72
2	Bangalore urban	12.46	1.98	27.31
3	Chikkaballapur*	24.90	12.47	41.22
4	Kolar	30.32	5.13	35.14
5	Bidar	23.47	13.85	58.93
6	Yadgiri	23.28	12.51	75.61
7	Uttara Kannada	8.1	2.38	49.85
8	Kalburgi	25.28	2.54	59.75
9	Ballari	21.10	18.41	65.21
10	Vijayapura	20.34	1.81	63.94
11	Tumkur	18.92	7.82	53.35
12	Mysuru	17.88	11.15	63.52
13	Chitradurga	23.45	18.23	57.12
14	Hassan	19.42	1.82	51.31
15	Raichur	20.79	19.03	78.75
16	Belgaum	12.08	6.22	84.34
17	Chickmagalur	22.29	3.95	61.04
18	Udupi	6.41	4.49	77.11
19	Haveri	13.77	8.85	85.14
20	Chamarajanagar	25.42	11.78	86.77



21	Kodagu	13.27	10.47	84.42
22	Bagalkot	16.89	5.14	83.73
23	Shimoga	17.58	3.73	79.06
24	Ramanagara	18.83	2.12	85.96
25	Davangere	20.18	11.98	78.64
26	Dakshina Kannada	7.09	3.94	86.86
27	Mandya	14.69	1.24	82.32
28	Koppal	18.61	11.82	88.06
29	Dharwad	9.63	4.74	98.57
30	Gadag	16.36	5.79	99.33
31	Vijayanagara	2.74	0.53	51.94
	Total			68.52

Source: Jal Jeevan Mission - Har Ghar Jal, 2023.

3. Policy Framework

The following table identifies major provisions of the Rural Water Supply Scheme.

Table 4: Prominent Provisions of the Scheme

Rural Water Supply Scheme	
1.	Functional Household Tap Connection to a rural household for providing piped water supply for drinking and domestic purposes in adequate quantity and of prescribed quality on a regular basis. ಕುಡಿಯುವ ಮತ್ತು ಗೃಹಬಳಕೆಯ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಸಾಕಷ್ಟು ಪ್ರಮಾಣದಲ್ಲಿ ಮತ್ತು ನಿಗದಿತ ಗುಣಮಟ್ಟದಲ್ಲಿ ನಿಯಮಿತವಾಗಿ ಪೈಪ್ ಮೂಲಕ ನೀರು ಸರಬರಾಜು ಮಾಡಲು ಮನೆಮನೆಗೆ ಗುಣಮಟ್ಟದ ಕುಡಿಯುವ ನೀರನ್ನು ಕ್ರಿಯಾತ್ಮಕ ಕೊಳಾಯಿ ಮೂಲಕ ಹರಿಸುವುದು
2.	Quantity of 55 lpcd (litres per capita per day) per person, basis which water will be released. Technological intervention for treatment to make water potable (where water quality is an issue, but quantity is sufficient). ಪ್ರತಿ ವ್ಯಕ್ತಿಗೆ 55 lpcd (ಪ್ರತಿ ದಿನಕ್ಕೆ 55 lpcd ತಲಾ ಲೀಟರ್ ನೀರು) ಪ್ರಮಾಣ, ಆಧಾರದ ಮೇಲೆ ನೀರನ್ನು ಬಿಡುಗಡೆ ಮಾಡಲಾಗುತ್ತದೆ. ನೀರನ್ನು ಕುಡಿಯಲು ಯೋಗ್ಯವಾಗಿಸಲು ಸಂಸ್ಕರಣೆಗೆ ತಾಂತ್ರಿಕ ಮಧ್ಯಸ್ಥಿಕೆ (ಎಲ್ಲಿ ನೀರಿನ ಗುಣಮಟ್ಟವು ಒಂದು ಸಮಸ್ಯೆಯಾಗಿದೆ, ಆದರೆ ನೀರಿನ ಪ್ರಮಾಣವು ಸಾಕಾಗುವಷ್ಟು ಲಭ್ಯವಿದ್ದಲ್ಲಿ)
3.	Once a year, RDPR officials have to send the water sample for the Arsenic test.



	The arsenic level should be no more than 0.01mg/litre. If found to be higher it results in neurological and different types of cancers. Iron content should be no more than 1.0mg/ litre. If found to be higher it results in gastric problems. Fluoride content should not be more than 1.5mg/litre. If found to be higher it results in fluorosis. Salt content should not be more than 1000ppm to 3000ppm. If found to be higher it results in blood pressure and kidney problems. Nitrate content should not be more than 45 mg/litre as per BIS. If found to be higher it results in Thyroid, Blue baby for children etc. Content of heavy metals like Lead, Cadmium etc., results in weakness of the nervous system. ವರ್ಷಕ್ಕೊಮ್ಮೆ ಆರ್‌ಡಿ‌ಪಿ‌ಆರ್ ಅಧಿಕಾರಿಗಳು ನೀರಿನ ಮಾದರಿಯನ್ನು ಆರ್‌ಸೆ‌ನಿಕ್ ಪರೀಕ್ಷೆಗೆ ಕಳುಹಿಸಬೇಕು. ಆರ್‌ಸೆ‌ನಿಕ್ ಮಟ್ಟವು 0.01mg/ಲೀಟರ್‌ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು. ಅಧಿಕವಾಗಿದ್ದರೆ, ನರವೈಜ್ಞಾನಿಕ ಮತ್ತು ವಿವಿಧ ರೀತಿಯ ಕ್ಯಾನ್ಸರ್‌ಗಳಿಗೆ ಕಾರಣವಾಗುತ್ತದೆ. ಕಬ್ಬಿಣದ ಅಂಶವು 1.0mg/ಲೀಟರ್‌ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು. ಅಧಿಕವಾಗಿದ್ದರೆ, ಗ್ಯಾಸ್ಟ್ರಿಕ್ ಸಮಸ್ಯೆ ಉಂಟಾಗುತ್ತದೆ. ಫ್ಲೋರೈಡ್ ಅಂಶವು 1.5mg/ಲೀಟರ್‌ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು. ಅಧಿಕವಾಗಿದ್ದರೆ, ಫ್ಲೋರೋಸಿಸ್ ಉಂಟಾಗುತ್ತದೆ. ಉಪ್ಪಿನ ಅಂಶವು 1000 ppm ನಿಂದ 3000 ppm ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು. ಅಧಿಕವಾಗಿದ್ದರೆ, ರಕ್ತದೊತ್ತಡ ಮತ್ತು ಮೂತ್ರಪಿಂಡದ ಸಮಸ್ಯೆಗಳಿಗೆ ಕಾರಣವಾಗುತ್ತದೆ. BIS ಪ್ರಕಾರ ನೈಟ್ರೇಟ್ ಅಂಶವು 45 mg/ಲೀಟರ್‌ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು. ಅಧಿಕವಾಗಿದ್ದರೆ, ಥೈರಾಯ್ಡ್, ಮಕ್ಕಳಿಗೆ ಬ್ಲೂ ಬೇಬಿ ಉಂಟಾಗುತ್ತದೆ ಇತ್ಯಾದಿ. ಸೀಸ, ಕ್ಯಾಡ್ಮಿಯಮ್ ಮುಂತಾದ ಭಾರ ಲೋಹಗಳ ಅಂಶವು ನರಮಂಡಲದ ದುರ್ಬಲತೆಗೆ ಕಾರಣವಾಗುತ್ತದೆ.
4.	While connecting the pipeline to the household pipe should be installed 3 feet below the surface level. Pipe should be not more than 12.5mm for all institutions ಪೈಪ್‌ಲೈನ್ ಅನ್ನು ಮನೆಯ ಪೈಪ್ ಸಂಪರ್ಕಿಸುವಾಗ ಮೇಲ್ಮೈ ಮಟ್ಟಕ್ಕಿಂತ 3 ಅಡಿ ಕೆಳಗೆ ಅಳವಡಿಸಬೇಕು. ಎಲ್ಲಾ ಸಂಸ್ಥೆಗಳಿಗೂ, ಪೈಪ್ 12.5mm ಗಿಂತ ಹೆಚ್ಚಿರಬಾರದು.
5.	In every household, they can construct a tank for rainwater storage that can be utilized for cooking and drinking purposes as it is Arsenic free. ಪ್ರತಿ ಮನೆಯಲ್ಲೂ ಮಳೆನೀರು ಶೇಖರಣೆಗಾಗಿ ಒಂದು ತೊಟ್ಟಿಯನ್ನು ನಿರ್ಮಿಸಿಕೊಳ್ಳಬಹುದು, ಇದನ್ನು ಆರ್‌ಸೆ‌ನಿಕ್ ಮುಕ್ತವಾಗಿರುವುದರಿಂದ ಅಡುಗೆ



	ಮತ್ತು ಕುಡಿಯುವ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಬಳಸಬಹುದು.
6.	Jalasangamithi is being constituted in every village with 50% of women participation in the committee, to plan and implement all aspects of water supply such as selection of water source, take water conservation measures, supervise work of laying pipes etc. Members are empowered to take necessary decisions to ensure uninterrupted water supply. ಸಮಿತಿಯಲ್ಲಿ 50% ಮಹಿಳೆಯರು ಭಾಗವಹಿಸುವ ಮೂಲಕ ಪ್ರತಿ ಗ್ರಾಮದಲ್ಲಿ ಜಲಸಮಿತಿಯನ್ನು ರಚಿಸಿರಬೇಕು. ನೀರಿನ ಮೂಲ ಆಯ್ಕೆ, ಜಲಸಂರಕ್ಷಣಾ ಕ್ರಮಗಳನ್ನು ಕೈಗೊಳ್ಳುವುದು, ಪೈಪ್‌ಗಳನ್ನು ಹಾಕುವ ಕೆಲಸದ ಮೇಲ್ವಿಚಾರಣೆ ಮುಂತಾದ ನೀರಿನ ಪೂರೈಕೆಯ ಎಲ್ಲಾ ಅಂಶಗಳನ್ನು ಯೋಜಿಸಲು ಮತ್ತು ಅನುಷ್ಠಾನಗೊಳಿಸಲು ಹಾಗೂ ತಡೆರಹಿತ ನೀರು ಪೂರೈಕೆಯನ್ನು ಖಚಿತಪಡಿಸಿಕೊಳ್ಳಲು ಅಗತ್ಯ ನಿರ್ಧಾರಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳಲು ಸದಸ್ಯರಿಗೆ ಅಧಿಕಾರ ನೀಡಲಾಗಿದೆ.
7.	Gram Panchayat calculates the requirement of water considering the rain, availability of water from all sources utilized for drinking. ಗ್ರಾಮ ಪಂಚಾಯತಿಯು ಮಳೆಯನ್ನು ಪರಿಗಣಿಸಿ ನೀರಿನ ಅಗತ್ಯತೆ, ಕುಡಿಯಲು ಬಳಸುವ ಎಲ್ಲಾ ಮೂಲಗಳಿಂದ ನೀರಿನ ಲಭ್ಯತೆಯನ್ನು ಲೆಕ್ಕಹಾಕುತ್ತದೆ
8.	If the water source is on private land then, the permission of the landowner is required. Transfer of land to Gram Panchayat. This study has to be made in presence of Geologist, Village elderly persons. ನೀರಿನ ಮೂಲವು ಖಾಸಗಿ ಭೂಮಿಯಲ್ಲಿದ್ದರೆ, ಜಮೀನು ಮಾಲೀಕರ ಅನುಮತಿ ಅಗತ್ಯವಿದೆ. ಭೂಮಿಯನ್ನು ಗ್ರಾಮ ಪಂಚಾಯತ್‌ಗೆ ವರ್ಗಾಯಿಸುವುದು. ಈ ಅಧ್ಯಯನವನ್ನು ಭೂಗೋಳ ವಿಜ್ಞಾನಿ, ಗ್ರಾಮದ ಹಿರಿಯ ವ್ಯಕ್ತಿಗಳ ಉಪಸ್ಥಿತಿಯಲ್ಲಿ ಮಾಡಬೇಕು.
9.	Gram Panchayat has to build 2 Cow Tanks as per the available domestic animals in the village for safer drinking water. ಗ್ರಾಮ ಪಂಚಾಯತಿಯು ಸಾಕುವ ಪ್ರಾಣಿಗಳಿಗೆ ಕುಡಿಯುವ ನೀರಿನ ಎರಡು ತೊಟ್ಟಿಗಳನ್ನು ನಿರ್ಮಾಣ ಮಾಡುವುದು
10.	Charges will be collected by the Gram Panchayat for the supply of water to every household, amount from the collection of water supply service charges will be used for operation and maintenance. ಪ್ರತಿ ಮನೆಗೆ ನೀರು ಸರಬರಾಜು ಮಾಡಲು ಗ್ರಾಮ ಪಂಚಾಯತಿಯು ಶುಲ್ಕವನ್ನು ಸಂಗ್ರಹಿಸುತ್ತದೆ, ನೀರು ಸರಬರಾಜು ಸೇವಾ ಶುಲ್ಕ ಸಂಗ್ರಹಣೆಯ ಮೊತ್ತವನ್ನು ಕಾರ್ಯಾಚರಣೆ ಮತ್ತು ನಿರ್ವಹಣೆಗೆ ಬಳಸಲಾಗುತ್ತದೆ.
11.	Gram Panchayat is responsible for planning, implementation, operations and maintenance of rural water supply and sanitation. ಗ್ರಾಮ ಪಂಚಾಯತಿಯು ಗ್ರಾಮೀಣ ನೀರು ಸರಬರಾಜು ಮತ್ತು ನೈರ್ಮಲ್ಯದ ಯೋಜನೆ, ಅನುಷ್ಠಾನ, ಕಾರ್ಯಾಚರಣೆ ಮತ್ತು ನಿರ್ವಹಣೆಯ ಜವಾಬ್ದಾರಿಯನ್ನು ಹೊಂದಿದೆ.



	Giving skill development training such as Plumber, Electricians, Pump Operator etc., for young people in relation to maintenance and repair function, to be employed for skilled labour under Jal Jeevan Mission Scheme. ಜಲ್ ಜೀವನ್ ಮಿಷನ್ ಯೋಜನೆಯಡಿಯಲ್ಲಿ ಯುವಕರಿಗೆ ನಿರ್ವಹಣೆ ಮತ್ತು ದುರಸ್ತಿ ಕಾರ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಕೌಶಲ್ಯಾಭಿವೃದ್ಧಿ ತರಬೇತಿಗಳಾದ ಪ್ಲಂಬರ್, ಎಲೆಕ್ಟ್ರೀಷಿಯನ್, ಪಂಪ್ ಆಪರೇಟರ್ ಇತ್ಯಾದಿಗಳನ್ನು ನೀಡಲಾಗುವುದು. 5 years action plan will be prepared by the GP 5 ವರ್ಷಗಳ ಕ್ರಿಯಾ ಯೋಜನೆಯನ್ನು ಗ್ರಾ.ಪಂ ಮಾಡುತ್ತದೆ.
12.	Gram Panchayats have to take the necessary steps for greywater rejuvenation and make use for agriculture purposes. ಗ್ರಾಮ ಪಂಚಾಯಿತಿಗಳು ಬೂದು ನೀರಿನ ಪುನಶ್ಚೇತನಕ್ಕೆ ಅಗತ್ಯ ಕ್ರಮಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳಬೇಕು ಮತ್ತು ಕೃಷಿ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಬಳಸಿಕೊಳ್ಳಬೇಕು.
13.	10% investment of tap connection to be given by Beneficiary or Work of the same to be done, this is to build the ownership quality among the Society. In the case of SC and ST communities, 5% of the investment of tap connection should be given by them. ಫಲಾನುಭವಿಯು ನಳ ಸಂಪರ್ಕದ 10% ಹೂಡಿಕೆಯನ್ನು ನೀಡಬೇಕು ಅಥವಾ ಅದಕ್ಕೆ ಸಮನಾದ ಕೆಲಸವನ್ನು ಮಾಡಬೇಕು, ಇದು ಸಮಾಜದ ನಡುವೆ ಮಾಲೀಕತ್ವದ ಗುಣಮಟ್ಟವನ್ನು ನಿರ್ಮಿಸುವುದು. ಪ.ಜಾ ಮತ್ತು ಪ.ಪಂ ಸಂದರ್ಭದಲ್ಲಿ ನಳ ಸಂಪರ್ಕದ ಹೂಡಿಕೆಯ 5% ಮಾತ್ರ ನೀಡಬೇಕು.
14.	Test kit to be provided for Jala Samithi - as they can test the quality of water in field visits. ಜಲ ಸಮಿತಿಗೆ ಪರೀಕ್ಷಾ ಕಿಟ್ ಒದಗಿಸಲಾಗುವುದು - ಅವರು ಕ್ಷೇತ್ರ ಭೇಟಿಗಳಲ್ಲಿ ನೀರಿನ ಗುಣಮಟ್ಟವನ್ನು ಪರೀಕ್ಷಿಸಬಹುದು
15.	If any problem arises in the tap connection, it should be reported to the Gram Panchayat office. ನಳ ಸಂಪರ್ಕದಲ್ಲಿ ಯಾವುದೇ ಸಮಸ್ಯೆ ಉಂಟಾದರೆ ಗ್ರಾಮ ಪಂಚಾಯಿತಿ ಕಚೇರಿಗೆ ತಿಳಿಸಬೇಕು.



Community Water Tank/ Tap ಸಮುದಾಯ ನೀರಿನ ಟ್ಯಾಂಕ್/ ನಳ	
1.	To provide every rural person with adequate safe water for Drinking, Cooking and other domestic basic needs on a sustainable basis. ಪ್ರತಿ ಗ್ರಾಮೀಣ ವ್ಯಕ್ತಿಗೆ ಸುಸ್ಥಿರ ಆಧಾರದ ಮೇಲೆ ಕುಡಿಯಲು, ಅಡುಗೆ ಮಾಡಲು ಮತ್ತು ಇತರ ದೇಶೀಯ ಮೂಲಭೂತ ಅಗತ್ಯಗಳಿಗಾಗಿ ಸಾಕಷ್ಟು ಸುರಕ್ಷಿತ ನೀರನ್ನು ಒದಗಿಸುವುದು.
2.	It is the lifeline activity of the Government to ensure that this basic need of the people is met without commercialization. ಜನರ ಈ ಮೂಲಭೂತ ಅಗತ್ಯವನ್ನು ನೈತಿಕ ನೆರವೇರಿಕೆಯೊಂದಿಗೆ ಪೂರೈಸುವುದನ್ನು ಖಚಿತಪಡಿಸಿಕೊಳ್ಳುವುದು ಸರ್ಕಾರದ ಜೀವನಾಡಿ ಚಟುವಟಿಕೆಯಾಗಿದೆ - ವಾಣಿಜ್ಯೀಕರಣವಿಲ್ಲದೆ
3.	Every rural person in the country will have access to 70 lpcd for their household or at a horizontal or vertical distance of not more than 50 meters from their household without barriers of social or financial discrimination. ದೇಶದ ಪ್ರತಿಯೊಬ್ಬ ಗ್ರಾಮೀಣ ವ್ಯಕ್ತಿಯು ಸಾಮಾಜಿಕ ಅಥವಾ ಆರ್ಥಿಕ ತಾರತಮ್ಯದ ಅಡೆತಡೆಗಳಿಲ್ಲದೆ, ಅವರ ಮನೆಯಿಂದ 50 ಮೀಟರ್‌ಗಳಿಗಿಂತ ಹೆಚ್ಚು ದೂರವಿಲ್ಲದೆ ಅಡ್ಡ ಅಥವಾ ಲಂಬ ದೂರದಲ್ಲಿ 70 ಎಲ್‌ಪಿಸಿಡಿಗೆ (ಪ್ರತಿ ದಿನಕ್ಕೆ ತಲಾ ಲೀಟರ್ ನೀರು) ಕೊಡಲಾಗುತ್ತದೆ.
4.	Ensure that all Households, Schools and Anganwadis Centres, Hospitals and Health centres, Community toilets and 2 tanks for Cattle have access to and use adequate quantities of safe drinking water. ಎಲ್ಲಾ ಮನೆಗಳು, ಶಾಲೆಗಳು ಮತ್ತು ಅಂಗನವಾಡಿ ಕೇಂದ್ರಗಳು, ಆಸ್ಪತ್ರೆಗಳು ಮತ್ತು ಆರೋಗ್ಯ ಕೇಂದ್ರಗಳು, ಸಮುದಾಯ ಶೌಚಾಲಯಗಳು ಮತ್ತು 2 ಟ್ಯಾಂಕ್ ಜಾನುವಾರುಗಳಿಗೆ ಸಾಕಷ್ಟು ಪ್ರಮಾಣದ ಸುರಕ್ಷಿತ ಕುಡಿಯುವ ನೀರನ್ನು ಪೂರೈಕೆಯನ್ನು ಖಚಿತಪಡಿಸಬೇಕು
5.	Village Water Security Plan will be prepared, which inter alia, will include the Demographic, Physical features, Water sources, and other details of the Village; available drinking water infrastructure and Gaps ಗ್ರಾಮ ಜಲ ಸುರಕ್ಷತಾ ಯೋಜನೆಯನ್ನು ತಯಾರಿಸಲಾಗುವುದು, ಇದು ಬೇರೆ ಬೇರೆಯಾಗಿ, ಜನಸಂಖ್ಯಾಶಾಸ್ತ್ರ, ಭೌತಿಕ ಲಕ್ಷಣಗಳು, ನೀರಿನ ಮೂಲಗಳು ಮತ್ತು ಗ್ರಾಮದ ಇತರ ವಿವರಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ; ಲಭ್ಯವಿರುವ ಕುಡಿಯುವ ನೀರಿನ ಮೂಲಸೌಕರ್ಯ ಮತ್ತು ಅಂತರಗಳು
6.	User charges of the water supply system should have an in-built component of cross-subsidy to ensure that the economically backward groups are not deprived of this basic minimum need. ಆರ್ಥಿಕವಾಗಿ ಹಿಂದುಳಿದ ಗುಂಪುಗಳು ಈ ಮೂಲಭೂತ ಕನಿಷ್ಠ ಅಗತ್ಯದಿಂದ ವಂಚಿತರಾಗುವುದಿಲ್ಲ ಎಂದು ಖಚಿತಪಡಿಸಿಕೊಳ್ಳಲು ನೀರು ಸರಬರಾಜು ವ್ಯವಸ್ಥೆಯ ಬಳಕೆದಾರರ ಶುಲ್ಕಗಳು ಕ್ರಾಸ್ ಸಬ್ಸಿಡಿಯ ಅಂತರ್ನಿರ್ಮಿತ ಘಟಕವನ್ನು ಹೊಂದಿರಬೇಕು.
7.	Access to information through an online reporting mechanism with information placed in the public domain to bring in transparency and informed decision making.



	ಮಾಹಿತಿ ಪಡೆಯುವ ಸಲುವಾಗಿ ಆನ್ಲೈನ್ ವರದಿ ಮಾಡುವ ಕಾರ್ಯವಿಧಾನದ ಮೂಲಕ, ಸಾರ್ವಜನಿಕ ಡೊಮೇನ್‌ನಲ್ಲಿ ಇರಿಸಲಾದ ಮಾಹಿತಿಯೊಂದಿಗೆ ಪಾರದರ್ಶಕತೆ ಮತ್ತು ತಿಳುವಳಿಕೆಯುಳ್ಳ ನಿರ್ಧಾರವನ್ನು ತೆರವು.
8.	To prevent contamination of drinking water in the conveyance system, it is advisable to adopt a 24 * 7 water supply wherever possible. ಸಾಗಣೆ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ ಕುಡಿಯುವ ನೀರು ಕಲುಷಿತವಾಗುವುದನ್ನು ತಡೆಯಲು, ಸಾಧ್ಯವಿರುವಲ್ಲಿ 24 x 7 ನೀರಿನ ಪೂರೈಕೆಯನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳುವುದು ಸೂಕ್ತ.
9.	The quality of drinking water will be as per guidelines of WHO and Bureau of Indian Standards, Greywater treatment and safe wastewater usage are also followed according to the guidelines of WHO. ವಿಶ್ವ ಆರೋಗ್ಯ ಸಂಸ್ಥೆ ಮತ್ತು ಬ್ಯೂರೋ ಆಫ್ ಇಂಡಿಯನ್ ಸ್ಟಾಂಡರ್ಡ್ಸ್ ಮಾರ್ಗಸೂಚಿಗಳ ಪ್ರಕಾರ ಕುಡಿಯುವ ನೀರಿನ ಗುಣಮಟ್ಟ ಇರುತ್ತದೆ, ಗ್ರೇ ವಾಟರ್ ಸಂಸ್ಕರಣೆ ಮತ್ತು ಸುರಕ್ಷಿತ ತ್ಯಾಜ್ಯ ನೀರಿನ ಬಳಕೆಯನ್ನು WHO (ವಿಶ್ವ ಆರೋಗ್ಯ ಸಂಸ್ಥೆಯ) ಮಾರ್ಗಸೂಚಿಗಳ ಪ್ರಕಾರ ಅನುಸರಿಸಲಾಗುತ್ತದೆ.
10.	Establish quality assurance programmes for water supplies to reduce the potential risk of contamination of the water supply. This has been indicated under 'Water Quality Monitoring & Surveillance Programme'. ನೀರಿನ ಸರಬರಾಜಿನ ಮಾಲಿನ್ಯದ ಸಂಭವನೀಯ ಅಪಾಯವನ್ನು ಕಡಿಮೆ ಮಾಡಲು ನೀರಿನ ಪೂರೈಕೆಗಾಗಿ ಗುಣಮಟ್ಟದ ಭರವಸೆ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ಸ್ಥಾಪಿಸಿ. ಇದನ್ನು 'ನೀರಿನ ಗುಣಮಟ್ಟ ಉಸ್ತುವಾರಿ ಮತ್ತು ಕಣ್ಗಾವಲು ಕಾರ್ಯಕ್ರಮದ ಅಡಿಯಲ್ಲಿ ಸೂಚಿಸಲಾಗಿದೆ
11.	Water supply systems management is done by the Panchayat Raj Institutions (Gram Panchayat). ನೀರು ಸರಬರಾಜು ವ್ಯವಸ್ಥೆಗಳ ನಿರ್ವಹಣೆಯನ್ನು ಪಂಚಾಯತ್ ರಾಜ್ ಸಂಸ್ಥೆಗಳು (ಗ್ರಾಮ ಪಂಚಾಯತ್) ನಿರ್ವಹಿಸುತ್ತವೆ.
12.	Measures to be taken by Gram Panchayat to face the uncertainties in supply of drinking water if there is only one source - Groundwater recharge mechanisms to be incorporated - Proper adoption and usage of rainwater harvesting - Excess rainwater at the household and community level should be recharged into the ground aquifer wherever feasible - Importance to protect the catchment to prevent its pollution from Human and Animal excreta and other sources of bacteriological contamination. ಒಂದೇ ಮೂಲವಿದ್ದಲ್ಲಿ ಕುಡಿಯುವ ನೀರು ಪೂರೈಕೆಯಲ್ಲಿನ ಅನಿಶ್ಚಿತತೆಗಳನ್ನು ಎದುರಿಸಲು ಗ್ರಾಮ ಪಂಚಾಯಿತಿಯಿಂದ ಕೈಗೊಳ್ಳಬೇಕಾದ ಕ್ರಮಗಳು - ಅಂತರ್ಜಲ ಮರುಪೂರಣ ಕಾರ್ಯವಿಧಾನಗಳನ್ನು ಅಳವಡಿಸಬೇಕು - ಮಳೆ ನೀರು ಕೊಯ್ಲಿನ ಸರಿಯಾದ ಅಳವಡಿಕೆ ಮತ್ತು ಬಳಕೆ - ಮನೆ ಮತ್ತು ಸಮುದಾಯ ಮಟ್ಟದ ಹೆಚ್ಚುವರಿ ಮಳೆ ನೀರನ್ನು ಸಾಧ್ಯವಾದಲ್ಲಿ ನೆಲದ ಜಲಚರಗಳಿಗೆ ಮರುಪೂರಣ ಮಾಡಬೇಕು - ಮಾನವ ಮತ್ತು ಪ್ರಾಣಿಗಳ ಮಲವಿಸರ್ಜನೆ ಮತ್ತು ಬ್ಯಾಕ್ಟೀರಿಯೋಲಾಜಿಕಲ್ ಮಾಲಿನ್ಯದ ಇತರ ಮೂಲಗಳಿಂದ ಅದರ ಮಾಲಿನ್ಯವನ್ನು ತಡೆಗಟ್ಟಲು ಜಲಾನಯನವನ್ನು ರಕ್ಷಿಸಲು ಪ್ರಾಮುಖ್ಯತೆ ನೀಡಬೇಕು



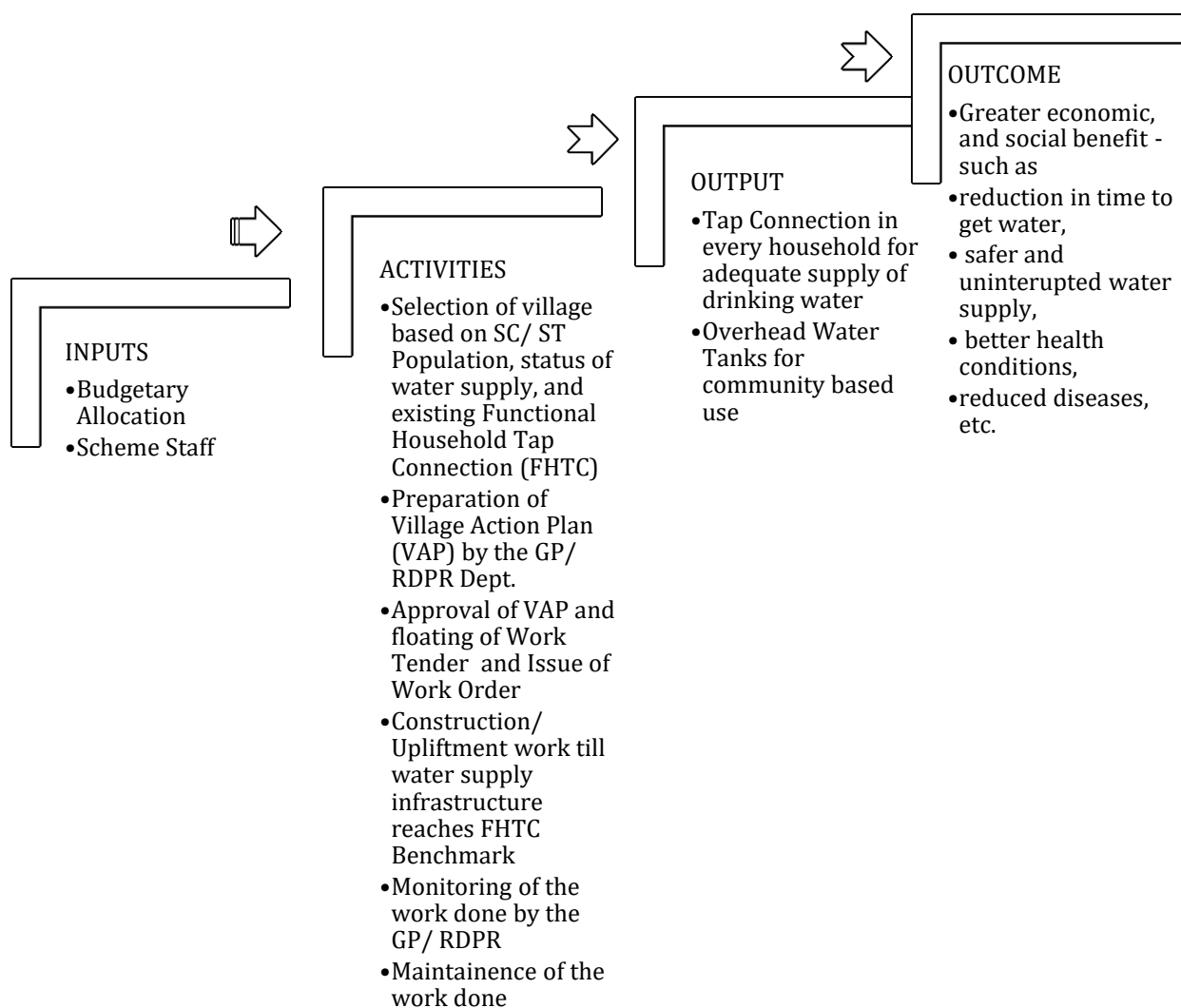
13.	At the Central level, 22% of NRDWP funds are earmarked for Scheduled Caste Sub-Plan and 10% for Tribal Sub-Plan to be utilized for the provision of drinking water supply to SC/ ST concentrated habitations. ಕೇಂದ್ರ ಮಟ್ಟದಲ್ಲಿ NRDWP (ರಾಷ್ಟ್ರೀಯ ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರಿನ ಕಾರ್ಯಕ್ರಮ) ನಿಧಿಯ 22% ಅನ್ನು ಪರಿಶಿಷ್ಟ ಜಾತಿ ಉಪ ಯೋಜನೆಗೆ ಮತ್ತು 10% ಬುಡಕಟ್ಟು ಉಪ ಯೋಜನೆಗೆ SC/ST ಕೇಂದ್ರೀಕೃತ ವಾಸಸ್ಥಳಗಳಿಗೆ ಕುಡಿಯುವ ನೀರು ಪೂರೈಕೆಗಾಗಿ ಬಳಸಿಕೊಳ್ಳಲು ಮೀಸಲಿಡಲಾಗಿದೆ.
14.	Women, especially those belonging to SCs, STs and OBCs, should constitute at least 50% of the members of the Gram Panchayat/ Village Water and Sanitation Committees (GPWSC/VWSC). ಮಹಿಳೆಯರು, ವಿಶೇಷವಾಗಿ ಪ.ಜಾ, ಪ.ಪಂ ಮತ್ತು ಇತರೆ ಹಿಂದುಲಿದ ವರ್ಗಗಳಿಗೆ ಸೇರಿ, ಗ್ರಾಮ ಪಂಚಾಯಿತಿ/ಗ್ರಾಮೀಣ ನೀರು ಮತ್ತು ನೈರ್ಮಲ್ಯ ಸಮಿತಿಗಳ (GPWSC/VWSC) ಕನಿಷ್ಠ 50% ಸದಸ್ಯರನ್ನು ಹೊಂದಿರಬೇಕು.
Source: Info taken from (National Rural Drinking Water Programme) NRDWP guidelines-2013 for the study. (ರಾಷ್ಟ್ರೀಯ ಗ್ರಾಮೀಣ ಕುಡಿಯುವ ನೀರಿನ ಕಾರ್ಯಕ್ರಮ) NRDWP ಮಾರ್ಗಸೂಚಿಗಳು-2013 ರಿಂದ ಮಾಹಿತಿಯನ್ನು ತೆಗೆದುಕೊಳ್ಳಲಾಗಿದೆ	

These guidelines are very comprehensive to cover all the issues related to the design and implementation of the scheme.

The implementation framework charts out how – through what inputs and activities- does an intervention seek to move from the current state of affairs to a desired state of affairs. Abstracting from the Scheme Guidelines, the current implementation framework is outlined in Figure 3.



Figure 3: Current Implementation Framework



Source: PAC - based on primary and secondary information



4. Scope of Study

The Rural Water Supply Scheme with focus on SC/ST households was the thematic scope of the study. The geographic scope was determined in consultation with the Department of Social Welfare, Government of Karnataka. 5 study areas–Chikkaballapur, Dharwad, Hassan, Chitradurga and Raichur–were hence identified. Specific Talukas and Gram Panchayats were determined on a non-random, purposive basis.

Table 5: Sampled Districts, Talukas and Corresponding Sample Size

District	Taluka	Beneficiary HH	Staff/ Service-Providers
Chikkaballapur	Gowribidanur	40	10
	Gudibande		
	Sidhligkata		
Dharwad	Kundhgal	40	15
	Dharwad		
	Hubli		
Hassan	Arkalgud	40	12
	Belur		
	Holenarasipura		
Chitradurga	Molakalmuru	37	14
	Challakare		
Raichur	Manvi	40	11
	Sindhanur		
Total		197	62

Scoping visits were conducted to gauge the persisting cultural and geographic circumstances of study areas. Key actors like beneficiaries, district-level and taluka-level staff/ service providers were identified. The questionnaire was designed to assess the quality and performance of delivery of benefits outlined in the guidelines of the Rural Water Supply Scheme. For this, both open-ended and closed-ended questions were included and fieldwork was carried out between the period of July-November 2021. On the basis of the responses, post-survey analysis was undertaken, the approach for which is outlined below.



Responses to closed-ended questions were analysed using descriptive statistics (counts, averages, frequencies) and triangulated with pair-wise correlation. Responses to open-ended questions were analysed using Natural Language Processing (NLP) techniques.

Impact Assessment

1. What are the changes that the RWSS has brought about in the lives of the beneficiaries?
2. What is the impact of the scheme on women and girls in reducing drudgery and time saving?
3. Which are the key areas in the scheme that require attention while implementing?
4. What are the health impacts of the scheme?
5. How can the scheme be made more impactful for the beneficiaries?

5. Evaluation Methodology

The quantitative analysis for impact evaluation was done within the broad framework of Realist Impact Evaluation (Context, Mechanism and Outcome), anchored in the 3E's - Equity, Efficiency and Effectiveness. For analysis, variables of interest were placed under 3 input pillars- Equitable Context, Efficient Mechanism and Effective Outcomes.

Table 6: Evaluation Matrix

Evaluation Concept	Indicator	Response Category
Equitable Context		
Economic	Land Ownership	Aggregate Number
	Average Annual Family Income in the last 2 years	Rupees
Administrative	Presence of trained employees related to the scheme	Number (Score out of 7 stages of training mentioned in the questionnaire)
	Number of staff related to the scheme	Number (To indicate whether overstaffed or understaffed, compare district average/state)
	Magnitude of IEC Activities	Number (Score out of 7)



	Programme staff's work environment	Number (Score out of 17 including office space, internal audit and performance appraisal, resources, remuneration, support from seniors, funds for IEC, adequacy of staff)
	Awareness of Employees about the Scheme	Yes/No (scheme guidelines)
Social	Clear Information about the Scheme	Yes/No (Score out of 4)
	Awareness of beneficiaries - Grievance Redressal Mechanisms	Numbers (Score out of 5)
	Education/Years of Schooling of Beneficiaries	Number
Efficient Mechanisms		
Process-related factors that work within a context and influence outcomes	Distance to the scheme-providing office	Number in km
	Days spent towards receiving benefits from the scheme	Number of days
	Total wage loss incurred to access the benefits of the scheme	Rupees
	Percentage of beneficiaries reported paying additional amount to access the scheme	Percentage
	Reported intensity of process-related delays	Number (Score out of 7 processes)
	Reported shortcoming in the quality of intervention	Number (Score out of 7 processes mentioned in the questionnaire)
	Reported adequacy of	Number (Score out of 6)



	support from the scheme staff	
	Reported intensity of problems faced	Number (Score out of 10)
	Receipt of maintenance support	Yes/No
	Regularity of piped water supply	Hours/24 Hours
	Reported cleanliness of water	Yes/No
	Reported Odour of water	Yes/No
	Efficacy of problem-resolution	Percentage
Effective Outcomes		
Outputs/Outcomes/Purported Impact of the Scheme	Access to Drinking water.	Yes/No (if perfectly functional - yes, if reduced functional- no)
	Average amount of time saved in a day towards procuring water as a result of the scheme	Minutes/Hours
	Average extra pots of water procured as a result of the scheme	Number of pots
	Whether water needs of the HH are met from the scheme	Yes/No

6. Results and Discussion

6.1 Socio-Economic profile

This pillar subsumes indicators relating to access to opportunities, networks and resources. It relates to indicators that potentially predict success or failure in realising an intervention being provided by the Government. The following section discusses concept-wise, indicator-wise and district-wise results for the same.



Demographic Background

The background characteristics of the beneficiaries were recorded to check whether they had any impact on the scheme outcomes.

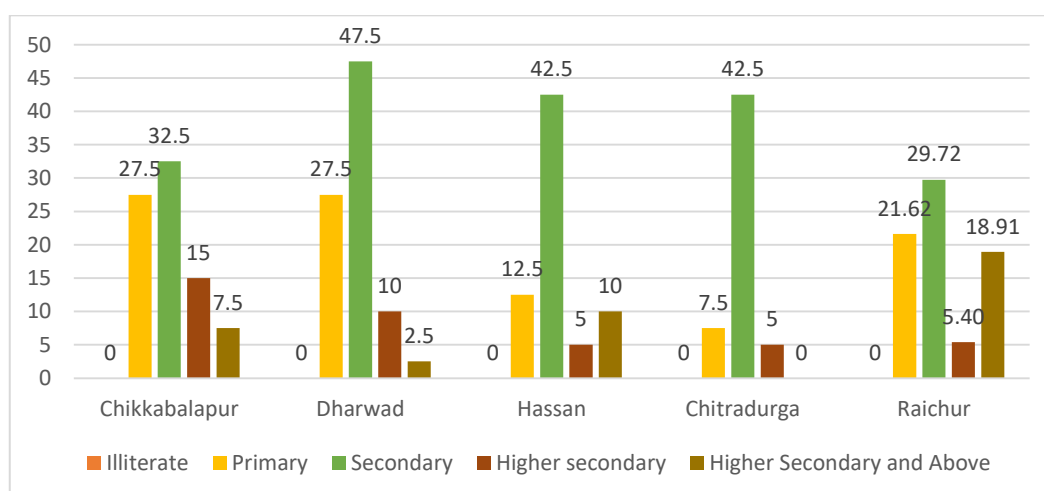
When analysed against educational attainments and ownership of assets, the link between better education, ownership of land and higher annual income is clearly established. In the case of Raichur, nearly one-fifth of the beneficiaries were educated, and owned some land.

Education

Beneficiaries were asked to indicate their years of schooling. On average, around 38 percent of sampled beneficiaries across all the districts had an educational attainment of up to the secondary level, with the highest being in Dharwad at 47 percent.

Raichur, Hassan and Chikkaballapura also has a small sample percentage of respondents with an educational attainment of higher secondary and above, including B. Com and B.A graduates. Out of the 30 responses recorded, Hassan indicates a small percentage of respondents at 7 percent who are Illiterate.

Figure 4: Educational Attainment



Source: Primary Data, 2022

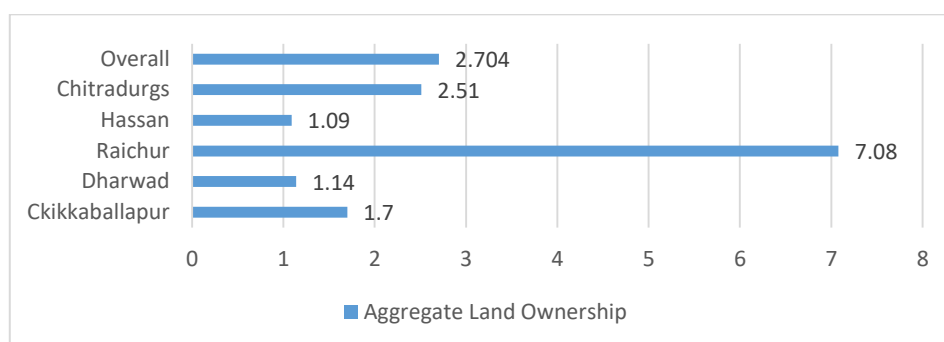
Due to higher education, in some districts, there emerged a higher identification of the problems emerging in the scheme implementation. There is a positive correlation between education of beneficiaries, and their reporting of problems, analysis of service delivery, timeline of activities and delays and monitoring quality throughout the scheme.



Land Ownership

The average ownership of land across the study districts have been mentioned in the table below.

Figure 5: District wise Aggregate Land Ownership (in Acres)



Source: Primary Data, 2022

Overall, higher land ownership has a strong positive correlation with higher income of the beneficiaries; evident from the observation in Raichur district. Dharwad, and Hassan emerge as regions with the lowest land ownership among beneficiaries.

6.2 Scheme Functioning

Awareness of the Scheme

The beneficiaries were asked if they received clear information on the some key facets related to service delivery. These included the application process, guidance during water pipe connection, maintenance, grievance redress mechanisms.

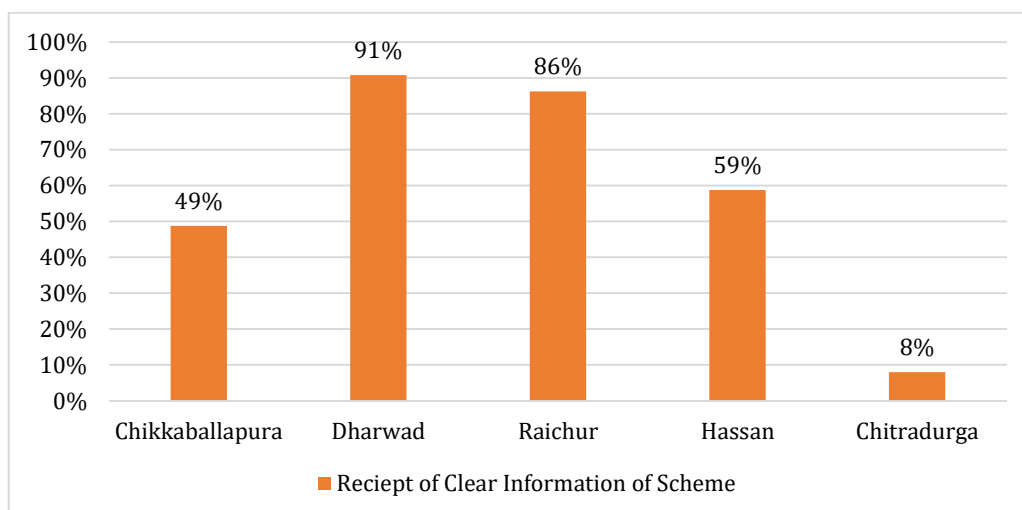
Beneficiaries in Dharwad and Raichur seemed to be most aware of the key facets of service delivery. Around 20 percent of beneficiaries also indicated to have received no information across any of the components at all. This indicates that information pertaining to after service delivery, including grievance redressal and maintenance, was not displayed openly, or were advertised extensively. This trend is seen across all the districts, where majority of the information was spread through GP/ Local Leaders, and other beneficiaries.

In Chitradurga, only 1 beneficiary highlighted to have received substantial information about the scheme. All the other 36 beneficiaries reported as received no information.

On an average, all study districts indicated least information awareness relating to 2 key facets of service delivery- post-work maintenance, and grievance redressal mechanism.



Figure 6: District-wise Clarity of Information



Source: Primary Data, 2022

It is noted that in Raichur and Dharwad which ranks the highest, the most widely used source of information dissemination relating to the scheme was through notices/ sign boards and newspapers as compared to others. This is because of better education levels of the beneficiaries.

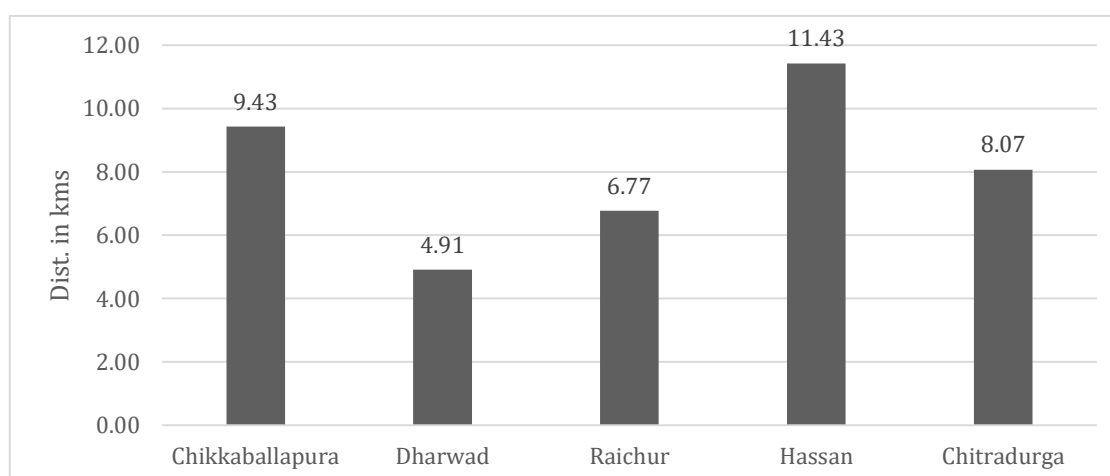
However, there is a need to provide awareness about proper maintenance of water supply surroundings, cleanliness and hygiene. Some field evidence is presented below.

6.3 Access Issues

Distance to the nearest scheme office

Beneficiaries were asked about the distance of the scheme office from their location of settlement.

Figure 7: Average distance to Scheme Office



Source: Primary Data, 2022

On an average, respondents in Hassan indicated to have travelled the most distance to their scheme office- 11.43 kms, followed by Chikkaballapura at 9.43 kms. Beneficiaries in



Hassan, indicate to have travelled even up to 31 kms to their scheme office. Similarly, beneficiaries in Chikkaballapura indicated to have travelled even up to 23 kms for the scheme.

Dharwad and Raichur, on an average have less travel distance to scheme office in this regard.

A lower distance to the scheme office indicates lower time loss. Further, this leads to expenditure reduction for beneficiaries for grievance redressal or complaint registration/escalation processes. or to seek information about the scheme.

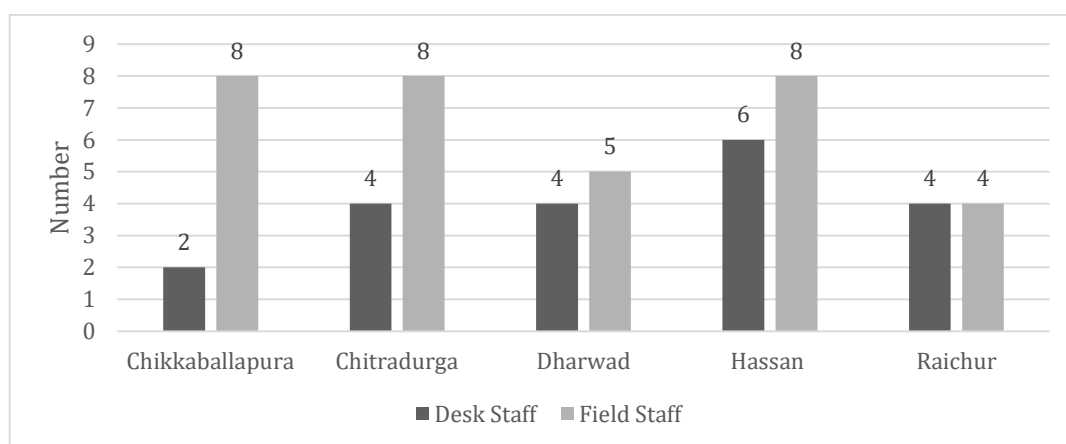
6.4 Staff availability

Staff/ service providers/ were asked to mention the number of staff associated with the Rural Water Supply Scheme.

On an average, Chitradurga had the highest number of total scheme staff working on the RWSS followed by Hassan. There were around 59 offices, and 105 field staff working in Chitradurga; for the total 14 responses received from Staff/ service providers, it was observed that the average number of staff is 11.71 (office staff and field staff taken together). For Hassan, which had the highest number of officials on an average at 13.88, there were 67 office staff and 97 field staff. Chikkaballapura had the lowest number of reported Staff working in the scheme at 3.90 on an average, with just 16 office staff and 28 field staff as recorded for the 10 respondents.



Figure 8: District-wise Office and Field Staff (on Average across)



Source: Primary Data, 2022

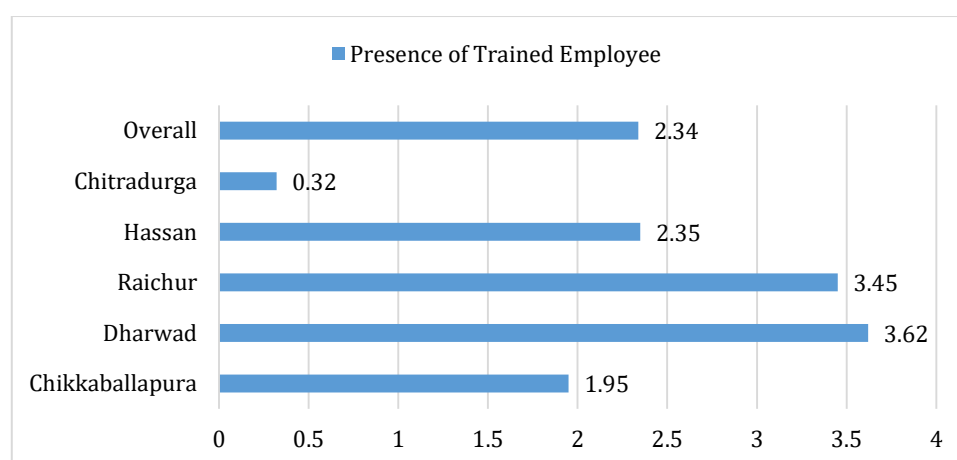
Staff/ service providers were asked whether they found the strength of the scheme staff in their respective districts adequate. Staff/ service providers in 3 districts except Chikkaballapura and Dharwad indicated an overall satisfaction with the number of staff allocated to this project.

6.5 Training and Awareness of Staff/ service providers

The questionnaire comprised questions pertaining to 7 components of training identified as necessary. Staff/ service providers were asked to check against the components they received training in.

In Dharwad, and Raichur employees were the most trained, with 50 percent of the components covered; they were training in around 3-4 out of the 7 components. The least training was given in Chitradurga.

Figure 8: District-wise Trained Employees



Source: Primary Data, 2022



In Chitradurga, out of the 14 staff/ service providers interviewed, majority of the respondents indicated that training was given only on 2 aspects;

- a. Software trainings for analysis for the outcomes under this scheme
- b. Training related to Selection of Beneficiaries

Majority of the staff/ service providers indicated to have not received any training on the other aspects. Only 1 respondent indicated to have received training on the MIS and Accounts handling aspect. A similar response was seen in Chikkaballapura as well. Dharwad outperforms the other districts; as 14 out of the 15 staff/ service providers indicated to have been trained in all the 7 components.

A pair-wise correlation exercise conducted indicated that staff/ service providers who were trained, were more aware about the overall processes of the scheme, identification of the issues, awareness about the maintenance systems, and information about the functional status of the services provided.

6.6 Information, Education and Communication (IEC) Campaigns

Staff/ service providers across the 5 sample districts were asked if and what IEC activities they had organised. IEC activities ranged from newspaper advertisements, notice/signboards, distribution of pamphlets, rallies, street plays, communication through Gram Panchayats and house-to-house visits.

Staff/ service providers in Dharwad had organised the maximum IEC activities- a total of around 7 out of the 8 activities.

Table 7 : District-wise Magnitude of IEC Activities

District	Magnitude of IEC Activities (Score out of 8)
Chikkaballapura	5.60
Dharwad	6.79
Raichur	3.36
Hassan	5.25
Chitradurga	2.86
Average (Total)	4.8



The medium which was used the most to disseminate the information was the Panchayat Meetings, and distribution of handbills. However, all media were used substantially across the study districts.

At the same time, beneficiary experience indicates that majority of the respondents received information about the scheme from four major sources- notice boards, GP leaders, other beneficiaries, and through Gram Sabha meetings. The least used medium were posters, and pamphlets indicating that beneficiaries have limited exposure to printed materials. Further, with regard to funds for IEC, staff/ service providers in 3 districts, other than Chitradurga and Hassan indicated their dissatisfaction with the funds received.

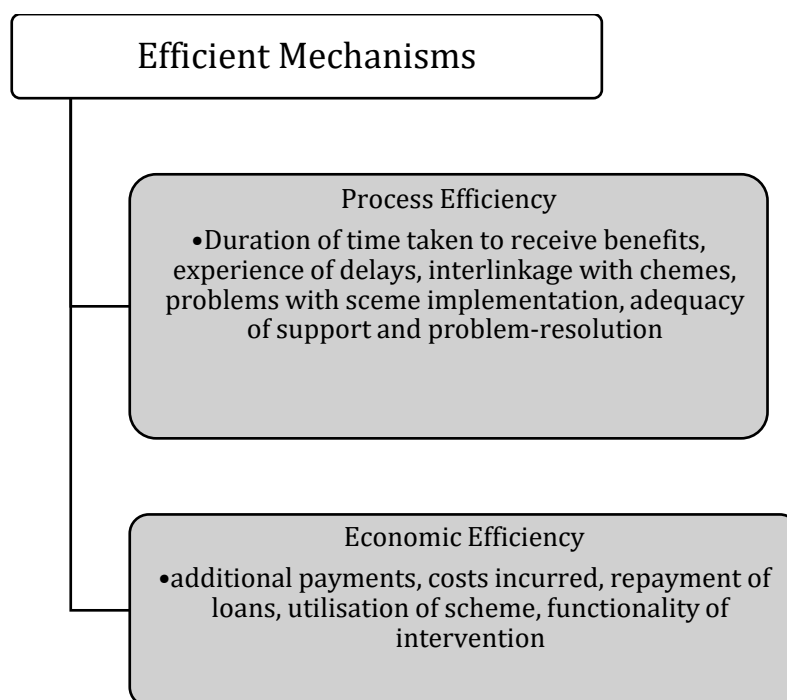
There was a positive correlation found between the magnitude of IEC activities and beneficiaries' reporting clarity of information. This implies that beneficiaries in districts in receipt of higher number of IEC activities were more likely to receive sufficient information regarding the scheme. Beneficiaries indicated to be more aware about the frequency of water supply, quality of water supply, and were able to comment on the current functional status of the benefits given.

7. Efficient Mechanisms - Implementation

Efficient mechanisms relate to the ratio of usefulness, practicality and suitability of outputs in proportion to the inputs, in this case, scheme-related process. They have been divided into the following-



Figure 9: Aspects related to Efficient Mechanisms



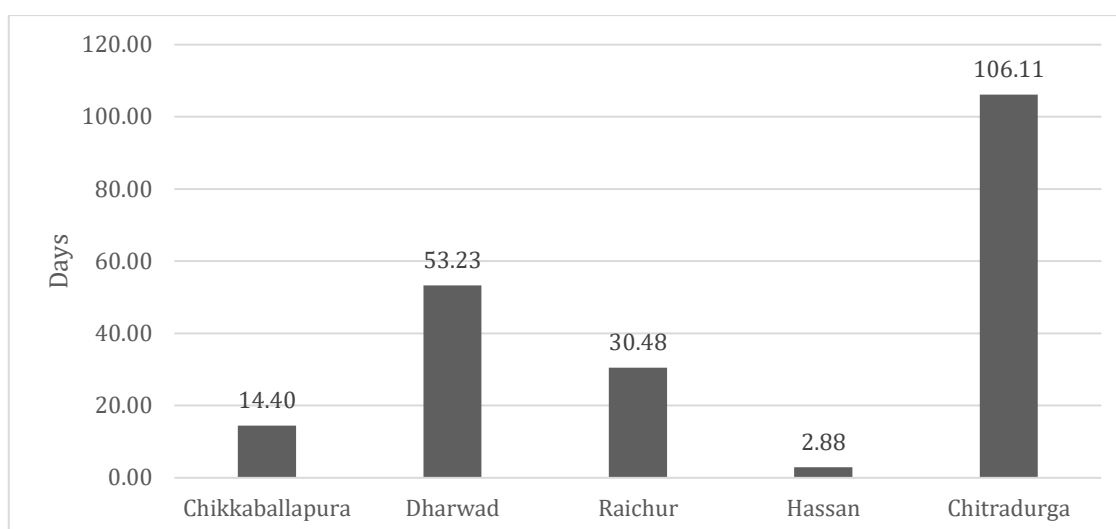
Source: Author constructed based on primary data, 2022

7.1 Process Efficiency

Days spent towards receiving benefits from the scheme

An important aspect of scheme delivery is to identify the time taken in a project/ scheme/ programme delivery. To this effect, beneficiaries were asked how many days were spent towards receiving benefits from the scheme.

Figure 10: Average Days spent towards receiving benefits from scheme



Source: Author constructed based on primary data, 2022



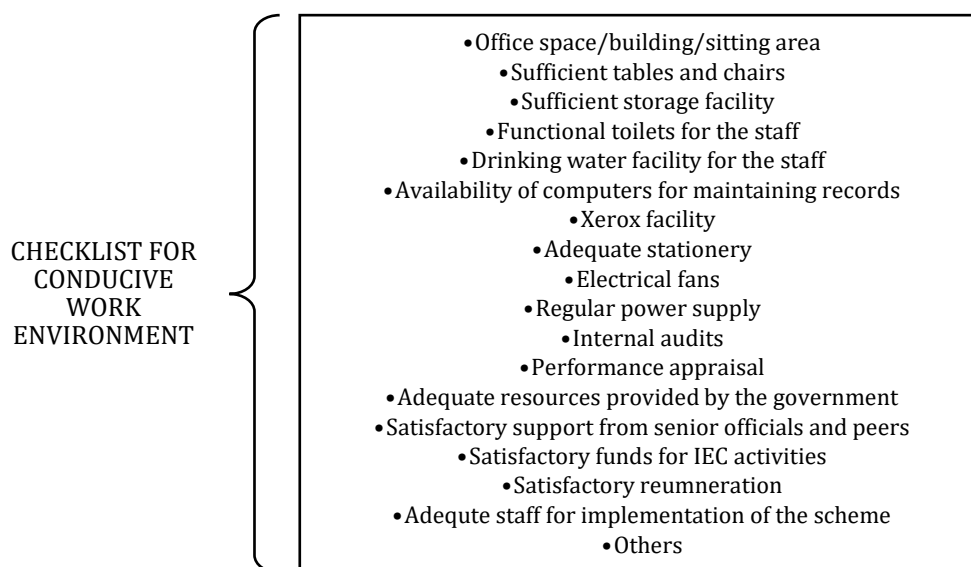
For all the responses received, beneficiaries in Chitradurga indicated to have spent more than 100 days (3.5 months) to avail the scheme benefits. Responses also indicate some beneficiaries to have spent more than 1 year, for receiving the scheme benefits. In Hassan and Chikkaballapura, beneficiaries spent only 2 and 14 days respectively.

However, service provider responses indicate that it takes around 30 days (1 month) to process applications, and provide benefits (e.g., Overhead tanks) to beneficiaries after they receive a request. Majority of the staff/ service providers also indicated to have the burden of added assignments which leads to the delay. Staff/ service providers from Dharwad and Chitradurga indicated major delay in release of funds/ services to contractors for construction, while Hassan and Dharwad recorded the least delays.

7.2 Staff's Work Environment

Staff/ service providers were asked if certain resources were made available to them in the office, as indicated in the Figure below.

Figure 11: Components of Work Environment



Staff/ service providers in Dharwad reported enjoying almost all key facilities of a conducive work environment, while Chikkaballapura had only 60 percent of all the facilities. In Chikkaballapura, among the 10 respondents, the major problems were observed in the following;

- a. Availability of Computer for Maintaining Records
- b. Performance Appraisal
- c. Satisfaction with IEC Funds
- d. Remuneration



While Dharwad performs the best in terms of providing a decent work environment to the staff, there were issues with regard to the office building and infrastructure facilities provided to the staff. A similar issue was observed in Chitradurga as well. In Hassan, which is the second-best district, the staff indicated lacking xerox facility and irregular power supply.

Table 8: Components of Work Environment

District	Facilities present in the work environment (Score out of 18)
Chikkaballapura	11.50
Dharwad	15.14
Raichur	14.09
Hassan	14.13
Chitradurga	13.85

7.3 Awareness of the different components of the Scheme

Scheme staff of the Rural Water Supply Scheme were asked whether they were aware of the scheme guidelines and grievance redressal system. In Dharwad and Chikkaballapura districts, staff/ service providers affirmed that they were fully aware of the scheme components and grievance redressal mechanisms.

Table 9: District-wise Awareness of the Scheme Staff

District	Awareness (Score out of 2)
Chikkaballapura	2.00
Dharwad	2.00
Raichur	1.55
Hassan	1.75
Chitradurga	1.71

In Chikkaballapura, though staff/ service providers mentioned their complete awareness about the programme guidelines. In Raichur, staff/ service providers indicated that they were unaware about the grievance redressal mechanism, as well as the scheme guidelines.



A few responses from Hassan also indicate that officials were unaware about the guidelines.

7.4 Adequacy of service from staff

The survey collected beneficiaries' responses on their experience relating to various processes.

Figure 12: Scheme-related Processes

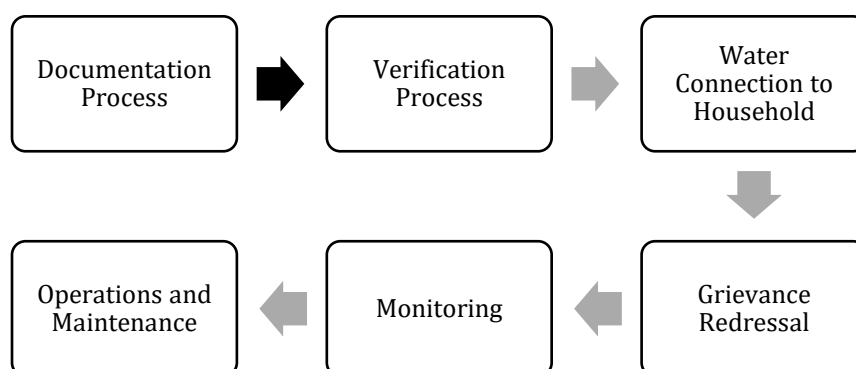


Table 10: District-wise Process related Issues during service delivery

District	Average Process related issues (Score out of 6)	No .of issues
Chikkaballapura	0.25	6
Dharwad	2.45	4
Raichur	2.73	4
Hassan	0.65	6
Chitradurga	0.08	6

On an average, and across all the study districts, majority of the issues were observed in the processes of verification, and providing the water connection to the household. The aspect where no major issues were mentioned is the operations and maintenance (O & M). This may be due to beneficiaries being unaware about the specification about any O & M by the PWD/ GP officials post the installation of the tap connection.



In Dharwad and Raichur, 4 areas were highlighted as problematic in both study districts-

- a. Documentation
- b. Verification
- c. Water Connection, and
- d. Grievance Redressal

7.5 Problems faced

The survey also recorded responses from beneficiaries about the specific scheme interventions, where they had faced challenges in the process of the scheme, as well as post implementation in the last 2 years. The figure below indicates the 10 aspects on which beneficiaries were asked to provide their inputs.

Figure 13: Aspects where major problems may be faced

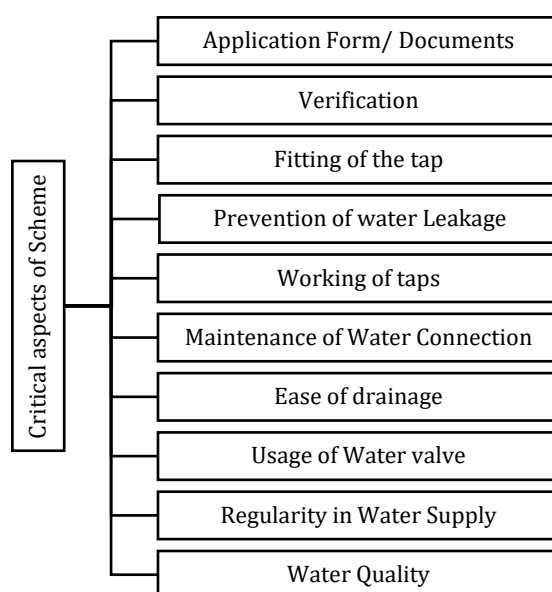
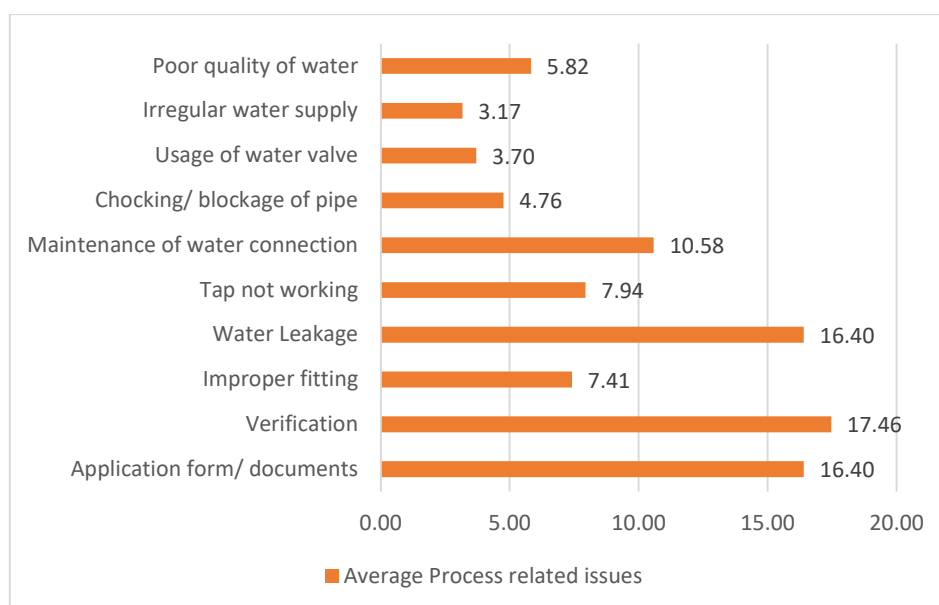




Figure 14: Process related issues faced by beneficiaries (%)



Source: Primary Data, 2022

Amon the study districts, Raichur emerged as the district with the greatest number of aspects where problems were observed. Beneficiaries have indicated to have faced issues with 5 major aspects;

- a. Application Form/ Documents
- b. Verification
- c. Water Leakage
- d. Tap not working
- e. Maintenance of Water Connection & surroundings

For the total responses received, the least number of issues were reported in Dharwad and Chikkaballapura indicating sufficiently adequate service delivery from staff/ service providers.

7.6 Maintenance Support to beneficiaries

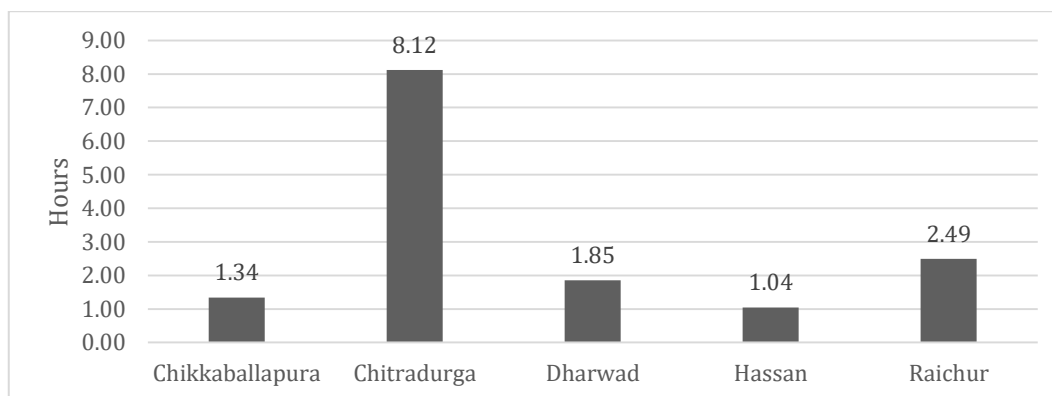
One of the critical aspects of a service delivery is to provide adequate after-implementation support. This includes adequate maintenance of the services provided. Beneficiaries were inquired about their satisfaction with the maintenance of the benefits (tap/ overhead water connections) provided by the staff/ service providers. 70 percent of beneficiaries in Dharwad have indicated that they have received support in terms of maintenance. Around 35 percent of beneficiaries indicate the same in Raichur.

7.7 Regularity of Piped Water Supply



The Rural Water Supply Scheme's specific intervention is to provide uninterrupted, good quality water to rural regions. Thus, analysis of the regularity of water supply becomes important. Beneficiaries were asked about the number of hours in a day that water supply was received by the beneficiaries. The benchmark being 24 hours as mentioned under the RWSS scheme guidelines.

Figure 15: Avg. Hours of Water Supply in a day



Source: Primary Data, 2022

Beneficiaries in Chitradurga indicated to have received water for eight or more hours of the day. The low regularity of water was observed in Hassan, where beneficiaries indicated to receive only around 1 hour of water in a day. Further, some beneficiaries indicated to receive no water supply on some days.

Across all the study districts, and all responses recorded, water supply is received only for 3 and half hours on an average, with the lowest response indicating around 30 minutes of water supply, while the highest indicating a full day of uninterrupted water supply. The uninterrupted water supply was observed for only 4 responses, where all belonged to Chitradurga district with the highest average hours of water supply.

7.8 Cleanliness and Odourless ness of Water

An underlying provision of any water supply scheme is to ensure that the water provided meets adequate safety standards. To identify any problems related to cleanliness, beneficiaries were enquired about the quality of water supplied to them. A substantial proportion of respondents (80 percent) in Raichur indicated to receive hard water regularly with around 8 percent of beneficiaries indicated to have received bad odour sometimes from the bore well. **The most positive responses regarding good quality of water supply were received from Chikkaballapura and Chitradurga, where beneficiaries indicated to receive good quality, clean water from their borewells.**



Poor Maintenance- some evidences

Poorly managed water sources Antar Gange village (Sindhanoor taluka, raichur)



Antar Gange tanda



Ground level connection





7.9 Problem Resolution

Access to safe, efficient grievance redressal mechanisms are a hallmark of good service delivery. To investigate the same, respondents were asked whether they lodged complaints, and if they did, whether those complaints were resolved.

- The highest number of sampled beneficiaries lodged complaints in Chikkaballapura, and Raichur. Of the 40 sample beneficiaries in Chikkaballapura, 13 lodged complaints. In Raichur, 11 out of 40 beneficiaries indicated lodging complaints. Raichur was followed by Dharwad and Hassan, with relatively lower incidence of lodged complaints.
- Beneficiaries in Raichur (and at some instances in Chikkaballapura) reported experiencing poor quality of implementation, sustainability issues, and processes related shortcomings in the scheme (highlighted in earlier sections).

Among those who lodged problems, the resolution rate was on the higher side across all the regions, with the highest being in Raichur, followed by Dharwad and Chikkaballapura.

Table 11: District-wise Efficacy of Problem Resolution

District	Percentage of beneficiaries who lodged complaints	Percentage of lodged complaints resolved
Chikkaballapur	32.5%	84.6%
Dharwad	17.5%	85.7%
Hassan	17.5%	42.8%
Chitradurga	0.00%	0.00%
Raichur	27.5%	90.9%

In most cases, across districts, complaints were lodged with the village leader, or the local leader/ politicians.

Further, the timeliness of problem resolution is an important indicator of good service delivery as well. In this regard, response from all districts, on an average, indicates to have resolved the issue in a period of 15 to 30 days after registering the complaint.



Problem resolution- Staff & Beneficiaries- Hassan

Effective Outcomes- Impact Analysis

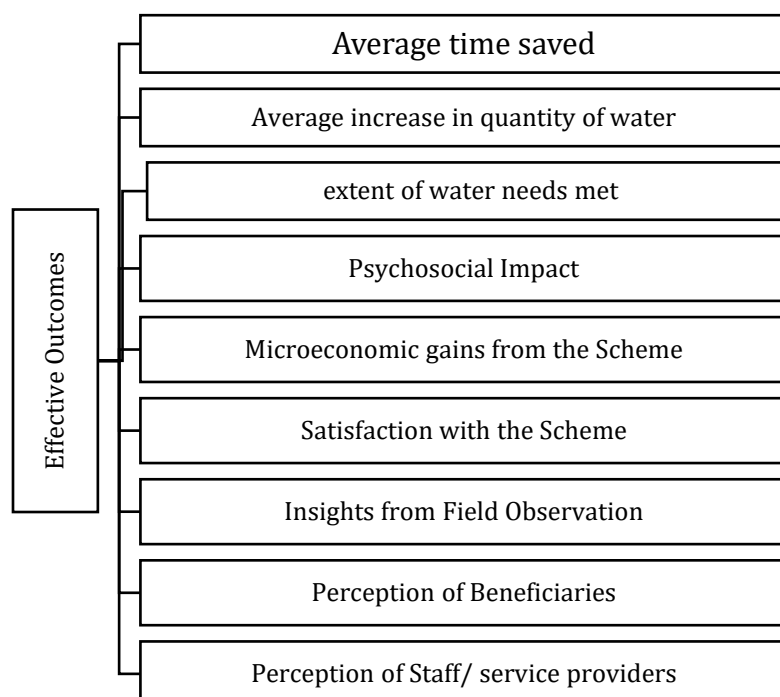
Effective outcomes convey the degree to which beneficiaries of a scheme have been able to utilize the scheme and the impact it has on the quality of their life. Any gaps therein are measured to arrive at precise course correction pointers.

8. Access to Functional Services

Beneficiaries were asked whether the services provided to them are currently in functional condition, and are providing them with the benefits they were intended for. The responses were collected in 4 categories



Figure 16: Indicators relating to Effective Outcomes



- a. Perfectly functional without maintenance
- b. Perfectly functional after maintenance
- c. Reduced functionality even after maintenance
- d. Reduced functionality without maintenance

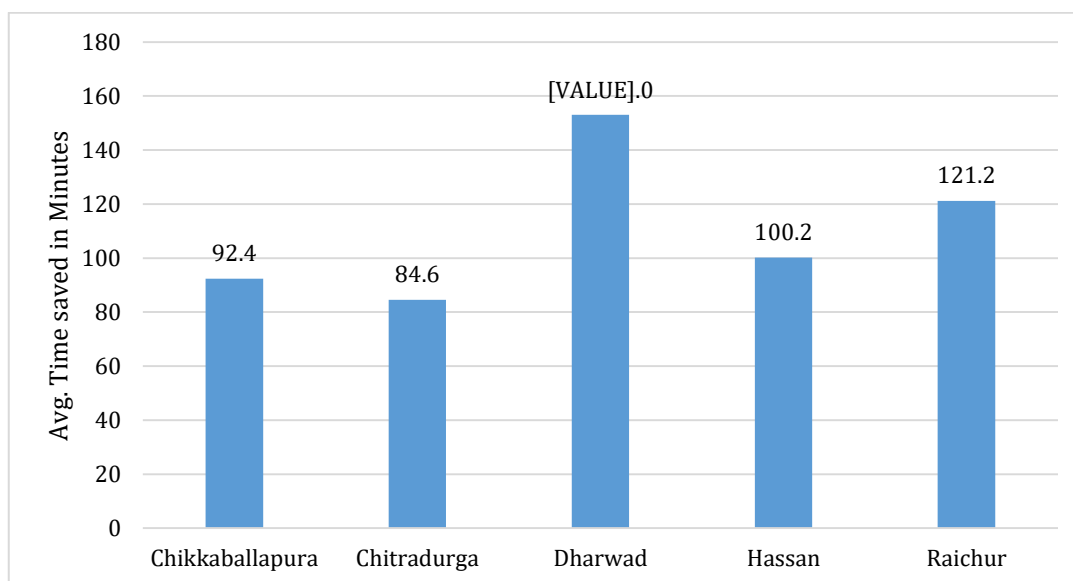
On an average, across all districts, majority of respondents indicated that they had functional services, without or after the maintenance provided. This is an indicator of efficient service delivery. In Dharwad, however, beneficiaries mentioned about need for more frequent maintenance services to be provided.

8.1 Average Time saved towards procuring water

Proximity to water sources saves precious time for family members, especially women and girls who usually carry out the work of collecting water from distant and sometimes unsafe sources. The Figure below shows the time saved due to the scheme.



Figure 16: Avg time saved in procuring water after the scheme (in minutes)



Source: Primary Data, 2022

The figure above indicates that beneficiaries, mainly women and girls, across all districts were able to save almost an hour and half after implementation of the scheme. This indicates a direct benefit as a result of the scheme. Respondents in Dharwad, and Raichur saved more than 2 hours after the scheme was implemented in the districts. The distance travelled and the physical strain is reduced drastically.

Case Study- 1 Raichur District- Ramreddy Camp

I'm Ambika resident of Ramareddy camp village Sindhanur Taluk Raichur district. I'm a homemaker married 8 years back, when I came to this village our had no water tap connection nor the water tank nearby, we have to fetch the water from the lake which is 1km far from our house, we had no option at all to wash clothes to take bath and all other works we had only one lake, in summer season lake would dry up and we have face the scarcity of water, walk miles together to bring the drinking water and no water to take bath in summer,.

By the implementation of the Rural water supply and sanitation Scheme all houses in our village are having a water tap with water facility and sanitation. I thank the Grama Panchayat and Government for the facility. I request the GP to fix the time for the water supply that would stop the water wastage.



Case Study - 2



Ms. Nagamma 40 Years , Ms. Nagamma 40 Years Coolie , Medakinal , (Raichur) We spent around 2000 for water connection materials expenses and entire burden of arranging water from 500 mtrs distance is completely stopped now, as I am getting it in my household tap. Now we are receiving safe water and enough water for my family. The fights at village at community water tapes also reduced drastically. I am able concentrate on other works peacefully. My family is completely healthy now, we rarely visit hospital for treatments. Thanks to our elected member to arrange water connection.

Case study -3



Ms. Hussainamma , 45 years, Coolie Antara Gange Medakinal GP Raichur

I am living here since a decade. From last eight years we have received water connection to our village and to our household. I think we spent around 1000 rupees to get household connection. I am happy that maximum amount of burden reduced on me to run the family and fulfill daily family needs. Now we receive two times daily for 3 hrs of each of water in public water tank and at home. In case of any repairs the Neerganti (waterman) Mr. Amarappa responds quickly and ensures we receive water regularly. Now I am able to go for coolie in the free times



FGD 1- with women on Water supply – Medakina GP , (Raichur)



Main points

- Thank the Govt. for promoting women welfare.
- It has brought a total change in our life. It has increased our status.
- Reduced our pain and sufferings to carry water from long distances.
- Helped to maintain health and hygiene- enough water for washing, cleaning and cooking.
- Our leisure time has increased. We can do other work now.
- Girls can go to school regularly and have time for study.

Case study -4 Health Impacts – reduction in disease burden



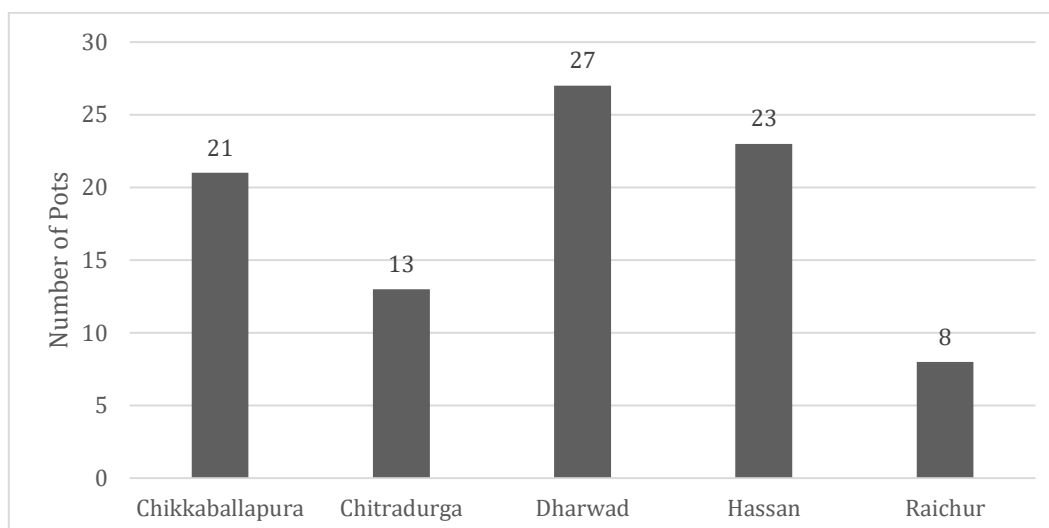
Ms. Sundaramma, 60 years, Home maker, I am happy that my kids are not facing any difficulties in relation to water. The water is at my doorstep regularly and even in summer season. My time is completely saved and I keep reminding my family members of importance water. We also seen the officials from Gramapanchayath regularly conducts water test. We are not facing any diseases earlier we use to face. Now I don't see health issues with my grandkids especially loose motion, de-hydration, fever etc. Thanks to the officials.

Average extra pots of water procured as a result of the scheme

Beneficiaries were asked about the number of extra pots of water they were able to procure after the scheme was implemented.



Figure 17: Number of extra pots of water after Scheme implementation



Source: Primary Data, 2022

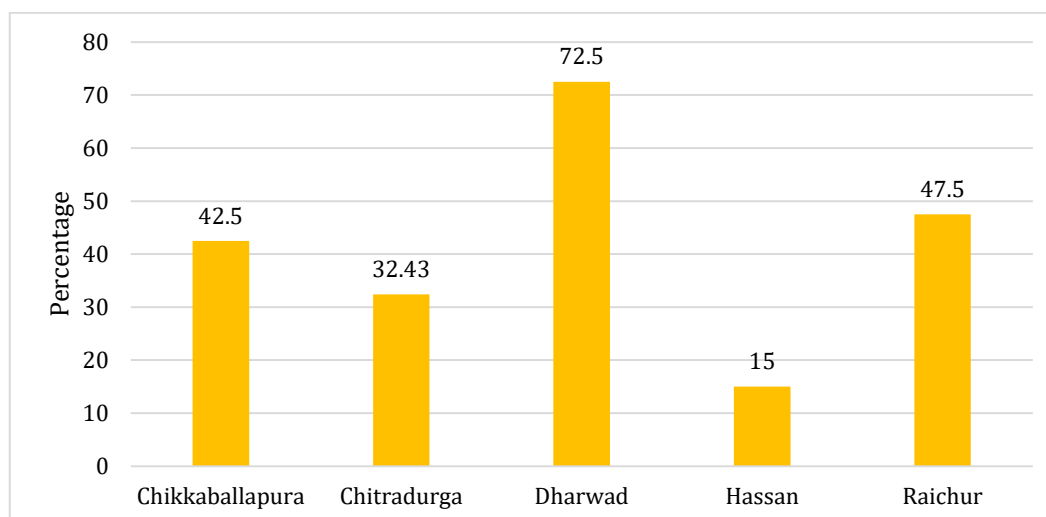
As evident from the figure above, beneficiaries in Dharwad, Hassan and Chikkaballapura were able to get more amount of extra water from the scheme. This has enabled them to maintain health and hygiene. One pot of a normal size contains 8 litres of water. It is then estimated that the extra water received is 168 litres in Chikballapura, 104 lt. in Chitradurga, 216 litres in Dharwad, 184 lts. In Hassan and 64 lts. in Raichur. However, in FGD it was expressed that the water quantity received in summer season is very low. It comes down to 2-3 additional pots.

8.2 Fulfilment of Water needs from the scheme

The RWSS scheme is directly intended to provide its beneficiaries with a clean source of reliable and uninterrupted water supply. To this effect, beneficiaries were asked whether the water supply scheme has actually been able to address their issues with water supply at least 55 LPCD per day.



Figure 18: Percentage of Beneficiaries agreeing to RWSS fulfilling their water needs



Source: Primary Data, 2022

The average size of household in the study area is 5 members and @ 55LPCD, the requirement per family is 275 litres. Majority of the respondents from Dharwad expressed that they were satisfied with the scheme, and that the scheme has provided benefits to them.

In Raichur, around 19 out of 40 beneficiaries indicated the scheme to have successfully resolved their water issue. However, despite the performance of RWSS in Dharwad and Raichur, more than 50 percent beneficiaries each in Chikkaballapura, Chitradurga, Raichur and Hassan (85 percent), and around 25 percent in Dharwad have highlighted that the scheme was unable to fulfil their water needs indicating further refinement to ensure more water is provided to the beneficiaries. This is because the water requirement as per their perception is 85-90 litres LPCD for all household chores and storage which is not fulfilled.

Overall, it is observed that, given the additional water received by them, over and above, their initial water quantity is above 55 LPCD. Hence the basic requirement is fulfilled. But, not assured in summer season. In Raichur and Chitradurga, the irregular and scanty water supply in summer season is the reason for their unsatisfactory response.



Active Community Water Connections in one of the study areas in Chitradurga



Figure on the left – A non-functional community water connection in the same study area

Figure on the right – An individual water connection fixed next to a drain the the SC/ST Colony.

Inputs- Awareness

- The BG Kere Community members mentioned that they were not aware of the name of the scheme and its specific benefits to the community
- Community members mentioned taking assistance from the middleman by paying some money mainly to fill out the application form and provide guidance on whom to meet and how much time it will take.

Outcome

- Drinking water is provided by the Grama Panchayat on a rotation basis - weekly once or twice
- Community drinking water units were installed for the entire colony where members of the colony can come and collect drinking water from the unit. It is available in enough quantity.
- An individual water tap connection was given by the Grama Panchayat through application processes and water connections were installed near the gate of the house, and in some cases on the road or next to drains. Member of the household



had to collect water and store in plastic drums for drinking and house purposes. The water supply is adequate.

Impression

- Many of the community drinking water units were found to be damaged with taps not functioning well and very poor maintenance - algae, mosquitoes and larva in the water. The community tried to raise these issues with their GP but were awaiting a response.

Case Study 5- Raichur District

Place: Somalapur GP, Sindhanur Taluka, Raichur district

Beneficiary: Mr. Narasappa, Agricultural labourer by profession.



Inputs

- Four years back the scheme was introduced in the Grama Sabha as an initiative of making drinking water available at home. Collective decision was made and the sources of water were selected for supply.

Activities

- The individual owners of the borewells were approached by the GP and their support and cooperation sought. After ensuring enough water sources, which can feed the entire village with safe drinking water, applications were invited by the GP from each and every one household for the connection under RWSS scheme in their colony.

Outcome

- Earlier he and his family members used to spend 4 to 5 hrs just to store enough drinking water from a water source that was 3 kms away.
- Transportation of the water posed a challenge to ensure that the water remained safe to drink - cleanliness at source, vessels used to transport, dust on the roads and the hand hygiene conditions of the handlers were key challenges. Adding to that there was no surety regarding water quality testing of the source.



Present status

- The household used the water for almost 18 months; then six months back the water supply stopped. Mr. Narsappa immediately enquired with the waterman and he informed that there were maintenance challenges -maintenance of pipes in the village, concerns on quality and safety of water (contamination) and motors repairs for water lifting.
- Mr. Narasappa approached officials at the Gram panchayat and informed elected members several times. There is no response and his family has now gone back to their old habit of collecting water.

Hassan District- FGD-3



Place: Jayachamaraja Pura Gram Panchayat
Arasikere Taluka, Hassan district.

Beneficiaries: Community of users in SC Colony.

Case: The PAC team took this area up for carrying out a Community Score Card exercise (details given in the next section).

The Community Score Card (CSC) with the community and staff/ service providers at the Sabha Bhavan of JC Pura included the orientation given to beneficiaries on the scheme and entitlements available for the beneficiaries. A detailed scoring was facilitated with beneficiaries and staff/ service providers separately, and an interface meeting arranged where key issues were discussed.

Inputs

- The GP had 12 elected members. The village JC pura has a total population of 2,829 including 1414 males and 1415 females and 479 Scheduled Caste communities. Out of 12 panchayat members, 2 women members belong to Scheduled Caste community.
- There is no application form at Gram Panchayat level, and since the community was not aware of the application form to apply for the scheme, it was decided that new beneficiaries will apply for the scheme by writing to the Gram Panchayat.

Awareness

- This scheme focuses on construction of overhead tanks and provision of clean drinking water facility with connections to individual households. The Community overhead tank holds 2500 liters of water. An overhead tank was constructed on a per capita liter per day (LPCD) basis. Each household is provided with one tap connection – these are basically provided in areas where 40% and above population belongs to Scheduled Caste community (Scheduled Caste Colony).



- There were individual household connections taken by a few households without bringing this to the notice of the Gram Panchayat; it was decided to make a list of those households to ensure all systems are followed.
- The Joint Action Committee team decided to participate in meetings organised by GPs. In turn, the GPs will ensure to inform the community during quality related checks of the water.

Outputs

- The timing of the water supply was not convenient to the labourers, they had tough time in storing the water. It is decided to build small chambers for them at their household so that they get the water or separate tanks to supply water to these household at their convenient times. The water supply is adequate to meet their needs.

8.3 Perception of beneficiaries

In terms of dissatisfaction with the scheme, the following prominent insights emerged from the beneficiaries' accounts across districts. These are related to maintenance, cleaning of tanks, water leakages and regularity in supply.

Table 12: Overall Reasons for Beneficiaries' Dissatisfaction

Responses	Proportion
Supply of water is not frequent; short duration of water supply, and low quantity of water supplied	16%
Water Tanks are not cleaned properly in regular intervals; poor maintenance and cleanliness of tanks, taps, etc.	56%
Very less information provided by the staff/ service providers about the scheme; low IEC in regions	11%
Poor response from officials during/ after grievance redressal; unsupportive working staff, and dissatisfactory behaviour of officials	7%
Lack of Community Participation in decision-making process relating to works to be taken up at certain localities	4.5%
Poor quality of construction materials used	2.5%
Incomplete work despite additional amounts being paid by community	2%
Poor escalation of grievances from the Gram Panchayat to the higher district officers, etc.	1%

Beneficiaries and staff/ service providers were asked for recommendations to improve the scheme-delivery for greater realisation of intended impact. The following were recommendations given by the beneficiaries.



Table 13: Overall Recommendations for Improvement provided by Beneficiaries

Responses	Proportion
Better Maintenance of Water Storage Tanks; at least once in 2-3 months	36%
Higher Frequency of water supply with increased quantity during summer	12%
More IEC and Community Participation before implementation of the scheme with higher response collection relating to requirements	11%
Better Response from Staff/ service providers; officials should undertake grievance redressal and escalate to higher officials	14%
Implementation of the Scheme can be taken up by providing the subsidy to the Gram Panchayat as the implementing agency monitored by the Taluka and District officials	8%
Multiple schemes should be made available for building community halls, maintaining drains, etc.	4%
Regular monitoring of water quality by officials	1%
Implementation of Digital Infrastructure for monitoring of the service delivery, grievance registration, escalation, etc.	4%

8.4 Perception of staff/ service providers

The staff/ service providers, on the other hand, had the following recommendations:

Table 14: Overall Recommendations provided by Staff/ service providers

Responses	Proportion
Higher Staff for scheme implementation	30%
Provision of Trainings	30%
Digital System to maintain records	20%
Provision of Higher Funds/ Subsidy Amount	12%
Guidelines and Scheme Documents to be shared with Staff/ service providers; more information and training to be provided on scheme along with complete guideline documents	10%
Establishment of filtration plant in near vicinity of the locality	8%



9. Major Findings

Major findings from the study are presented as follows under the 3E framework –

Equitable context:

- All beneficiaries were not aware of the different components of the scheme. While 20 percent of beneficiaries reported having received no information across any of the components, beneficiaries in Dharwad and Raichur seemed to be most aware of the key facets of service delivery. Most of the beneficiaries reporting receiving no information, were from Chitradurga district. The gap is with regard to maintenance of the water supply system.
- In terms of distance travelled to be able to apply for and avail the scheme, beneficiaries have travelled a distance of less than 5 kms (Dharwad) to 11.4 kms (Hassan) to the scheme office. Outliers point to 31 kms in Hassan and 23 kms in Chikkaballapura as well.
- Not all scheme offices had the same amount of staff to be able to implement the scheme across their jurisdiction within a fixed time period – field staff, for example varied between 28 in Chikkaballapura to 105 in Chitradurga.
- The extent of use of IEC to generate demand and implement the scheme was different in each of the study districts. The maximum utilisation of IEC was found to be in Dharwad and the least in Chitradurga. However, the component of health and hygiene and clean surroundings was less in the IEC.

Coverage of HH- Districts below the State average

Sl.No.	District	% of SC HH covered
1.	Ballari	65.21
2.	Vijayapura	63.94
3.	Mysuru	63.52
4.	Chickmagalur	61.04
5.	Kalburgi	59.75
6.	Bidar	58.93
7.	Chitradurga	57.12
8.	Tumkur	53.35
9.	Vijayanagara	51.94
10.	Hassan	51.31
11.	Uttara Kannada	49.85
12.	Bangalore Rural	48.72
13.	Chikkaballapur	41.22



14.	Kolar	35.14
15.	Bangalore urban	27.31
	State Average	68.52

Efficient Mechanisms:

5. Efficiency of the scheme is reflected in the ease with which beneficiaries have been able to avail the scheme. In the case of RWSS, on average beneficiaries have spent approximately 48 days to be able to get the connection. This varies between more than 100 days in the case of Chitradurga as against 14 days in Chikkaballapura district. This is despite the fact, that the latter district has less field staff than the former.
6. In terms of ability to complete all scheme related processes, staff/ service providers have reported issues mainly related to the process of document verification and the actual provision of water connection to the household. O&M as a responsibility for the GP to be carried out is yet to be a priority for the GP and the community of users due to lack of awareness of any specification related to this component of service delivery.
7. Issues affecting efficiency were also reflected in the responses provided by beneficiaries. During the application process, nearly 18% of them faced issues related to verification while 16% faced challenges with regard to filling up the application form, getting the supporting documents. Post getting the connection, 16% also faced water leakages, taps not working (8%), maintaining the connection (11%), improper fitting (7.4%). However, 70% beneficiaries also reported receiving support for maintenance of the connection.
8. Addressing issues related to quality of water is important. While there were generally good feedback about the quality, 8% beneficiaries did report a bad odour which needs to be addressed to prevent any health problems in those households.
9. There is reportedly a high rate of problem resolution especially related to fixing and maintenance (as reported earlier) but after interaction between the two parties, the beneficiaries agreed with the scheme staff.



Effective outcomes: - Impact

- By availing the RWSS, beneficiaries were able to save more than 2 hours per day of their time as experienced in Dharwad and Raichur, while even in Chitradurga, beneficiaries were freed by nearly 85 minutes.
- The scheme was able to give more pots of water to most beneficiaries – the number of pots amounted to 27 in Dharwad, followed by 23 in Hassan and 21 in Chikballapura. One pot of a normal size contains 8 litres of water. It is then estimated that the extra water received is 168 litres in Chikballapura, 104 lt. in Chitradurga, 216 litres in Dharwad, 184 lts. In Hassan and 64 lts. in Raichur. However, in FGD it was expressed that the water quantity received in summer season is very low. It comes down to 2-3 additional pots.
- The major impact is seen as reduction in water borne diseases.
- The satisfaction due to this, is reflected when it is noted that nearly three-fourth of the beneficiaries in Dharwad expressed that the scheme has successfully met their water needs. At the same time, it is interesting to note that despite getting more water in Hassan, only 15% beneficiaries agreed that their water needs are being met. But overall the response was satisfactory. This is due to their more demand for water for other purposes.

Table 15: Major suggestions from beneficiaries and staff/ service

Responses from beneficiaries	%
Better Maintenance of Water Storage Tanks; at least once in 2-3 months	36%
Officials should undertake grievance redressal and escalate to higher officials	14%
Higher Frequency of water supply with increased quantity during summer	12%
More IEC and Community Participation before implementation of the scheme with higher response collection relating to requirements	11%
Responses from staff/ service providers	%
Higher Staff for scheme implementation	30%
Provision of Training on new technologies/ softwares	30%
Digital System to maintain records	20%

Major issues that need to be addressed are proper maintenance, regularity, hygienic surroundings through awareness and community participation.



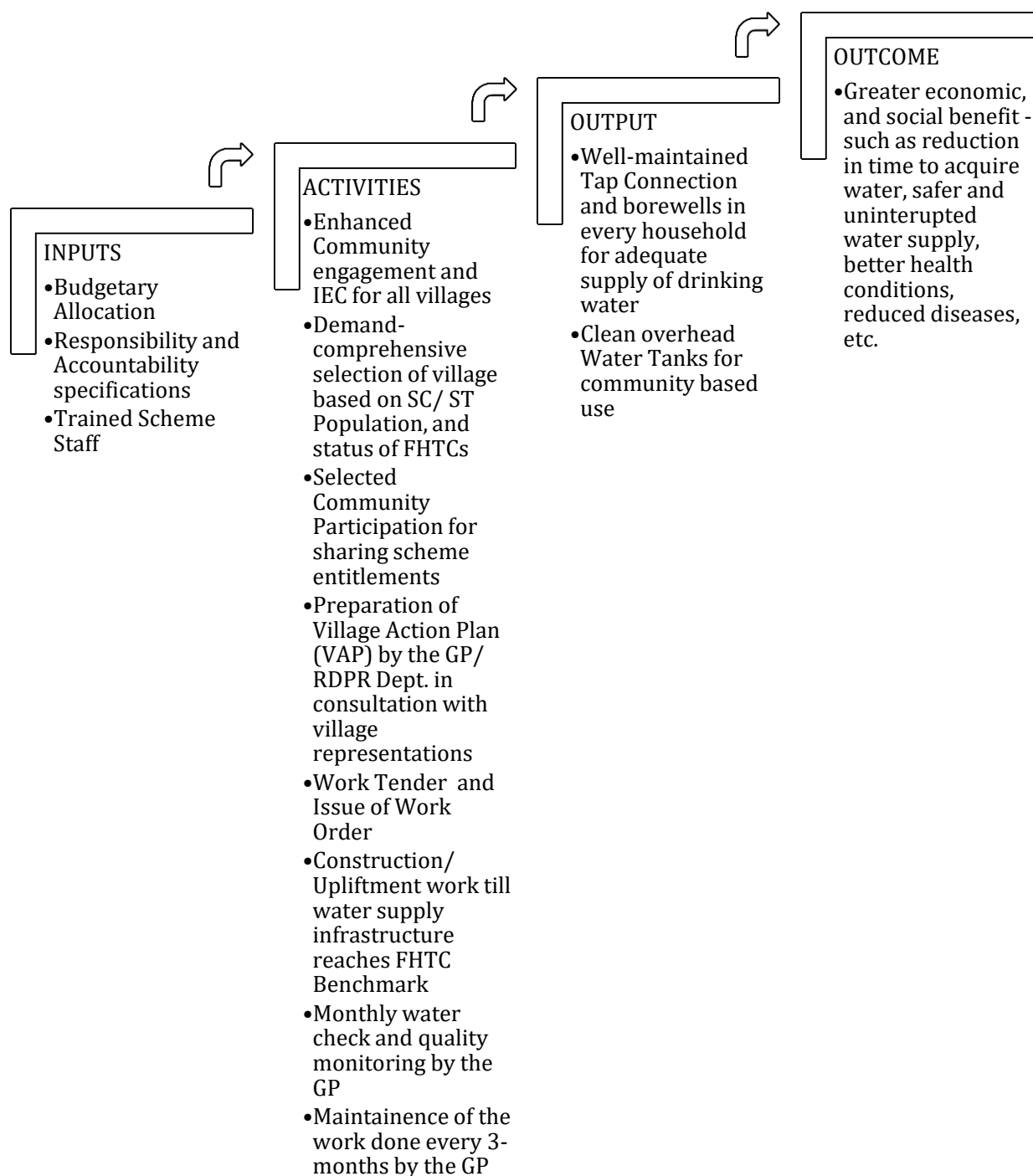
10. Recommendations

The following are recommendations abstracted on the basis of the findings from the CRC survey:

1. Demand-responsive selection of Villages for providing water supply connection; There are 15 districts below State average in coverage of HH connections- The districts of Kalaburagi, Chitradurga, Bidar, Vijayanagara, Hassan, Chikkaballapur, Kolar need to be given priority and additional allocations to cover the deprived households.
2. **Conduct extensive IEC campaigns to strengthen community participation and ownership.** The IEC should also cover issues related to maintenance of clean surroundings, hygiene and create a feeling of my house, my tap, and my community & village
3. Provide adequate **drainage facilities** for proper flow of water near the public tap connections and mini water tanks.
4. **Quality Control and effective O&M system-** Maintenance of water taps, pipelines, valves, bore wells, overhead tanks etc. Give training in O&M to **local youths** for maintenance of the system.
5. Ensure **regularity in water supply** and generate awareness on judicious use of water and promote water savings.
6. **Water Filtration Plants (WFP)**- it is also suggested that in regions where RWSS has been implemented as a multi-village scheme, a centralised WFP be set-up at the village level for filtration of water supply to all habitations.
7. Convergence of the programme under different schemes- All the individual schemes related to drinking water, sanitation, roads and other infrastructure to be converged under **Habitation Infrastructural Development Programme/ SC.ST colony Development Scheme..**
8. Conduct a social audit of the scheme to bring out the functioning and impact.
9. Increase community participation and ownership for better maintenance of the scheme. Promote formation of User Associations involving women SHGs and youths.
 - Maintenance for a specific period under work contract
 - Provision of maintenance fund at GP to take up the repairs immediately.
 - It can also be made mandatory as part of the scheme design and implementation.
 - This can also be done through Gram Panchayats and community associations.
10. **Digitisation of Water Supply Mechanism;** Staff/ service providers from Raichur and Dharwad have indicated the need for digitalisation of water supply mechanism for efficient functioning. While this has not been initiated in the NRDWP, the National Jal Jeevan Mission has provisions for rolling out of sensor-based Internet of Things (IoT) solutions to measure and monitor water supply in the hinterland. Further, digitized solutions can also be used for GIS based record keeping of villages with water connection and maintenance coverage.



Figure 19: Theory of Change for the Scheme





District-wise Performance Score Card: Hassan

The table below indicates the outcomes of the Community Score Card Exercise in Hassan District (in JC Pura Gram Panchayat) for the Rural Water Supply Scheme. It indicates the scores given by the Beneficiaries and the Staff/ service providers on the services provided under the Scheme. Based on the scores, and Interface meeting leads to the generation of a suggestive list of recommendations.

Rural Water Supply Scheme						
JC Pura Gram Panchayat, Hassan District						
S. No.	Indicators	Beneficiaries		Staff/ service providers		Suggested Recommendations from Interface Meeting
		Score (0-5)	Reason(s) for the Score	Score (0-5)	Reason(s) for the Score	
1	Information, Education and Communication (IEC)					
1.1	Awareness of the entitlements and benefits	5	Beneficiaries indicate that the information is provided by the MLA and other concerned authorities	5	Staff/ service providers indicate that an effective awareness programme is undertaken	NA
1.2	Simplicity of the messages	5	Beneficiaries mention that clear information has been provided	5	SPs have also agreed that the messages provided to the beneficiaries are in simple language	NA
1.3	Comprehensiveness of the messages.	5	The message that is shared is comprehensive as indicated by the beneficiaries	4	SPs, however, indicate that despite the simple information, some beneficiaries are unable to comprehend	NA
2.	Application Procedure (Individual Water Tap Connection)					
2.1	Experience of filling the application form	3	Beneficiaries indicate to have never seen a physical copy of the application form. Further, they indicate that the required information is collected by the SPs and water connection is	5	SPs mention that there is no prescribed application form that the beneficiaries should be given; rather individual request letters are sent by beneficiaries	It is suggested that a Draft Application Form be drafted by the Secretary, Gram Panchayat and approval of the same is received from higher officials at the taluka and district level



Impact Evaluation of Rural Water Supply Scheme

			provided.			
2.2	Attaching of supporting documents	5	Beneficiaries indicate that it is easy to provide all the relevant documents	5	SPs have also agreed to the reasoning provided by the beneficiaries	NA
2.3	Submission of completed application form	4	Beneficiaries indicate to have never seen a physical copy of the application form. Further, they indicate that the required information is collected by the SPs and water connection is provided.	5	SPs mention that there is no prescribed application form that the beneficiaries should give; rather individual request letters should be submitted by beneficiaries	NA
3.	<i>Selection Process (Individual Water Tap Connection)</i>					
3.1	Mode of selection of beneficiaries	5	Beneficiaries mention that all request letters are processed and tap water connection are provided; there is no specific selection process	5	SPs indicate that all the tap connections are given based on the request made by the beneficiaries; there is no selection process for the same	NA
3.2	Intimation to the Head of Household	5	Beneficiaries expressed their satisfaction in this regard. They mention that all beneficiaries whose tap water connections have been sanctioned are intimidated through the Ward Meetings	5	SPs indicate that the intimation is given by the Gram Panchayat, and beneficiaries are not required to pay any additional amount	NA
4.	<i>Process involved in getting Individual Water Tap Connection to the Household</i>					
4.1	Process involved in getting Water tap connection	3	Beneficiaries indicate that the work orders are given to the contractors under the Jal Jeevan Mission (JJM). The contractors, then, carry out the laying of the water tap connection	4	SPs also indicate that the work orders are given to the contractors under the JJM. However, the contractors do not inform the Gram Panchayat about the same. The concerned officers visit	It is suggested that the concerned officers will indicate to the GP about the award of work to the contractor (under the JJM) – accordingly, the same can be informed to the community through the GP



Impact Evaluation of Rural Water Supply Scheme

					the work site and inspect the quality of work at regular intervals.	
4.2	Initiation of construction work.	3	Beneficiaries indicate that the tap connection is provided outside each house – however, to take the water connection inside the beneficiary's house, the cost of the materials and labour is borne by the individual. The beneficiaries face the burden of arranging the amount to get the water tap connection inside the house	5	SPs indicate that the nodal officer from the RDPR Department usually undertakes the monitoring of the work being undertaken	NA
4.3	Efficiency in time to get water pipe connection and supervision of work by officials	4	The work being carried out are monitored by the nodal officers from RDPR Department and the water tap connection is provided	5	The officers monitor the work till completion	NA
4.4	Completion of connection	4	Though the work is delayed, the monitoring by the nodal officers ensures that the work is completed	5	SPs indicate that the work is completed as per the time line given in the work order. However, some minor delays are observed due to administrative issues, etc.	NA
5.	Accessibility to Community Water Tank					
5.1	Distance from household to Community water tank	2	Beneficiaries indicate that there is no community water tank inside the premises of the SC colony. Usually, a water tank is located 0.5 kms from the habitation	3	SPs indicate that the community water tank is available approximately two hundred meters away	Beneficiaries and SPs indicate that provision to install a community tank (cistern) within the premises of every habitation can be considered by the RDPR or PWD Dept.
5.2	Usage of Community tank water	5	Beneficiaries indicate that they use the water from the	5	The water supply is given to all the community centres	NA



Impact Evaluation of Rural Water Supply Scheme

			community water tank			
6.	Quantity of Water					
6.1	Quantity of Water (Individual Water Tap Connection)	4	Beneficiaries indicate that the frequency of water supply is twice in a week – and for majority of the population it is sufficient. However, in high-population regions, with higher number of households, the water supplied is insufficient	5	SPs indicate that water supply is provided to all the communities on a regular basis	NA
6.2	Quantity of Water (Community Tank)	4	Beneficiaries indicate that sufficient amount of water is available from the community water tank which is usually situated around 0.5 kms away from the habitation	5	SPs also mention that sufficient water is provided through the community tank – around 20 families are benefitted from the same	NA
7.	Quality of Water (Individual Water Tap Connection)					
7.1	Quality of water	3	Beneficiaries indicate that the water supplied to the community is usually from two sources – either from the river or the borewell/ ground water. The water supplied from the river is of good quality, however, beneficiaries complain of high fluoride and salt content in the borewell or ground water	5	SPs indicate that the water supplied is chemical free and suitable for drinking	It is suggested that the testing of drinking water should be done twice in a year at all the sources – main source of supply, storage tank, as well as tap connections Further, the reports from these water tests should be mentioned at the ward or community level meeting, and should be displayed on the notice Board at GP office
7.2	Testing of Water	3	Beneficiaries indicate that there is no testing of water	5	However, SPs indicate that water testing is conducted twice a year	The test reports must be indicated to the beneficiaries through GP Meetings, etc.
8.	Quality of Water (Community Water)					



Impact Evaluation of Rural Water Supply Scheme

8.1	Quality of water	2	Beneficiaries have indicated their dissatisfaction with the maintenance and adequate cleaning of the water tank	5	SPs, however, argue that the water is chemical free, and testing is undertaken twice a year	The RDPR nodal officers should undertake cleaning of the water tank, as well as testing at least twice in a year
8.2	Testing of Water	2	Beneficiaries indicate the need for testing the water at regular intervals	5		
9.	Functioning of the Jalasamithi Committees and GP					
9.1	Existence of Committee	0	Beneficiaries indicate to have no information about the existence of a Jal Samithi Committee (Participants from the Jal Samithi may have not been a part of the CSC Exercise)	5	SPs indicate that the committee is functional	The Gram Panchayat should inform the communities about the provision and existence of Jal Samithi committee and its functions as mentioned under the JJM. The GP should check whether there are any members from SC community in the Jal Samithi. Further, SC members should be encouraged to join the Jal Samithi for proper voice and empowerment of the community
9.2	Responsibilities of the Gram Panchayat	4	The maintenance of the water tank is done by Gram Panchayat and is slightly delayed	5	Complete maintenance work of water tank is done by the Gram Panchayat	Check the document on Jalasamithi regarding GP's responsibility of sourcing the water keeping in view the proportion of population growth in their village, supply of uninterrupted water supply and maintenance. Inform the members of Jalasamithi.
9.3	Grey Water Rejuvenation by Gram Panchayat	0	Beneficiaries as well as SPs indicate that there are no Grey-water treatment plants	0	Beneficiaries as well as SPs indicate that there are no Grey-water treatment plants	It is suggested that the GP Secretary should put a written request to the taluka, and district-level Dept. to install a Grey-water treatment plant
10.	Operations and Maintenance (Individual Tap Water Connection)					
10.1	Operations and	4	Beneficiaries indicate that the	5	SPs, however, argue that the	Suggestive measure reference Point 7.1



Impact Evaluation of Rural Water Supply Scheme

	Maintenance of the Water Supply		maintenance work is delayed by the GP officials		maintenance activities are undertaken on time	- maintenance and cleaning should be undertaken at least twice a year
11.	Operations and Maintenance (Community Water Tank)					
11.1	Operations and Maintenance of the Water Supply.	4	Beneficiaries mention that the maintenance work of community water tanks are completed at a lesser time as compared to maintenance of individual water tap connection – GP officials and technical teams undertake the activity	5	SPs indicate that the testing of water tanks are done by the technical team	Suggestive measure reference Point 7.1 – maintenance and cleaning should be undertaken at least twice a year
12.	Grievance Redress mechanism					
12.1	Grievance Redress mechanism (Individual Water Tap Connection)	3	Beneficiaries mention that as there is inadequate staff strength. Due to this, it becomes difficult for the officials to attend all the complaints on time	5	SPs indicate that most of the complaints are attended – staffs try to resolve the issues as early as possible	NA
12.2	Grievance Redress mechanism (Community Water Tank)	4	Beneficiaries indicate that complaints pertaining to the community water tank gets an early resolution as compared to the individual tap connection for households	5	SPs indicate that the regular minor works are usually resolved with ease, however, if there are some major interventions required, some extended time is required	NA
13.	Fund Flow and Programme Implementation					
13.1	Ease of ensuring uninterrupted water supply	NA	NA	3	SP indicate that getting water supply from the private land (using borewells) usually takes more time as compared to river water	NA
13.2	Request to allocate funds.	NA	NA	4	The requests to allocate funds are immediately sent to the senior officers.	NA



Impact Evaluation of Rural Water Supply Scheme

13.3	Receipt of allocated funds	NA	NA	3	The allocated funds are not sufficient	NA
13.4	Maintenance of records	NA	NA	5	SPs indicate that an online facility is available for record maintenance and data management	NA

Photographs from the Two-Day CSC Exercise in Hassan District





Impact Evaluation of Rural Water Supply Scheme

2.	Application Procedure (Individual Water Tap Connection)				
2.1	Experience of filling the application form	3	It is suggested that a Draft Application Form be drafted by the Secretary, Gram Panchayat and approval of the same is received from higher officials at the taluka and district level	SPs indicate that they have mentioned to the beneficiaries to follow the norms as usual – writing to the GP officials, who then escalate the requirements to the concerned Departments. Based on this, water connections will be provided, etc.	5
2.2	Attaching of supporting documents	5	NA	NA	5
2.3	Submission of completed application form	4	NA	NA	4
3.	Selection Process (Individual Water Tap Connection)				
3.1	Mode of selection of beneficiaries	5	NA	NA	5
3.2	Intimation to the Head of Household	5	NA	NA	5
4.	Process involved in getting Individual Water Tap Connection to the Household				
4.1	Process involved in getting Water tap connection	3	It is suggested that the concerned officers will indicate to the GP about the award of work to the contractor (under the JJM) – accordingly, the same can be informed to the community through the GP	Based on the interface meeting, and as decided by the SPs, it was decided that taluka and district level officers will inform GP officials as well as beneficiaries (GP residents) about the activities that will be taken up by the contractors under the Jal Jeevan Mission	3
4.2	Initiation of construction work.	3			3
4.3	Efficiency in time to get water pipe connection and supervision of work by officials	4	NA	NA	4
4.4	Completion of connection	4	NA	NA	4



Impact Evaluation of Rural Water Supply Scheme

5.	Accessibility to Community Water Tank				
5.1	Distance from household to Community water tank	2	Beneficiaries and SPs indicate that provision to install a community tank (cistern) within the premises of every habitation can be considered by the RDPR or PWD Dept.	SPs and GP officials indicated that the tanks for water storage within the community will be ready by next year.	5
5.2	Usage of Community tank water	5	NA	NA	5
6.	Quantity of Water				
6.1	Quantity of Water (Individual Water Tap Connection)	4	NA	NA	4
6.2	Quantity of Water (Community Tank)	4	NA	NA	4
7.	Quality of Water (Individual Water Tap Connection)				
7.1	Quality of water	3	It is suggested that the testing of drinking water should be done twice in a year at all the sources – main source of supply, storage tank, as well as tap connections Further, the reports from these water tests should be mentioned at the ward or community level meeting, and should be displayed on the notice Board at GP office	SPs and GP officials indicated that the water quality is up to the safety standards. However, water testing will be conducted every three months	5
7.2	Testing of Water	3	The test reports must be indicated to the beneficiaries through GP Meetings, etc.		5
8.	Quality of Water (Community Water)				
8.1	Quality of water	2	The RDPR nodal officers should undertake cleaning of the water tank, as well as testing at least twice in a	SPs indicated to ensure testing of water twice in a year.	5



Impact Evaluation of Rural Water Supply Scheme

8.2	Testing of Water	2	year		5
9.	Functioning of the Jalasamithi Committees and GP				
9.1	Existence of Committee	0	The Gram Panchayat should inform the communities about the provision and existence of Jal Samithi committee and its functions as mentioned under the JJM. The GP should check whether there are any members from SC community in the Jal Samithi. Further, SC members should be encouraged to join the Jal Samithi for proper voice and empowerment of the community	The Panchayat Development Officer mentioned that the initiative under the Jal Jeevan Mission to constitute a 'Jal Samiti' will be undertaken after three months	3
9.2	Responsibilities of the Gram Panchayat	4	Check the document on Jalasamithi regarding GP's responsibility of sourcing the water keeping in view the proportion of population growth in their village, supply of uninterrupted water supply and maintenance. Inform the members of Jalasamithi.	The GP officials have indicated to undertake the responsibilities as indicated in the scheme guidelines, and in accordance with the Jalasamithi protocols	5
9.3	Grey Water Rejuvenation by Gram Panchayat	0	It is suggested that the GP Secretary should put a written request to the taluka, and district-level Dept. to install a Grey-water treatment plant	The GP officials indicated that a Rejuvenation Plant is being set up (where activities pertaining to the same has been initiated), and is likely to be completed in the next 1 year	2
10.	Operations and Maintenance (Individual Tap Water Connection)				
10.1	Operations and Maintenance of the Water Supply	4	Suggestive measure reference Point 7.1 – maintenance and cleaning should be undertaken at least twice a year		5
11.	Operations and Maintenance (Community Water Tank)				
11.1	Operations and Maintenance of the Water Supply	4	Suggestive measure reference Point 7.1 – maintenance and cleaning should be undertaken at least twice a year	SPs indicated that timely inspection and testing will be undertaken by the GP officials	5
12.	Grievance Redress mechanism				



Impact Evaluation of Rural Water Supply Scheme

12.1	Grievance mechanism (Individual Water Tap Connection)	Redress (Individual Water Tap Connection)	3	NA	NA	3
12.2	Grievance mechanism (Community Water Tank)	Redress (Community Water Tank)	4	NA	NA	4
13.	Fund Flow and Programme Implementation					
13.1	Ease of ensuring uninterrupted water supply		NA	NA	NA	NA
13.2	Request to allocate funds.		NA	NA	NA	NA
13.3	Receipt of allocated funds		NA	NA	NA	NA
13.4	Maintenance of records		NA	NA	NA	NA

In Hassan, the results from the CSC Phase 2 exercise indicated that the initiative has led to substantial improvement in the scores across majority of the indicators.

Further, the CSC exercise and JAC Meetings also witnessed some **notable improvements**. Some of them have been indicated below.

1. During the CSC Phase 2 exercise, major initiatives of change were assured by the Gram Panchayat and Department officials – GP leaders have indicated to ensure that good quality of water is supplied, periodic quality checks are conducted, and testing/ inspection of water supply and storage modes are undertaken

Further, the CSC exercise also provides **recommendations** which can provide long-term reform measures to the SWD Dept. with regards to the Rural Water Supply Scheme.

1. Several beneficiaries during the CSC survey of Phase 1 as well as Phase 2 indicated to have faced problems with availability of water, which is primarily due to the high population in the villages. In this regard, it is suggested that the Department considers installation of Grey Water Rejuvenation Plant.



Photographs from the JAC Meeting during CSC Exercise in Hassan District - Phase 2



11. Annexure

Annexure 1: Chikkaballapur Fact Sheet

Characteristic	Finding																				
Educational Profile of Sampled Beneficiaries	<table border="1"> <thead> <tr> <th>Educational Level</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Illiterate</td> <td>0</td> </tr> <tr> <td>Primary</td> <td>27.5</td> </tr> <tr> <td>Secondary</td> <td>32.5</td> </tr> <tr> <td>Higher secondary</td> <td>15</td> </tr> <tr> <td>Higher Secondary and Above</td> <td>7.5</td> </tr> </tbody> </table>	Educational Level	Percentage	Illiterate	0	Primary	27.5	Secondary	32.5	Higher secondary	15	Higher Secondary and Above	7.5								
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Aspect where there was major delay observed – Time Crunch	Application Process, Documentation and Submission: 40 Verification Process Water Connection to the Household: 0 Monitoring Process Evaluation Process Complaint Mechanism Operations and Maintenance																				

Aspect where there was major expenditure (extra amount required) observed – Money Crunch	Application Process, Documentation and Submission Operations and Maintenance Complaint Mechanism Evaluation Process Verification Process Water Connection to the Household Monitoring Process																								
Scheme Satisfaction with the Processes	<table><tr><th>Category</th><th>Satisfied</th><th>Partially Satisfied</th><th>Dissatisfied</th></tr><tr><td>Application process</td><td>37.5</td><td>50.0</td><td>12.5</td></tr><tr><td>Behaviour of officials</td><td>40.6</td><td>59.4</td><td>0.0</td></tr><tr><td>Helpfulness of the officials</td><td>40.6</td><td>59.4</td><td>0.0</td></tr><tr><td>Information provided about scheme</td><td>31.3</td><td>68.8</td><td>0.0</td></tr><tr><td>Overall, satisfaction with the scheme</td><td>34.4</td><td>65.6</td><td>0.0</td></tr></table> ■ Satisfied ■ Partially Satisfied ■ Dissatisfied	Category	Satisfied	Partially Satisfied	Dissatisfied	Application process	37.5	50.0	12.5	Behaviour of officials	40.6	59.4	0.0	Helpfulness of the officials	40.6	59.4	0.0	Information provided about scheme	31.3	68.8	0.0	Overall, satisfaction with the scheme	34.4	65.6	0.0
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Reason for Beneficiary Dissatisfaction	1. Weak Maintenance of Water Supply sources 2. Unclean water at some instances 3. Improper behaviour of officers with limited support																								
Suggested Recommendations by Beneficiaries	1. Better Maintenance of Water Storage Tanks 2. Regular monitoring of water quality																								
Reason for Staff/ service providers Dissatisfaction	1. High shortage of Staff for Scheme Implementation																								
Suggested Recommendations by Staff/ service providers	1. Provision of Higher working Staff 2. Dedicated officers for regular Monitoring and Quality Control 3. Requirement of Training																								

Annexure 2: Dharwad Fact Sheet

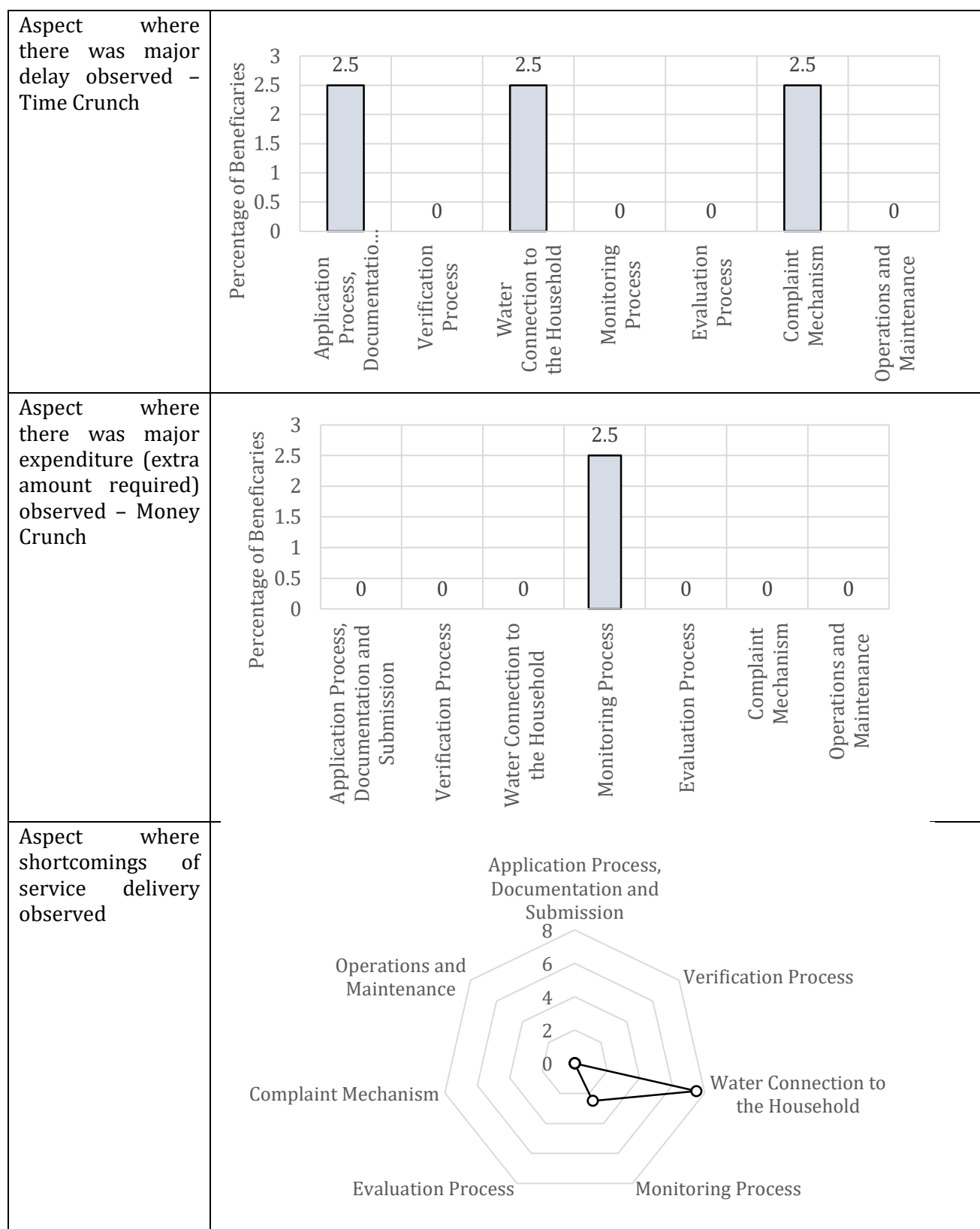
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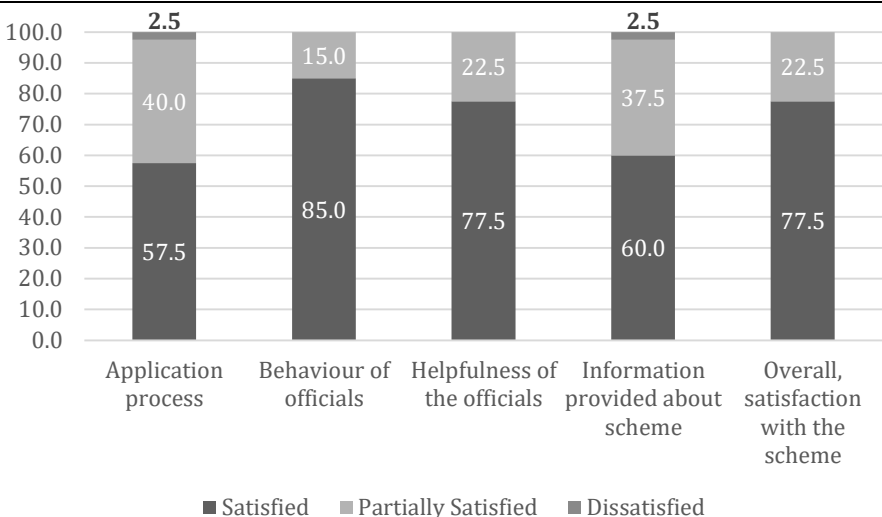
Aspect where there was major expenditure (extra amount required) observed – Money Crunch	A radar chart with six axes representing different processes. The scale ranges from 0 to 100 in increments of 20. The data points are: Application Process, Documentation and Submission (80), Verification Process (50), Water Connection to the Household (10), Monitoring Process (10), Evaluation Process (10), and Complaint Mechanism (10). The highest expenditure is in the Application Process, Documentation and Submission.																								
Aspect where shortcomings of service delivery observed	A radar chart with six axes representing different processes. The scale ranges from 0 to 20 in increments of 5. The data points are: Application Process, Documentation and Submission (20), Verification Process (15), Water Connection to the Household (10), Monitoring Process (10), Evaluation Process (10), and Complaint Mechanism (10). The highest shortcomings are in the Application Process, Documentation and Submission.																								
Satisfaction related to the Scheme	A stacked bar chart showing satisfaction levels for five categories. The Y-axis ranges from 0.0 to 100.0. The legend indicates: Satisfied (dark grey), Partially Satisfied (medium grey), and Dissatisfied (light grey). <table><thead><tr><th>Category</th><th>Satisfied (%)</th><th>Partially Satisfied (%)</th><th>Dissatisfied (%)</th></tr></thead><tbody><tr><td>Application process</td><td>87.5</td><td>12.5</td><td>0.0</td></tr><tr><td>Behaviour of officials</td><td>37.5</td><td>57.5</td><td>5.0</td></tr><tr><td>Helpfulness of the officials</td><td>82.5</td><td>12.5</td><td>5.0</td></tr><tr><td>Information provided about scheme</td><td>87.5</td><td>12.5</td><td>0.0</td></tr><tr><td>Overall, satisfaction with the scheme</td><td>80.0</td><td>15.0</td><td>5.0</td></tr></tbody></table>	Category	Satisfied (%)	Partially Satisfied (%)	Dissatisfied (%)	Application process	87.5	12.5	0.0	Behaviour of officials	37.5	57.5	5.0	Helpfulness of the officials	82.5	12.5	5.0	Information provided about scheme	87.5	12.5	0.0	Overall, satisfaction with the scheme	80.0	15.0	5.0
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Reason for Beneficiary Dissatisfaction	1. Inadequate Information Sharing with Beneficiaries of Scheme 2. Lack of Community Participation 3. Low frequency and less quantity of water supplied																								
Suggested Recommendations by Beneficiaries	1. Higher Frequency of water supply 2. Implementation to be taken up by providing subsidy to the Gram Panchayats																								

	3. Multiple Schemes can be taken up for overall development 4. Higher water supply in
Reason for Staff/ service providers Dissatisfaction	1. Staff Shortage 2. Poor participation from community members
Suggested Recommendations by Staff/ service providers	1. Provision of Higher working Staff with Training 2. Digitalisation of system of service delivery

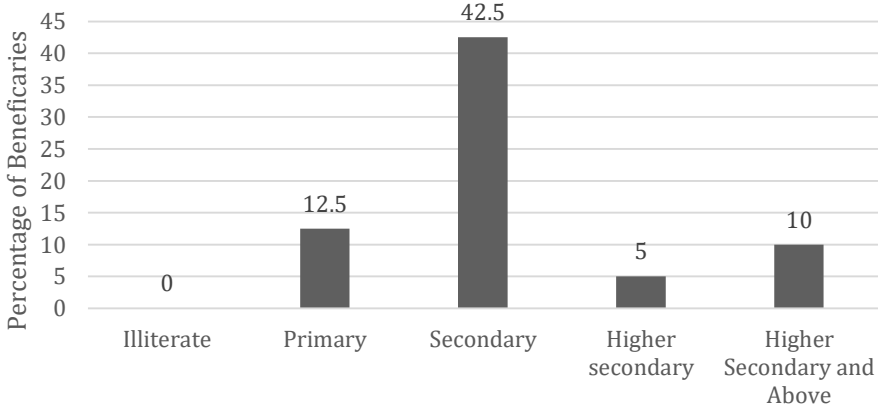
Annexure 3: Hassan Fact Sheet

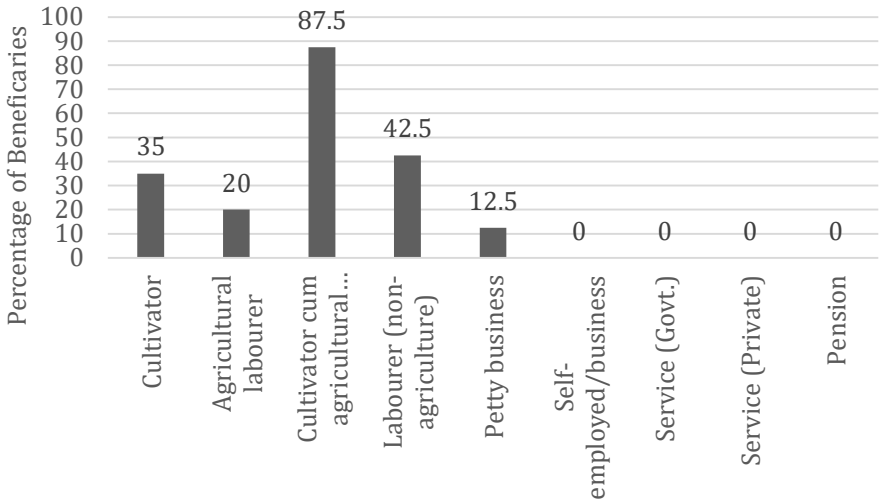
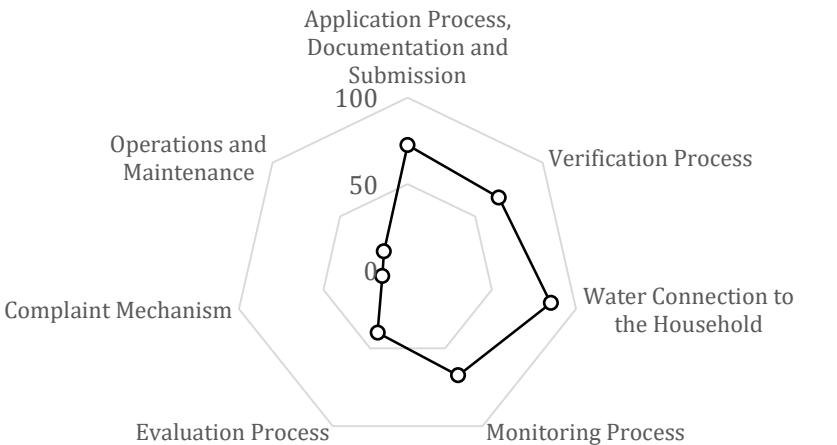
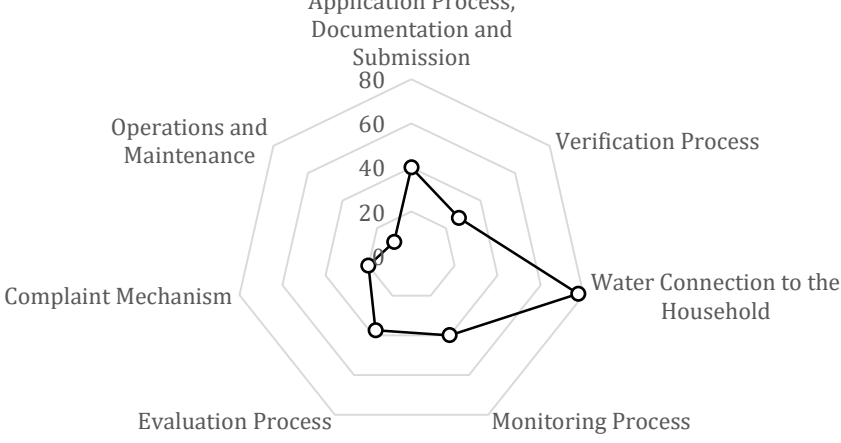
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Occupation Profile of Sampled Beneficiaries	<table border="1"> <thead> <tr> <th>Occupation</th> <th>Percentage of Beneficiaries</th> </tr> </thead> <tbody> <tr> <td>Cultivator</td> <td>22.5</td> </tr> <tr> <td>Agricultural labourer</td> <td>37.5</td> </tr> <tr> <td>Cultivator cum agricultural labourer</td> <td>7.5</td> </tr> <tr> <td>Labourer (non-agriculture)</td> <td>17.5</td> </tr> <tr> <td>Petty business</td> <td>2.5</td> </tr> <tr> <td>Self-employed/business</td> <td>0</td> </tr> <tr> <td>Service (Govt.)</td> <td>0</td> </tr> <tr> <td>Service (Private)</td> <td>0</td> </tr> <tr> <td>Pension</td> <td>12.5</td> </tr> </tbody> </table>	Occupation	Percentage of Beneficiaries	Cultivator	22.5	Agricultural labourer	37.5	Cultivator cum agricultural labourer	7.5	Labourer (non-agriculture)	17.5	Petty business	2.5	Self-employed/business	0	Service (Govt.)	0	Service (Private)	0	Pension	12.5
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Satisfaction related to the Scheme	 <table><thead><tr><th>Category</th><th>Satisfied (%)</th><th>Partially Satisfied (%)</th><th>Dissatisfied (%)</th></tr></thead><tbody><tr><td>Application process</td><td>57.5</td><td>40.0</td><td>2.5</td></tr><tr><td>Behaviour of officials</td><td>85.0</td><td>15.0</td><td>0.0</td></tr><tr><td>Helpfulness of the officials</td><td>77.5</td><td>22.5</td><td>0.0</td></tr><tr><td>Information provided about scheme</td><td>60.0</td><td>37.5</td><td>2.5</td></tr><tr><td>Overall, satisfaction with the scheme</td><td>77.5</td><td>22.5</td><td>0.0</td></tr></tbody></table>	Category	Satisfied (%)	Partially Satisfied (%)	Dissatisfied (%)	Application process	57.5	40.0	2.5	Behaviour of officials	85.0	15.0	0.0	Helpfulness of the officials	77.5	22.5	0.0	Information provided about scheme	60.0	37.5	2.5	Overall, satisfaction with the scheme	77.5	22.5	0.0
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Overall, satisfaction with the scheme	77.5	22.5	0.0																						
Reason for Beneficiary Dissatisfaction	1. Poor IEC and community engagement 2. Low engagement of community members 3. Incomplete work despite payment of additional funds																								
Suggested Recommendations by Beneficiaries	1. Regular Monitoring of water quality 2. Better Response from Staff/ service providers 3. Proper grievance mechanism to be used																								
Reason for Staff/ service providers Dissatisfaction	1. Low training conducted related to the scheme																								
Suggested Recommendations by Staff/ service providers	1. Provision of Scheme Guidelines and Training for the same																								

Annexure 4: Raichur Fact Sheet

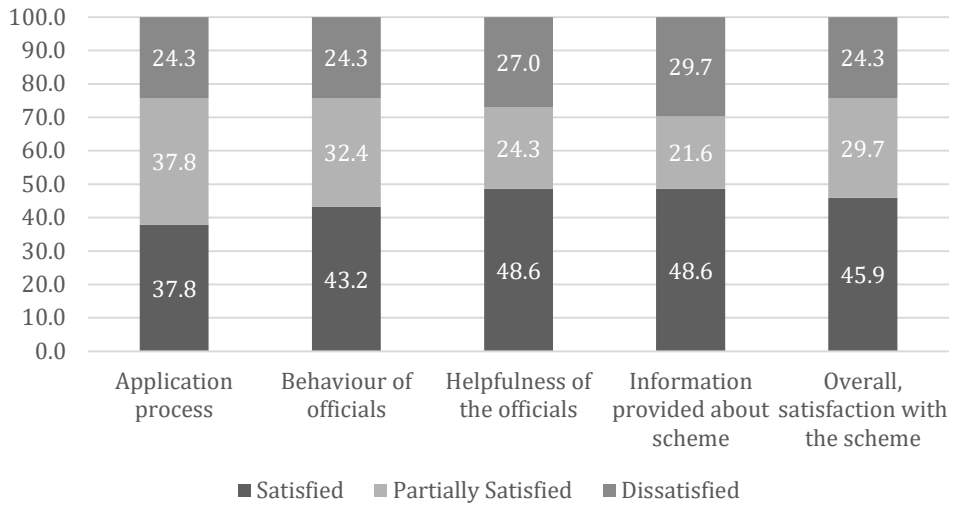
Educational Profile of Sampled Beneficiaries	Finding												
Educational Profile of Sampled Beneficiaries	 <table border="1"> <thead> <tr> <th>Educational Level</th> <th>Percentage of Beneficiaries (%)</th> </tr> </thead> <tbody> <tr> <td>Illiterate</td> <td>0</td> </tr> <tr> <td>Primary</td> <td>12.5</td> </tr> <tr> <td>Secondary</td> <td>42.5</td> </tr> <tr> <td>Higher secondary</td> <td>5</td> </tr> <tr> <td>Higher Secondary and Above</td> <td>10</td> </tr> </tbody> </table>	Educational Level	Percentage of Beneficiaries (%)	Illiterate	0	Primary	12.5	Secondary	42.5	Higher secondary	5	Higher Secondary and Above	10
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Aspect where there was major delay observed – Time Crunch	 <table border="1"> <thead> <tr> <th>Aspect</th> <th>Time Crunch Score (approx.)</th> </tr> </thead> <tbody> <tr> <td>Application Process, Documentation and Submission</td> <td>100</td> </tr> <tr> <td>Verification Process</td> <td>40</td> </tr> <tr> <td>Water Connection to the Household</td> <td>40</td> </tr> <tr> <td>Monitoring Process</td> <td>10</td> </tr> <tr> <td>Evaluation Process</td> <td>10</td> </tr> <tr> <td>Complaint Mechanism</td> <td>10</td> </tr> <tr> <td>Operations and Maintenance</td> <td>0</td> </tr> </tbody> </table>	Aspect	Time Crunch Score (approx.)	Application Process, Documentation and Submission	100	Verification Process	40	Water Connection to the Household	40	Monitoring Process	10	Evaluation Process	10	Complaint Mechanism	10	Operations and Maintenance	0				
Aspect	Time Crunch Score (approx.)																				
Application Process, Documentation and Submission	100																				
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Evaluation Process	10																				
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Operations and Maintenance	0																				
Aspect where there was major expenditure (extra amount required) observed – Money Crunch	 <table border="1"> <thead> <tr> <th>Aspect</th> <th>Money Crunch Score (approx.)</th> </tr> </thead> <tbody> <tr> <td>Application Process, Documentation and Submission</td> <td>80</td> </tr> <tr> <td>Verification Process</td> <td>20</td> </tr> <tr> <td>Water Connection to the Household</td> <td>40</td> </tr> <tr> <td>Monitoring Process</td> <td>10</td> </tr> <tr> <td>Evaluation Process</td> <td>10</td> </tr> <tr> <td>Complaint Mechanism</td> <td>10</td> </tr> <tr> <td>Operations and Maintenance</td> <td>0</td> </tr> </tbody> </table>	Aspect	Money Crunch Score (approx.)	Application Process, Documentation and Submission	80	Verification Process	20	Water Connection to the Household	40	Monitoring Process	10	Evaluation Process	10	Complaint Mechanism	10	Operations and Maintenance	0				
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Aspect where shortcomings in service delivery were observed		
Satisfaction related to the Scheme		
Reason for Beneficiary Dissatisfaction	1. were Maintenance of Water Taps and Overhead Tanks	
Suggested Recommendations by Beneficiaries	1. Use of disinfectants for cleaning water supply taps 2. More IEC campaigns 3. Better grievance redressal 4. Multiple schemes for overall development	
Reason for Staff/ service providers Dissatisfaction	1. Lack of Funds/ Subsidy for undertaking all work in regions	
Suggested Recommendations by Staff/ service providers	1. Higher Funds for IEC and Awareness 2. Better Training 3. Establishment of Water Treatment Plants in locations where multiple localities have received the scheme in near vicinity	

Annexure 5: Chitradurga Fact Sheet

Characteristic	Finding																				
Educational Profile of Sampled Beneficiaries	<table border="1"> <caption>Educational Profile of Sampled Beneficiaries</caption> <thead> <tr> <th>Education Level</th> <th>Percentage of Beneficiaries</th> </tr> </thead> <tbody> <tr> <td>Illiterate</td> <td>0</td> </tr> <tr> <td>Primary</td> <td>22</td> </tr> <tr> <td>Secondary</td> <td>30</td> </tr> <tr> <td>Higher secondary</td> <td>5</td> </tr> <tr> <td>Higher Secondary and Above</td> <td>19</td> </tr> </tbody> </table>	Education Level	Percentage of Beneficiaries	Illiterate	0	Primary	22	Secondary	30	Higher secondary	5	Higher Secondary and Above	19								
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Aspect where shortcomings of service delivery observed	<table border="1"> <caption>Aspects where shortcomings of service delivery were observed</caption> <thead> <tr> <th>Aspect</th> <th>Level of Shortcomings (0 to 6)</th> </tr> </thead> <tbody> <tr> <td>Application Process, Documentation and Submission</td> <td>4</td> </tr> <tr> <td>Verification Process</td> <td>4</td> </tr> <tr> <td>Water Connection to the Household</td> <td>1</td> </tr> <tr> <td>Monitoring Process</td> <td>1</td> </tr> <tr> <td>Evaluation Process</td> <td>1</td> </tr> <tr> <td>Complaint Mechanism</td> <td>1</td> </tr> <tr> <td>Operations and Maintenance</td> <td>4</td> </tr> </tbody> </table>	Aspect	Level of Shortcomings (0 to 6)	Application Process, Documentation and Submission	4	Verification Process	4	Water Connection to the Household	1	Monitoring Process	1	Evaluation Process	1	Complaint Mechanism	1	Operations and Maintenance	4				
Aspect	Level of Shortcomings (0 to 6)																				
Application Process, Documentation and Submission	4																				
Verification Process	4																				
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Satisfaction related to the Scheme	 <table><thead><tr><th>Category</th><th>Satisfied (%)</th><th>Partially Satisfied (%)</th><th>Dissatisfied (%)</th></tr></thead><tbody><tr><td>Application process</td><td>37.8</td><td>37.8</td><td>24.3</td></tr><tr><td>Behaviour of officials</td><td>43.2</td><td>32.4</td><td>24.3</td></tr><tr><td>Helpfulness of the officials</td><td>48.6</td><td>24.3</td><td>27.0</td></tr><tr><td>Information provided about scheme</td><td>48.6</td><td>21.6</td><td>29.7</td></tr><tr><td>Overall, satisfaction with the scheme</td><td>45.9</td><td>29.7</td><td>24.3</td></tr></tbody></table>	Category	Satisfied (%)	Partially Satisfied (%)	Dissatisfied (%)	Application process	37.8	37.8	24.3	Behaviour of officials	43.2	32.4	24.3	Helpfulness of the officials	48.6	24.3	27.0	Information provided about scheme	48.6	21.6	29.7	Overall, satisfaction with the scheme	45.9	29.7	24.3
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Overall, satisfaction with the scheme	45.9	29.7	24.3																						
Reason for Beneficiary Dissatisfaction	1. Poor IEC and community engagement 2. Low engagement of community members before implementation 3. Poor Quality of Materials used 4. Poor maintenance																								
Suggested Recommendations by Beneficiaries	1. Higher maintenance at specific intervals 2. Better behaviour of officials																								
Reason for Staff/ service providers Dissatisfaction	1. Low training conducted related to the scheme 2. Low subsidy amount																								
Suggested Recommendations by Staff/ service providers	1. Provision of Scheme Guidelines and Training for the same 2. Higher digital infrastructure																								

