



SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

Report of the Comptroller and Auditor General of India on Performance Audit of Jal Jeevan Mission in Chhattisgarh for the period ended March 2024



Government of Chhattisgarh

Report No. 02 of 2026

(Performance Audit-Civil)

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PREFACE

The report has been prepared for submission to the Governor of Chhattisgarh under Article 151 of the Constitution of India for being laid before the State Legislature.

The Report contains significant results of Performance Audit on Jal Jeevan Mission in Chhattisgarh covering the period from 2019-20 to 2023-24.

The instances mentioned are those which came to notice in the course of test audit for the period 2019-20 to 2023-24 as well as matters subsequent to the year 2023-24 have also been included wherever necessary.

The audit has been conducted in conformity with Auditing Standards issued by the Comptroller and Auditor General of India.

EXECUTIVE SUMMARY

Why did we take up this audit?

Water is one of the essential requirements of life. Assured availability of potable water is vital for human development. The focus of water supply schemes shifted from providing water to general areas or clusters within villages (habitations) to supply water directly to individual homes (households) to enhance ease of living.

In the series of drinking water supply schemes and programmes for rural areas, the Jal Jeevan Mission (JJM), as a flagship programme, was announced by the Government of India in August 2019 which aims at providing Functional Household Tap Connection (FHTC) to every rural household by 2024. At the time of commencement of JJM, 3.20 lakh (6 per cent) rural Households (HHs) in the State had FHTC at their houses. As of March 2024, the State had reported FHTC in 38.97 lakh (78 per cent) rural HHs including 1.48 lakh private connections, ranked 23rd in terms of FHTC progress in India by incurring an expenditure of ₹ 11,034.26 crore.

The Performance Audit on JJM in Chhattisgarh was conducted to assess if the necessary planning and institutional mechanisms existed for effective implementation of the programme; financial resources were utilised in an economic and efficient manner; implementation of the programme was effective and efficient, and the programme objectives were achieved successfully.



What we found?

We noticed that bottom-up planning process for water supply schemes from Village Action Plan to District Action Plan to State Action Plan, wasn't followed to ensure long-term drinking water security in the state. State Action Plan was not prepared, and District Action Plans were prepared without preparing corresponding Village Action Plans. The required handholding of Gram Panchayat and community involvement at planning stage by Implementing Support Agencies during preparation of Village Action Plans was not ensured as Implementing Support Agencies were engaged after preparation of Village Action Plans. There was no water security plan at the State level, so long-term strategy and monitoring for source sustainability and maintenance during the mission period could not be ensured.

Audit observed that 40.10 lakh FHTCs were installed against the target of covering 50 lakh HHs for providing tap connections up to March 2025. Out of 40.10 lakh FHTCs installed, 13.31 lakh FHTCs (33 *per cent*) were non-functional as of January 2025, due to dry source, incomplete overhead tanks, lack of electric connection, non-installation of solar pump etc.

As per JJM guidelines all 19,656 villages in Chhattisgarh were to be certified as '*Har Ghar Jal (HGJ)*' by March 2024. Against the target of 100 *per cent* certification of 19,656 villages as HGJ, only 716 villages (3.64 *per cent*) were certified as '*Har Ghar Jal*' as of March 2024 in Chhattisgarh. Instances of certification of villages as '*Har Ghar Jal*' with incomplete work/schemes were also noticed.

As of March 2024, none of the 33 districts and 146 blocks of Chhattisgarh have achieved 100 *per cent* saturation in providing FHTC to all HHs. The FHTC coverage in 18 districts ranged from 76 to 98 *per cent* with Dhamtari district leading with 98 *per cent* coverage and Balodabazar with 76 *per cent*. Further, the remaining 15 districts had FHTC coverage in the range of 56 to 74 *per cent*.

In Chhattisgarh, out of total 29,153 Single Village Schemes and 70 Multi Village Schemes sanctioned under JJM, only 172 Single Village Schemes had been completed of which, 32 schemes had been handed over to the community/Gram Panchayat as of March 2024.

Delays in initiation of Multi Village Scheme hindered the objective to cover 9.85 lakh FHTCs through surface water sources, as none of the Multi Village Scheme were completed as of March 2025. Audit also noticed deficiencies in execution of schemes



such as elimination of mandatory components like Supervisory Control and Data Access (SCADA) to keep the project cost within the sanctioned cost and insufficient allotment of water from the source against the demand due to less availability of water in the source itself which compromised the monitoring efficiency under Multi Village Schemes and sustainability of water source for long-term supply of drinking water to HHs.

The Solar Photo Voltaic (Solar) based water schemes executed failed to meet the prescribed minimum service level for drinking water for 28,984 households due to overloading of FHTCs connections beyond the capacity of installed solar system.

Due to slow initialisation of Mission in first two years, the State Mission could not mobilise funds of ₹ 6,480.04 crore from Centre (₹ 3,285.38 crore) and State contribution (₹ 3,194.66 crore). Audit observed that due to non-preparation of State Annual Plan (SAP), the convergence of the water conservation activities to ensure long term water security could not be planned. For convergence of funds, District Water Sanitation Mission (DWSM) was to prepare financial plan by pooling all the available resources for rural drinking water supply under 15th Finance Commission grant and Central/State fund from the other programmes i.e. MGNREGS, SBM (G), MPLADS, DMF, CSR Fund etc. but no such planning was done in test-checked districts. The mission could not raise ₹ 2,220.18 crore in the form of community contribution and 15th Finance Commission tied grant of ₹ 1,358 crore to augment its financial resource. Expenditure on Water Quality Monitoring and surveillance (₹ 40.88 crore) was less than the provisioned amount (₹ 199.79 crore) of two *per cent*.

There was a significant shortfall in the expansion of water quality testing infrastructure during the JJM period. Out of 75 laboratories in the State, only four laboratories (viz. State level laboratory, Raipur, District laboratories-Rajnandgaon, Kabirdham and Durg) were equipped for testing of all prescribed 13 parameters for water testing. Thirty-seven *per cent* of existing water testing laboratories lacked accreditation from National Accreditation Board for Testing and Calibration. Water testing was not being done in schools and *Anganwadi* centers as per prescribed frequency.

The implementation of water supply schemes under JJM faced sustainability challenges due to inadequate planning, poor designing of Solar based systems, execution of schemes without ensuring availability of sustainable water sources, lack of water quality testing facilities, inadequate testing, gaps in financial resources and community engagement, and weak institutional monitoring. Higher reporting of FHTC without completion of scheme and ascertaining its functionality and



incorrect ‘*Har Ghar Jal*’ certification further marred the scheme. Therefore, the risk of failure in delivering long-term sustainable drinking water supply to the rural population remains high.

What we recommend?

The State Government should:

- ***Assess the actual status of funds and incomplete works and ensure the timely completion of water supply schemes especially in priority areas.***
- ***Adopt streamlined procedures for inter-departmental co-ordination for convergence of funds at the apex level.***
- ***Review the process of reporting and certification of ‘Har Ghar Jal’ to address the issues of false certification highlighted by the Audit.***
- ***Ensure functional water testing laboratories with NABL accreditation, along with adequate manpower and equipment.***
- ***Review the sustainability of the schemes with special focus on community ownership, water source identification to ensure water security for future generations.***

CHAPTER- I

INTRODUCTION

CHAPTER-I

INTRODUCTION

1 Programme Overview and Audit Approach

1.1 Introduction

The Jal Jeevan Mission (JJM) is a flagship programme announced by the Government of India (GoI) in August 2019 with the aim to ensure that every rural household (HH) in India has access to regular and long-term supply of potable water in adequate quantity and prescribed quality by 2024¹ through Functional Household Tap Connections (FHTCs). In consonance with the above, the Government of Chhattisgarh (GoCG) launched the mission to provide FHTC to 44.39 lakh HHs which was revised as 50 lakh HHs by 2024. Public Health Engineering Department (PHED) is the nodal department of the GoCG entrusted with the responsibility of providing drinking water to rural population of the State.



1.2 Institutional framework for implementation of JJM in Chhattisgarh

For implementation of JJM in Chhattisgarh two committees viz. Apex Committee and Executive Committee were formed (March and June 2020) under the State Water and Sanitation Mission (SWSM) Chhattisgarh. The Apex Committee is headed by the Chief Secretary of the State and is responsible for overall policy formulation, strategic planning and monitoring. The Secretary, PHED acts as the Member Secretary of the Apex Committee. The Executive Committee is headed by the Mission Director, JJM a Secretary level officer responsible for handling day-to-day implementation, including project planning, fund management and coordination with district and village bodies.

The **Chart 1.1** shows the institutional framework for implementation of JJM.

¹ GoI announced extension of JJM till 2028.

Chart 1.1: Institutional framework for implementation of JJM in Chhattisgarh

SWSM	State Water and Sanitation Mission
• Apex committee: Apex Committee headed by Chief Secretary, GoCG, The Principal Secretary, Public Health Engineering Department, GoCG is the Member Secretary of the Apex Committee. • Executive Committee: Executive Committee headed by Mission Director, a Secretary level officer responsible for monitoring of physical and financial performance and management of the water supply schemes.	
DWSM	District Water and Sanitation Mission
• Chairman, DWSM: District Collector acts as Chairman of the DWSM, responsible for overall implementation of JJM at district level. • Member Secretary, DWSM: Executive Engineer, PHED acts as the Member Secretary responsible for providing technical help to village community in preparation of Village Action Plan (VAP), preparing design, estimate and providing technical approvals of water supply infrastructure.	
VWSC	Village Water and Sanitation Committee
• Village community, through Gram survey at or its sub-committees is responsible for preparing VAPs, planning, designing, implementing, supervising, operating and maintaining water supply schemes.	

The financial powers for sanctioning of schemes and invitation of tenders for schemes costing up to ₹ 5 crore were delegated to the DWSM. Further, powers to sanction the MVS (out-village) were vested with SWSM.

1.3 Types of Schemes under JJM

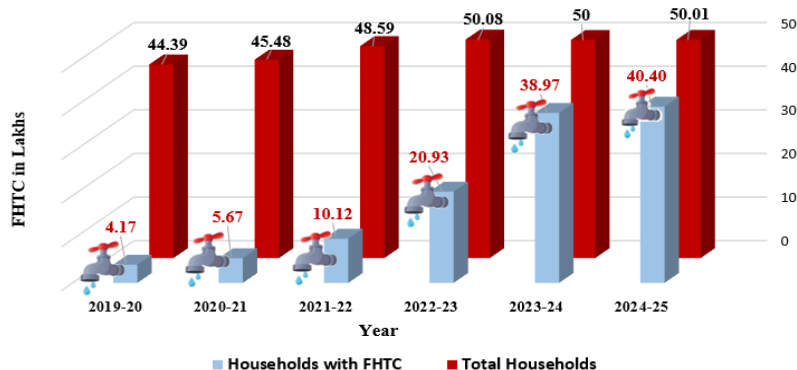
JJM guidelines (2019) had provision of two types of schemes viz. Single Village Scheme (SVS) and Multi Village Scheme (MVS) for providing FHTC. The SVS is a groundwater, springs, or surface water scheme consisting of development/augmentation of drinking water source, a water treatment plant, pumping arrangement, Overhead Tank (OHT) and distribution network leading to FHTC. In Chhattisgarh most (90 *per cent*) of the SVS are based on groundwater source. The MVS is a surface water-based scheme that caters to multiple villages. It consists of two parts, i.e. in-village infrastructure and out-village infrastructure. In-village infrastructure consists of pumping arrangement, OHT and distribution network leading to FHTC similar to SVS and the major components of out-village infrastructure includes the source of raw water, raw water storage, transmission system, filtration system, pumping machinery, balancing reservoir and distribution system up to the village boundary. In Chhattisgarh, out-village infrastructure component was executed under MVS while in-village infrastructure was executed separately as SVS.

In Chhattisgarh, 29,153 SVS and 70 MVS were sanctioned during the period of audit under JJM to provide FHTC to 50 lakh HHs. As of March 2024, only 172 SVSs had been completed and out of those 32 schemes had been handed over to the community/Gram Panchayat (GP). Work of all 70 MVS (out-village) sanctioned to cover 9.85 lakh FHTCs through surface water sources was under progress as of March 2024.

1.4 Physical Progress

At the time of commencement of JJM, 3.20 lakh rural HHs had FHTC at their houses in Chhattisgarh. Chhattisgarh ranked 23rd in terms of FHTC progress in India as of March 2024 and further slipped to 26th rank as of March 2025.

Chart 1.2: Year-wise progress of FHTCs provided under JJM



The year-wise FHTCs provided are detailed in **Table 1.1**.

Table 1.1: Year-wise progress of FHTCs provided under JJM

Year	Total rural HHs ² as on 1 April	HHs provided with FHTC up to 31 March	Achievement in per cent
2019-20	44,38,941	4,16,568	9
2020-21	45,48,080	5,66,614	12
2021-22	48,59,443	10,11,583	21
2022-23	50,08,481	20,92,828	42
2023-24	50,00,155	38,97,049	78
2024-25	50,01,291	40,40,180	81

(Source: JJM IMIS report J36)

(Note: Figure of 40.40 lakh includes existing FHTCs of 3.20 lakh as of April 2019 and 1.48 lakh connections provided through private/own source.)

Out of 40.40 lakh FHTCs installed, 13.31 lakh FHTCs (33 per cent) were non-functional as of January 2025, due to dry source, incomplete OHTs, lack of electric connection, non-installation of solar pump etc.

As per JJM guidelines all 19,656 villages in Chhattisgarh were to be certified as 'Har Ghar Jal' by March 2024. Against the target of 100 per cent certification of 19,656 villages as HGJ, only 716 villages (3.64 per cent) were certified as HGJ as of March 2024 which increased to 3,266 villages (17 per cent) as of March 2025 in Chhattisgarh.

As of March 2024, none of the 33 districts and 146 blocks of Chhattisgarh has achieved 100 per cent saturation in providing FHTC to all HHs. The FHTC coverage in 18 districts ranged from 76 to 98 per cent with Dhamtari district

² Total number of households in the State was updated during yearly data updation.

leading with 98 per cent coverage and Balodabazar with 76 per cent. Further, the remaining 15 districts had FHTC coverage in the range of 56 to 74 per cent. The district-wise status of FHTC coverage in the State as of March 2024 is shown in **Chart 1.3**.

Chart 1.3: District-wise status of FHTC coverage



1.5 Financial Progress

During 2019-20 to 2023-24, the total fund released by the GoI and GoCG under JJM was ₹ 11,855.72 crore out of which expenditure of ₹ 11,034.26 crore was incurred for implementation of JJM in the State. The funds released and expenditure under JJM during 2019-20 to 2023-24 are shown in **Table 1.2**.

Table 1.2: Details of JJM fund released and expenditure

(₹ in crore)

Year	Opening Balance	Fund release			Other receipts*	Total Available fund	Expenditure	Closing Balance
		Central	State	Total				
1	2	3	4	5 (3+4)	6	7 (2+5+6)	8	9
2019-20	0	24.27	24.27	48.54	0.59	49.13	23.36	25.77
2020-21	25.77	290.15	283.95	574.10	3.14	603.01	444.30	158.71
2021-22	158.71	556.82	543.64	1,100.46	13.35	1,272.52	988.98	283.54
2022-23	283.54	2,236.86	2,184.97	4,421.83	6.11	4,711.48	4,203.40	508.08
2023-24	508.08	2,885.56	2,825.23	5,710.79	15.28	6,234.15	5,374.22	859.93
Total		5,993.66	5,862.06	11,855.72	38.47		11,034.26	

(Source: As per the utilisation certificates in the audited statement of accounts of SWSM)

(* includes interest payment and refund)

(Note: During 2019-20, the GoI released ₹65.82 core out of which SWSM deposited ₹ 41.55 crore of Central share and ₹ 40.58 crore matching State share in next FY 2020-21. Similarly, Central share amounting to ₹ 92.47 crore and matching State share amounting to ₹ 89.87 crore pertaining to year 2020-21 was deposited to nodal account in FY 2021-22 and ₹ 12.88 crore Central and State share each pertaining to FY 2021-22 deposited in FY 2022-23)

It can be seen from the above table that expenditure of ₹ 11,034.26 crore had been incurred against the total funds of ₹ 11,855.72 crore released by GoI and GoCG with balance fund of ₹ 859.93 crore as of March 2024. The executive committee of SWSM in its meeting during 2023-24 projected requirement of funds of ₹ 26,137 crore based on administrative approval accorded to SVS/MVS under JJM. During 2024-25, funds of ₹ 3,823 crore were released by GoI and GoCG. For completion of existing schemes, more funds would be needed, however, no funds were released by Central Government during 2025-26 and the State Government released only ₹ 983 crore up to September 2025. This would also affect the completion of schemes in a timely manner.

1.6 Audit Objectives

The Performance Audit was taken up to assess whether

- Necessary planning and institutional mechanisms existed for the effective implementation of the programme;
- Financial resources were utilised in an economic and efficient manner;
- Implementation of the programme was effective and efficient, and the programme objectives were achieved successfully.

1.7 Audit Criteria

The audit criteria for the Performance Audit were sourced from the following:

- i. Operational guidelines (December 2019) for implementation of Jal Jeevan Mission
- ii. Central Public Health Environment Engineering Organisation (CPHEEO) Manual (May 1999) on Water Supply & Treatment and Manual on Operation & Maintenance
- iii. Water Quality Monitoring & Surveillance (WQM&S) Framework (October 2021) issued by the Ministry of Jal Shakti, GoI
- iv. Bureau of Indian Standards (BIS) IS: 10500 (2015)
- v. Orders/notifications/circulars issued by GoI and GoCG from time to time
- vi. Chhattisgarh Works Department Manual

1.8 Audit Scope and Methodology

Performance Audit on Jal Jeevan Mission (JJM) covers the period of JJM implementation from 2019-20 to 2023-24 with test-check of the records in the Office of the Engineer-in-Chief, PHED, and information collected from the Office of the Mission Director (MD), JJM and CEO, CREDA to assess the overall implementation of JJM in the State. Audit also scrutinised the records of six³ district- level implementing units i.e. District Water and Sanitation Mission and District and Block laboratories from August 2024 to September 2024, selected out of 33 districts by the Stratified Random Sampling method. Two blocks from each selected district and two villages from each selected block were selected for test-check of the schemes. Audit conducted a

³ 1. Dhamtari, 2. Gaurella-Pendra-Marwahi (GPM), 3. Kondagaon, 4. Korba, 5. Mahasamund, 6. Surguja

beneficiary survey of 20 HHs each in 24 selected villages to assess the project implementation in the state. The list of selected units is given in **Appendix 1.1**.

An entry conference was held (June 2023) with the Secretary, PHED, GoCG, to discuss the objectives, scope and methodology of the performance audit. The draft report was forwarded to the State Government in January 2025. An exit conference was held in May 2025 with the Secretary of the PHED to discuss the audit findings. The views/replies of the Government were suitably incorporated in the report. Audit acknowledges the cooperation and assistance extended by the Department and test-checked units visited during conduct of the performance audit.

CHAPTER- II

PLANNING

CHAPTER-II

PLANNING

2.1 Preparation of Action Plan

Planning is essential for achieving the goals set out for any programme. The strategy elucidated in paragraphs 3.5 and 3.6 of the JJM guidelines states that need-based Village Action Plans (VAP) should be prepared by all Gram Panchayats (GP) in a district. The VAPs of all the villages in a district were to be aggregated into a District Action Plan (DAP) by the DWSM and the State Action Plan (SAP) was to be prepared and finalised by the SWSM based on DAPs. The strategy for planning at the Village, District and State levels is shown in **Chart 2.1**.

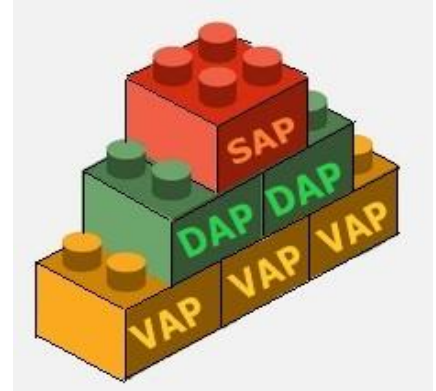
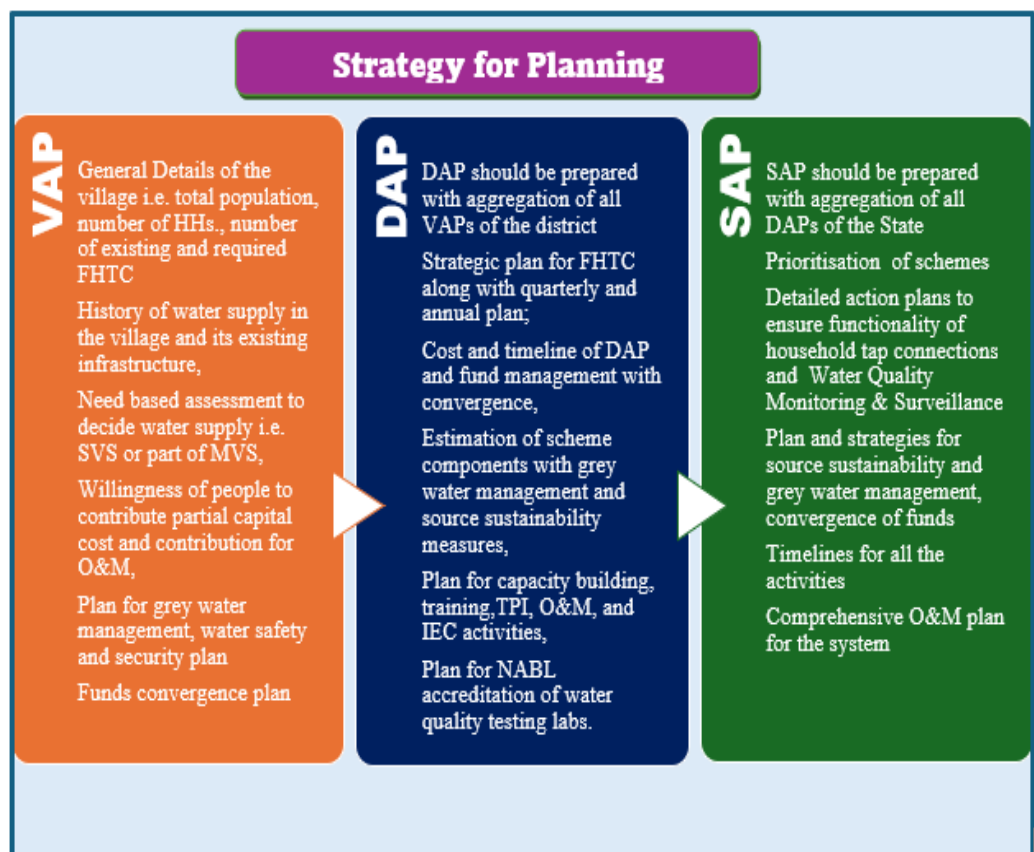


Chart 2.1: Strategy for planning



Deficiencies in planning at the Village, District and State levels are discussed in the following paragraphs.

2.1.1 Village Action Plan

JJM guidelines provide that the VAP should be based on the felt needs of the village community. PHED will provide three options prepared based on

techno-economic and socio-economic analysis of projects with possible least cost water supply systems to GPs for selection of the best fit scheme for the village. All water supply and related works of the village to provide FHTC to every rural HH will be taken from VAP approved by the GP. All funds from different sources including JJM were to be dovetailed to implement various components of VAP to optimal utilisation of resources for focused outputs.

During the test-check of 24 VAPs, audit noticed followings:

- **Lack of Community Involvement:** As per JJM guidelines (2019) the VAP was to be approved with 80 *per cent* of the village community present in the meeting and agree to the prepared plan. Audit noticed that 22 out of 24 VAPs were approved by Gram Sabha with presence of one to 28 *per cent* of population/village community while in two cases the presence was more than 50 *per cent*.
- **Non providing of least cost options based on techno-economic analysis:** While deciding in-village water supply system, three options with possible least cost water supply systems should be presented by PHED before the VWSC with complete techno-economic analysis involving community participation and VWSC was to be involved while deciding the system, emphasis on low O&M cost and capacity of local community to operate and maintain the scheme. Audit observed that in 12 out of 24 VAPs, only single scheme for the village was mentioned in VAP without providing the three options with possible least cost water supply scheme with complete techno-economic analysis of schemes. This hindered the GPs ability to make informed decisions for selection of the best fit scheme for the village.
- **Incomplete details/data:** Historical data related to existing water supply systems in the village, source strengthening, general trend of water availability, major water-borne diseases, etc. were not found included in 10 out of 24 VAPs.
- **Non-preparation of water budget:** The water budget prepared as part of the VAP was to be disseminated among the local community so that they can be sensitized to improve the agriculture water-use efficiency by adopting micro-irrigation and/or adopt cropping pattern suiting the agro-climatic zone.
- **Funding sources:** While approving water supply scheme for villages in 13 out of 24 VAPs, sources of funds like GoI, State Government share and community contribution along with convergence with another schemes were not discussed. Thus, willingness including affordability of people to contribute towards capital and O&M cost could not be ensured.
- **Non-engagement of Implementations Support Agencies (ISAs):** All 24 VAPs in test-checked 24 villages were approved by GPs/VWSC during October and December 2020. Whereas ISAs were engaged by DWSM during September 2021 to March 2023 after approval of VAPs by the GPs. ISAs were to be appointed to support GPs in the preparation of VAP and to obtain consent from the HHs to contribute capital cost and regular contribution towards Operation and Maintenance of piped water supply scheme. Delayed engagement of ISAs indicates that

required handholding of GPs and community involvement at the planning stage by ISAs could not be ensured.

- **Inconsistencies in VAP data:** Audit noticed that data collected in the VAPs did not match with data used for sanctioning schemes. In test-checked schemes, the figure of population and FHTCs to be provided as per the VAPs and Detailed Project Reports (DPRs) differed indicating that VAPs were prepared without baseline survey which undermines the entire process of village level planning.

Thus, due to above deficiencies in preparation of VAPs, the objective to ensure community involvement with 'sense of ownership' and to manage, operate & maintain the system as well as drinking water sources and participation in all decisions pertaining to water supply systems was not achieved.

2.1.2 ***District Action Plan (DAP)***

As per the JJM guidelines, the DAP should be prepared by DWSM by aggregating all VAPs and additional work, i.e. bulk water transfer, distribution network, laboratories, etc. to ensure drinking water security in all the villages of the district including strategic annual and quarterly plans and should be sent to SWSM to consolidate SAP. The DAP should include financial details and timelines for the activities identified for FHTC coverage.

- **Lack of bottom-up planning:** Audit noticed that DAPs of six test-checked districts were prepared and approved during April 2020 to February 2021. DAPs of two (Kondagaon and Korba) out of six test-checked districts were prepared before the preparation of VAPs indicating lack of bottom-up planning.
- **Lack of planning for support activities:** The guidelines state that for the support activities such as Information, Education and Communication (IEC), training and capacity building should be need-based and should be discussed in detail in the DAPs. Audit noticed that plans for support activities such as IEC activities, training, third party inspection and ISA requirement and deployment were not discussed in DAPs of test-checked districts.
- **Lack of planning for water quality testing facilities:** Plan for NABL accreditation of district and sub-division level water quality testing laboratories was also not included in DAPs of any of the test-checked districts.
- **Source sustainability and convergence:** As per the guidelines, source of convergence was to be identified and included in the DAP by the DWSM to meet the requirements emerging from the VAPs. Audit noticed that convergence of funds with other schemes, greywater management, treatment, re-use measures and source sustainability measures etc. were not identified while preparing DAPs.

Thus, DAPs in test-checked districts were prepared without following bottom-up approach, plan for support activities, water quality testing facilities, convergence and source sustainability measures.

The Government replied (May 2025) that greywater management work was being done through *Swachh Bharat Mission Gramin* (SBM-G) through

Panchayat and Rural Development Department and the provision for the same were made in Annual Action Plans (AAP).

Reply provided by the Government was not consistent with the approved AAP as there were no plans for convergence with other schemes in the AAP.

2.1.3 State Action Plan (SAP)

Paragraph 3.6.1 of the JJM guidelines (2019) required the SWSM to prepare the SAP (for National Jal Jeevan Mission i.e. NJJM approval) by combining DAPs. The SAP needs to outline the roadmap to achieve household tap connections by 2024 and ensure long-term state water security. Annual action plan of the State was to emerge from SAP.

Audit observed that the SAP for the scheme period (2019-2024) was not prepared by SWSM as required under the JJM operational guidelines. However, SWSM prepared annual action plans for the years 2020-21 to 2023-24. The AAPs did not address the broader aspects of water security due to non-preparation of water security plan based on assessment of surface and ground water availability and regional water transfer plan as outlined in the JJM operational guidelines.

This omission resulted in lack of comprehensive assessment of availability of surface and groundwater, regional water transfer, domestic, agriculture and industrial etc. uses of water. Thus, various water supply schemes under the JJM were undertaken without assessing long-term, water security for sustainable drinking water supply.

In the exit conference (May 2025), the Secretary, PHED stated that due to the non-availability of data for the water security plan, the SAP could not be finalised.

2.2 Non-allocation of priority

2.2.1 Non-prioritising of retrofitting work

Paragraph 3.6.1 of JJM Operational guidelines stipulates that priority is to be accorded to retrofit existing infrastructure to make them JJM compliant and should be taken up and completed in the first two financial years by March 2021, extended to March 2022.

While approving AAP 2020-21, GoI suggested that 25,681 existing schemes of the State, which were in the range of 40-55 Litres Per Capita per Day (LPCD), may be taken up for retrofitting so that the target of almost 18.71 lakh HHs with FHTCs can be achieved early with little efforts as low hanging fruits.

According to the Integrated Management Information System (IMIS) report, 4,492 retrofitting schemes with 12.25 lakh FHTCs were sanctioned during 2019-20 to 2022-23 under JJM. Out of which only 48 retrofitting schemes with 8,875 FHTCs were completed till extended target date of March 2022 and only 75 retrofitting schemes with 15,532 FHTCs were completed as of March 2024. In six test-checked districts audit observed that out of 781 schemes taken up under retrofitting, 758 scheme (97 per cent) remained incomplete as of March 2024.

On this being pointed out the Government replied (May 2025) that as per the plan, efforts are being made to complete the ongoing work as soon as possible.

2.2.2 *Non-prioritisation of coverage in aspirational districts*

Para 3.6 of JJM guidelines provides that priority is to be accorded to provide FHTC by March 2021 in aspirational districts extended up to March 2022 by GoI. In Chhattisgarh, 10 districts were identified as aspirational districts.

Audit noticed that as per the approved AAP 2020-21, 11.60 lakh HHs were to be covered in the 10 aspirational districts for providing FHTC under JJM. However, only 4.01 lakh HHs were planned to be covered during 2020-21 and only 8,427 HHs (2.1 per cent) were provided with FHTCs during 2020-21. Thus, the State Mission did not prioritise coverage of aspirational districts. The status of progress of FHTCs in aspirational district as of March 2024 is shown in the **Table 2.1**.

Table 2.1: Status of FHTCs progress in Aspirational districts as of March 2024

Sl. No.	District	Total Household	No. of SVS	No. of MVS	Achievement as on March 2024	
					FHTCs	Per cent
1	Bastar	1,71,717	627	0	1,38,639	81
2	Bijapur	56,298	573	0	31,558	56
3	Dantewada	50,756	291	0	36,653	72
4	Kondagaon	1,27,110	606	0	99,545	78
5	Korba	2,06,953	1,094	1	1,39,307	67
6	Mahasamund	2,40,467	1,359	1	1,95,031	81
7	Narayanpur	30,909	385	0	21,256	69
8	Rajnandgaon	1,56,789	757	2	1,38,639	88
9	Sukma	66,264	537	0	45,533	69
10	Kanker	1,51,157	1302	0	1,07,530	71
Total		12,58,420	7,531	4	9,53,691	76

(Source: IMIS portal)

From the above table it can be seen that none of the aspirational districts were fully saturated even as of March 2024.

Further, audit noticed that seven MVS were initially proposed in Bastar district for 255 villages. According to the DPRs, the MVS with surface water sources were crucial for these villages in the district due to depletion of ground water in the area, being dry zone and non-sustainability of all local sources. However, none of seven proposed MVS in Bastar district was finally taken up for execution indicating non-prioritisation of MVS in most needed areas by the State Government. Instead, solar based Piped Water Supply Scheme (PWSS) in 74 villages with ground water sources were taken up without the provision of electro-chlorinators for treatment of groundwater to enhance the coverage of FHTCs in Bastar district.

During the exit conference (May 2025), the Secretary, PHED stated that on account of delay in submission of detailed project reports, the DPRs could not be approved by the SWSM. The Department is planning to execute the MVS from the State budget in the southern zone.

2.3 Lack of Planning for convergence with other schemes

Paragraph 6.3 of the JJM guidelines provides for the convergence of funds and water conservation activities such as rainwater harvesting, greywater management and ground water recharge under the other Central and State schemes, to achieve long term drinking water security. It further provides that the SAP should be prepared to assess water availability through rainwater harvesting and artificial recharge by convergence of resources.

Audit observed that due to non-preparation of SAP, the convergence of the water conservation activities to ensure long term water security could not be planned. For convergence of funds, DWSM was to prepare financial plan by pooling all the available resources for rural drinking supply like Central and State fund from other programmes i.e. MGNREGS, SBM (G), MPLADS, DMF, CSR Funds, 15th FC etc. but no such financial planning was done in test-checked districts.

Thus, SWSM/DWSM did not effectively converge funds and activities from various other sources of funds. Audit noticed that the 15th Finance Commission tied grants of ₹ 1,358 crore, earmarked for drinking water, rainwater harvesting, and water recycling released by GoI during 2020-21 to 2023-24 could also not be converged for pooling of resources for JJM purposes.

During the exit conference (May 2025), the Secretary, PHED stated that as these funds are available with PRDD, efforts are being made to coordinate with the PRDD for convergence of funds. The reply furnished by the Secretary confirms that convergence of other central funds with JJM is yet to be achieved.

2.4 Gaps in planning of target under AAP

The JJM envisioned a project approach that required SAPs to be prepared for the period up to 2024, covering strategic planning, implementation modalities, activities, outputs, timelines, annual financial outlay, and a bottom-up approach from VAP to SAP. The State did not prepare SAP, but AAPs for the period 2020-21 to 2023-24 were prepared with the year wise target of FHTC. The status of the annual FHTCs planned and achievement in the State is shown in **Table 2.2**.

Table 2.2: Year-wise FHTCs target as per AAP and achievement by the Department

(Figures in Lakh)

Plan Year	Details of Annual Action Plan						Achievement in plan year ¹	
	Total HHs	Planned FHTCs as per AAP					As per IMIS	
		2019-20*	2020-21	2021-22	2022-23	2023-24	in numbers	in per cent
1	2	3	4	5	6	7	8	9
2019-20	43.17	7.86					0.96	12
2020-21	45.48		16.71				0.41	2
2021-22	45.48			22.15			4.44	20
2022-23	48.59				23.58		10.80	46
2023-24	50.08					29.08	17.68	61
Total planned in AAPs							46.23	
Achievement during the Mission period (31.03.2024)							34.29	
Existing FHTCs at the beginning of Mission							3.20	
Tap connections from private/own sources							1.48	
Total as per IMIS progress report							38.97	

(Source: Data provided by the Department and compiled by audit)

* For 2019-20 AAP was not prepared but targets were provided by GoI.

GoCG achieved installation of 38.97 lakh household tap connections (78 per cent) against the target of 50 lakh HHs up to March 2024. The annual targets outlined in the AAP could not be achieved throughout the mission period (2019-20 to 2023-24) indicating that targets for each year were fixed irrespective of actual achievement resulting in accumulation of targets in later years.

Thus, deficient planning, delay in engagement of ISAs, delay in execution of sanctioned schemes and lack of community participation led to non-achievement of overall target by March 2024.

On this being pointed out, the Government stated (May 2025) that work progress was affected due to delay in the availability of water for the MVS, non-availability of skilled human resources for the construction of RCC overhead tank (OHT) etc. However, efforts are being made for early completion of projects.

2.5 Mismatch in data

Audit observed that there was mismatch in the data relating to number of schemes executed and FHTCs installed as reflected in JJM Dashboard with that maintained by PHED. As per the information provided by the PHED, total 29,262 schemes (5,153-retrofitting, 7,490-solar, 16,542-SVS and 77 MVS) were planned during 2019-20 to 2023-24 out of which 27,580 schemes

¹ FHTCs provided through PHED (excluding private connections)

(4,892-retro, 6,572-solar, 16,046-SVS and 70-MVS) had been taken up for execution as of May 2024.

However, PM7 report in IMIS portal shows total number of schemes as 29,223 and B-15 report shows total 32,215 schemes (27,653-SVS, 4,492-Retro and 70-MVS) were taken up. One of the reasons for mismatch is classification of 2,860 running water schemes for schools and *Anganwadi* centres were as separate schemes in some of the IMIS reports.

Thus, there was inconsistency between the data maintained by the Department and the data uploaded to the IMIS portal, and this problem extends to different formats within the portal itself which needs to be addressed for correctness of scheme data.

CHAPTER- III

FUND MANAGEMENT

CHAPTER-III

FUND MANAGEMENT

3 Fund Management

As per paragraph 7.8 of the JJM guidelines, the funds under JJM were to be released in four tranches per annum based on the utilisation of the previous tranche. Guidelines also provide that funds available in the erstwhile National Rural Drinking Water Programme (NRDWP) should be transferred to JJM. Funds for JJM should also be arranged through community contributions. Audit observations on non-utilisation of funds, non-achievement of progress, short release of central share etc. are discussed in the succeeding paragraphs below:

3.1 Status of release and expenditure of JJM funds

JJM is a time-bound mission-mode programme and for its successful implementation, robust financial planning, timely funding, mobilisation of adequate resources and prudent utilisation of funds are pre-requisites. Funds for JJM were available in three components, namely coverage¹ i.e. up to 93 per cent of project cost (central 50: state 50), Support² i.e. up to five per cent of project cost (central 60: state 40) and WQMS³ i.e. up to two per cent of project cost (central 60: state 40).

The component-wise funds released and expenditure of JJM are shown in **Table 3.1**.

Table 3.1: JJM funds released during 2019-20 to 2023-24

(₹ in crore)

Year	Total allocation by GoI	Central Funds released				Total State Funds released	Total Funds released during the year
		Coverage	Support	WQMS	Total Central Funds released		
1	2	3	4	5	6 (3+4+5)	7	8 (6+7)
2019-20	208.04	22.57	1.21	0.49	24.27	24.27	48.54
2020-21*	445.52	269.84	14.51	5.80	290.15	283.95	574.10
2021-22	1,908.96	517.84	27.84	11.14	556.82	543.64	1,100.46
2022-23	2,223.98	2,080.28	111.84	44.74	2,236.86	2,184.97	4,421.83
2023-24	4,485.60	2,683.57	144.28	57.71	2,885.56	2,825.23	5,710.79
Total	9,272.10	5,574.10	299.68	119.88	5,993.66	5,862.06	11,855.72

(Source: Information provided by the Office of the MD, JJM and compiled by the audit)

*[including NRDWP balance funds ₹ 13.83 crore (Central Share: ₹ 6.93 crore + State share: ₹ 6.90 crore) deposited in JJM nodal account]^ this included ₹ 900 crore released by GoI as additional fund and matching share by GoCG.

¹ Infrastructure for pipe water supply in terms of FHTC provided to rural households.

² Activities conducted to spread awareness and sensitise communities on judicious use of water, community contribution and ownership, build capacities of GP and/or its sub-committee to plan, implement, manage, operate and maintain in-village infrastructure.

³ Water Quality Monitoring and Surveillance (WQM&S) involves testing of water samples collected from water sources in water quality testing laboratories. Surveillance is undertaken by community using Field Test Kits (FTK) & sanitary inspection.

The above table represents the funds released by the Central and State Government during 2019-24 and **Table 3.2** shows the details of expenditure incurred under various components of JJM.

Table 3.2: Expenditure incurred under JJM from 2019-20 to 2023-24

(₹ in crore)

Year	Coverage		Support		WQMS		Expenditure from Central Share	Expenditure from State Share	Total Expenditure
	Central Share (50%)	State Share (50%)	Central Share (60%)	State Share (40%)	Central Share (60%)	State Share (40%)			
1	2	3	4	5	6	7	8 (2+4+6)	9 (3+5+7)	10 (8+9)
2019-20	11.68	11.68	0.00	0.00	0.00	0.00	11.68	11.68	23.36
2020-21	217.18	217.18	3.37	2.24	2.57	1.72	223.12	221.14	444.26
2021-22	470.66	470.66	20.83	13.88	7.71	5.14	499.20	489.68	988.88
2022-23	2,051.47	2,051.47	50.54	33.69	9.74	6.49	2,111.75	2,091.65	4,203.40
2023-24	2,654.51	2,654.51	34.67	23.12	4.51	3.00	2,693.69	2,680.63	5,374.32
Total	5,405.50	5,405.50	109.41	72.93	24.53	16.35	5,539.44	5,494.78	11,034.22⁴

(Source: Data provided by the PHED and compiled by Audit)

It can be seen from above tables that against the total allocation of ₹ 9,272.10 crore, funds of ₹ 5,993.66 crore were released by GoI and State Government contributed matching share ₹ 5,862.06 crore which falls short by ₹ 71.60 crore.

Out of the total funds of ₹ 11,855.72 crore released by GoI and GoCG ₹ 11,034.22 crore (93 per cent) were spent. Audit also noticed a difference of ₹ 0.04 crore⁵ in the utilized amount from 2019 to 2024 as per the audited statement of account submitted by CA and the expenditure figures in the PHED expenditure portal i.e. 'e-Works'.

3.2 Non receipt of Central share of fund

The fund sharing pattern between the Centre and the State is 50:50. Para 7.8 of the JJM guidelines stipulates that annual allocation will be released to States in two equal instalments and each instalment is to be released in two tranches after assessing the utilisation of funds by the States/UTs.

The tranche-wise fund allocation and release of the central share is shown in **Table 3.3**.

⁴ As per Utilisation Certificates the total expenditure during 2019-24 was ₹ 11,034.26 crore and as per the PHED e-Works portal the total expenditure for the period 2019-24 was ₹ 11,034.22 crore.

⁵ The difference amount during the year 2020-21, 2021-22 and 2023-24 was ₹ 0.04 crore, ₹ 0.10 crore and (-) ₹ 0.10 crore respectively.

Table 3.3: Allocation and sanction of Central Share

(₹ in crore)

Year	GoI Allocation	Instalment 1		Instalment 2		Additional Funds	Total Sanction	Short release of Central share against allocation
		Tranche 1	Tranche 2	Tranche 1	Tranche 2			
1	2	3	4	5	6	7	8 (3+4+5+6+7)	9 (2-8)
2019-20	208.04	65.82	0.00	0.00	0.00	0.00	65.82	142.22
2020-21	445.52	111.38	111.38	111.38	0.00	0.00	334.14	111.38
2021-22	1,908.96	477.24	0.00	0.00	0.00	0.00	477.24	1,431.72
2022-23	2,223.98	555.99	555.99	555.99	555.99	0.00	2,223.96	0.02
2023-24	4,485.60	496.39	496.39	496.39	496.39	900.00	2,885.56	1,600.04
Total	9,272.10	1,706.82	1,163.76	1,163.76	1,052.38	900.00	5,986.72	3,285.38

(Source: As per Annual allocation letter and Sanction order letter of DDWS, GoI)

During 2019-20, the 1st tranche of ₹ 65.82 crore was sanctioned and released by the GoI, out of which the State could draw only the central share of ₹ 24.27 crore, with the State matching share of ₹ 24.27 crore and deposited to the nodal bank account. The other three tranches of the financial year 2019-20 could not be released by the GoI for want of appropriate expenditure plan with the commitment of State share. Similarly, in 2020-21 and 2021-22, the State could get only three tranches (₹ 334.14 crore) out of four and one tranche (₹ 477.24 crore) out of four respectively due to slow physical and financial progress, and non-availability of budget with the State Government. Further, in 2023-24, GoI did not release ₹ 1,600.04 crore of the allocated fund of ₹ 4,485.60 crore.

Thus, the State could not get seven tranches of funds out of 16 tranches from the central government because of non-achievement of required financial progress due to shortage of fund with the GoCG. This resulted in non-receipt of central grant-in-aid of ₹ 3,285.38 crore against the total allocation of ₹ 9,272.10 crore, thereby depriving the state of ₹ 6,480.04 crore of JJM funds including the corresponding matching state share of ₹ 3,194.66⁶ crore.

In the exit conference (May 2025), the Secretary, PHED stated that unavailability of fund from the State Finance Department, procedural delay of tender etc. were the reasons for non-release of the State share.

3.3 Delay in release of State Matching Share

The sanction order for release of grant-in-aid by the GoI stipulated that the State is to ensure release/transfer of the sanctioned amount to the single nodal account (SNA) of the implementing agency of JJM along with matching state share within 15 days of its receipt.

⁶ ₹ 3,285.38 * State share (49.30 per cent)/GoI share (50.70 per cent)

Audit observed that there were delays in the release of matching State share into SNA in excess of 15 days multiple times as shown in **Table 3.4**.

Table 3.4: Statement showing delay in release of state matching share of JJM

(₹ in crore)

Year	Date of release of Central share	Respective Central share	Date of release of matching State share	Respective State share	Delay in excess of 15 days
2019-20	04-10-2019	65.82	19-02-2020	24.27	123
			06-05-2020	40.58	200
2020-21	27-07-2020	111.38	19-09-2020	57.26	39
	29-10-2020	111.38	15-12-2020	105.53	32
	15-03-2021	111.38	04-05-2021	89.87	35
2021-22	13-05-2021	453.71	15-06-2021	321.95	18
			06-12-2021	91.62	192
			07-03-2022	16.67	283
			03-06-2022	12.88	371
2022-23	21-06-2022	491.03	29-09-2022	21.93	85
	02-09-2022	64.96	20-10-2022	64.96	33
	30-10-2022	555.99	28-12-2022	119.16	44
	02-02-2023	555.99	20-03-2023	354.83	31

(Source: Data provided by the PHED and compiled by audit)

It can be observed from the above table that there were delays in the release of matching state shares, particularly in the years 2019-20 and 2021-22. In 2019-20, ₹ 40.58 crore of GoI share alongwith the matching state share was released in the next financial year after delay of 200 days from the due date. Similarly, in the years 2021-22 the delay was 192 to 371 days for the release of state share. There was also a delay of 31 to 85 days in the year 2022-23 for release of matching state share against central share.

In the exit conference (May 2025), the Secretary, PHED stated that due to lack of sufficient allocation in the State budget, there was a delay in deposit of State shares.

3.4 Short transfer of NRDWP funds to JJM

Chapter 4 of the JJM guidelines stipulates that with the launch of JJM, all schemes under the erstwhile NRDWP are subsumed into JJM. The balance fund of NRDWP with the States after 31 March 2021 were to be adjusted with funds released for JJM.

Scrutiny of records revealed that as per the Utilisation Certificate (UC) for the year 2019-20 the closing balance under NRDWP was ₹ 19.70 crore comprising central share and state share of ₹ 10.07 crore and ₹ 9.63 crore respectively. Audit observed that the SWSM transferred only ₹ 6.93 crore as the central share and ₹ 6.90 crore as State share in June 2020 and the balance amount of ₹ 5.87 crore was not transferred to JJM nodal account as detailed in **Table 3.5**.

Table 3.5: Details of NRDWP funds not transferred to JJM*(₹ in crore)*

Fund	Central share				State share			
Component	Coverage	Support	WQMS	Total	Coverage	Support	WQMS	Total
Balance fund as per ASA NRDWP 2019-20	9.04	0.69	0.34	10.07	9.04	0.36	0.23	9.63
Fund transferred to JJM nodal account	6.83	0.03	0.07	6.93	6.83	0.02	0.05	6.90
Short transfer of fund	2.21	0.66	0.27	3.14	2.21	0.34	0.18	2.73

(Source: Data provided by the PHED and compiled by audit)

On this being pointed out, MD, JJM, Raipur stated (May 2025) that it could not be transferred due to non-release of balance NRDWP fund from the State Government. During the exit conference (May 2025), the Secretary stated that PHED would seek budgetary supplement from the State Finance Department for the said fund.

3.5 Non-collection of community contribution

Para 6.1.2 of the JJM guidelines states that for in-village piped water supply infrastructure and related source development to be implemented by Gram Panchayat and/or its sub-committee, communities will contribute five *per cent* of the capital cost. Further, the willingness of the community and contribution from at least 80 *per cent* households of the village is a prerequisite for taking up water supply scheme.

Audit observed that the State Mission did not collect any community contribution against capital cost of ₹ 2,220.18 crore projected in the AAP from 2019-20 to 2022-23, thereby failing to promote and ensure voluntary ownership among the local community.

The Government stated (May 2025) that the amount was collected in the form of labour instead of cash as provisioned in the JJM guidelines. The reply is not justifiable as such records were not found during audit of six selected districts.

3.6 Revision of Schedule of Rates without market survey

Paragraph 4.3 of the Central Public Works Manual stipulates that a schedule of rates should be updated and maintained in the Department. The Unified Schedule of Rates (USOR) should base on the rates prevailing in each station, and the necessary analysis of the rates for each description of work and the varying conditions thereof should be recorded.

A committee for revision of the USOR, enforced in PHED, Chhattisgarh w.e.f. February 2013, was formed by the E-in-C, PHED in July 2018. After the launch of JJM in August 2019, the USOR was revised in June 2020 by adding 1.679 *per cent* for all existing items based on increase in Wholesale Price Index (WPI) in the USOR rates, issued by the PHED, Madhya Pradesh in July 2018, without item wise detailed rate analysis.

Further, there was an oversight in the derivation of the rates for new item introduced i.e. providing and laying Oriented Un-plasticized Polyvinyl Chloride (O-PVC) pipes for potable water supply in the USOR. The rates were calculated based on the minimum company price of the pipes, with additions for transportation, GST and Third Party Inspection (TPI) charges, but crucial factors like the cost of fittings, labour for laying and jointing, machinery, and other necessary expenses were not taken into account.

Thus, the revision of the USOR without conducting a detailed, item-wise rate analysis based on the prevailing market rates for goods, services, labour, and machinery, indicated lack of due diligence in revision of the USOR which may lead to preparation of unreliable cost estimates.

On this being pointed out, the E-in-C, PHED replied (October 2024) that as there was time constraint in the implementation of JJM, the USOR was updated on the basis of the USOR applicable in Madhya Pradesh (MP) by addition of certain percentage based on WPI. The new items which were not available in the MP-SoR were added on the basis of market rate analysis. On this being pointed out, the Government replied (May 2025) that the current USOR was based on MP SoR 2018 after considering the WPI.

The reply confirms that the USOR was revised without detailed rate analysis and market survey.

3.7 Incorrect estimate of unit price of FHTC in USOR and excess payment

Looking at the mission target to provide regular and long-term supply of potable water every household new item “Functional Household Tap Connections” (FHTCs), was introduced in USOR June 2020 with unit rate ₹ 6,969. The detailed estimate of the FHTC was published by the PHED vide amendment No-5 to the USOR (June 2021). The detailed rate analysis comprised of two parts i.e. Annexure -VI (a) for connection of stand post with distribution pipeline using PE-AL-PE composite pipe, Integrated Saddle piece with Flow Control Valve (FCV), etc. costing ₹ 4,225 and Annexure -VI (b) for the construction of the platform costing ₹ 2,744.

During scrutiny of analysis of rate, audit noticed 12 errors in the detailed analysis, like, consideration of cost of shuttering unwarranted for filling concrete in UPVC pipe, rate of oversized water tap, non-deduction of overlapping cement concrete work, double provision for same work, unwarranted provision of demolishing cement concrete surface, excavation and refilling of earth for connection with distribution line etc. which inflated the FHTC rate by ₹ 1,556.31 per unit as detailed in **Appendix 3.1**.

Some of the works which resulted in double provision are explained below:

➤ The unit rate includes work of demolishing of cement concrete surface, excavation of earth, refilling of excavated earth and finally restoration of CC surface with M-15 concrete after installation of integrated saddle piece and connecting the composite pipe to the distribution line. These items are being paid for within the scope of work of providing and laying of distribution pipeline work. This led to double provision of works.

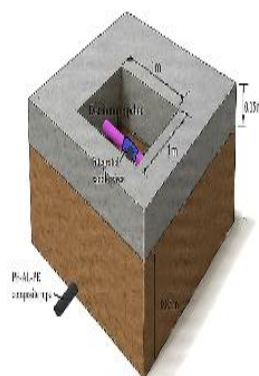


Photo 3.1: Picture showing dismantling of CC surface for installation of integrated saddle piece

➤ Provisioning of rate of oversized water tap i.e. 20 mm tap for 15 mm GI pipe in the unit rate of FHTC while taps with 15 mm were actually used resulting in claim of higher cost by ₹ 56 in each FHTC installed.

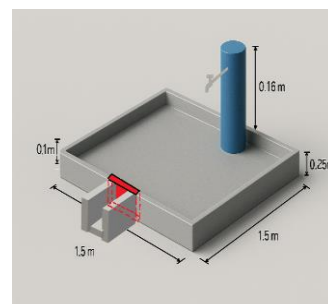


Photo 3.2: Picture showing 15mm taps being used in FHTC

➤ Non-deduction of overlapping cement concrete work in platform, standpost, bed block and drain gap led to claim of higher cost by ₹ 43.32⁷ per FHTC.



Overlapping of Bed block



Non deduction of Drain Gap

Photo 3.3: Picture showing overlapping of CC in standpost, bed block and drain gap

For works executed under SVS, in 22 test-checked schemes audit noticed that payment was made to the contractor at the unit rate of ₹ 6,969 per FHTC without

⁷ Quantity of CC embedded in the bed block: $0.785 \times 0.16^2 \times 0.15\text{m} = 0.003$ at the rate of ₹ 4,774 per cum = ₹ 14.32, Overlapping of cement concrete work in platform: $0.785 \times 0.16^2 \times 0.17\text{m} = 0.003$ at the rate of ₹ 4,774 per cum = ₹ 15 and non-deduction of drain gap in the platform from the wall of the platform $0.3 \times 0.1 \times 0.1\text{m} = 0.003$ at the rate of ₹ 4,774 per cum = ₹ 14.32

recording item wise detailed measurement. This resulted in an excess payment of ₹ 54.46 lakh to contractors. As 34.29 lakh FHTCs were installed in the state under JJM (March 2024), there is probability of excess payment up to ₹ 533.66⁸ crore due to incorrect rate analysis of FHTC.

The Government (May 2025) stated that directions have been given for the recovery of excess payment to concerned PHE divisions. The Government intimated (May 2025) that a deduction of ₹53.25 crore has been made from 1,915 agreements across different districts.

3.8 Extra financial burden on State Government

Paragraph 7.5 read with paragraph 7.10 of the JJM operational guidelines stipulates that all schemes sanctioned under JJM shall be implemented without cost and time overrun. In case of any cost escalation due to tender premium, it will have to be borne by the State government and expenditure from the central share was not permissible. However, as per amendment issued by DDWS, Ministry of Jal Shakti, GoI issued (June 2022) the payment of tender premium from the central share was allowed but the provision was not applicable to the schemes for which work has been awarded prior to 21 June 2022.

Audit observed that sanctioned cost of 11,055 schemes was revised from ₹ 7,840.94 crore to ₹ 8,366.58 crore due to tender premium, in respect of works awarded before June 2022. This cost difference of ₹ 525.64 crore will not be shared by the Central Government. The State Government will have to bear extra financial burden as detailed in **Table 3.6**.

Table 3.6: Details of number of schemes and cost revised under JJM

(₹ in crore)

Sl. No.	Type of scheme	Number of schemes	Original AS	Revised AS	Difference
1	SVS	7,629	6,622.91	7,056.28	433.37
2	Solar	3,426	1,218.03	1,310.30	92.27
Total		11,055	7,840.94	8,366.58	525.64

(Source: Data provided by the PHED and compiled by audit)

The Government replied (May 2025) that the tenders were approved by the DWSM on the basis of WPI and site conditions. The payment of tender premium from JJM central share was inadmissible before 21 June 2022 therefore it will be borne by the GoCG. Hence, a proposal for creation of new budget head for tender premium amount has been sent to the State Finance Department. However, the proposal has not been accepted.

3.9 Short utilisation of funds under Support Activities

Support Activities under JJM include mobilisation of communities through awareness campaigns, training local stakeholders, and strengthening VWSCs to take ownership of water resources. Implementation Support Agencies (ISA) were deployed to spread awareness and sensitize communities on judicious use of water, community contribution, build skills of various human resources required, viz. masons, plumbers, electricians, motor mechanics, pump

⁸ ₹ 1,556.31 x 34,28,980 FHTC = ₹ 533.66 crore

operators, etc. to set up long-term sustainable institutional mechanisms under the guidelines of the JJM.

The Mission has made provision of up to five *per cent* of annual allocation to the States as support activities funds to carry out the Information, Education and Communication (IEC) among local communities; Human Resource Development (HRD); training and skill development and third-party inspection. Total funds during 2019-20 to 2023-24 available in the state nodal account of JJM was ₹ 11,855.73 crore and the amount of ₹ 592.79 crore was available with the state for support activities. Year-wise allocation of funds, limit issued by the SWSM for support activities and its year-wise utilisation are depicted in **Table 3.7**.

Table 3.7: Year-wise fund allocation under JJM and utilisation of funds for support activities

(₹ in crore)

Year	JJM Central fund released by GoI	Mandated 5 <i>per cent</i> of JJM Central allocation (60%) plus matching State share (40%)	Fund allocated to DWSM for Support activities		Utilised	Shortfall of Utilisation against fund allocated	
			Amount	<i>Per cent</i> of allocation against mandated		Amount	<i>Per cent</i>
1	2	3	4	5	6	7 (4-6)	8
2019-20	24.27	2.02	0.00	0	0.00	0.00	0
2020-21	290.15	24.18	7.82	32	5.61	2.21	28
2021-22	556.82	46.40	49.28	106	34.71	14.57	30
2022-23	2,236.86	186.41	92.81	50	84.23	8.58	9
2023-24	2,885.56	240.46	66.16	28	57.79	8.37	13
Total	5,993.66	499.47	216.07		182.34	33.73	16

(Source: Information provided by the office of the MD, JJM and compiled by audit)

It can be observed from the above table that against the amount of ₹ 499.47 crore mandated for support activity only ₹ 216.07 crore was allocated during the period 2019-20 to 2023-24 except during 2021-22, the amount for support component was allocated as mandated by JJM guidelines.

Thus, due to less allocation of support activities funds to DWSM, required activities by ISA for IEC etc. were adversely affected.

CHAPTER- IV

SCHEME IMPLEMENTATION

CHAPTER-IV

SCHEME IMPLEMENTATION

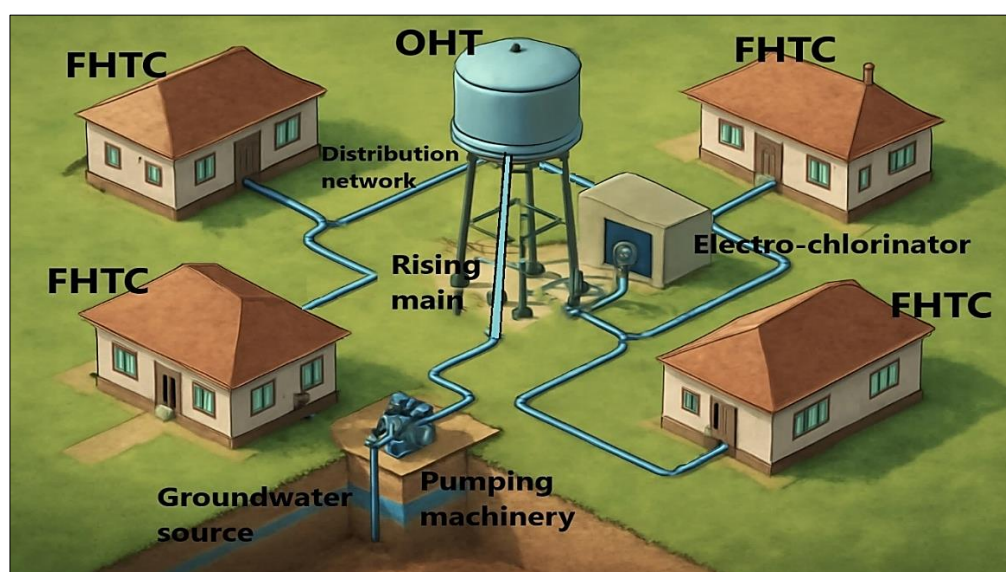
4.1 Status of schemes planned and executed

Effective implementation of the programme revolves around key strategies such as identifying reliable water sources, building infrastructure for FHTC and ensuring sustainability through capacity building. The PHED executed the projects in two parts, i.e. Multi-Village Schemes (MVS) and Single Village Schemes (SVS). Solar power-operated systems of SVS were handed over to the Chhattisgarh Renewable Energy Development Agency (CREDA) for execution, while PHED was doing the pipelines and FHTC part of that system.

- The SVS is a groundwater, springs, or surface water scheme consisting of development/augmentation of drinking water source, a water treatment plant, pumping arrangement, OHT and distribution network leading to FHTC, planned and managed by GPs.

An illustrative picture of a SVS along with its components is shown in *Chart 4.1*.

Chart: 4.1: Components of SVS



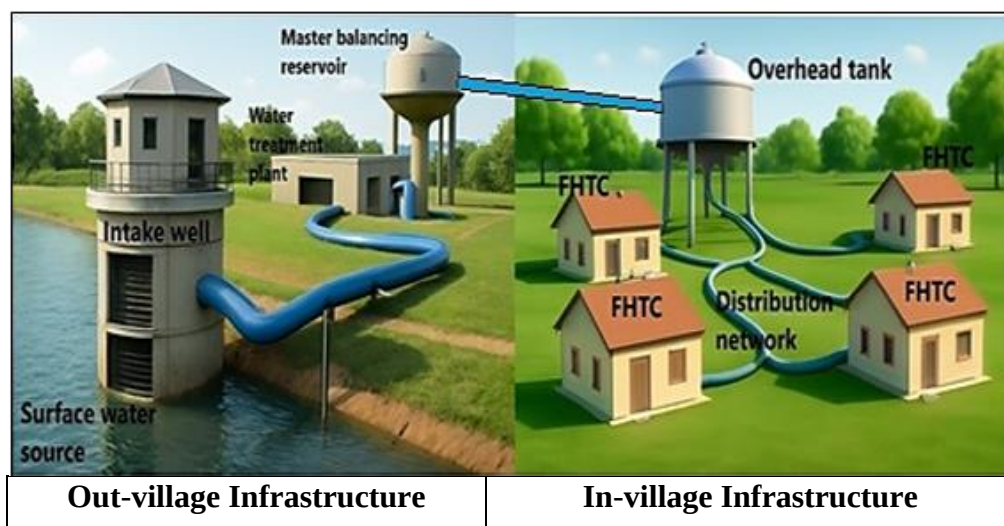
- The MVS is a ground or surface water-based scheme that caters to multiple villages. It consists of two parts, i.e. in-village infrastructure¹ and out-village infrastructure². In-village infrastructure consists of pumping arrangement, OHT and distribution network leading to FHTC similar to SVS and the major components of out-village infrastructure include the source of raw water, raw water storage, transmission system, filtration system, pumping machinery, balancing reservoir and distribution system up to the village boundary.

¹ Distribution of water from OHT to individual FHTC.

² Bulk transfer of water and distribution systems up to the village boundary.

Both, in-village and out-village infrastructures of MVS were technically sanctioned by the PHED. However, the infrastructure and machinery of out-village system of the MVS are managed, operated and maintained by the PHED and that of in-village part of MVS are managed, operated and maintained by the GP. A flow diagram showing the MVS water supply system is shown in **Chart 4.2**.

Chart 4.2: Components of MVS



As per the information provided by the PHED, the status of planned and executed schemes (retrofitting, single village, multi-village, solar) from 2019-20 to 2023-24, is detailed in **Table 4.1**.

Table 4.1: Status of schemes planned and executed

Year	Number of schemes planned					Number of schemes taken up for execution				
	Retro	Solar	SVS	MVS	Total	Retro	Solar	SVS	MVS	Total
1	2	3	4	5	6	7	8	9	10	11
2019-20	0	0	0	0	0	0	0	0	0	0
2020-21	1,212	3,705	301	0	5,218	977	2,903	286	0	4,166
2021-22	3,823	2,082	9,423	46	15,374	3,798	2,025	9,233	39	15,095
2022-23	116	1,701	6,551	31	8,399	115	1,643	6,489	31	8,278
2023-24	2	2	267	0	271	2	1	38	0	41
Total	5,153	7,490	16,542	77	29,262	4,892	6,572	16,046	70	27,580

(Source: Data provided by the Department as of May 2024)

Out of the 29,262 schemes planned, only 27,580 schemes were taken up for execution under JJM, of which 172 schemes had been completed as of March 2024.

Audit observations on the implementation of schemes are discussed in the succeeding paragraphs.

4.2 Execution of Single Village Schemes

4.2.1 Execution of Solar Photovoltaic (SPV) pump-based water supply schemes by CREDA

Paragraph 3.5 of the JJM Operational guidelines suggests exploring the option of solar power-based water supply schemes with low O&M expenditure in tribal/hilly/forest areas in Chhattisgarh. The work of Solar Photovoltaic (SPV) Water Pumping System was executed through CREDA, the nodal agency of the State Government for the development and promotion of non-conventional and renewable sources of energy.

The components of solar power-based pipe water supply were divided into two parts, viz. installation of water tank on steel structure and solar-dual pump system with solar panels. The five-year free O&M of these structures and pumps have been assigned to CREDA. Whereas PHED is responsible for the development of water sources, laying of the distribution network and construction of FHTC.

The test-check of records of the solar power-based water supply system revealed the following observations:

4.2.1.1 Release of advance to CREDA for Execution of work to CREDA without following established procedures and regulations

Para 7.10 of JJM guidelines states that centage charges are not permissible from grant-in-aid provided by the Government of India. The Para further states that if it is necessary to pay, the same will be the responsibility of the State Government i.e. Funds should be arranged separately by the State Government. Further, as per GoI, Ministry of Jal Shakti, Department of Drinking Water and Sanitation vide letter dated June 2020, no advances were to be issued to any authority/offices under Jal Jeevan Mission. Chapter 6 of the JJM Operational Guidelines made it mandatory to engage third party agency for inspection of work before payment to the agency.

Audit noticed that tripartite agreements between DWSM, Gram Panchayat and CREDA were executed for installation of solar pumping system for solar based PWSS according to which advance payment of 90 per cent of the cost was to be released by PHED to the CREDA. As per the agreement, the work will be executed by CREDA under the supervision of EE, PHED. CREDA was to submit completion certificate and utilisation certificate within 15 days of work completion to PHED.

Audit noticed that CREDA was assigned to execute 19,684 SPV pump-based systems and an advance of ₹ 1,816.83 crore was provided to CREDA during 2020 to 2023 (up to June 2023). CREDA could not provide the information for solar pumps installed after June 2023 under JJM to Audit. Against the sanctioned advance, Utilisation Certificate (UC) was submitted for 4,112 schemes for ₹ 557.52 crore. Year-wise details of advances released to CREDA and utilisation of funds are mentioned in **Table 4.2**.

Table 4.2: Details of SPV pump systems sanctioned and fund released to CREDA*(₹ in crore)*

Year	Number of systems sanctioned	Funds released	System installed	Funds utilised	Balance work	Funds for which UC are not submitted as of	Utilisation Certificate	
							Submission Date	Period covered
2020-21	3,288	365.00	2,882	398.33	2,016	155.81	12 th May 2022	2020-22
2021-22	1,610	189.14						
2022-23	12,300	988.38	1230	159.19	13,086	985.00	21 st September 2022	03/2022 to 09/2022
2023-24	2,486	274.31	NA	NA	15,572	1,259.31	Not submitted	--
Total	19,684	1,816.83	4,112	557.52	15,572	1,259.31	--	--

(Source: Information collected from MD, JJM, Chhattisgarh, Raipur up to June 2023)

Audit observed that fund utilisation by CREDA was not monitored by the PHED. CREDA submitted its first UC for 2,882 projects with utilisation of ₹ 398.33 crore funds in May 2022 against the assignment of 4,898 projects of ₹ 554.14 crore allotted during 2020-21 and 2021-22, before completing each project as stipulated in the contract document. It was noticed that subsequent funds were transferred to CREDA without obtaining UCs for the previous funds. CREDA had not submitted UCs after September 2022; even then, ₹ 274.31 crore was released in the year 2023-24. Neither the status of 15,572 incomplete projects nor the UC for ₹ 1,259.31 crore advanced to CREDA was obtained.

During the exit conference (May 2025), the Secretary, PHED stated that CREDA is a state government agency and work was entrusted to them on the basis of agreed terms and conditions. The UCs are being furnished by CREDA at the division offices. However, CREDA has been requested to submit the consolidated UCs to the MD, JJM.

Reply is not acceptable as progress of work and utilisation of funds released to CREDA is not being monitored to ensure timeliness in execution of assigned work. However, no reply has been furnished on release of advance to CREDA, non-compliance with third party inspection on works executed through CREDA.

4.2.1.2 Centage charges to CREDA

Paragraph 7.10 of the JJM guidelines states that payment of centage charges is not permissible from grant-in-aid provided by the GoI. If it is necessary to pay, funds should be arranged separately by the State Government.

During scrutiny of breakup of unit rates claimed by CREDA for the solar structure with solar dual pumps, it was noticed that centage charges (supervision charges) amounting to ₹ 15,000 to ₹ 89,500 per unit were added in the unit cost of solar pumps by the CREDA and an amount ₹ 12.09 crore was paid to CREDA as centage charges for installation of 2,386 SPV dual pump systems in all

six test-checked districts from JJM funds under the 50:50 ratio as detailed in **Table 4.3**.

Table 4.3: Details of centage charges charged by CREDA in test-checked districts

(₹ in lakh)

Sl no.	District	1HP/1200W/9m/10KL tank		1HP/1200W/12m/10KL tank		Total no. of systems	Total amount of centage charge
		No. of system at old rate	Centage charge @ ₹ 15,000	No. of system at new rate	Centage charge @ ₹ 62,500		
1	Dhamtari	11	1.65	16	10.00	255	125.09
2	GPM	4	0.60	98	61.25	180	75.11
3	Kondagaon	17	2.55	260	162.50	454	224.14
4	Korba	115	17.25	260	162.50	734	466.98
5	Mahasamund	0	0.00	15	9.38	43	16.32
6	Surguja	320	48.00	332	207.50	720	301.86
Total		467	70.05	981	613.13	2,386	1,209.50

(Source: Data provided by the Department and compiled by Audit)

The Government stated (May 2025) that information regarding centage charges is being sought from CREDA. During the exit conference (May 2025), the Secretary, PHED stated that the matter would be taken up with CREDA.

4.2.1.3 Execution of Solar Photovoltaic pump water supply systems without considering residual pressure head

Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual (Paragraph 10.3.3 and 10.3.6) stipulates that the elevation of the service reservoir should be such as maintaining the minimum residual pressure of 7 m in the distribution system consistent with its cost effectiveness. The staging of the overhead service reservoirs should be decided based on total frictional losses in the carrying system, plus the residual head required with the effect of Positive/Negative static level difference³. The minimum and maximum residual pressure head in the distribution system needs to be calculated and shown in the form of pressure chart showing residual head at each node in the network to determine economic staging height of elevated service reservoirs.

Audit observed that the SVS with solar system were being executed without the preparation of a pressure-chart to ascertain the staging height of solar pump systems to maintain the required residual head. Only two options provided by the CREDA, i.e. with 9 m staging and 12 m staging out of which one was opted by the PHED without consideration of residual pressure requirements.

Thus, solar based OHT structures were installed without optimisation of the staging height of system based on residual head and water pressure in the distribution system.

On this being pointed out, the MD, JJM stated (May 2024) that the drawing design for the installation of solar dual pump of 9 m staging or 12 m staging

³ Ground level of service reservoir (minus) maximum ground level of distribution mains

was prepared by PHED Division/CREDA. The reply is not acceptable as in none of the test-checked districts, the above technical aspects were taken into consideration in the DPR for determining economical staging for adequate and proper water supply.

The Government stated (May 2025) stated that the report was being collected from the concerned districts.

4.2.1.4 **Households connected with Solar Photovoltaic pump water supply systems not getting prescribed minimum service level of drinking water**

Audit noticed that under SVS scheme, the component of distribution network and installation of FHTC was executed by contractors hired by DWSM while the component of OHT with SPV system was implemented by CREDA.

Water supply schemes under JJM were designed by taking 65.19⁴ LPCD including loss and other components to cater for the minimum prescribed water demand of 55 LPCD with an average of five souls per HH while the Solar system used by the CREDA was of 17,052 litres per day capacity⁵ under outdoor conditions.

As the water pumping capacity of Solar pump system was 17,052 litres per day, it can cater 53 HHs⁶ in a day for supply of prescribed quantity of water, i.e. 55 LPCD. However, audit noticed in the six test-checked districts that 429 Solar pump systems in 310 water supply schemes were connected to more than 53 households. The range of FHTCs connected per SPV system was from 54 to 169 as detailed in **Table 4.4**.

Table 4.4: Details of SPV with excess connections in test-checked districts

District	No of Schemes	Number of SPV with excess connections beyond 53 HH	Range of FHTCs connected per SPV system	No of FHTCs	Population affected
Dhamtari	37	38	54 to 125	2,519	12,595
GPM	78	79	54 to 107	5,694	28,470
Korba	127	214	54 to 169	13,701	68,505
Kondagaon	35	59	56 to 147	4,327	21,635
Mahasamund	10	10	55 to 84	635	3,175
Surguja	23	29	54 to 145	2,108	10,540
Total	310	429		28,984	1,44,920

(Source: Data provided by the Department and compiled by Audit)

Due to overloading of FHTCs beyond the maximum capacity of one Solar system, the prescribed norms of supply of 55 LPCD to each household could not be ensured in 28,984 FHTCs installed in HHs covering 1.44 lakh population.

⁴ As per circular issued by the GoCG January 2020 for providing 55 LPCD, per capita water supply level for designing of the scheme for domestic purpose is adopted as 65.19 LPCD (including fire demand, institutional demand and wastage)

⁵ Test report No. MRTCTP151820221395 dated 13.06.2022

⁶ 17,052 L/65.19 LPCD/5 souls per HH=52.31 ~ 53 HH

The Government stated (May 2025) that report was being collected from the concerned districts.

4.2.1.5 *Non-provision of electro chlorinator in Solar power-based schemes*

Para 6.1 of JJM Guidelines (2019) states that the in-village piped water supply infrastructure will consist of water treatment plants to ensure water quality.

Audit noticed that in all six test-checked districts there was provision of electro-chlorinators in SVS and retrofitting schemes whereas it was not provisioned in case of solar-based schemes thereby depriving the rural population from safe drinking water. It is pertinent to mention that five⁷ out of six test-checked districts in Chhattisgarh are partly affected from either fluoride, iron and/or Nitrate contamination.

4.3 Implementation of Multi Village Schemes (MVS)

4.3.1 *Delayed initiation of MVS and elimination of key components*

Under JJM guidelines (2019), the maximum time allowed for completing MVS was 36 months and contracts should not be awarded after March 2021 which was extended to December 2021 by the GoI. The SWSM planned for 77 MVS and accorded administrative sanction of 70 MVS during 2021-22 to 2022-23. The MVS works were finally awarded during June 2023 to February 2024.

In the meantime, due to revision in USOR (June 2022), the rates of items (such as PVC, DI and HDPE pipes and accessories) were increased by 12 to 62 per cent. Consequently, the cost of projects increased, but instead of obtaining revised administrative approvals, SWSM decided to eliminate key components sanctioned in the administrative approvals of 70 MVS to contain the cost of project within the approved cost. Eliminated components included Programmable Logic Control- Supervisory Control and Data Access (PLC-SCADA) and bulk meters, water regulators etc. In some cases specifications such as length, diameter, material of pipe etc. were also altered.

It was mandatory to adopt SCADA which is important for monitoring of parameters of treatment plants like pressure, water quality, flow rate, etc. under JJM guidelines, since the water is transferred from a long distance at a very high cost, it is essential to monitor the loss of water during transmission.

Thus, elimination of mandatory components compromised the efficiency of monitoring efficiency under MVS.

During the exit conference (May 2025), the Secretary, PHED stated that at present, the mission period is extended up to 2028. The SWSM will complete the MVS as per the new timeline.

4.3.2 *Execution of MVS without ensuring allotment of water in requisite quantity*

Assurance of availability of surface water for the period of the ultimate designed life of an MVS is essential for the sustainability of the Pipe Water Supply

⁷ Dhamtari, Kondagaon, Korba, Mahasamund and Surguja

Schemes. Audit observed significant deficiencies in allotment and availability of water was as discussed below:

- i) **Short allotment of water:** Audit observed shortfall in demand and allocation of water in six MVSs. The allotment of water was less than the requirement of the schemes, directly impacting the availability of potable water in the targeted rural areas. The Water Resource Department was able to provide 9.185 Million Cubic Meters (MCM) of water as against the demand of 16.363 MCM in these schemes as detailed in **Appendix 4.1**. The shortfall in allotment of water in individual MVS ranged from 18 Kilo Litres (KL) per day to 17,537 KL per day.
- ii) **Non-availability of water in the waterbodies:** At the planning stage, assessment of the storage capacity of waterbodies supplying the water to the MVS, was crucial for the sustainable supply of water for the scheme. Audit noticed that the tanks and reservoirs in serving these MVSs lacked the necessary capacity to meet the water needs of all connected villages. In five cases, it was noticed that the tanks and reservoirs did not have the requisite quantity of water to feed the MVS, and the shortfall ranged from 37,000 KL to 39,49,000 KL as detailed in **Appendix 4.2**.

Thus, short allocation of water and non-availability of water in the water bodies may result in non fulfilment of minimum service level benchmark of 55 LPCD of drinking water undermining the MVS's sustainability.

On this being pointed out, the Government intimated (May 2025) that information was being collected from the concerned districts.

4.3.3 Inclusion of unwarranted components for in-village part of MVS

Paragraph 6.1 of the JJM guidelines (2019) details that the in-village piped water supply infrastructure will consist of pumping arrangement, OHT/underground sump, pipeline for water supply, distribution network leading up to FHTC and bulk meter/ sensor-based water meter to measure the water supplied.

Audit scrutiny of records of three⁸ MVS in Dhamtari and Mahasamund districts covering 124 villages revealed that these schemes were designed for gravity-based distribution through surface water. Thus, in-village infrastructure of these MVS did not require tube-wells drilling, submersible pump, rising main, electro-chlorinator and electric connection as components of in-village infrastructure. However, Audit observed that these unwarranted components costing ₹ 13.51 crore were executed as detailed in **Table 4.5**.

⁸ Ghatula and Sankara in Dhamtari and Samoda Achhola in Mahasamund.

Table 4.5: Inclusion of unwarranted components*(₹ in lakh)*

SI. No.	District	Name of MVS	Amount of in-village components						
			Tube well	Submersible pump	Rising main	Electro-Chlorinator	Electro-Chlorinator room	Electric connection	Total
1	Dhamtari	Ghatula MVS	44.00	47.30	245.38	132.30	46.56	47.50	563.04
2		Sankra MVS	46.20	49.50	235.22	132.30	46.56	50.90	560.68
3	Mahasamund	Samoda-Achhola MVS	0.00	0.00	0.00	184.32	42.72	0.00	227.04
Total			90.20	96.80	480.60	448.92	135.84	98.40	1,350.76

(Source: Data provided by the PHED and compiled by audit)

The execution of MVS with these unwarranted items would be rendered defunct after commissioning of MVS.

On this being pointed out EE, PHED, Dhamtari, stated (September 2024) that there was delay in tendering of MVS by SWSM. The out-village infrastructure in MVS delayed for reasons beyond the control of DWSM/Division office. Meanwhile the in-village works of the villages included in the MVSs were completed and there was a demand to supply drinking water under completed in village works. The villagers are getting water through above items of works despite delays in out-village works. EE, PHED Mahasamund (September 2024) stated that in-village infrastructures were sanctioned to make the system operational by 2024.

The reply confirms that additional funds were required for unwarranted components like tube wells, pumps, and electro-chlorinators, to make the in-village infrastructure concerning MVS villages, which will be of no use after the functioning of the MVS.

4.4 Implementation Support Agencies (ISA)

JJM Guidelines emphasised the importance of ISAs to ensure the successful implementation and sustainability of its objectives. The ISAs work closely with communities to strengthen their participation and capacity to manage water resources, supporting GP in creation of VAPs by facilitating baseline surveys, water resource mapping, identifying infrastructure needs, helps GP to pass resolution for taking up JJM in villages and undertake Participatory Rural Appraisal (PRA) activities for determination of community contribution and its deposition in the bank account.

Delayed engagement of ISA: In tests checked districts, it was observed that ISAs were appointed one to two years after (between September 2021 to March 2023) the preparation of VAPs (between October 2020 to December 2020). The delayed appointment of ISAs resulted in non-involvement of ISA in preparation of VAPs and also resulted in non-obtaining consent from villagers on Capex and Opex contribution along with assurance of presence of 80 per cent community at the time of the GP

resolution as requisite under JJM. Consequently, community contribution for Capex could not be collected.

On this being pointed out, the Government replied (May 2025) that information was being collected from the concerned districts.

Shortfall in support activities: JJM also aims to build capacities of different stakeholders especially local communities, responsible for owning, managing, operating and maintaining in-village water supply systems. Therefore, Information Education and Communication (IEC) activities such as Participatory Rural Appraisal (PRA) activities, Inter Personal Communication (IPC), Behavioral Change Communication (BCC) related activities are key to success of JJM.

During test-check of records in selected districts, it was observed that there was significant shortfall in IEC, BCC, IPC activities, skilling activities and capacity building activities as shown in **Table 4.6**.

Table 4.6: Target and achievement of various support activities

Sl. No.	District	IEC/BCC/IPC			Skilling Activity			Capacity Building		
		Target	Achievement	Per cent	Target	Achievement	Per cent	Target	Achievement	Per cent
1	Dhamtari	9,207	3,194	35	1,674	664	40	2,180	1,671	77
2	GPM	8,014	55	0.69	1,257	110	9	1,033	59	6
3	Kondagaon	10,712	4,746	44	1,238	157	13	647	280	43
4	Korba	21,154	6,425	30	1,412	300	21	0	0	0
5	Mahasamund	24,161	0	0	7,946	3,525	44	3,201	236	7
6	Surguja	2,166	1142	53	753	213	28	742	257	35
Total		75,414	15,562	21	14,280	4,969	34	7,803	2,503	32

(Source: Information provided by the respective District PHE divisions and compiled by audit)

- Achievement for IEC/BCC/IPC activities, skilling the local people and capacity building of institutes was only 21 per cent, 34 per cent and 32 per cent respectively against the targets and no IEC activities were undertaken in Mahasamund.
- Mahasamund district was at the top with 44 per cent progress to train the identified people of the community in the field of construction, plumbing, electrical, etc. whereas, in GPM district the progress was only nine per cent.
- Training of the various level officers in Dhamtari district to improve institutional capacity was satisfactory with the achievement of 77 per cent, on the contrary, GPM district was lagging in this activity also and no capacity building activities were conducted in Korba.

On this being pointed out, the Government replied (May 2025) that information was being collected from the concerned districts.

4.5 Third-Party Inspection Agencies

The role of the Third-Party Inspection (TPI) agencies under JJM is crucial for ensuring the quality of work and materials, adherence to specifications and

timelines, and sustainability of infrastructure through independent evaluations. As per the JJM guidelines the duties of the TPIs are to sample check the quality of materials used in the field; to verify the quantity and quality of works executed as per the bill for payment claimed, recommendations on the payment for the work executed, functioning of the in-village infrastructure during trial run, etc.

During the scrutiny of records in the selected districts, it was observed that initially 13 TPI agencies were empaneled by SWSM (November 2021). TPI agencies were also empaneled by DWSMs. Audit noticed that during 2019-21 the JJM works were executed before engagement of TPIs.

As per the work order & Expression of Interest (EoI), TPIs were required to inspect work under rural water supply scheme. The work of TPIs including activities proposed under the agreement and action plan of TPIs were to be monitored by Executive Engineer with guidance from DWSM. In four test-checked districts, audit observed that action plan for allotted village for entire scheme cycle with phase-wise outputs was not prepared by TPI indicating that work of TPIs was not monitored by DWSM. TPIs were submitting test reports only at the time of submission of running bills by the civil contractors, however, records in respect of sample checking of test report of material used for construction, quality control measures adopted for construction and safety measures adopted at the time of construction in field were not provided to Audit by DWSM. Therefore, it could not be ensured that the quality and quantity of materials used for the work were checked or not by the TPIs. Audit noticed that expenditure of ₹ two crore was incurred towards payment to TPIs by the five selected districts.

Thus, the intention behind engagement of TPI for ensuring quality and quantity at different stages was not fulfilled.

On this being pointed out, the Government replied (May 2025) that information was being collected from the concerned districts.

4.6. Monitoring

As per the JJM Operational Guidelines, after making provision of tap connections to all rural HHs in a village, the Department implementing the scheme will get a completion certificate from GP and then mark the village as 'Har Ghar Jal' on JJM-IMIS by March 2024. There were 19,656 villages in Chhattisgarh and all HHs of these villages were to be provided with FHTC under JJM. Against the target of 100 per cent HGJ, the achievement (March 2024) of certified HGJ villages was only 3.64 per cent (716 villages) in the State and it was 4.31 per cent in six selected districts as shown in **Table 4.7**.

Table 4.7: Status of HGJ certified village up to March 2024

Name of district	Total number of villages	No. of villages reported as HGJ by DWSM	No. of villages certified as HGJ by VWSC	Percentage of villages certified against reported	Percentage of villages certified against targeted village
Dhamtari	622	558	91	16	14.63
GPM	222	7	2	29	0.90
Kondagaon	571	44	14	32	2.45
Korba	703	28	11	39	1.56
Mahasamund	1,119	134	39	29	3.49
Surguja	569	10	7	70	1.23
Total	3,806	781	164	21	4.31
Total for State	19,656	2239	716	31.98	3.64

(Source: As per JJM IMIS data as of 01.04.2024)

Thus, less than five per cent of villages were certified as *Har Ghar Jal* as of March 2024 against the target of 100 per cent in the State.

The Government replied (May 2025) that the GoI has extended the target date till 2028 and all targets will be achieved as per the new timelines.

4.6.1 Physical verification of Har Ghar Jal certified villages

To ascertain the functionality of FHTC reported in the IMIS, Joint Physical Inspections (JPI) of 24 selected schemes were conducted by audit. Out of these, two villages, Bhithidih of Mahasamund district and Bhidavar of Dhamtari district were certified as HGJ.

(i) **HGJ certified village-Bhithidih:** As per the DPR, out of 381 HHs, 15 HHs had existing FHTC and the remaining 366 HHs were planned to be provided FHTC under JJM. Audit observed that the village Bhithidih was certified (October 2023) as HGJ after construction of only 214 FHTCs out of the required 366. As per IMIS data there were four habitations with 230 HHs, however, in VAP, FHTC was planned for 249 HHs (334-85) in three habitations. During JPI, it was noticed that 105 HHs of two habitations of the village, i.e. Kamardera and Vidyanagar, were not covered under JJM. The photograph showing habitation of village Bhithidih, without FHTCs and non-connected FHTCs with distributory line of pipeline and declared as “HGJ” is shown below:



Photo 4.1: FHTC constructed, laying of distribution line not done and composite pipe lying open without connection (Kamardera habitation, Village-Bhithidih)



Photo 4.2: FHTC constructed, laying of distribution line not done and composite pipe lying open without connection (Kamardera habitation, Village-Bhithidih)



Photo 4.3: Distribution line did not reach and FHTC not constructed (Vidyanagar habitation, Village-Bhithidih)

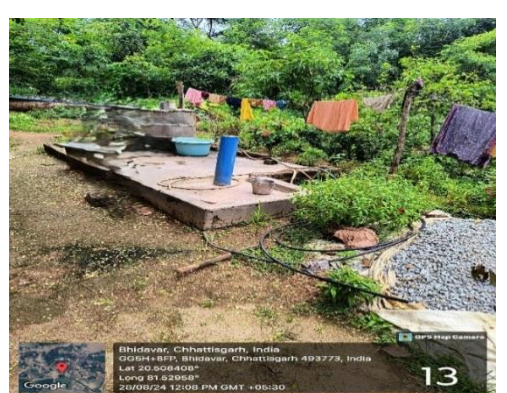


Photo 4.4: Distribution line did not reach and FHTC not constructed (Vidyanagar habitation, Village-Bhithidih)

(ii) **HGJ reported village- Bhidavar:** Similarly, 20 HHs were visited during JPI and it was noticed that village Bhidavar of Dhamtari district was reported as 'Har Ghar Jal' by PHED without connecting the standpost with distribution line of the water supply system as shown in photographs below:



Photo 4.5: Picture showing FHTCs at village Bhidavar with composite pipe not connected with distribution line



Thus, all the habitations and households were not covered under JJM. Further villages covered under the scheme were reported and certified as HGJ without

even completion of work and providing FHTC in every HH of the village, depriving the village population of the mission benefits.

In the exit conference (May 2025), the Secretary, PHED stated that the matter has already been investigated, and action has been taken against the responsible officers.

4.6.2 *Inflated progress by declaration of non-functional tap connections as functional*

The JJM guidelines provides that the National Mission would create an IMIS for capturing financial and physical progress of the Mission and the PHED would be responsible for entry of data in IMIS. The data from States with respect to physical progress of various projects, geo-tagging of assets, expenditure made on the projects, functionality status of projects would be captured on IMIS and will be kept in the public domain through which there is a scope of social audit and overseeing by end-users and various institutional structures.

Functionality of tap connections is defined as a tap connection to a rural HH for providing drinking water in adequate quantity of prescribed quality regularly. DWSM at the district level is responsible for uploading FHTC on IMIS after receipt of commissioning certificate from GP. As per IMIS, total FHTCs provided in rural areas of Chhattisgarh as of March 2024 was 38.97 lakh. The status of functionality of FHTCs is detailed in **Table 4.8**.

Table 4.8: Status of functionality of FHTCs

Status as of January, 2025	Progress of FHTCs as per IMIS	Reason for non-functionality of FHTC					Actually Functional FHTCs
		For want of source/dry source	Incomplete OHTs	For want of electric connection	Solar System not installed	Total	
	40,10,825	7,86,566	2,91,471	1,56,433	96,710	13,31,180	26,79,645

(Source: Information provided by the Department)

From the above table, it can be observed that even though the progress of FHTCs shown in the IMIS was 40.11 lakh (January 2025), the FHTCs were non-functional because of incomplete OHTs, dry source, lack of water source/electric connection, non-installation of solar pump etc. Thus, out of 40.11 lakh FHTCs declared as functional in the IMIS, 26.80 lakh (67 per cent) FHTCs were incorrectly reported as functional.

To ascertain the functionality of FHTCs reported in the IMIS, JPI of 24 selected schemes covering 475 beneficiaries was carried out by Audit along with PHED division staff. The observations noticed during JPI are discussed below:

- Audit observed that out of 475 FHTCs which were shown as functional in the IMIS, 303 FHTCs were found non-functional (64 per cent) due to reasons like dry source, scheme under progress, incomplete OHT, non-availability of electric connection and refusal to take over the scheme by GPs.
- Audit noticed that in 21 SVS/retro schemes out of 35 test-checked schemes, there was provision of construction of new OHT. Out of which in 15 schemes, the OHT was not completed and 1,648 FHTCs associated

with those OHTs were shown as functional in the IMIS (**Appendix 4.3**). Photographs of some under-construction OHTs and the respective non-functional household tap connections are shown below:

Photographs showing overhead tanks under construction stage and non-functional FHTCs



Photo 4.6: Incomplete OHT at village Banjoda, District: Kondagaon



Photo 4.7: Non-functional household tap connection at village Banjoda, District: Kondagaon



Photo 4.8: Incomplete OHT at Pandripani (Pachri), District: Mahasamund



Photo 4.9: Non-functional household tap connection Pandripani (Pachri), District: Mahasamund



Photo 4.10: Incomplete OHT at village Padariya, District: GPM

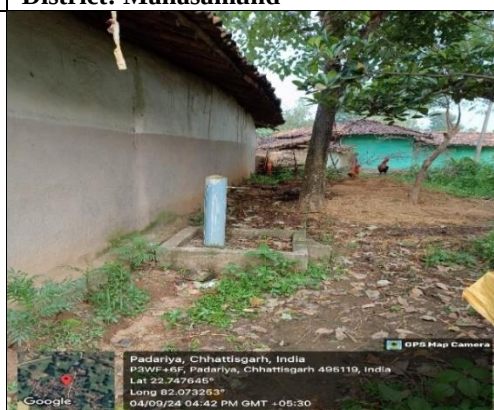


Photo 4.11: Non-functional household tap connection at village Padariya, District: GPM

Thus, the inflated progress of FHTC was reported and civil construction work of FHTC was completed without ascertaining its functionality.

In the exit conference (May 2025), the Secretary, PHED stated that most of the schemes were based on ground water sources. The department is exploring all alternatives to make tap connections functional. The reply furnished by the secretary is in line with the audit observation that the progress of FHTC was declared functional before ascertaining the actual functionality of the FHTC.

CHAPTER- V

WATER QUALITY MONITORING AND SURVEILLANCE

CHAPTER-V

WATER QUALITY MONITORING AND SURVEILLANCE

5 Water Quality Monitoring and Surveillance

The Annual Groundwater Quality Report (2024) published by the Central Ground Water Board, Ministry of Jal Shakti, GoI presented findings from the data collected from several groundwater monitoring stations to establish a comprehensive baseline for groundwater quality, enabling targeted interventions to address emerging concerns. The report highlighted high concentrations of Iron, Fluoride and Nitrates above their permissible limits in several districts of Chhattisgarh State. Although not alarming, these findings necessitate regular monitoring of water quality in rural areas for protecting public health.



To ensure quality of water supply, Water Quality Monitoring & Surveillance (WQMS) is given topmost priority under JJM. Water testing is important for monitoring the operation of water supply, verification of the safety of drinking water, investigation of disease outbreaks, validation process and preventive measures. Monitoring of water quality involves laboratory and field testing of water samples collected from water sources and FHTC.

The Audit findings on Water Quality Monitoring & Surveillance issues are discussed in the following paragraphs:

5.1 Allocation of funds and their utilisation for WQMS

Recognising the importance of WQMS, up to two *per cent* of the total funds allocated to each state are earmarked specifically for WQMS activities. This financial provision reflects the mission's commitment to public health by ensuring the safe operation of water supply systems, continuous monitoring of water quality, and delivering safe drinking water. These include setting up and upgrading laboratories, procurement of equipment, chemicals and glassware, hiring resources, and covering expenses for National Accreditation Board for Testing and Calibration (NABL) accreditation. During 2019 to 2024, SWSM allocated ₹ 58.91 crore for WQMS, against the earmarked two *per cent* of total allocated funds i.e. ₹ 199.79 crore. The year-wise allocation and utilisation of funds for the WQMS component is summarised in **Table 5.1**.

Table 5.1: Year-wise allocation and utilisation of WQMS funds in Chhattisgarh*(₹ in crore)*

Year	JJM Central fund released by GoI	Mandated 2 per cent of JJM Central allocation (60%) plus matching State share (40%)	Fund allocated to DWSMs for WQMS activities		Utilised	Shortfall of utilisation against fund allocated	
			Amount	Per cent of allocation against mandated		Amount	Per cent
1	2	3	4	5	6	7 (4-6)	8
2019-20	24.27	0.81	0.00	0	0.00	0.00	0
2020-21	290.15	9.67	6.90	71	4.29	2.61	38
2021-22	556.82	18.56	20.32	109	12.85	7.47	37
2022-23	2,236.86	74.56	19.99	27	16.23	3.76	19
2023-24	2,885.56	96.19	11.70	12	7.51	4.19	36
Total	5,993.66	199.79	58.91		40.88	18.03	31

(Source: JJM sanction letter by GoI and e-Works data provided by PHED)

It can be observed from the above table that against the amount of ₹ 199.79 crore mandated for WQMS activity only ₹ 58.91 crore was allocated to DWSMs during the period 2019-20 to 2023-24. Only during 2021-22, the amount for support component was allocated as mandated by JJM guidelines. Out of total allocated amount 69.40 per cent was utilized by DWSMs.

This reflects missed opportunities in setting-up of water testing laboratories in the State and accreditation of the laboratories by NABL and shortage of staff in the laboratories due to less utilisation of funds for WQMS as discussed in subsequent paragraphs.

On this being pointed out, the Government stated (May 2025) that the PHE divisions have received allocation as per the annual work plan and accordingly fund drawl limit was issued to each division. Subsequently expenditure on WQMS work has been incurred by the PHE divisions under the WQMS during 2019-20 to 2023-24.

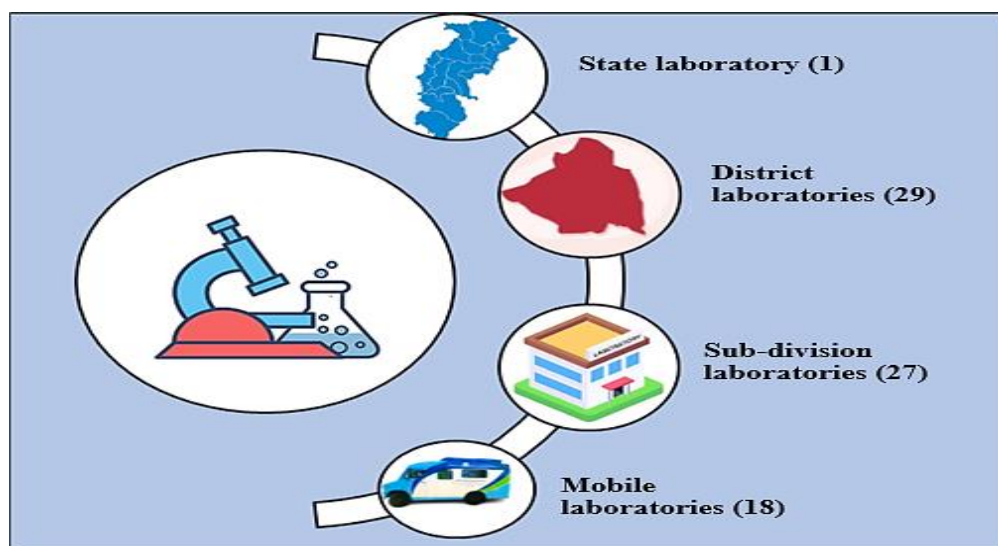
The reply furnished indicates that the activities like laboratory expansion, procurement of testing equipment under WQMS were not planned as per norms prescribed in the JJM guidelines.

5.2 Setting up of Water Quality Testing Laboratories and testing of 13 basic water quality parameters

The JJM guidelines mandate that states strengthen their water quality testing infrastructure by establishing or upgrading laboratories at the state, district, block levels, as well as mobile laboratories. This initiative is supported by regular monitoring through laboratory assessments and improvement plans. Laboratories at the state, district, and sub-division levels are required to test water samples for at least 13 basic water quality parameters in accordance with BIS:10500 (2015) standards. In Chhattisgarh, there is one state laboratory, 29 district laboratories, 27 sub-division level laboratories, and 18 mobile

laboratories. **Chart 5.1** illustrates the availability of water quality testing laboratories across the state.

Chart 5.1: Chart depicting the number of water testing laboratories at various levels in the State



Audit scrutiny revealed that the expansion of water quality testing infrastructure was not planned adequately, with the establishment of only two district level and three sub-division level laboratories to fulfill the testing requirement under JJM. As of March 2024, there was no laboratory in four¹ out of 33 districts and 27 sub-divisional laboratories covered 146 blocks in the State indicating significant shortfall in infrastructure facility for testing.

The JJM guidelines emphasise not only the creation of laboratories but also the critical need for their upgradation and regular monitoring through assessments and improvement plans. This ensures that these laboratories are fully equipped to test water samples for at least 13 essential water quality parameters², in line with BIS:10500 (2015) standards. Among these, testing for Iron, Arsenic, and Nitrate is particularly critical, as these contaminants pose serious health risks, such as stomach and skin diseases, cancer, and blue-baby syndrome. Due to the severity of these risks, no permissible relaxation is allowed for these parameters, making it crucial that all laboratories are fully capable of detecting them to protect public health.

The status of testing for all 13 basic water quality parameters prescribed by BIS:10500 (2015), along with the capability of laboratories to test the three critical parameters: Iron, Arsenic and Nitrate at various levels of laboratories (state, district, block, and mobile) is summarised in **Table 5.2**.

¹ Khairagarh-Chhuikhadan-Gandai, Manendragarh-Chirmiri-Bharatpur(MCB), Mohla-Manpur-Ambagarh Chouki, Sakti and Sarangarh-Bilaigarh.

² PH, Total Dissolved Solids (TDS), Turbidity, Chloride, Total Alkalinity, Total Hardness, Sulphate, Iron, Arsenic, Fluoride, Nitrate, Total Coliforms, and Thermotolerant Coliform or E. coli

Table 5.2: Details showing the number of water quality testing laboratories in the State and availability of parameter testing facilities

Type of Laboratory	Total No. of Laboratories	Number of basic parameters that can be tested (out of 13)	Facility for testing three parameters: Iron, Arsenic, Nitrate
State Lab	1	13 parameters	All three parameters being tested
District Labs	29	Below 5 parameters: 1 lab	0 parameters: 5 labs
		6 to 10 parameters: 11 labs	1 parameter: 6 labs
		11 to 12 parameters: 14 labs	2 parameters: 15 labs
		13 parameters: 3 labs	3 parameters: 3 labs
Sub-division Labs.	27	Below 5 parameters: 5 labs	0 parameters: 24 labs
		6 to 10 parameters: 22 labs	1 parameter: 3 labs
		11 to 12 parameters: 0 lab	2 parameters: 0 lab
		13 parameters: 0 lab	3 parameters: 0 lab
Mobile Labs	18	Below 5 parameters: 15 labs	0 parameters: 0 lab
		6 to 10 parameters: 3 labs	1 parameter: 16 labs
		11 to 12 parameters: 0 lab	2 parameters: 2 labs
		13 parameters: 0 lab	3 parameters: 0 lab
Total	75	Below 5 parameters: 21 labs	0 parameters: 29 labs
		6 to 10 parameters: 36 labs	1 parameter: 25 labs
		11 to 12 parameters: 15 labs	2 parameters: 18 labs
		13 parameters: 3 lab	3 parameters: 3 labs

(Source: Information obtained from WQMIS portal and compiled by Audit)

During scrutiny of records, the following observations on water quality testing facilities in the state were noticed:

- **Inadequate Testing Capacity:** Out of 75 water testing laboratories in the State, 51 had the capability to test only three to 10 parameters, highlighting a significant gap in testing facilities. The State laboratory did not have the facility to test Arsenic till March 2024. The equipment to test Arsenic was procured and commissioned after March 2024. Among the 29 district laboratories, only three viz. Durg, Kabirdham, and Rajnandgaon were equipped to test all 13 basic water quality parameters. In Durg and Kabirdham districts, Arsenic testing was conducted using testing kits instead of testing with laboratory equipment

viz. atomic absorption spectrophotometer, raising concerns about reliability of results.

- Additionally, five district labs and 24 sub-division labs were not conducting tests for Arsenic, Iron and Nitrates.
- **Lack of Bacteriological Testing:** The district laboratory in GPM district lacked the facility to test for bacteriological parameters. This is particularly concerning, as it may expose the rural population to the risk of bacterial contamination in drinking water.
- **Non-functional Testing Instruments:** In test-checked district-Dhamtari it was noticed that the spectrophotometer used for detecting Iron, Nitrates, Fluorides, and Sulphate in water samples had been non-functional since December 2022, further compromising the ability to accurately assess water quality in the district.
- **Non-functional Mobile Labs:** The mobile labs in two test-checked districts Kondagaon and Surguja were found to be non-functional due to a shortage of staff and lack of testing materials, undermining the flexibility and responsiveness of water quality monitoring efforts. The mobile laboratory in Kondagaon was non-functional for seven years.

There were significant gaps in the infrastructure and operational capabilities of water quality testing laboratories in the state, posing serious risks to public health.

The Government stated (May 2025) that Arsenic testing facility is available at district laboratory Rajnandgaon and State level laboratory. In other districts Arsenic testing kits are being used to test for Arsenic. Facility for testing of 13 basic parameters is available in 28 district laboratories. Further, the district laboratory has the facility for testing bacteriological parameters.

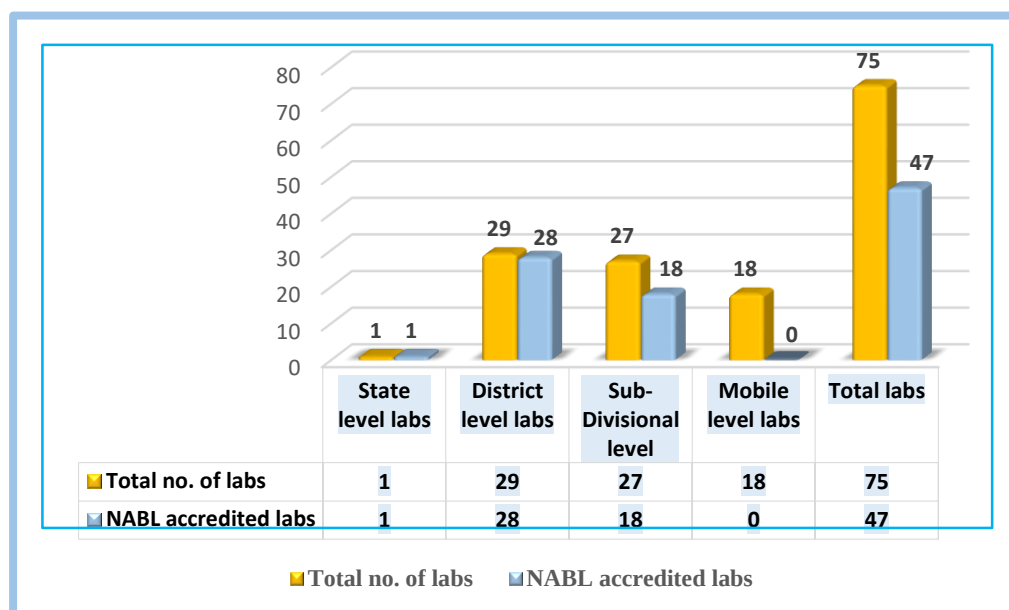
The JJM guidelines (2020) stipulates that facility for testing of 13 basic parameters including Arsenic should be available at State, district and block level laboratories. Also, the Arsenic testing facility was not available at the State level laboratory till October 2024 which is in contravention with JJM guidelines (2020). Only three district level laboratories out of 28 have the facility to test all 13 basic parameters as pointed in the paragraph, the same is also reflecting on WQMIS portal.

5.3 NABL accreditation of laboratories

According to the Uniform Drinking Water Quality Monitoring Protocol (February 2013) and Paragraph 10 (xii) of the JJM Guidelines, all water testing laboratories are required to pursue NABL accreditation as per IS/ISO/IEC:17025 for testing water quality, especially for basic water quality parameters.

Audit observed that out of 75 water quality testing laboratories in the State, only 47 laboratories had NABL accreditation as detailed in **Chart 5.2**. None of the mobile laboratories, which are crucial for testing in remote areas, in the entire State was accredited by NABL.

Chart 5.2: Details of NABL accredited laboratories in the State



Further, district water testing laboratories of all six test-checked districts were NABL accredited for only six (less than 50 per cent) basic water quality parameters out of 13 essential parameters as detailed in **Table 5.3**.

Table 5.3: Details showing number of water quality parameters being tested in the test-checked laboratories and their accreditation with NABL

Sl. No	District	District labs (6)		Sub-division labs (5)		Mobile labs (2)	
		No of basic parameters being tested	NABL accredited parameters	No of basic parameters being tested	NABL accredited parameters	No of basic parameters being tested	NABL accredited parameters
1	Dhamtari	12	6	6	Not accredited	NA	NA
2	GPM	6	6	NA	NA	NA	NA
3	Kondagaon	12	6	6	6	Not functional	0
4	Korba	12	6	6	6	NA	NA
5	Mahasamund	12	6	7	6	NA	NA
6	Surguja	10	6	3	Not accredited	Not functional	0

(Source: Information provided by the PHED and compiled by audit)

*NA: Lab not available

In the absence of NABL accreditation for water testing laboratories, the quality assurance of test results cannot be relied upon and can result in inaccurate testing of water samples.

On this being pointed out, the Government stated (May 2025) that no initiative was taken for accreditation of 18 mobile labs. Further, 11 out of 13 basic parameters were NABL accredited in Dhamtari, GPM, Mahasamund,

Kondagaon, Korba and Surguja district laboratories. Action is being taken for the accreditation of sub-division laboratories of Dhamtari and Surguja.

The NABL accreditation certificates of the six test-checked districts clearly indicate that only six out of 13 basic parameters were NABL accredited.

5.4 Shortfall in conducting quality testing of water sources

The JJM guidelines stipulate that the sub-divisional/block labs should test 100 *per cent* water sources under their jurisdiction once for chemical parameters and twice for bacteriological parameters (pre and post monsoon) in a year, covering all sources of a block for at least 13 basic water quality parameters. It further stipulates that the district lab should test 250 water sources per month i.e. 3,000 in a year for at least 13 basic water quality parameters. The district lab should also refer the positively tested samples to the State laboratory immediately. Moreover, five *per cent* of samples tested by the district laboratories are to be tested at State laboratories. The water source tested in six test-checked districts by the district and sub-divisional laboratories are detailed in **Table 5.4**.

Table 5.4: Details of water sources tested in the test-checked districts during 2019-24

District	Year	2021-22	2022-23	2023-24
Dhamtari	No. of water sources	1357	1446	1446
	No. of water sources tested	818	1436	1357
	Testing (in <i>per cent</i>)	60	99	94
GPM*	No. of water sources	599	599	621
	No. of water sources tested	138	150	308
	Testing (in <i>per cent</i>)	23	25	50
Kondagaon	No. of water sources	8460	8460	8460
	No. of water sources tested	704	3255	4441
	Testing (in <i>per cent</i>)	8	38	52
Korba	No. of water sources	1022	1573	2418
	No. of water sources tested	145	1177	2416
	Testing (in <i>per cent</i>)	14	75	100
Mahasamund	No. of water sources	4246	4714	4790
	No. of water sources tested	2200	2200	1851
	Testing (in <i>per cent</i>)	51.81	46.67	38.64

(Source: Information provided by the PHED and compiled by audit)

*District formed in year 2022

- **Water source testing targets were not achieved:** Audit noticed that the target of the roster to test the water sources in the districts was neither set by the PHED nor was it available on IMIS. None of the six test-checked districts achieved the target prescribed under the JJM

guidelines. Dhamtari district was at the top for testing the water sources with an average of 53 *per cent* during 2021-24.

- **Weak monitoring of water testing activities:** Korba district could not provide testing data for the year 2019-20, and Mahasamund was unable to give data for the initial two years i.e. 2019-21. Audit noticed that water source ID wise testing records were not being maintained in the laboratory, required for identification and treatment of the contaminated sources. Testing data of water sources were neither maintained on the basis of pre and post monsoon test results nor was any analysis of water sources available in the records on such decisive factors.
- **Non conducting of bacteriological testing of water sources during pre-monsoon and post-monsoon period:** The data related to the pre-monsoon and post-monsoon testing of piped water supply (PWS) sources during 2019-20 and 2020-21 was not available either with the test-checked districts or on the WQMIS portal. Details of testing during 2021-22 to 2023-24 are given in **Table 5.5**.

Table 5.5: Details of pre-monsoon and post-monsoon testing of drinking water sources in the test-checked districts

District	Year	No. of PWS source	Pre-monsoon		Post-monsoon	
			Tested	Shortfall (<i>per cent</i>)	Tested	Shortfall (<i>per cent</i>)
Dhamtari	2021-22	1,357	185	1,172 (86%)	678	679 (50%)
	2022-23	1,446	813	633 (44%)	477	969 (67%)
	2023-24	1,446	397	1,049 (73%)	608	838 (58%)
GPM	2021-22	554	0	554 (73%)	0	554 (100%)
	2022-23	554	0	554 (100%)	0	554 (100%)
	2023-24	601	0	601 (100%)	0	601 (100%)
Kondagaon	2021-22	848	0	848 (100%)	0	848 (100%)
	2022-23	848	0	848 (100%)	0	848 (100%)
	2023-24	874	265	609 (70%)	825	49 (6%)
Korba	2021-22	1,022	80	942 (92%)	22	1000 (98%)
	2022-23	1,573	528	1045 (66%)	220	1353 (86%)
	2023-24	2,418	2,100	318 (13%)	90	2328 (96%)
Mahasamund	2021-22	2,046	0	2046 (100%)	0	2046 (100%)
	2022-23	2,514	0	2514 (100%)	0	2514 (100%)
	2023-24	2,590	1	2589 (100%)	2	2588 (100%)

(Source: Information provided by the PHED and compiled by audit)

It can be observed from the above table that the shortfall in pre-monsoon testing ranged from 13 to 100 *per cent* and that during post-monsoon it was from 6 to 100 *per cent*.

- **Poor water quality checks in Schools and Anganwadi Centers:** In test-checked districts, it was noticed that the DWSM was not serious about water quality checks of Schools and Anganwadi Centers. Testing of water quality during the first three years of the JJM period i.e. 2019-20 to 2021-22 was negligible. Information on testing of the drinking water in the Schools and Anganwadi Centers in test-checked districts is summarised in **Table 5.6**.

Table 5.6: Details of water quality check in Schools and Anganwadi Centers in the test-checked districts during 2019-24

District	Year	Schools			Anganwadi centres		
		Total no.	Tested	Test percentage	Total no.	Tested	Test percentage
Dhamtari	2019-20	1,165	5	0.43	758	12	1.58
	2020-21	1,165	6	0.52	758	5	0.66
	2021-22	1,165	0	0.00	758	0	0.00
	2022-23	1,165	26	2.23	758	18	2.37
	2023-24	1,165	15	1.29	758	0	0.00
GPM	2019-20	NA	NA	NA	NA	NA	NA
	2020-21	NA	NA	NA	NA	NA	NA
	2021-22	197	4	2.03	160	7	4.38
	2022-23	197	10	5.08	160	7	4.38
	2023-24	197	128	64.97	160	106	66.25
Kondagaon	2019-20	884	27	3.05	320	14	4.38
	2020-21	884	39	4.41	320	25	7.81
	2021-22	884	159	17.99	320	62	19.38
	2022-23	884	116	13.12	320	53	16.56
	2023-24	883	883	100.00	322	322	100.00
Korba	2019-20	NA	NA	NA	NA	NA	NA
	2020-21	NA	NA	NA	NA	NA	NA
	2021-22	356	332	93.26	202	189	93.56
	2022-23	356	353	99.16	202	197	97.52
	2023-24	356	294	82.58	202	192	95.05
Mahasamund	2019-20	NA	NA	NA	NA	NA	NA
	2020-21	NA	NA	NA	NA	NA	NA
	2021-22	902	160	17.74	329	80	24.32
	2022-23	902	471	52.22	329	237	72.04
	2023-24	899	462	51.39	329	91	27.66

(Source: Information provided by the PHED and compiled by audit)

It can be observed from the table that the quality of water supplied in Schools and Anganwadi Centers of the district was not tested completely except in Kondagaon in the year 2023-24. The performance of district Dhamtari was very poor in testing of water quality of Schools and Anganwadi.

On this being pointed out, the Government replied (May 2025) that pre-monsoon and post-monsoon tests of source of PWSS were being conducted. Further, the water sources in Schools and *Anganwadi* Centres were being conducted through Field Test kits (FTK).

The reply furnished by the Government is not acceptable as there was huge shortfall in pre-monsoon and post-monsoon testing in the test-checked districts as found during audit. Moreover, as per JJM guidelines (2019) all block level laboratories are to test all drinking water sources in their jurisdiction which includes the drinking water sources in Schools and *Anganwadi* Centres also.

5.5 Tests conducted through Field Test Kits (FTK) and Bacteriological Detection Kits (BDK)

Chapter 10 of the JJM guidelines states that every VWSC is to identify and train five women (Surveillance group) in every village to undertake surveillance activities involving use of FTK for testing and conducting sanitary inspection.

Further, paragraph 4.3 (v) and 6.3.6 of JJM-WQMS Framework stipulates that surveillance groups must ensure to test 100 *per cent* drinking water sources, including private sources, and water supply at schools, *Anganwadi* centers under their jurisdiction using FTK/BDK along with sanitary inspection as well as two sample delivery points in each habitation which are at the tail-end at least once in a month. The monthly test results are to be uploaded on WQMIS portal. The Surveillance Groups were formed with the name '*Jal Bahini*' in Chhattisgarh State.

During audit, it was seen that the Surveillance Groups were not formed in three out of 24 test-checked villages³. Testing results were not maintained in any of the test-checked villages, nor were they available at the WQMIS portal of the JJM.

The annual requisite testing frequency at all levels i.e. water sources, schools, *Anganwadi* centers and households and the number of samples tested during 2023-24 in the entire state as per WQMS Framework are depicted in **Table 5.7**.



Photo 5.1: A surveillance group member using FTK for water quality

³ Pandripani (Mahasamund), Bundeli (Korba) and Chhindlibeda (Kondagaon)

Table 5.7: Details of FTK/BDK sampling target and number of tests conducted during 2023-24

Water testing levels	Sampling frequency as per JJM-WQMS guideline	Total number	Annual testing target	No. of samples tested
1	2	3	4 (2*3)	5
Water sources (PWSS + non-PWSS*)	Once for chemical parameters and twice for bacteriological parameters (pre-monsoon and post-monsoon)	60,211	1,80,633	-
Schools	Once every month	46,280	5,55,360	
Anganwadi	Once every month	45,731	5,48,772	
Sample Household (no. of habitation=75,207)	Two households in each habitation every month	75,207*2 = 1,50,414	18,04,968	
Total			30,89,733	7,10,584 (23%)

(Source: IMIS and WQMIS reports and compiled by audit)

(* Non-PWSS source includes handpump, borewell, tubewell etc.)

The audit noticed that:

- Only 23 per cent of samples (7,10,584) were tested by using FTK/BDK against the target of 30,89,733 samples.
- As per the WQMIS, 3,060 samples were found contaminated out of 7,10,584 samples tested through FTK/BDK, of which only four were retested at the district laboratories and the test results of those four were not uploaded on the WQMIS. Health of rural people is at risk as contaminated samples are not retested at district labs.
- Data analysis of water testing done in test-checked districts using FTK/BDK revealed that achievement was meagre with only two to 28 per cent of the target during 2021-22 to 2023-24 as detailed in **Table 5.8**.

Table 5.8: Details of FTK/BDK sampling target and number of tests conducted in test-checked districts

District	2021-22			2022-23			2023-24		
	Target	No. of tests conducted	Per cent	Target	No. of tests conducted	Per cent	Target	No. of tests conducted	Per cent
Dhamtari	1,05,507	23,526	22	1,05,774	4097	4	1,05,774	7,602	7
GPM	32,097	1467	5	32,121	1,469	5	32,187	4,279	13
Kondagaon	1,37,748	28,998	26	1,38,564	28,992	21	1,38,408	27,533	20
Korba	71,634	1,104	2	73,287	2,382	3	75,822	5,153	7
Mahasamund	88,086	23,001	26	89,490	25,358	28	89,658	22,036	25

(Source: Information provided by the PHED and compiled by audit)

It can be seen from the above table that against the target, actual tests conducted ranged between 7 to 25 *per cent* during 2023-24.

On this being pointed out, the Government intimated (May 2025) that information was being collected from the concerned districts.

5.6 Monitoring of the utilisation of FTK/ H₂S vials

As per Chapter 10 of the JJM guidelines, one of the activities under WQMS is to enable communities to undertake presumptive testing of water quality using FTK and set up a system to procure/ refill FTK/bacteriological vials and monitor their utilisation.

Audit observed that FTK and H₂S vial were procured during 2019-20 to 2022-23 by DWSM.

Further, MD, JJM issued instruction (May 2023) to all DWSM for not procuring FTK, FTK refill and H₂S vials for BDK due to purchase of low standard of quality of kit at higher rates. The SWSM issued (September 2023) for empanelment of manufacturers and suppliers of FTK/BDK for centralised procurement of kits.

However, no FTK and H₂S vials were procured and distributed to the surveillance groups in the villages from 2023-24 to till date of audit (September 2024) in all six test-checked districts which hampered the water testing in the villages. The above-mentioned districts had reported conducting tests using earlier procured FTK and H₂S vials during 2023-24 and 2024-25, which indicates ineffective testing.

Since the FTK and H₂S vials have only two years of best life, it must be procured and issued to all surveillance groups (SGs) in a timely manner and their proper utilisation must be ensured. It was seen that no system has been evolved by the DWSMs for monitoring the utilisation of FTK/H₂S vials by the surveillance groups.

On this being pointed out, the Government stated (May 2025) that the FTK and H₂S vials are being procured and provided for testing of water quality.

The reply is not consistent with the findings during audit.



Photo 5.2: FTK for water

5.7 Water quality 'Hot spots'

Paragraph 10.3 of the JJM guidelines states that the water sources where the concentration of chemical contaminants is found to be borderline i.e. a little lower than the permissible limit as prescribed in BIS:10500, should be termed as 'Hot spot'. The list of such 'Hot spots' is to be shared by the PHED with SWSM, DWSM and GPs. Regular monitoring of water quality of such water sources was also the responsibility of the PHED and water quality surveillance should be done by the GP to take corrective measures as required.

Audit noticed that 'Hot spots' were neither identified nor the criteria to define the 'Hot spots' were fixed by the SWSM or DWSM.

On this being pointed out, the Government stated (May 2025) that the samples with borderline results are being retested and rechecked at the State level laboratory.

The reply is not acceptable as no such records were found at the test-checked districts regarding referring of samples to State level laboratory.

5.8 Shortage of manpower in water quality testing laboratories

Paragraph 4.3 of the WQMS framework (October 2021) issued by GoI stipulates the states to plan for adequate human resources (HR) to operate the water quality testing laboratories, facilitate water quality surveillance activities. The availability of staff against the prescribed staffing pattern for laboratories at all levels as shown in **Table 5.9**.

Table 5.9: Details of manpower position in various water quality laboratories

Type of Laboratory	Prescribed staff		No. of laboratories	Required Staff	Person in position	Shortfall
	Position	Numbers				
State lab	Chief Chemist/ Chief Water Analyst	1	1	1*1=1	1	0
	Senior Chemist/ Senior Water Analyst/ Senior Microbiologist	1		1*1=1	0	1
	Chemist/ Water Analyst	2		2*1=2	1	1
	Microbiologist/ bacteriologist	1		1*1=1	0	1
	Laboratory Assistant	3		3*1=3	0	3
	Data Entry Operator	2		2*1=2	0	2
	Lab Attendant	2		2*1=2	0	2
	Field Assistant	2		2*1=2	0	2
Total		14		14	2	12
District labs	Chemist/ Water Analyst	1	29	1*29=29	17	12
	Microbiologist/ Bacteriologist	1		1*29=29	0	29
	Laboratory Assistant	2		2*29=58	11	47
	Data Entry Operator	1		1*29=29	0	29
	Lab Attendant	1		1*29=29	0	29
	Field Assistant	2		2*29=58	0	58
Total		8		232	28	204

Block level labs	Junior Chemist	1	27	1*27=27	0	27
	Junior Microbiologist	1		1*27=27	0	27
	Laboratory Assistant	1		1*27=27	0	27
	Data Entry Operator	1		1*27=27	0	27
	Lab Attendant	1		1*27=27	0	27
	Field Assistant	1		1*27=27	0	27
Total		6		162	0	162
Mobile labs	Junior Chemist/ Microbiologist	1	18	1*18=18	0	18
	Field Assistant	1		1*18=18	0	18
	Driver	1		1*18=18	0	18
Total		3		54	0	54
Grand Total			75	462	30	432 (94%)

(Source: Information provided by the PHED and compiled by audit)

As can be seen from the above table, there is a shortfall of 432 i.e. 94 per cent of staff in laboratories at all levels. Further, it was seen that there was no provision for sanction strength for sub-division and mobile labs in the State. Thus, the shortage of prescribed laboratory staff not only hampered the number of water quality tests to be conducted but also the quality of tests conducted at laboratories.

On this being pointed out, the Government stated (May 2025) that temporary staffs were engaged through collectorate rate after providing due training to the employees for conducting water testing in the laboratory.

The reply furnished by the Government is not acceptable because, in the six test-checked districts, the sanction strength was itself less than the prescribed norms suggested under JJM.

CHAPTER- VI

ACHIEVEMENT OF PROGRAMME OUTPUT AND OUTCOME

CHAPTER-VI

ACHIEVEMENT OF PROGRAMME OUTPUT AND OUTCOME

6 Achievement of programme output and outcome

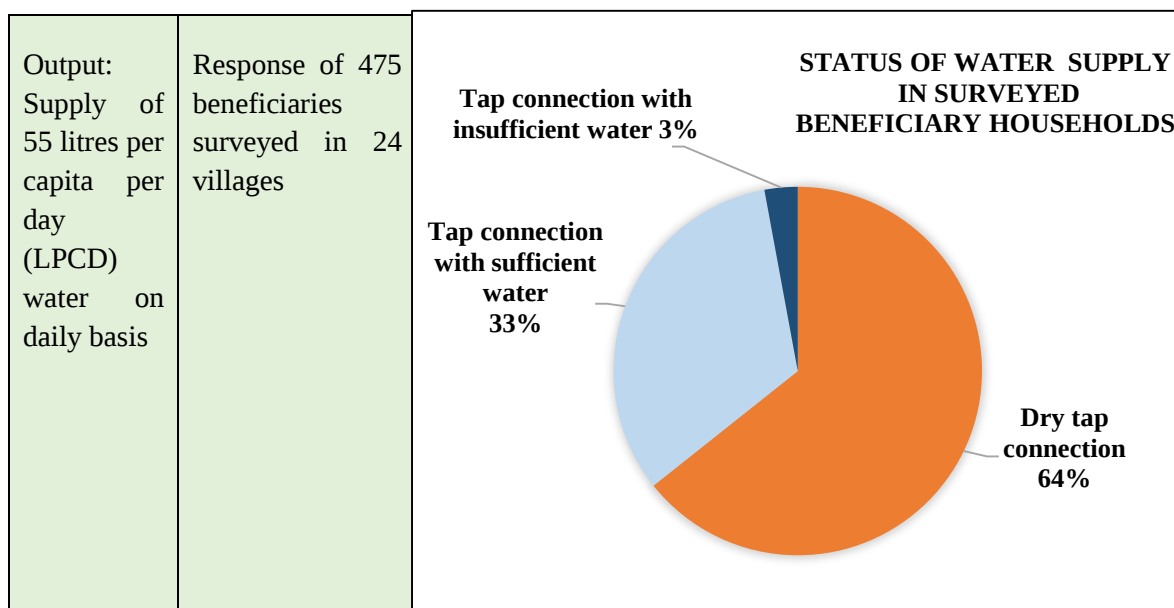
JJM's primary output is to provide all rural HHs with a FHTC by 2024. The Mission also strives to achieve four key measurable outcomes, viz. Improved health conditions of rural communities; Reduction in drudgery faced by women and girls, and empowerment of women, reduced school dropout rates of upper primary level girls; and increase in employment opportunities for rural communities. The success of JJM can be evaluated by measuring level of achievement of output and outcomes which depend upon timely delivery of output.

6.1 Non-achievement of primary output

Chhattisgarh was lagging in achieving the target and even though achievement of FHTC was 78 *per cent* as of March 2024, the schemes were in progress and not yet completed. Hence, the programme objective i.e. key output of delivering drinking water at the doorstep of every rural HHs has not been fully achieved. During test-check of 35 schemes in 24 villages, only three schemes were completed, 30 schemes were in progress and the remaining two schemes were not yet started. Therefore, the outcome has been assessed based on the conclusion drawn from the Joint Physical Inspection (JPI) and beneficiary survey (August-September 2024) of 24 villages¹ along with a survey of 475 beneficiaries, to assess the functionality of the FHTCs and evaluate the progress towards the JJM's objectives.

It was found that water supply was being provided only in 12 villages through 16 schemes. Out of 475 HHs FHTCs physically verified, 172 FHTCs were found functional and the remaining 303 FHTCs were found dry. Out of the 172 functional FHTCs, 14 HHs reported that they were not getting sufficient water through FHTC. Status of JPI is depicted in **Chart 6.1**.

¹ As per IMIS, these 24 villages reported to be 4,404 FHTC as on 5 November 2024

Chart 6.1: Status of water supply in 475 beneficiaries surveyed

(Source: Information provided by beneficiaries and compiled by audit)

These findings indicate that the programme objective i.e. key output of delivering drinking water at the doorstep of every rural HHs has not been fully achieved. The data shows significant issues with the reliability and functionality of the water connections, despite the initial infrastructure being established under JJM.

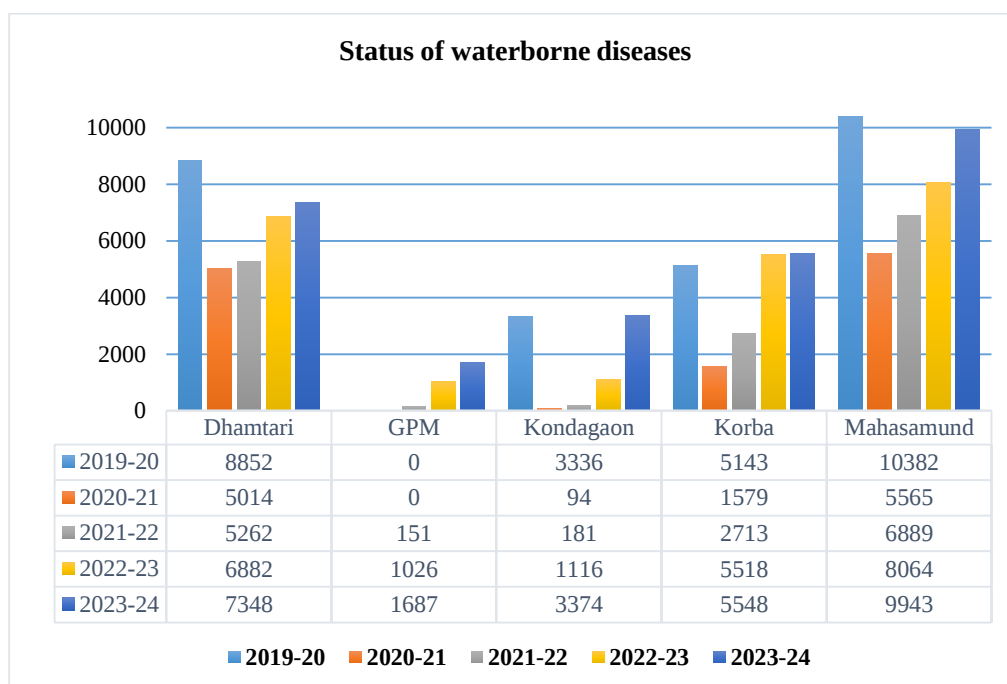
6.2 Non-achievement of Outcome

Outcomes are generally measured in terms of the achievement of the long-term goals of a project. JJM, Chhattisgarh achieved 38.97 lakh FHTCs (78 per cent) out of the planned 50 lakh FHTCs up to March 2024, including 3.20 lakh existing connections before JJM and 1.48 lakh private connections. Audit further observed that out of 29,178 schemes planned in the State, PHED was able to physically complete only 172 schemes and hand over 32 schemes to the GPs/Community (May 2024). Hence, evaluation of outcomes may be premature. The impact of JJM infrastructure on outcomes as noticed during audit is discussed below:

(i) Outcome on reduction of waterborne diseases

The information on waterborne diseases (acute diarrhoea/gastroenteritis, viral hepatitis, etc.) were collected from the Chief Medical Health Officer (CMHO), Public Health and Family Welfare Department for five² out of the six sampled districts. The status of water borne diseases from 2019-20 to 2023-24 of five out of six sampled district as collected from the district CMHO is shown in **Chart 6.2**.

² Dhamtari, GPM, Kondagaon, Korba, Mahasamund

Chart-6.2: Status of waterborne disease reported in test-checked districts

As evident from the above, Dhamtari district reported the highest number of cases of acute diarrhoea/gastroenteritis during 2023-24 followed by Kondagaon and Korba. Mahasamund district reported the highest number of cases of typhoid followed by Korba and GPM. The overall trend shows increase in number of cases of waterborne diseases from 2021 to 2024.

On this being pointed out, the Government stated (May 2025) that periodical testing of drinking water sources was being conducted by the department. Safe drinking water is being made available to the households of rural areas, hence there is no possibility of waterborne diseases.

Intended outcome of JJM may be influenced by multiple factors. Hence, it can be difficult to determine whether the outcomes were directly caused by the scheme or by other external factors. Besides, JJM is an ongoing programme which is yet to be concluded. Evaluating immediate outcomes may not give a full picture of JJM's effectiveness. Long-term effects may take time to manifest and may not be captured in a short-term evaluation.

CHAPTER- VII

CONCLUSION AND RECOMMENDATIONS

CHAPTER-VII

CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

JJM is envisioned to provide safe and adequate drinking water to 50 lakh HHs of the State by 2024. The State could provide FHTC to 38.97 lakh HHs by March 2024.

Audit observed that there was no bottom-up approach in the preparation of VAPs and DAPs. The SAP was not prepared. The AAPs prepared from 2019-20 to 2023-24 were unrealistic and deficient and thus, the State could not achieve the FHTC targets outlined in the AAPs throughout the mission period. Non-prioritisation of schemes like retrofitting of existing schemes, coverage of aspirational districts within the scheduled period was observed.

Villages identified to be covered under MVS were being executed with unsustainable ground water source based SVS and retrofitting schemes due to non-finalisation and delayed initiation of MVS. Short allocation of water may deprive a minimum of 55 LPCD of drinking water as per the JJM norms, undermining the entire MVS's sustainability.

Excess FHTCs connected to the SPV systems beyond their capacity failed to provide the prescribed minimum service level of 55 LPCD drinking water. Due to non-achievement of annual targets, the State Mission could not get Central share of ₹ 3,285.38 crore and the corresponding matching State share of ₹ 3,194.66 crore. The revision of the USOR without conducting a detailed, item-wise rate analysis led to preparation of unreliable cost estimates. The State Mission did not collect funds from community contributions and convergence with other Central and State schemes. Poor capacity building, skilling and IEC activities in villages were noticed.

There was a significant shortfall in the establishment of water quality testing infrastructure, NABL accreditation and short utilisation of funds. Non-achievement of the target for water quality testing, non-conducting of bacteriological tests during pre and post monsoon periods, re-testing of contaminated samples, acute shortage of manpower and inadequate training to staff were observed.

GoCG aimed to achieve 19,656 villages as 'Har Ghar Jal' by 2024, against which 716 villages were certified as HGJ. Instances of reporting and certification of HGJ villages with incomplete schemes were noticed during joint physical inspection by Audit. Chhattisgarh State was lagging in achieving the primary output of providing FHTC to all rural households by March 2024, achievement as per IMIS was 78 per cent, however, the data shows significant issues with the reliability and functionality of the water connections, despite the initial infrastructure being established under JJM.

The water supply systems executed under JJM faced sustainability challenges due to inadequate planning, poor designing of Solar based systems, execution of schemes without ensuring availability of sustainable water sources, lack of water quality testing facilities, inadequate testing, gaps in financial resources and community engagement, and weak institutional monitoring. Higher

reporting of FHTC without completion of scheme and ascertaining its functionality and incorrect ‘Har Ghar Jal’ certification further marred the scheme. Therefore, the risk of failure in delivering long-term sustainable drinking water supply to the rural population remains high.

7.2 Recommendations

Based on the audit findings, we recommend that the State Government should:

- *Assess the actual status of funds and incomplete works and ensure the timely completion of water supply schemes especially in priority areas.*
- *Adopt streamlined procedures for inter-departmental co-ordination for convergence of funds at the apex level.*
- *Review the process of reporting and certification of ‘Har Ghar Jal’ to address the issues of false certification highlighted by the Audit.*
- *Ensure functional water testing laboratories with NABL accreditation, along with adequate manpower and equipment.*
- *Review the sustainability of the schemes with special focus on community ownership, water source identification to ensure water security for future generations.*

Raipur

The: 30 March 2026



(MOHD. FAIZAN NAYYAR)

Accountant General (Audit)

Chhattisgarh

Countersigned

New Delhi

The: 06 April 2026



(K. SANJAY MURTHY)

Comptroller and Auditor General of India

APPENDICES

Appendix 1.1

(Referred to in paragraph 1.8)

Statement showing test-checked districts and villages

Name of districts	Name of blocks	Name of villages
1. Dhamtari	1. Dhamtari	1. Bhidavar
		2. Gangrel
	2. Kurud	3. Bhothli (Khurd)
		4. Sirsida
2. Gaurella-Pendra-Marwahi (GPM)	3. Gaurella-II	5. Adbhar
		6. Padariya
	4. Marwahi	7. Deoridand
		8. Salhekota
3. Kondagaon	5. Kondagaon	9. Jhara
		10. Korhobeda
	6. Pharasgaon	11. Banjoda
		12. Chhindibeda
4. Korba	7. Katghora	13. Bundeli
		14. Gamota
	8. Korba	15. Dumardih
		16. Kesala
5. Mahasamund	9. Mahasamund	17. Jhakharmunda
		18. Pandripani (Pachri)
	10. Pithora	19. Bhithidih
		20. Thakurdaya Kalan
6. Surguja	11. Ambikapur	21. Shrigarh
		22. Tihpatra
	12. Udaipur	23. Badegaon (In place of village Pangoti due to non-accessibility of the village for beneficiary survey)
		24. Tolga

Appendix 3.1
(Referred to in paragraph 3.7)

Statement showing errors in the estimate of FHTC

Sl. No.	USOR amendment item no.	Description (USOR item no.)	Audit observation	Calculation	Qty	Unit	Rate	Excess Amount
1	Item no.4 of Annexure VI(b)	Shuttering (Stand)	UPVC pipe used for stand post does not require shuttering	0.785*0.20*0.80m	0.5*	cum	185	92.50
2	Item no.8 Annexure VI(a) and Item no.3 Annexure-VI(b)	Doubling of M-15 stand post	PCC M-15 for stand post is taken twice in the analysis of rate. Once taken as item no.8, Annexure-VI (a) and again taken in item no.3 Annexure-VI(b).	0.785*0.20*0.20*0.80m	0.025	cum	4,774	119.35
3	Item no.9 of Annexure - VI(a)	Oversized Steel Water tap	As per item no.7 of Annexure-VI(a) 15mm diameter GI pipe and socket was used whereas in item no.9, steel tap of 20mm was provisioned. As in the 15mm GI pipe steep tap of 15 mm should be provisioned.	(₹ 254 - ₹198)	1.00	each	56	56.00
4	Item no.3 Annexure-VI(a)	Separate payment for excavation for composite pipe	The General Notes of the PE-AL-PE pipes & fittings specify that the rates of composite pipes used to connect the stand post with distribution line, are inclusive of charges of civil works (like digging of trenches and refilling of trenches). Whereas it was noticed that the excavation and refilling of trenches was considered separately for laying of composite pipes while calculation resulted in undue benefit of ₹ 212.85 per FHTC (₹ 150.94 + ₹ 61.91).	6.25*0.30*0.50m	0.938	cum	161	150.94
5	Item no.10, Annexure-VI(a)	Separate payment for refilling of excavated earth for composite pipe		6.25*0.30*0.50m	0.938	cum	66	61.91
6	Item no.1, Annexure VI (a)	Dismantling of CC (18.29.1)	Provision of excavation of cc and earth, restoration of cc and refilling of earth was provisioned in the estimate. However, these items are needed only for connection involving old existing distribution line.	1*1*0.15m	0.15	cum	758	113.70
7	Item no.8, Annexure VI (a)	CC restoration (18.41.1.2)		1*1*0.15m	0.15	cum	4,774	716.10

Sl. No.	USOR amendment item no.	Description (USOR item no.)	Audit observation	Calculation	Qty	Unit	Rate	Excess Amount
8	Item no.2, Annexure VI (a)	Excavation of earth (18.15)	For new connection excavation and refilling work were already executed for distribution line. Hence these works were not required in each and every FHTC. And should be paid only in case of detailed measurement recorded in the MB	1*1*0.85m	0.85	cum	161	136.85
9	Item no.10, Annexure VI (a)	Refilling of earth (18.22)		1*1*1m	1.00	cum	66	66.00
10	Item no.8 Annexure VI(a)	M-15 overlapping in bed block	Area of UPVC pipe embedded in bed block not deducted in quantity calculation of CC	0.785*0.16 ² *0.15m	0.003	cum	4,774	14.32
11	As per drawing	M-15 overlapping in platform	Area of UPVC pipe embedded in plate form not deducted in quantity calculation of CC	0.785*0.16 ² *0.17m	0.003	cum	4,774	14.32
12	As per drawing	M-15 overlapping of drain in PF	Quantity of drain gap not deducted	0.3*0.1*0.1m	0.003	Cum	4,774	14.32
Total								1,556.31

(Source: Data taken from the USOR and compiled by audit)

Note: *As per detailed estimate Annexure-VI(b), Item no.4, Stand post (0.785*0.20*0.80m) =0.125, the department took the sum as 0.5, hence taken as 0.5 by audit.

Appendix 4.1
(Referred to in paragraph 4.3.2)

Statement showing short allocation of water for Multi Village Scheme (MVS)

Sl. No.	Name of the District	Name of the MVS	Cost of the Scheme (PAC)	Water demand as SWSM source finding committee		Water Supply			Short allocation		Likely to deprived of water due to short allocation	
				(in MCM)	(in MLD)	Water allocated (in MCM)	Short allocation in MCM	Short allocation in per cent	Short allocation (in MLD)	Short allocation (in LPD)	No. of persons	Households
1	2	3	4	5	6 (Col.5*1,000/365)	7	8 (Col.5-Col.7)	9 (Col.8/Col.5*100)	10 (Col.8*1,000/365)	11 (Col.10*10,00,000)	12 (Col.11/67.80) i.e. 65.19+4% transmission loss)	13 (Col.12/ Five persons)
1	Balodabazar	Ahilda Pandariya MVS	6,127.60	9.41	25.781	3.009	6.401	68	17.537	1,75,37,000	2,58,658	51,732
2	Baikunthpur	Bardar MVS	3,224.19	1.23	3.37	0.8	0.43	35	1.178	11,78,000	17,375	3,475
3	Balodabazar	Agamdham MVS	6,722.24	2.74	7.507	2.517	0.223	8	0.610	6,10,000	8,997	1,799
4	Dhamtari	Ghatula MVS	2,957.83	1.373	3.762	1.3	0.073	5	0.117	1,17,000	1,726	345
5	Rajnandgaon	Mathlabdari MVS	1,374.27	0.5	1.37	0.456	0.044	9	0.120	1,20,000	1,770	354
6	Bilaspur	Chapora Baradhil Banabel MVS	2,322.97	1.11	3.041	1.103	0.007	1	0.018	18,000	265	53
Total			22,729.10	16.363	44.831	9.185	7.178	44	19.580	1,95,80,000	2,88,790	57,758

(Source: Data provided by the PHED and compiled by audit)

Appendix 4.2
(Referred to in paragraph 4.3.2)

Statement showing non-availability of water in the source water bodies of MVS

(Qty in MCM)

Sl. No.	Name of MVS	Name of water body and WRD division	Capacity of the water bodies	Water Allotment			Water available	Water required for MVS	Short availability of water	
				Deduction for Nistari, Evaporation, E-flow, others	Irrigation	Others			Qty in MCM*	Qty in KL**
1	2	3	4	5	6	7	8 Col.4- (Col.5+Col.6 +Col.7)	9	10 (Col.9- Col.8)	11 (Col.10* 10,00,000)
1	Mongra MVS	Mongra Barrage, Mohla	32.05	9.62	12.82	2.63	6.98	10.929	3.949	39,49,000
2	LB Nagar MVS	Khatutola Barrage, Mohla	2.90	0.71	2.1	0	0.09	1.01	0.92	9,20,000
3	Jeora-Sirsa Bhatgaon MVS	Bhatagaon Anicut (Shivnath River), Durg	1.76	0.042	0.236	0.6	0.88	0.919	0.04	37,000
4	Odragahan-Surpa MVS	Odragahan Anicut (Kharun River), Durg	0.36	0.025	0.141	0	0.19	0.449	0.26	2,55,000
5	Kohi-Ranitarai MVS	Ranitarai Anicut (Kharun River), Durg	0.51	0.045	0.183	0	0.28	0.51	0.23	2,28,000
	Total		37.58	10.442	15.48	3.23	8.43	13.82	5.39	53,89,000

(Source: Data provided by the PHED and compiled by audit)

*MCM : Million Cubic Meters, **KL: Kilo Litres

Appendix 4.3
(Referred to in paragraph 4.6.2)

Statement showing non-functional household tap connections declared as functional in case of incomplete OHT

Sl. No.	Name of				Type of scheme	DPR data		Whether OHTs provisioned	FHTCs Planned		OHT Status during JPI	Execution
	District	Block	Village	Scheme		Existing			FHTC	For Public Inst.		
						OHT	HH					
1	2	3	4	5	6	7	8	9	10	11	12	13
Schemes where OHTs were found to be completed during JPI [A]												
1	Mahasamund	Pithora	Bhithidih	Bhithidih Retrofitting	Retro	0	381	Yes	366	0	Yes	214
2	Mahasamund	Pithora	Thakurdayakala	Thakurdayakala Retrofitting	Retro	0	215	Yes	215	6	Yes	180
3	Korba	Korba	Dumardih	Dumardih SVS	SVS	0	178	Yes	177	0	Yes	177
4	GPM	Marwahi	Deoridand (157/DL/2021-22) & Deoridand (04DL/2023-24)	Deoridand SVS	SVS	0	209 (137+72)	Yes	209	0	Yes	110 (67+43)
5	GPM	Marwahi	Salhekota	Salhekota SVS	SVS	0	375	Yes	375	0	Yes	298
6	GPM	Gaurella-II	Adbhar	Adbhar SVS	SVS	0	420	Yes	420	0	Yes	341
Total [A]									1,762	6		1,320
Schemes where OHTs were found to be incomplete during JPI [B]												
7	Mahasamund	Mahasamund	Jhakharmunda	Jhakharmunda SVS	SVS	0	82	Yes	80	5	No	80
8	Mahasamund	Mahasamund	Padripani (Pachri)	Padripani (Pachri) SVS	SVS with steel structure	0	19	Yes	19	4	No	MB not recorded
9	Korba	Korba	Kesala	Kesala SVS	SVS	0	208	Yes	208	0	No	168
10	GPM	Gaurella-II	Padariya (127DL/2021-22) & (47/DL/2023-24)	Padariya SVS	SVS	0	211	Yes	211	0	No	214 (95+119)
11	Kondagaon	Pharasgaon	Banjoda	SVS and Solar	SVS	0	325	Yes	325	10	No	335

Sl. No.	Name of				Type of scheme	DPR data		Whether OHTs provisioned	FHTCs Planned		OHT Status during JPI	Execution
	District	Block	Village	Scheme		Existing			FHTC	For Public Inst.	OHT complete (YES/NO)	FHTCs Executed
						OHT	HH					
1	2	3	4	5	6	7	8	9	10	11	12	13
12	Kondagaon	Pharasgaon	Chhindalibeda	SVS and SVS with steel structure	SVS	0	178	Yes	178	0	No	174
13	Kondagaon	Kondagaon	Jhara	SVS and Solar	SVS	0	133	Yes	133	5	No	183
14	Surguja	Ambikapur	Tihpatra	Banspara & Khalpara	SVS	0	60	Yes	60	0	No	0
15	Surguja	Ambikapur	Tihpatra	Schoolpara	SVS	0	20	Yes	20	0	No	Work not Started
16	Surguja	Ambikapur	Shrigarh	Khaspara	SVS	0	77	Yes	77	0	No	44
17	Surguja	Ambikapur	Shrigarh	Mahadeopara	SVS	0	98	Yes	98	0	No	85
18	Surguja	Ambikapur	Shrigarh	Marghatiyapara	SVS	0	92	Yes	92	0	No	75
19	Surguja	Ambikapur	Shrigarh	Pandopara	SVS	0	69	Yes	69	0	No	43
20	Surguja	Ambikapur	Shrigarh	Sarpanchpara	SVS	0	19	Yes	19	0	No	18
21	Surguja	Udaipur	Tolga	Bancharpara, Chilkapara, Diggipara, Ghasiyapara, Pandopara, Patelpara, Schoolpara	SVS-MVS	0	343	Yes	343	0	No	229
Total [B]									1,932	24		1,648

(Source: Data provided by the PHED and compiled by audit)

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