

Chapter-5

Performance Audit of Implementation of Rural Water Supply Schemes

**Panchayat Raj and Rural Development
(Rural Water Supply and Sanitation)
Department**

5.1 Introduction

5.1.1 Background

National Rural Drinking Water Programme (NRDWP) is one of the flagship programmes of Government of India (GoI). It was originally introduced as the Accelerated Rural Water Supply Programme (ARWSP) in 1972-73, and was renamed as National Drinking Water Mission (1986), and Rajiv Gandhi National Drinking Water Mission (1991), before being revised with effect from April 2009 as the NRDWP.

5.1.2 Coverage Norms and Habitation Status

GoI has adopted the following norms for providing potable drinking water in rural areas:

- 40 litres per capita per day (lpcd) for human beings;
- 30 lpcd of additional water for animals in areas under Desert Development Programme; and
- One hand pump or stand post for every 250 persons.

As per GoI norms, rural habitations are categorised as follows:

Not Covered (NC)/No Safe Source (NSS) habitations, where a drinking water source/point is not available within 1.6 km of the habitations in the plains or 100 metre elevation in hilly areas, or where the habitations have a water source which is affected by quality problems.

Partially Covered (PC) habitations, which have a safe drinking water source, but the capacity of the system ranges between 10 lpcd to 40 lpcd.

Fully Covered (FC) habitations, which would cover all the remaining habitations.

All habitations other than FC habitations are also termed as '**problem habitations**'. State Government categorised the PC habitations further as PC-1 (upto 9 lpcd), PC-2 (10-19 lpcd), PC-3 (20-29 lpcd) and PC-4 (30-39 lpcd).

The three main categories of rural water supply assets in the State are:

- (i) Comprehensive Protected Water Supply (CPWS) schemes, which supply treated water;
- (ii) Pipeline Water Supply (PWS) schemes, which supply non-treated water; and
- (iii) Borewells.

As per NRDWP guidelines, higher priority should be accorded while planning for implementation of the scheme and habitations, where only 0 - 25 *per cent* of population is covered, quality affected habitations, SC, ST and minority community dominated habitations.

5.1.3 Organisational Set-up

The primary responsibility for planning and implementation of rural water supply schemes rests with the Rural Water Supply and Sanitation (RWSS) Department. Panchayat Raj Institutions (PRIs) at different levels have a subsidiary role in planning, implementation and O&M of such schemes. The role of PRIs, as laid down by the State Government in December 2007, is summarised below:

Level	Main Responsibilities
Zilla Parishad (ZP)	<ul style="list-style-type: none"> • Participation in planning and maintenance of CPWS schemes • Review and monitoring the water quality testing reports • Arrange training programmes, seminars and Information Education and Communication (IEC) activities relating to drinking water • Review the activities of District Water and Sanitation Mission
Mandal Praja Parishad (MPP)	<ul style="list-style-type: none"> • Participation in planning of water supply schemes involving more than one Gram Panchayat (GP) • Review and monitoring maintenance of hand pumps and PWS schemes, and distribution of grant • Providing and entrustment of transportation and hiring of wells for drinking water
Gram Panchayat (GP)	<ul style="list-style-type: none"> • Identifying schemes and locations through involvement of Gram Sabha and GP • Execution of pipeline works in the village • Operation and Maintenance (O&M) of single village schemes • Regular chlorination of drinking water sources; ensuring proper distribution of water to all the locations of village • Monitoring and surveillance of quality of water

Source: GO Ms No. 569 dated 22 December 2007

Although O&M of PWS and hand pumps were transferred to GPs along with the budget, the RWSS Department is to 'extend technical support' to maintain the schemes properly. The CPWS schemes, however, are being maintained by the Department.

5.2 Audit Approach

5.2.1 Audit objectives

The objectives of the Performance Audit are to assess whether,

- there was a robust planning process for rural water supply schemes;
- funds provided by the GoI and the State Government for implementation of the schemes were utilised for the purpose and properly accounted for;
- individual water supply schemes were properly planned and executed economically, efficiently and effectively;

- adequate arrangements have been made for ensuring coverage of ‘problem habitations’ and sustainability aspects have been addressed;
- adequate and effective arrangements for monitoring water quality and surveillance were in place; and
- monitoring and evaluation of the schemes are adequate.

5.2.2 Audit criteria

Audit findings were benchmarked against the criteria sourced from the following:

- Guidelines of Accelerated Rural Water Supply Programme;
- Guidelines of National Rural Drinking Water Programme and the National Rural Drinking Water Quality Monitoring and Surveillance Programme (NRDWQMSP); and
- National Water Policy (April 2002).

5.2.3 Audit Scope and Methodology

Performance Audit was carried out between July 2011 and June 2012 and covered the implementation of rural water supply schemes during the five year period 2007-12. Audit methodology involved test-check of records in the RWSS Department, offices of the Engineer-in-Chief (ENC) and the sampled divisions. Physical inspection of all the test checked CPWS schemes was also conducted and photographic evidence was taken to substantiate audit findings, where necessary. Detailed list of sampled schemes along with their current status is given in *Appendix 5.1*.

Entry Conference was held with the Departmental officials on 20 June 2011 wherein audit objectives, scope, criteria and methodology were discussed and the inputs of the Department were obtained. Audit findings were discussed with the Government in an Exit Conference on 18 January 2013 and the responses of the Government/ Department, including their written replies, were incorporated in the report.

5.2.3.1 Sample size

Out of 292 rural water supply schemes taken up for execution, 60 works (39 completed and 21 in progress) falling under 21 divisions of 10 districts¹ were selected for detailed scrutiny. The selected schemes contained all categories of habitations (NC, PC and FC) and were spread over the three regions of the State *viz.*, Coastal Andhra, Rayalaseema and Telangana. Further, findings relating to six CPWS works² in Anantapur, Nizamabad and Karimnagar districts, which were reviewed

¹ Nellore (Nellore, Gudur), Anantapur (Penukonda, Kalyandurg and Anantapur), Kurnool (Nandyal, Kurnool and Adoni), Medak (Medak and Siddipet), Warangal (Warangal), Karimnagar (Karimnagar and Manthani), Nizamabad (Banswada and Nizamabad), Khammam (Khammam), Ranga Reddy (Hyderabad) (1 scheme) and Prakasam (Ongole, Kanigiri, Darsi and Podili)

² CPWS - Damarancha and other habitations, CPWS - Chandur and other habitations of Varni Mandal in Nizamabad District, CPWS - JCNDR Drinking Water supply, CPWS - Neelakantapuram Sri Rami Reddy Drinking Water Supply in Anantapur District, CPWS to Gangadhara and CPWS to Kothapally of Karimnagar District

during regular audit inspection of the engineering divisions concerned have also been included in the report. However, these 6 CPWS works did not figure in the list of works (292 Nos) furnished by the ENC to audit, indicating that the data of CPWS schemes was either incorrect or incomplete.

5.3 Funding pattern

Funding pattern of ARWSP and NRDWP implemented during the audit review period (2007-12) is given below:

5.3.1 Funding for ARWSP

This programme is funded by the Central and State Governments in the ratio of 50:50 between 1 April 1998 and 31 March 1999. Thereafter, it was 75:25 for water quality and sustainability and Desert Development Programme (DDP) is funded by GoI.

- Upto 20 *per cent* of the funds can be utilised by the State Government.
 - (i) to take up projects under the Sub-Mission programme for tackling water quality problems like fluorosis, arsenic, brackishness, excess iron and nitrate (15 *per cent* of funds) and
 - (ii) to ensure source sustainability by conserving water, recharging aquifers, etc. (5 *per cent* of funds).
- Upto 15 *per cent* of the funds can be utilised for Operation and Maintenance (O&M) of assets created.
- At least 35 *per cent* of funds must be utilised for drinking water supply to SC/ST habitations.

5.3.2 Funding for NRDWP

NRDWP has seven components *viz.*, Coverage (30 *per cent*), Quality (20 *per cent*), Sustainability (20 *per cent*), DDP (10 *per cent*), O&M (10 *per cent*), Support (5 *per cent*) and Natural Calamity (5 *per cent*). While the Centre and State share the expenditure on Coverage, Quality and O&M on a 50:50 basis, Sustainability, Natural Calamity, DDP and Support are funded 100 *per cent* by the GoI. GoI releases the first instalment of the grant without any proposals from the State, if the State has drawn the 2nd instalment of the previous year. For the release of 2nd instalment, the State Government is required to submit specific proposals in the prescribed proforma.

5.4 Physical and Finance performance

5.4.1 Physical performance

Details relating to status of habitations are updated dynamically in the 'Watersoft' database of the State Government. However, the base data, which is updated dynamically, has not been validated through any survey at any point of time. As per the data furnished by the Department, the change in status of habitations in the State between April 2007 and April 2012 was as follows.

Table 5.1

	Status as of April 2007 (percentage)	Status as of April 2012 (percentage)	Change
FC	29114 (43)	39275 (54)	10161
PC	36301 (53)	32441 (45)	(-) 3860
NC	626 (1)	113 (--)	513
NSS	2388 (3)	561 (1)	1827
Total	68429	72390	3931

Source: 'Watersoft', State Government MIS

From the above data, it appears that the State put in commendable efforts to substantially reduce the number of PC and NC/NSS habitations during the five year period. However, of the 32,441 PC habitations as of April 2012, 15988 habitations (49 per cent) were 'slipped back' habitations i.e., those which had come 'down' from FC to PC status. Government attributed (October 2012) the 'slipped back' status to increasing depletion of ground water and the consequent failure of water sources and quality problems. While Audit agrees that depletion of ground water is one of the reasons for the habitations to slip back from FC to PC, it is also true that Government's inadequate attention to sustainability aspects has played an important role in this regard.

During the Exit Conference, Government accepted that no survey has been carried out during the recent past/during the audit review period to validate the details of coverage of habitations as reflected in the 'Watersoft' database. It was stated that presumably, such a survey may have been carried out initially when the scheme was launched.

5.4.2 Financial performance

Details of funds released by GoI and State Government, and loans obtained by the State for implementation of water supply schemes during 2007-12 are given below along with the expenditure incurred.

Table 5.2

Year	Opening Balance	Budget released				Expenditure				Closing Balance	Percentage of GoI funds unutilised
		State	GoI	Loan	Total	State	GoI	Loan	Total		
2007-08	137	50	354	272	676	50	452	272	774	39	(+) 28
2008-09	39	106	397	397	900	106	420	397	923	16	(+) 6
2009-10	16	453	534	98	1085	453	334	98	885	216	(-) 37
2010-11	216	342	559	87	988	272	355	87	714	490	(-) 36
2011-12	490	150	462	96	708	220	446	96	762	436	(-) 3
Total		1101	2306	950	4357	1101	2007	950	4058		

Source: Records of RWSS Department

As can be seen above, while the loan amounts were utilised in full, the State funds (2010-12) and GoI releases (2007-12) were not fully utilised. The accumulated balances during the years 2009-12 relate to NRDWP funds, as the scheme was

operationalised with effect from 1 April 2009. About 37 *per cent* of the funds received during 2009-10 and 2010-11 were thus lying unutilised.

Government assured (October 2012) that efforts would be made to utilise the balance funds.

Audit Findings

5.5 Planning

5.5.1 Annual Action Plans (AAPs)

The guidelines of ARWSP/NRDWP stipulate preparation of AAPs at the State level by April every year with inputs from the PRIs, to provide a definite direction to the programme and ensure regular monitoring of its physical and financial progress. While preparing AAPs, completion of incomplete works is to be given priority over new works. The State Government is required to identify reputed technical institutions designated as State Technical Agency (STA) to assist in planning and designing sound and cost effective rural water supply schemes with special emphasis on sustainability of the source and to assist in preparation of action plan for both software as well as hardware activities.

Audit scrutiny revealed the following:

- (i) STA was not constituted during the entire period (2007-12) under review; however, AAP was prepared from 2011-12 onwards. Proposals for water supply schemes were initiated primarily based on the request of public representatives. There was no evidence from the records made available regarding the involvement of PRIs in the planning process. In reply Government stated (October 2012) that proposals were being initiated through Village Water and Sanitation Committee (VWSC) and other PRIs in the six districts³ where 3 schemes were being implemented with World Bank assistance.
- (ii) Out of the 66 schemes test checked in audit, 27 were sanctioned during the period 2002-2010, which indicates that adequate priority was not accorded to completion of incomplete schemes before taking up new schemes.
- (iii) Further, while 4,881 habitations were proposed to be covered under the 66 test checked schemes, scrutiny revealed that only 1,328 habitations (27 *per cent*) were actually covered, which include NC and NSS habitations.
- (iv) There was no correlation between the total number of habitations as per the RWSS Department records and the other departments of the Government like Agriculture Department, which also plan programmes for coverage of habitations. Government confirmed during Exit Conference that there are inconsistencies/variations in this regard among the departments and this was primarily due to absence of a survey in the recent past.

³ Adilabad, Karimnagar, Mahbubnagar, Prakasam, Visakhapatnam and YSR (Kadapa)

5.5.2 Involvement of local community

As per ARWSP/NRDWP guidelines, Detailed Project Reports (DPRs) of rural water supply schemes were to be prepared in consultation with the local community through the Gram Panchayat in order to ensure community participation and also to ensure that the choice of technology/system was appropriate and easy to operate and maintain. While DPRs were stated to have been prepared for all the schemes, these were not made available to Audit in respect of any of the test checked schemes. Therefore, Audit could not verify whether community participation was ensured in the preparation of DPRs. Government confirmed during the Exit Conference that local community was not involved in the planning process and that, apart from the detailed proposal submitted while seeking approval/sanction for the project, there was no separate DPR in respect of any of the schemes.

5.5.3 Non-compliance with approved procedure

The orders of State Government of July 2003⁴ stipulated grant of administrative approval in two stages:

- 1st stage approval for preparatory work – detailed investigation, Environment Impact Assessment (EIA) and Environment Management Plan (EMP), forest and other clearances, rehabilitation and reconstruction plan, detailed designs and drawings, acquisition of minimum land required, etc.
- 2nd stage approval after finalisation of designs, completion of detailed investigation and acquisition of land for taking up works without interruption for the first two years. Such approval could be given straightaway on certification by Engineer-in-Chief (ENC)/Chief Engineer (CE) that these requirements have been fulfilled.

Audit scrutiny of the test checked CPWS schemes revealed that administrative approval was granted by the Government without a two-stage approach and also without ensuring fulfilment of the above requirements. Further, while the ENC/CE was required⁵ to inspect works costing ₹5 crore or more before according technical sanction and after inspection of the site, no such inspections were found to have been carried out in the test checked cases.

Non-adherence to the above stipulated conditions by the ENC/CEs have resulted in failure to identify the bottlenecks in terms of permissions from Railways, Forest and Irrigation departments, and Hyderabad Metro Water Supply & Sewerage Board (HMWSSB) as well as inadequate co-ordination for energisation of completed schemes. Consequently, several schemes were mired in problems relating to land acquisition, clearances from Forest and Irrigation departments, Railways, National Highways Authority of India, etc., thereby pushing upwards the cost and time budgeted for their completion.

⁴ GO Ms No. 94 dated 1 July 2003

⁵ Para 154 of APWD Code read with GO Ms No. 94 – Irrigation CAD (PW-COD) Department, dated 1 July 2003, Para 2(c)

Government accepted the audit finding and stated (October 2012) that it has been complying with the requisite rules with effect from 2012-13.

5.6 Financial Management

5.6.1 Short release of State matching share

As per the guidelines of ARWSP/NRDWP, the State Government was required to match the releases of the GoI on a 1:1 basis pertaining to three⁶ out of seven components. While there was excess release of matching share by State Government during 2007-08 and 2008-09, it was noticed that there were significant short releases during the period 2009-10 to 2011-12 as detailed below.

Table 5.3

(₹ in crore)

Year	GoI release	Corresponding matching share to be released by State	Actual release by State	Shortfall
2007-08	4.02	1.15	24.20	Nil
2008-09	4.02	1.15	40.00	Nil
2009-10	339.79	339.79	0.00	339.79
2010-11	389.74	389.74	87.95	301.79
2011-12	363.32	363.32	0.00	363.32
Total	1100.89	1095.15	152.15	1004.90

Source: Correspondence between ENC and Secretary, RWSS

Government stated (October 2012) that short release of funds did not result in stoppage/slow progress of works, as GoI released its share taking into account the amounts released by them under the State plan and NABARD for the purpose of drinking water supply. It was further stated that the balance amount would be released in future. The contention of State Government could not be verified in Audit, as the RWSS Department had not provided the year wise details of schemes sanctioned and completed along with the sanctioned cost and expenditure incurred on each of these schemes.

5.6.2 Delay in release of GoI funds

Apart from not releasing its share, the State Government has also not released the funds provided by the GoI to the implementing agencies on time. The delays in this regard ranged from 31 days to 261 days during 2008-10 involving an amount of ₹529.98 crore, which had an adverse impact on completion of the works. Government responded (October 2012) that funds were released on need basis and that the delay had not affected the implementation and progress of work.

⁶ Coverage, O&M and Quality

5.6.3 Avoidable payment of interest

State Government raised (February 2006 - December 2008) ₹393.27 crore loan from HUDCO for implementing the water supply schemes, especially in the fluoride affected areas. The delay in payment of interest on this loan amount resulted in avoidable payment of penal as well as compound interest amounting to ₹2.93 crore to HUDCO. Audit observed that this was due to delay in release of Letter of Credit (LoC) and onward remittance to HUDCO. There was a delay in release of budget release order (BRO) at the Government level as well. Government confirmed (October 2012) the audit finding and attributed the delay in payment to the procedure involved in releasing the BRO and also delay in forwarding invoice by HUDCO.

5.6.4 Non-utilisation of Natural Calamity fund

GoI released (November 2009 and February 2010) an amount of ₹69.77 crore under natural calamity component during 2009-10 towards assistance for restoration of rural drinking water supply schemes damaged during the floods in 2009. As against five works⁷ sanctioned to be taken up with this amount, only three works were taken up and an amount of ₹11.59 crore was expended on them. The two remaining works relating to Mahbubnagar district were not taken up, statedly due to accumulation of silt. Thus, an amount of ₹58.20 crore released for restoration works was not utilised for the said purpose by the State Government as of June 2012.

Government replied (October 2012) that all the works were in progress and would be completed during 2013.

5.6.5 Compliance deviations

Several instances of non-compliance with the scheme guidelines were observed in Audit during the test-check of 21 divisions. Significant findings in this regard are detailed below:

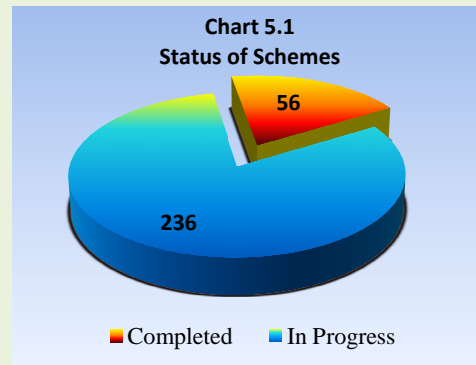
Deviation	Details in brief
Short recovery of Labour cess	<p>₹1.96 crore was short recovered (between March 2010 and March 2012) from the contractors' bills in respect of works towards Labour cess in violation of Labour Cess Act (GoI), 1996 read with State Government orders issued in February 2008.</p> <p>Government assured (October 2012) that recoveries would be effected as per rules.</p>

⁷ Integration of water supply and sanitation project in flood affected temple village of Alampur in Mahbubnagar district- ₹10 crore – Expenditure Nil; Integration of water supply and sanitation project in flood affected temple village of Mantralayam in Kurnool district – ₹10 crore – Expenditure ₹6.40 crore; Providing restoration works of damaged infrastructure due to floods in 2009 to habitations in Mahbubnagar district – ₹18 crore – Expenditure ₹2.61 crore; providing restoration works of damage infrastructure due to floods in 2009 to 19 habitations of Pebbair Mandal in Mahbubnagar district – ₹8.77 crore – Expenditure Nil and providing restoration works of damaged infrastructure due to floods in 2009 to 29 habitations in Kurnool district – ₹23 crore – Expenditure ₹2.58 crore

Deviation	Details in brief
Non-availing of Central Excise Duty exemption	The Department reimbursed (between May 2009 and June 2012) ₹93.49 lakh to the contractors in respect of 9 works due to their failure to avail of Central Excise Duty (CED) exemption ⁸ in the absence of a certificate from the District Collector. In respect of the contract relating to 'CPWS scheme to Gazwel, Narsapur, Ramayampet and Dommat constituencies in Medak district-Phase-I', an amount of ₹1.05 crore was paid (between October 2007 and March 2011) to the contractor, without obtaining proof of payment of excise duty to the Central Excise department. Regarding payment of ₹1.05 crore, Government stated (October 2012) that the Department had been reimbursing the proportionate amount of CED on raw material only as per proof of invoice and payment certificate issued by Central Excise Department.
Non-revalidation of Bank Guarantees	Bank Guarantees (BG) collected from the contractors towards Earnest Money Deposit and Performance certificate will be valid upto completion of defective liability period. On sanctioning Extension of Agreement Time (EOAT), the BGs are also required to be revalidated and sanction extended. In case of suspension of works by the contractor, the BG should be encashed and credited to respective Government account. In six cases, BGs amounting to ₹1.84 crore were neither revalidated nor encashed (between June 2007 and June 2012) and credited to Government Account.

5.7 Programme implementation/Execution of works

Out of 538 CPWS schemes sanctioned by the Government to the end of March 2012, only 292 (54 per cent) were taken up for execution. Of these, 56 schemes have been completed and 236 schemes are in progress, as can be seen from the status of schemes depicted alongside. Year-wise details of schemes and habitations approved and completed were not made available by the Department.



As regards the test checked 66 schemes taken up at a total outlay of ₹2120.16 crore, 39 schemes were commissioned by incurring an expenditure of ₹741.54 crore; 7 schemes were completed at a cost of ₹86.82 crore but not commissioned (due to lack of dedicated power supply feeder lines, water drawal permission, etc.) and 20 schemes were incomplete despite spending ₹655.33 crore as of June 2012.

Audit observed that the main reasons for non-completion of the water supply schemes are as follows:

- (i) Lack of forest clearance for laying of pipes
- (ii) Delay in obtaining water drawal permission from Irrigation Department
- (iii) Non-acquisition of land

⁸ Granted by GoI, Central Excise Department for pipes required for transportation of raw water to place of storage i.e., upto filter beds

Significant audit findings on implementation of 10 schemes are detailed below followed by common observations relating to the other schemes.

5.7.1 CPWS Scheme Chandur, Varni and 19 other habitations

The work was sanctioned under NABARD RIDF(X) by the Government in March 2005 and the contract was awarded in September 2006 for ₹8.64 crore. The time set for completion of the work was 12 months and EOAT was sanctioned upto December 2008.

The contractor, after executing the works valuing ₹2.23 crore relating to Chandur Scheme, stopped further execution from February 2008, on the grounds that the Department changed (May 2007) the specification of pipes from Glass Reinforced Plastic (GRP) to Ductile Iron (DI) for pumping main due to terrain conditions, and that, there was a shortage of DI pipes in the market. Consequently, the ENC decided (April 2008) to pre-close the work and a working estimate for completion of the balance works was prepared (May 2008) for ₹6 crore and submitted to the Superintending Engineer (SE) for approval. As of June 2012, no further action was taken to complete the work.

However, although the contract was closed in December 2009, a supplementary agreement was concluded with the same contractor in June 2010, for additional quantities and new items for an amount of ₹29 lakh for which payment was also made (June 2010) after two years from the decision taken to pre-close the contract. These items were not urgent in nature (distribution lines) as the scheme could not be commissioned without the completion of pumping main, which is yet to be taken up. The picture shows the status of works as of June 2012.



Pump house at Rudur without pumps



Sump without water vents

Government accepted (October 2012) the audit finding and assured that the balance works would be taken up under different grants and the infrastructure would be put to use.

5.7.2 CPWS Scheme Nyalkal and 52 other habitations

The work was sanctioned through three different Government Orders (September 2004; March 2005; November 2006 as Part-I; Part-II and Part-IB) and awarded at a total contract value of ₹19.53 crore to different contractors with a delay of 1 - 2 years from their date of sanction under different grants (NABARD/ARWSP etc.). None of the contractors completed the works as of June 2012 and after incurring an

expenditure of ₹16.28 crore, further execution was stopped from November 2011 without recording any reasons. The left over works included missing gaps in gravity main; pipe line connections with Cast Iron (CI), Galvanised Iron (GI) specials; gaps of Mild Steel (MS) pipes; finishing of structures viz., Over Head Storage Reservoirs (OHSRs), Summer Storage (SS) Tanks, etc. and testing of all pipelines. No action was taken to complete and commission the scheme, which resulted in the expenditure of ₹16.28 crore incurred on the works remaining unfruitful and the objective of providing safe drinking water to the targeted habitations intended way back in 2004, remaining unfulfilled. The status of works as of June 2012 is given below in pictures.



SS tank of Nyalkal scheme without water and without pumps



Burnt GRP pipes at the site relating to Part-IB works

Further, 40 out of 2493 GRP pipes worth ₹19.85 lakh procured for the works and stacked at the site, were burnt in a fire accident as can be seen from the photograph given above. The pumpsets purchased in March 2007 worth ₹8.52 lakh also remained idle as of June 2012.

In respect of Part-II works, inspite of non-completion of works within the agreement period, the contractor was given unintended benefit of ₹28.27 lakh towards price variation in GRP pipes in violation of agreement conditions (where the price variation is allowed for the works completed within agreement period only).

Government accepted (October 2012) the audit findings and assured that the cost of the burnt pipes would be recovered from the contractor, but was silent on the unintended benefit to the contractor.

5.7.3 Krishnagiri CPWS Phases I, II and III

Krishnagiri CPWS Scheme was approved in March 2006 by the State Level Advisory Committee (SLAC). This scheme was originally intended to cover 56 habitations, of which, 25 habitations in Phases I & II at an estimated cost of ₹18.50 crore, and 31 habitations under Phase-III at an estimated cost of ₹13.50 crore. Subsequently, 15 out of 31 habitations under Phase-III (including 11 NSS habitations) were deleted, due to lack of sufficient funds⁹.

Although Krishnagiri CPWS Phases I and II were completed in May 2009 at a cost of ₹14.68 crore, the same could not be commissioned, since the Irrigation Department

⁹ On account of change in Standard Schedule of Rates and inclusion of excess tender premium and unforeseen items

refused (March 2009) to grant permission to draw water from the proposed source (Gajuladinne Project) citing an ayacut loss of 2,900 acres.

Notwithstanding the lack of access to the proposed water source for Krishnagiri CPWS Phases I and II, the RWSS Department sanctioned Phase-III works in July 2008 at an estimated cost of ₹13.50 crore and awarded the contract in February 2010. As of June 2012, an expenditure of ₹6.40 crore was incurred on it.

The EE/RWS stated (June 2012) that the work was taken up ‘in anticipation of getting water drawal permission’ and that a revised estimate was prepared for obtaining a revised administrative sanction from State Government, which was awaited.

Government stated (October 2012) that efforts are being made to commission the scheme so that the expenditure incurred is fruitful.

5.7.4 CPWS Palair Phase III

CPWS Palair Phases I and II, covering 85 habitations at an estimated cost of ₹21.50 crore, sourcing water from the Palair Reservoir were completed and commissioned in August 2008 and October 2010 respectively. The Phase-III was designed and approved (October 2007) for covering 15 habitations at an estimated cost of ₹7.50 crore with an additional water source – forming a Summer Storage (SS) Tank (Lakaram Tank) within a larger existing irrigation tank adjoining Khammam Municipality.

The project was completed and commissioned in March 2011, covering 8 habitations at an expenditure of ₹5.47 crore. However, this expenditure is wasteful, as the water source (Lakaram SS Tank) is not fit for storage of potable drinking water and is surrounded by the drainage water of nearby villages as well as of Khammam municipality, as can be seen from the photographs of the tank given below.



View inside Lakaram SS Tank



Contaminated water surrounding Lakaram SS Tank

This major design failure was pointed out in October 2010 by CE, Vigilance and Quality Control (VQC) Wing, who stated that the Lakaram SS Tank was not fit for storage of water due to sub-surface pollution derived from ‘privy pits’, leaching cesspool and pollution introduced at or below the ground water table and bacteriological and chemical contamination. Further, the Ground Water Department of State Government had investigated the area in December 2008, and concluded that except in slum areas, water from bore wells and open wells in the area was only for ‘domestic purposes’ and not for drinking purposes. Subsequently (2010), the Institute

of Preventive Medicine, the apex body under State Government, also confirmed the presence of e-Coli bacteria and evidence of e-Coli MPN¹⁰ index above the permissible limits. In December 2010, CE, VQC again visited the site and recommended certain additional measures for diversion of drainage flow, prevention of open defecation, etc., at an estimated cost of ₹25 crore.

Government stated (October 2012) that water was being supplied to 8 habitations by taking required measures like formation of cross bund and key trunch, laying B.C. blanket in the bed of the tank, barbed wire fencing, construction of compound wall around the SS tank to protect the water from contamination and chemical analysis to ensure potability of drinking water. However, the fact remains that water is not yet being supplied to all the 15 habitations intended. In the absence of chemical analysis report, quality of water being supplied to 8 habitations could also not be vouched in audit.

5.7.5 J.C. Nagi Reddy Drinking Water Supply Scheme

The scheme was sanctioned by the State Government with the objective of providing drinking water to 514 habitations and 3 municipalities in Anantapur district in three phases, with funding from HUDCO and State Plan (Phase I May 2006 at a contract value of ₹148 crore; Phase II and III for ₹170 crore in June 2007; Phase-IV for ₹190 crore in February 2009).

The source for the scheme was Gandikota reservoir, which draws water from the Owk balancing reservoir through a tunnel. The tunnelling work, being executed by the Irrigation department, was targeted to be completed by October 2009 but was not completed even as of June 2012.

The status of tunnel works at Gandikota reservoir as of June 2012 can be gauged from the photograph placed alongside, which clearly indicates that the work would take a long time to complete.



Tunnel work at Gandikota Reservoir under progress

Works relating to Phase-IV distribution lines were awarded (January 2010) without ascertaining the progress of tunnel works executed by Irrigation Department.

Lack of co-ordination between the two departments resulted in not even a single habitation out of the targeted 514 habitations being supplied with drinking water as of June 2012. Besides, the expenditure of ₹287.82 crore incurred so far on Phase I, II, III and IV remained unfruitful.

Government stated (October 2012) that based on the schedule of Irrigation department for tunnel work, Phase-IV of the scheme was also taken up with the intention of releasing water to all the 514 habitations. Reply is not acceptable in view of the fact

¹⁰ MPN: Most Probable Number

that actual progress of tunnel work should have been ascertained before awarding the work.

Further, as per Government order of 2003¹¹, no lumpsum provisions should be included in the estimates without a strong justification. However, a lumpsum provision (₹5 crore) for construction of 37 Million Litres per Day (Mld) capacity of Rapid Sand Filter (RSF) was made (February 2007) in the estimates for Phase-I and the work was awarded subsequently in March 2009 at higher rates due to change in SSRs. This had resulted in increase in the cost by ₹2.47crore. Government stated (October 2012) that due to non-availability of land, non-preparation of designs of RSF and to avoid delay in completion of other components of work, LS provision was made. Reply is not acceptable in view of the fact that availability of land and preparation of designs should have been addressed before initiation of work and also the fact remained that the other components of the schemes also remained incomplete as pointed out above.

5.7.6 Non-commissioning of CPWS Vattinagulapally

This project, which was to cover four PC habitations, was sanctioned in January 2007 at an estimated cost of ₹2.50 crore for completion by January 2009. Although an expenditure of ₹1.33 crore was incurred (August 2010), the project was not commissioned as of June 2012.



Pipeline from CPWS Vattinagulapally upto boundary wall of Osman Sagar Reservoir awaiting connectivity

The source of water for this project is Osman Sagar reservoir (which supplies water to the Greater Hyderabad Municipal Corporation areas). After carrying out a feasibility study through HMWSSB¹² in November 2004, the Department requested HMWSSB in June 2007 to accord permission for drawing water from Osman Sagar reservoir, and subsequently deposited a part amount of ₹32 lakh for the purpose in November 2009.

However, before receipt of such permission, the RWSS Department went ahead with tendering and award of contracts for pipeline laying in June - July 2008. In August 2011, HMWSSB raised a demand notice for a further amount of ₹2.36 crore for release of clear drinking water, which had not yet been deposited as of June 2012. Delay in obtaining permission from HMWSSB for drawal of water has resulted in unfruitful expenditure of ₹1.33 crore on the said scheme. Government accepted the

¹¹ GO Ms No. 94 dated 1 July 2003 of Irrigation and CAD (PW-COD) Department

¹² HMWSSB: Hyderabad Metropolitan Water Supply and Sewerage Board

audit finding and stated (October 2012) that required amount would be provided for water connection and potable water would be supplied to all the targeted habitations.

5.7.7 Non-energisation of CPWS Pullala Cheruvu

CPWS Pullala Cheruvu was sanctioned by the State Government in January 2007 at an estimated cost of ₹16.90 crore for coverage of 44 habitations by June 2009. This sanction was based on NABARD's clearance of a bunch of 12 CPWS Schemes in November 2006 under the Rural Infrastructure Development Fund (RIDF).

There were three calls of tenders for the work in November 2007, December 2007 and April 2008. Scrutiny of records revealed that while no bidders participated in the first call, the lowest tender of the second call was rejected on the grounds of non-indication of the status of on-hand project "CPWS scheme Thanakkal" by the contractor at the time of bidding. This action was incorrect, as the status of this scheme (being implemented by the RWSS Department itself) was easily ascertainable by the Department. This rejection, followed by subsequent award (June 2008) to the same contractor (Shri A.V. Ram Babu) in the third call for tender resulted in an additional burden of ₹1.26 crore¹³.

The scheme was completed in May 2010 at an expenditure of ₹11.77 crore. However, it could not be commissioned as of June 2012 due to non-energisation. Although the initial estimate included provision for energisation, due to non-availability of funds, the deposit for electrical connection was made only in September 2010. Funds sanctioned by Government were almost fully exhausted in execution of civil works alone, leaving insufficient funds for other essential items/payments (power supply, pump sets, insurance coverage, maintenance work, taxes, etc.).

Though the sub-estimate for purchase of pump sets was submitted to the Superintending Engineer in January 2010, tenders were finalised by him only in May 2011 (after nearly 17 months), for which no reasons were on record. Government responded (October 2012) that the location of certain reservoirs was changed during actual execution as per site condition due to which, designs for pump sets were also delayed resulting in delay in tendering process for procurement of pump sets. Evidently, proper survey/investigation was not carried out before award of works.

5.7.8 CPWS Scheme to Venkatapur and 8 other Habitations

This scheme was taken up in June 2004 to control fluorosis and brackishness and to provide drinking water in the habitations for which Kakatiya canal of Sriram Sagar Project (SRSP) at a point of 253 km was identified as a source. For this purpose, permission from Irrigation and Command Area Development (I&CAD) department was to be obtained by depositing ₹70 lakh for construction of sluice by I&CAD.

Without depositing the required amount and obtaining permission for drawal of water, the RWSS authorities entrusted the other auxiliary works like summer storage tank,

¹³ ₹14.82 crore (estimated contract value of Phase-II) X 8.5 per cent (13.39 per cent excess over ECV quoted in the third call – 4.89 per cent excess over ECV quoted in the second call)

slow sand filter beds, clear water sump, pump house, 60 kl OHBR, pumping and gravity mains and incurred an expenditure of ₹4.33 crore. These works were completed in February 2007, but had not put to use due to clearance from I&CAD department resulting in the expenditure of ₹4.33 crore incurred as of June 2012 remaining unfruitful.

Government stated (October 2012) that construction of off-take was proposed to tackle the water drawal problem and estimates were awaited from I&CAD department in this regard. It was further stated that ₹2 crore was sanctioned to meet the cost of this work and that, the amount would be deposited with I&CAD department on receipt of the estimates.

5.7.9 Non-commissioning of CPWS Kurichedu

CPWS Kurichedu (Podili Division, Prakasam District) was to cover 24 habitations at an estimated cost of ₹10 crore and was scheduled for completion by January 2010. However, after expending ₹6.79 crore, the scheme was completed but not commissioned as of June 2012, due to non-energisation and non-obtaining permission from Forest and Railway departments for laying of pipelines.

Government stated (October 2012) that the scheme was commissioned covering 12 habitations and permission from Forest department was obtained for laying pipelines for the remaining habitations only in October 2011 and clearance was awaited from Railways.

5.7.10 CPWS scheme to Kothapalli town

The work was taken up in June 2004 with the objective of providing safe drinking water to Kothapalli Town of Karimnagar district as there was no safe drinking water source. Accordingly, survey was conducted (July 2003) and SRSP canal was taken as main source to draw the water and fill in the Ooracheruvu, an irrigation tank and to convert it into summer storage tank. However, due to increase in stoppage period of water supply from 120 to 180 days by the SRSP authorities for canal maintenance, the RWSS authorities dug an open well in the tank and the water was supplied through the existing pipe lines.

By then (December 2007), the contractor had executed the Head works (construction of off take sluice at canal, pumping mains, watchman quarters, pump house, etc.) at SRSP (Chainage 139/400) at a cost of ₹61.41 lakh. Government admitted (October 2012) utilising the open well as alternate source since the Irrigation Department has not released water continuously for 240 days.

Thus, improper survey by the RWSS authorities in identifying a sustainable source resulted in wasteful expenditure of ₹61.41 lakh, as these components were not being utilised as of June 2012 as can be seen from the photographs given below.



*Sluice and Pump House at SRSP Canal
(main source) lying Idle*

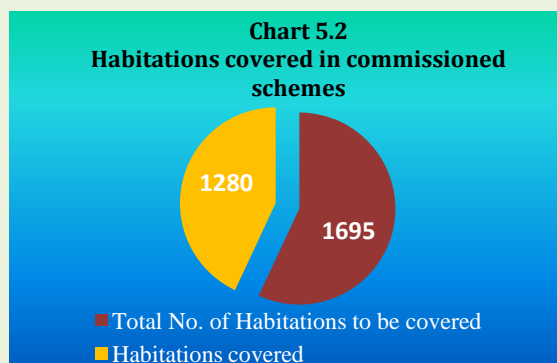


*Open well was dug and is being put to use
instead of main source of SRSP Canal*

5.7.11 Delay in execution of other works

Out of the 66 schemes test checked in Audit, 39 were completed and commissioned as of June 2012. Seven schemes were completed but not commissioned, 4 due to non-receipt of permission from the Irrigation Department and 3 lack of power to energise them. The estimated cost of these schemes was ₹103.5 crore and the actual expenditure incurred was ₹86.82 crore. There was no cost overrun in these schemes, since the targeted habitations were not covered completely through these schemes as can be seen from the chart below.

As against 2,975 habitations targeted for coverage through the 39 schemes commissioned, only 1,280 (43 per cent) were covered. Shortfall in coverage of the targeted number of habitations were 1,695. There was time overrun in all 39 schemes ranging from 1 month (CPWS Scheme Sullurpet) to 36 months (CPWS Scheme Indukurpet).



The details relating to the 20 schemes¹⁴ which are still in progress along with the reasons for non-completion are indicated in the table given below.

Table 5.4

Sl. No.	Name of the Work	Approved cost (₹ in crore)	Due date of Completion	Reasons for delay	Expenditure (₹ in crore)
1	CPWSS to C.S. Puram and Other habitations	12.00	June 2010	Non-clearance of site, lack of R&B Permission	73.47
2	CPWSS to NSS Habitations in Veligandla and Pamur Mandals	30.00			
3	CPWSS to Quality affected habitations in Pamuru, Veligandla, P C Palli & C S Puram Mandals	49.00			

¹⁴ Four schemes have been discussed in the preceding paragraph no. 5.7.1, 5.7.2, 5.7.5 and 5.7.8

Sl. No.	Name of the Work	Approved cost (₹ in crore)	Due date of Completion	Reasons for delay	Expenditure (₹ in crore)
4	Husnabad Chigurumamidi NSS	15.00	November 2009	Delay in preparation of estimates and entrustment of work; Non-acquisition of land; objections raised by Rajiv Swagruha authorities to construct OHBR; delay in getting permission from R&B department; delay in commencement of work by the contractor.	13.14
5	GambheeraoPET Mustabad NSS	15.00	May 2010	Lack of forest clearance for laying pipelines	27.12
6	Ramadugu, Ambaripet, Kodimiyal, Lingapur & Boinpalli NSS	32.6			
7	CPWSS to Parkal and other habitations	9.00	October 2010	Lack of water drawal permission from irrigation department; Land acquisition problem for construction of certain head works.	4.83
8	Integration of drinking water supply with Lift Irrigation Scheme (Devadula) in Warangal District	125.00	September 2011	Delay due to re-survey of designs of the project; delay in getting water drawal permission; objection from local public and other local bodies for laying of pipelines; non-completion of pumping mains	87.55
9	Providing pipeline from Velugodu Balancing Reservoir (VBR) to Erragudur and other habitations.	8.00	August 2012, October 2012	Lack of forest clearance for laying of pipes and permission from Irrigation department for drawal of water	0.00
10	CPWSS to Kamareddy & 281 Villages	140.00	January 2010	Non-obtaining permission from NH and Forest authorities for laying of pipelines; non-release of amounts to contractor	114.50
11	CPWSS to uncovered habitations in Narsapur, Kowdipally, Kulcharam, Hatnoora Mandals in Medak district	18.00	April 2012	Non-clearance from forest department for laying pipelines and construction of OHBRs; Objections raised by some farmers for laying of pipelines etc.,	2.98
12	CPWSS to uncovered habitations in Gajwel, Mulugu, Wargal and Toopran Mandals in Medak District	9.00	April 2012	Objections raised by farmers for laying of pipelines owing to crop season and shortage of labour owing to Telangana agitation	1.24
13	CPWSS to uncovered habitations of Chegunta, Doulatabad Mandals of Medak District	15.00	April 2012	Non-obtaining of permission from Forest and NH authorities for laying of pipelines; awarding seven works to a single contractor; diversion of funds to other habitations; Telangana agitation attributed by the department	3.82
14	Providing CPWSS to Rapur and other habitations	10.00	September 2009	Non-obtaining of Forest permission for laying of pipelines	8.26

Sl. No.	Name of the Work	Approved cost (₹ in crore)	Due date of Completion	Reasons for delay	Expenditure (₹ in crore)
15	CPWSS to Jaladanki and 28 other habitations	6.00	June 2009	Lack of funds, as more than 75 per cent of funds were exhausted on construction of SS tank due to change of designs	6.72
16	CPWSS to Alluru, Isakapalli and other 47 habitations	5.00	March 2008	Delay in commencement of SS tank work caused stoppage of work by the contractor midway leading to revision of estimates	1.05
Total		498.60			344.68

Source: Records of test checked divisions

Government stated (October 2012) that the schemes at serial number 1,2,3,7 and 9 were commissioned. However, the details of habitations covered were not provided. In respect of the schemes at serial number 4, 5, 6, 8, 10, 11, 12, 13, 14, 15 and 16, it was assured that the schemes would be completed by January/March 2013 duly obtaining required permissions and funds. As regards the scheme at serial number 14, it was stated that, water was released to 15 habitations as against the targeted 47 and work would be taken upto cover the remaining habitations after obtaining permission from Forest department.

Abnormal delay in completion and commissioning of the above listed 16 schemes due to non-receipt of clearance/permission from various authorities, non-acquisition of land, non-energisation, etc., resulted in unfruitful expenditure of ₹344.68 crore without providing the envisaged benefit of providing potable drinking water to the 1,983 habitations.

5.7.12 Tendering and Contract Management

5.7.12.1 Acceptance of single bid in the first call

As per the State Government order of 2003, single bids with premium rates should not be accepted on first call and the Department was required to go in for second call. Even after second call, if the response is poor, the Department has to report the matter to the Government and the work is to be entrusted to the agencies nominated by the Government at the estimated rates.

Scrutiny of records relating to 22 works executed by the divisions in 7 districts revealed acceptance of single bid with premium rates in all the cases in the first call itself and awarding contracts at a total estimated contract value of ₹620.60 crore.

Government responded (October 2012) that the tenders were entrusted in line with the existing procedures in vogue (through e-procurement within allowable premium of five per cent). Reply is not acceptable since in all these cases, the tender premium was above 5 per cent and as such, the Department should have gone in for second call.

5.7.12.2 Non-invitation of contractor within bid validity period

Tenders for the work '*CPWS scheme to Kota and other habitations*' were invited on 9 February 2007 with a bid validity period of 90 days (7 June 2007). Scrutiny of records of EE, RWS Nellore revealed that even though the Tender Evaluation Committee accepted the tender filed by the contractor, Shri K.L. Sridhar Reddy on 24 May 2007 (79th day), the SE (RWS), Nellore invited the contractor to conclude the agreement on 27 June 2007 i.e., 110th day. By then, the contractor refused (21 August 2007) to conclude the agreement as the bid validity period had expired and the Department issued fresh tenders again in March 2008. The same contractor K.L. Sridhar Reddy participated and the work was entrusted to him in September 2008 at a contract value of ₹5.55 crore against the first tender contract value of ₹3.10 crore at 13.70 *per cent* (overall) above the estimated cost of work of ₹4.88 crore.

Failure of the Department in finalising the contract within the bid validity period resulted in additional burden of ₹2.45 crore to the exchequer.

Government accepted (October 2012) the comment and assured that the responsibility would be fixed against the concerned.

5.7.12.3 Excess payment/Undue benefit to the contractors

Scrutiny of works bills of the test checked schemes revealed that the Department gave undue benefit to contractors in several cases as discussed below:

- As per Government order issued in July 2006, price variation is allowed for steel, cement, bitumen and Petrol, Oil and Lubricants (POL) only. However, based on recommendations of ENC, State Government extended the benefit of price variation to the pig iron also in November 2008 applicable to only prospective supply of material. Subsequently, an amendment was issued in June 2010 applying the price variation clause for all the ongoing and future projects in the PR & RD (RWSS Department). Audit scrutiny, however, revealed that the price variation clause was wrongly adopted for the supplies made before November 2008 resulting in undue benefit to the contractors of four schemes¹⁵ amounting to ₹7.06 crore.

Government stated (October 2012) that the Department was strictly implementing the instructions issued by the Government from time to time. Reply is not acceptable in view of the fact that the order issued in June 2010 was an amendment to the order of 2008, which stipulated that price variation is applicable to only prospective supply of material. Considering this, price variation should not be allowed for the supplies made prior to November 2008.

¹⁵ CPWS J.C. Nagireddy - entered agreement with M/s Indian Hume Pipes on 30 March 2007 and supplied material during May 2007 to September 2007; CPWS scheme to Y.T. Cheruvu - entered agreement with A.V.Ram Babu on 27 January 2007 and supplied material during October 2007 to August 2008 - ₹26 lakh; CPWS scheme to K.K. Mitta and H.M. Padu (Phase-I & II) entered agreement with A.V.Ram Babu on 11 February 2006 and supplied material during April 2007 to February 2008 – ₹83 lakh and CPWS scheme Chundi Cherlopalem and 25 other habitations- entered agreement with A.V. Ram Babu on 7 June 2007 and supplied material in January 2008 - ₹3 lakh

- Price adjustment clause is admissible to steel, cement, bitumen and POL between estimated rates and Board of Chief Engineers approved rates (increase or decrease is more than 5 per cent). This clause was further amended in September 2008 by limiting to the lowest rate of invoice or rates fixed by the price adjustment clause whichever is less.

However, based on the representation from Builders Association of India and the recommendations of Board of Chief Engineers, this clause was deleted in the subsequent order issued in February 2009. Due to deletion of above clause, even if the contractor purchased the pipes at a lower rate, the department could not restrict the rates of the pipes and as a result, the Department would be forced to pay as per the rates fixed in the SSRs. This was substantiated on scrutiny of the records of payments made on pipes relating to the '*CPWS scheme J.C. Nagireddy*', '*CPWS scheme Neelakantapuram Srirama Reddy*', '*CPWS scheme to Gazwel, Narsapur, Ramayampet and Dommat constituencies in Medak district - Phase I & II*', where the contractors were paid excess amount of ₹58.67 crore¹⁶ over and above the invoice rates.

Government responded (October 2012) that the Department has been complying with its orders issued from time to time, without, however, indicating the justification for issuing orders for deleting the clause to restrict the lowest of invoice or SSR rates.

Incidentally, the deleted clause was revived by the Government in February 2012.

- Price variation clause for manufacture of pipes was allowed in respect of steel, cement, bitumen and resin and the benefit was also extended to pig iron but not to Hoop glass and Chop glass. It was noticed that an amount of ₹32.94 crore was paid (January 2009 – December 2012) to the contractor towards price variation for increase in raw material cost of GRP pipes (manufactured with Hoop glass, Chop glass and resin) utilised (June 2007 – June 2009) in Phase I, II and III of '*CPWS Scheme to Neelakantapuram Srirama Reddy*' and '*CPWS scheme to Gazwel, Narsapur, Ramayampet and Dommat constituencies in Medak district-Phase I&II*'.

The Department replied that price variation amount was paid by adopting the formula given in the concerned SSRs and as per the agreement and based on the raw material cost obtained from the manufacturers of the GRP pipes.

The reply of the Department is not acceptable as the Government orders issued on the price variation largely based on the increase or decrease in raw material cost declared by the Government, i.e., Steel Authority of India Limited for steel; Cement by the Government. However, in respect of GRP pipes there was no such controlling authority; and as such, the increase in rates given by the same manufacturer should not be entertained without ascertaining from market.

¹⁶ ₹6.64 crore for CPWS Scheme to J.C. Nagireddy; ₹52.03 crore for CPWS Neelakantapuram Srirama Reddy

Incidentally, as seen from the invoices produced (August 2008 to September 2008) by the contractor for reimbursement of the taxes, the producers were selling the pipes at a lesser rate than the SSR rate fixed by the Board of Chief Engineers, which is contrary to the Department's contention of increase in rates of raw material. In the light of this, the excess amount paid on above price variation requires to be recovered from the contractor, and other cases should be reviewed for similar excess payments.

Government stated (October 2012) that the issue would be reviewed and appropriate action would be taken.

- State Government issued orders in February 2008 to split the working items into Part-A (pipe works) and B (Civil works) with the tender premium on Part-A being limited to 5 per cent and Part-B to 20 per cent.

Scrutiny of eight works revealed that the tenders were floated (between June 2008 and February 2009) by the circle officers concerned without incorporating the above tender conditions. Instead of restricting Part-A to 5 per cent and Part-B to 20 per cent, a condition that tenders above 20 per cent will be rejected (Part-A and B) was included in the tender condition and thereby the overall percentage box for quoting the tender premium was mentioned as 20 per cent. The contractors quoted their bids by combining Part-A and B. The tender evaluation committee/CE split the tender percentages for Part-A to less than 5 per cent there by resulting in part-B being more than 20 per cent. The improper inclusion of tender condition resulted in undue favour to the agencies/contractors to the tune of ₹15.43 crore apart from excess financial burden on the exchequer. Details are given in *Appendix 5.2*.

Government stated (October 2012) that the Department had restricted the overall tender premium (on Part A + Part B together) to 20 per cent and the tenders were accepted by the Tender Committee after detailed discussions, with an intention not to give abnormal Tender Premium to the contractors. Reply is not acceptable in view of the fact that as per Government orders of February 2008, tender premium on Part A and Part B has to be limited to 5 per cent and 20 per cent respectively, instead of overall tender premium of 20 per cent for Part A&B together.

- As per clause 8.1 of the agreement of '**CPWS scheme to Neelakantapuram Sriram Reddy Drinking Water Supply**', the actual taxes paid by the contractor were to be reimbursed. From the invoices and measurement books produced to audit, it was noticed that as per invoice, the contractor had paid 3 per cent Central sales tax to the firm but 4 per cent of the cost was reimbursed (July 2008/September 2008) to the contractor as per M.Book, with the result an amount of ₹46.32 lakh was reimbursed (Phase-I ₹25.66 lakh; Phase-II ₹20.65 lakh) in excess.

Government stated (October 2012) that recovery pointed out by audit was effected. However, details of recovery were not furnished.

- Scrutiny of works records of the project “**CPWS Scheme to Neelakantapuram Sriram Reddy Drinking Water Supply**” revealed an excess payment (March 2011) of ₹45.67 lakh to the contractor on account of extending tender percentage on the items relating to Lumpsum provisions such as payment toward engaging technical personnel, insurance, banker charges, price variation amount and O&M even though the same was not provided in agreement conditions.

Government stated (October 2012) that recovery pointed out by audit was effected. However, details of recovery were not furnished.

5.8 Sustainability

In order to ensure availability of drinking water by improvement/augmentation of existing drinking water sources and conjunctive use of ground water, surface water and rain water harvesting, ARWSP/NRDWP earmarked separate component for sustainability, with fund allocation of 20 *per cent* (100 *per cent* by GoI). The works under the ‘sustainability’ component include desilting of tanks and old wells, rain water harvesting structures, construction of sub-surface dykes, watersheds, check dams, ‘ooranies’, Reverse Oxma Oxidation (ROO), regulation of digging of bore wells in over-exploited areas, etc.

As per GoI release order dated 1 April 2008 under ARWSP, an amount of ₹2.34 crore (out of the total release ₹46.96 crore) was earmarked towards sustainability aspects, of which, only ₹0.95 crore was expended during 2008-09. In the subsequent release orders, there was no specific allocation towards sustainability, which indicates that adequate attention was not bestowed on this component. However, the ENC stated that ₹6.87 crore was incurred during 2008-12 on 4,263 sustainability related works, as against the approved cost of ₹228.32 crore. The source from which these additional funds were met is not available on record, particularly, when the State matching share was not stipulated for this component.

As per the information provided by the ENC in respect of 16 districts, (information in respect of the remaining 5 districts¹⁷ is awaited as of January 2013), State Government sanctioned 2975 sustainability-related works to the end of 2011 at a cost of ₹162.56 crore, out of which, only 734 works costing ₹2.62 crore (2 *per cent*) were taken up for execution.

In the test checked divisions, a majority of the works under this component were sanctioned only after 2010 and very few were sanctioned during 2007-10. Even the works sanctioned after 2010 had not commenced in full and as can be seen from the table below, out of 1983 works sanctioned, 1422 works (72 *per cent*) were yet to commence as of November 2012.

¹⁷ Adilabad, Karimnagar, Nizamabad, Srikakulam and Warangal

Table 5.5

District	Name of the division	Year of Sanction	No. of works sanctioned	Estimated cost (₹ in crore)	No. of works commenced	Expenditure (₹ in crore)	Works yet to commence
Anantapur	Penukonda	2009-10 & 2010-11	310	5.74	16	0.06	294
	Kalyandurg	2010-11	51	6.47	0	0.00	51
	Anantapur	2009-10 & 2010-11	164	8.22	3	0.01	161
SPS Nellore	Gudur	2010-11	37	2.09	0	0.00	37
	Nellore	2007-08 to 2011-12	706	67.04	266	23.01	375
Kurnool	Nandyal	2010-11	18	0.72	0	0.00	18
	Kurnool	2008-09 & 2010-11	23	6.83	15	0.05	8
	Adoni	2008-09 & 2010-11	26	1.90	10	0.04	16
Prakasam	Ongole	2010-11	4	3.30	0	0.00	4
	Podili	2010-11	120	15.99	0	0.00	120
Nizamabad	Banswada	2009-10	4	1.32	0	0.00	4
	Nizamabad	2010-11	87	5.32	4	0.02	83
Medak	Medak	2008-09 & 2010-11	103	1.79	62	0.24	41
	Siddipet	2008-09 & 2010-11	184	10.16	89	0.35	95
Karimnagar	Karimnagar	2007-08	23	0.09	23	0.08	0
Warangal	Warangal	2006-07 to 2011-12 except 2008-09	9	174.49	8	122.36	1
Ranga Reddy	Hyderabad	2010-11	94	3.76	0	0.00	94
Khammam	Khammam	2008-09 & 2010-11	20	394.59	0	0.00	20
Total			1983	709.82	496	146.22	1422

Source: Records of test checked divisions

While a majority of the EEs of the test checked divisions did not furnish specific reasons for not taking up the sanctioned works, EEs of 6 divisions¹⁸ indicated non-release of funds; insufficient tie-up with MGNREGS (labour component), non-viability as per geological report as the main reasons for non-execution. They stated further that works were not taken up since there was no drinking water problem in the habitations and construction of the planned ooranies was not feasible, as the surrounding areas being rice fields, were contaminated with fertilizers and pesticides. Sanction of works without assessing the feasibility resulted in non-utilisation of the grant from GoI. In the absence of component wise break-up, the contention of the department about non-release of funds could not be vouchsafed.

During the Exit Conference (January 2013), Government admitted that sustainability issues were not addressed adequately during the audit review period and attributed it to initial expectation of linkages with NRHM and MGNREGS, which did not fructify.

¹⁸ EE, RWS divisions in Anantapur, Nizamabad and Gudur division of Nellore

5.9 Water Quality Monitoring and Surveillance

5.9.1 Status of Ground water development

Ground water is the principal source of drinking water in rural habitations in the country and almost 85 *per cent* of rural water supply is dependent on ground water. As per the Andhra Pradesh Ground Water Resource Report, 1108 Mandals in the State were categorised as under,

- 111 Mandals (10 *per cent*) were 'over-exploited' (i.e., ground water development of 100 *per cent* or more);
- 60 Mandals (6 *per cent*) were 'critical' (ground water development of 90 to 100 *per cent*);
- 160 Mandals (14 *per cent*) were 'semi-critical' (ground water development of 70 to 90 *per cent*); and
- 777 Mandals (70 *per cent*) were 'safe' (ground water development of less than 70 *per cent*).

The above categorisation was changed in the subsequent Ground Water Resource Estimation Committee Report 2009, where 6 Mandals in the State have been categorised as 'Over-exploited', where the stage of ground water development exceeded the annual replenishable limit and 24 Mandals were categorised as 'Dark', where the stage of ground water development was more than 85 *per cent*.

5.9.2 Requirements for Maintenance of Water Quality

Water quality is a key component of NRDWP, with allocation of 20 *per cent* funding. Under this component,

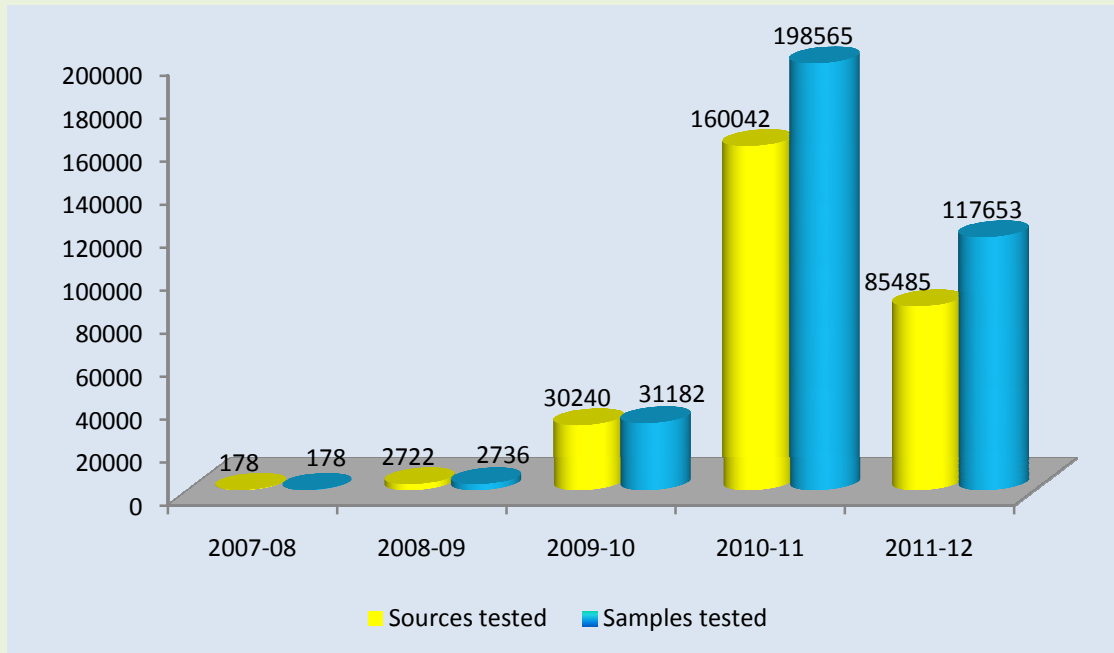
- Water quality laboratories are to be set up at three levels – a nodal unit at the top level, intermediary level units like district laboratories and grass-root level units;
- All drinking water sources should be tested at least twice a year for bacteriological contamination and once a year for chemical contamination. District laboratories are to test at least 30 *per cent* of water samples tested at GP Level and all cases where possibility of contamination was reported by the community. 10 *per cent* of all samples (including all positive tested samples) tested by the district water quality laboratories are to be tested at the State level; and
- Capacity building of Panchayats to own Field Test Kits (FTKs) and take up full O&M responsibility for water quality monitoring of drinking water sources in their area is envisaged.

Audit observations with regard to each of these are given below.

5.9.2.1 Water Quality Laboratories

As per the Management Information System (MIS) of MoRD, as of June 2012, 51 laboratories were established at the district level and 119 at the sub-divisional level in the State. However, there was no evidence in the records produced to Audit with regard to the targets fixed by the Government and the sources and samples identified for conducting water quality tests across the State. As per the MIS database of MoRD samples tested during 2007-12 are given below.

Chart 5.3



Government replied (October 2012) that out of 119 laboratories at sub-division level, 92 were set up during the last quarter of 2011-12 and were commissioned and operationalised with effect from August 2012. It was further stated that the targets for chemical and bacteriological testing for each laboratory were set uniformly at 3,000 per annum and by achieving this target, all the sources would be covered over a period of time. The reply is not acceptable, in view of the NRDWP guidelines, which require that the samples of all the sources should be tested at least once a year.

5.9.2.2 Water Quality Testing

Test-check of 20 divisions revealed that targets for chemical and bacteriological tests in water were set uniformly at 100 and 200 per month respectively, irrespective of the number of sources to be tested. The actual number of tests performed during 2007-12 was lower than even the arbitrarily set targets in the test checked divisions (notably in respect of bacteriological testing), as summarised below.

Table 5.6

District	Name of the division	Bacteriological Tests			Chemical Tests		
		Target	Achievement	Shortfall (-)/ Excess (+)	Target	Achievement	Shortfall(-)/ Excess (+)
Anantapur	Penukonda	7200	5486	1714	22800	33095	(+)10295
	Kalyandurg	4500	2800	1700	11400	7036	4634
	Anantapur	100 ¹⁹	52	48	18000	19487	(+)1487
SPS Nellore	Gudur ²⁰	960	3820	(+)2860	6240	36718	(+)30478
	Nellore	6400	6400	----	20800	20800	-----
Kurnool	Nandyal	Details not furnished					
	Kurnool	1300	581	719	5700	6355	(+)655
	Adoni	Details not furnished					
Prakasam	Ongole	7200	3529	3671	14400	14031	369
	Kanigiri ²¹	1200	75	1125	2400	767	(-)1633
	Darsi	7200	6464	736	14400	17550	(+)3150
Nizamabad	Banswada	2160	4031	(+)1871	21600	21137	(-)463
	Nizamabad ²²	21600	26873	(+)5273	----	-----	----
Medak	Medak	4800	3308	1492	19200	18667	(-)533
	Siddipet	14100	14100	-----	4250	2550	(-)1700
Karimnagar	Karimnagar	7200	6740	460	14400	13957	(-)443
	Manthani	7200	6666	534	14400	13318	(-)1082
Warangal	Warangal	6000	2379	3621	18000	10018	(-)7982
Khammam	Khammam	6000	4591	1409	24000	25669	(+)1669
Ranga Reddy	Hyderabad	6000	3357	2643	12000	13308	(+)1308

Source: Records of test checked divisions

In response, the EEs of Khammam and Hyderabad divisions stated that the shortfall was due to non-release of funds by Government for purchase of raw materials (chemicals) and transportation charges. The EEs of other divisions have not responded. Non-receipt of funds could not be established in the absence of component wise allocation of funds at the State level.

5.9.2.3 Field Test Kits (FTKs)

The main objective of the FTKs was to obtain a preliminary report on quality of water with basic chemical and bacteriological parameters, subject to confirmation through subsequent testing in the established labs. These kits can be utilised by any one at any place by following the instructions or with simple training. Operation and Maintenance (O&M) of FTKs, including their refilling cost, cost of disinfection, minor remedial expenses and honorarium to GP Level co-ordinators is to be covered by community contribution at ₹1 per family per month. The amount so collected is to be deposited in the account of the Village Water and Sanitation Committee (VWSC) and accounted for in a separate ledger.

GoI released ₹17.90 crore during 2005-08 under NRDWQM&SP²³, of which, the State Government expended ₹5.36 crore towards purchase of 25312 FTKs and ₹2.95

¹⁹ Furnished only for the year 2011-12

²⁰ Targets for Bacteriological tests were given for only two years for 2010-11 and 2011-12

²¹ Lab started functioning in June 2011

²² Break-up for Chemical and Bacteriological tests was not given

²³ National Rural Drinking Water Quality Monitoring and & Surveillance Programme

crore on purchase of 18,74,800 Bacteriological vials (HS2S). Further, ₹7.77 crore was incurred on training programmes under HRD activities. These FTKs were utilised by the GPs till the vials lasted, and thereafter, these remained idle due to non-refilling with chemicals. The ENC accepted the audit finding in this regard. Since the VWSCs were not constituted in any of the GPs under the purview of the test checked divisions, collection of contribution from the general public and crediting it to VWSC account would also not arise. Thus, besides defeating the objective of FTKs, the expenditure incurred on procurement of these units also remained unfruitful.

Government stated (October 2012) that pursuant to convergence of RWS with NRHM, the Medical and Health department has been handling the operation of the FTKs through Accredited Social Health Activist (ASHA) with effect from 2011-12. During the Exit Conference (January 2013), Government confirmed that VWSCs have not been constituted as yet and that, the mechanism of operating FTKs through the Medical and Health department was being reviewed, since it had not produced the desired results.

5.9.2.4 Testing Results

None of the test checked divisions, except Podili, could furnish the details of test results to Audit, which leads to the conclusion that 19 divisions have not carried out the required tests and/or the test results indicated presence of chemical and bacterial substances beyond the prescribed norms, which would render the source unsafe. In respect of Podili, it was observed that, 9327 (69 *per cent*) of the 13,516 bore wells were tested over a five year period of 2006-11, against the norm of testing of each water source at least once a year. The test results indicated that, 5408 sources (58 *per cent*) were unsafe, on account of excess presence of fluorides and Total Dissolved Solids (TDS). The EE of Podili attributed the shortfall in testing to inadequate budgetary release for O&M activities.

Government stated (October 2012) that most of the habitations contain both safe and unsafe sources of water, and that, only protected water was being used for human consumption and quality affected water was being used for domestic requirements. Audit could not verify the correctness of Government contention, since the details relating to the source of protected water supply were not furnished for scrutiny.

5.9.3 Operation and Maintenance (O&M) charges

Ten *per cent* of funds allocated under ARWSP/NRDWP are meant to be earmarked for meeting O&M expenditure on drinking water supply. Further, grants provided to PRIs based on the Finance Commission's recommendations should also be provided for O&M on drinking water supply schemes. These amounts were to be deposited in a corpus fund linked to the project operated by PRI itself. All water supply schemes within the GP are to be maintained by the GP and for multi-village or bulk water supply schemes the source, treatment plants, rising mains, etc., should be maintained by the Panchayat Raj Engineering Division (PRED) or the concerned agency, while the distribution and other components within the village are to be maintained by the GP.

State Government had not released its matching share corresponding to GoI grant (₹135.57 crore) for this component under NRDWP during 2009-12. While the entire fund released by GoI was stated to have been utilised by the Department, details of funds released under State plan and their utilisation were not available in the records provided to Audit.

Government stated (October 2012) that funds under NRDWP (O&M) would be released during the year to take up the repair works of the schemes.

5.10 Monitoring and Evaluation

5.10.1 Monitoring

Inspection/monitoring reports of the State level/district level authorities specified by the State Water Sanitation Mission/District Water Sanitation Mission were not made available for Audit scrutiny. In the absence of these details, the effectiveness of monitoring mechanism in implementation of the schemes could not be verified. However, scrutiny of the minutes of the State Level Scheme Sanctioning Committee meetings (SLSSC) (constituted in October 2009) revealed several drawbacks in the monitoring mechanism instituted for effective implementation of the water supply schemes as detailed below:

- The SLSSC held four meetings during 2009-12. However, during these meetings, the Committee deliberated mostly about sanctioning new schemes and ratification of irregularly sanctioned schemes/works by Government without the approval of SLSSC rather than on the progress of the works underway.
- The Vigilance and Quality control wings reviewed quality aspects of 4,561 works during 2008-12 (upto September 2012) and pointed out deficiencies in 761 works. These deficiencies were basically in the nature of selection of unfit source, defects in civil structure, lack of supervision, etc. Action was taken by the Department only with regard to six of these works and the deficiencies relating to the remaining 755 works were not yet addressed.
- Even though the ARWSP/NRDWP stipulated management of O&M of the completed projects by VWSCs, as brought out in paragraph 5.9.2.3, VWSCs have not been constituted as yet and the Department stated that it is maintaining these schemes on its own.

Government assured (October 2012) that adequate steps would be taken to ensure effective monitoring.

5.10.2 Evaluation of the programme

As per the ARWSP/NRDWP guidelines, evaluation studies are to be conducted by both the Central and State Governments through reputed organisations/institutions from time to time on implementation of the rural water supply programme. 100 per cent financial assistance would be provided by the Centre to the States for taking up such evaluation studies under Support activities component of NRDWP. Reports

of these studies should be made available to the Department and immediate corrective action should be initiated as a follow up to improve the quality of programme implementation.

However, no evaluation studies were conducted by the State Government on any of the water supply schemes as of June 2012. Under the Results Framework Document (RFD) introduced by GoI to measure the performance of the Ministries at the Centre, the Ministry of Drinking Water and Sanitation ranked (May 2012) the State Government in implementation of rural water supply schemes at 19th position. The ranking was given based on performance in achievement on various aspects such as augmentation of slipped back habitations; quality affected habitations; number of persons trained to monitor water quality using FTKs, number of water quality tests done; setting up of sub-district level laboratories; number of pipe water supply schemes handed over to Panchayats; number of VWSC members trained; etc.

Government stated (October 2012) that the department was monitoring the performance of EEs and SEs based on RFD, without, however, responding to evaluation studies conducted at State level.

5.11 Conclusion

Implementation of rural water supply schemes was adversely affected by poor financial management involving non-utilisation of allocated funds, non-release of the State's matching share, releases without component wise break-up, avoidable payment of interest, etc. Planning was not adequate as the State Government has not ensured preparation of annual action plans with community involvement. New projects were taken up before the completion of projects on hand and administrative approvals were accorded in violation of GoI norms. Commencement of works without proper investigation, defective designs, lack of co-ordination with the related departments, non-acquisition of land, etc. had resulted in non-completion of projects in a significant number of cases and idling of resources in several others. Where completed also, several schemes could not be energised, denying the benefit of drinking water to the targeted habitations. Tendering and contract management were marked by several irregularities, including excess payment/undue benefit to the contractors. While the reduction in NC habitations was impressive, the State has not paid adequate attention to sustainability of water sources, which led to several habitations slipping back. Water quality testing was inadequate and expenditure incurred in FTKs remained unfruitful.

5.12 Recommendations

- State share of matching funds should be released component wise to facilitate proper implementation of the planned schemes and evaluation of the programme.
- Government should ensure preparation of AAPs with inputs from the local level and ensure strict compliance with all the pre-requisites before according administrative sanction for schemes so as to avoid cost and time over run.

- Adequate emphasis should be placed on sustainability of water so as to minimise the possibility of more “slipped back” habitations.
- Targets for chemical and bacteriological testing for each water quality laboratory should be set individually, depending on the number of water sources falling within its jurisdiction. Further, Government should release adequate funds in a timely manner to ensure testing of all water sources at least once a year.
- Monitoring mechanism as stipulated in NRDWP guidelines should be strengthened to ensure that schemes are executed on time within the budgeted cost and the benefit of potable water is provided to all the habitations as envisaged.